

# Possibility and necessity in Japanese: prioritizing, epistemic, and dynamic modality

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## 1. Introducing ‘modality’

One of the most fascinating properties that set apart human languages from other systems of communication is their unlimited capacity to abstract away from the actual situation, which Hockett (1960) refers to as **displacement**. Displacement along the temporal dimension allows speakers to talk about circumstances and events obtaining at different times and to relate them to their actual now (see the chapters in Section III of this volume). Displacement along the modal dimension allows speakers to talk about circumstances and events that need not be part of the actual course of events at all. For this, languages use content words (like *believe* or *seek*), morphological marking (like the Romance subjunctives), functional words (like the English modal auxiliaries *must* and *may*), as well as complex constructions. ‘Modality’ can thus be defined as the category of grammatical devices that serve to express displacement along the modal dimension. In the following, we will build on this understanding to present an overview of the relevant expressions and constructions in contemporary Japanese.

While relatively standard in current formal semantic theories (see Portner 2009, Hacquard 2011), this understanding of modality is largely orthogonal to that found in the native tradition of Japanese linguistics and functional or cognitive approaches in Western linguistics (for recent overviews in English, see Larm 2006, Narrog 2012). In Japanese linguistics, ‘modality’ is typically defined as the category of linguistic expressions that serve to express the speaker’s current attitude to a proposition (Nakau 1979, Nitta 1989, Masuoka 1991, 1999). This characterization picks out a class of linguistic phenomena that is, on one hand, much broader (encompassing for instance also politeness marking, negation, topic markers, and tense), but excludes, on the other hand, any instances of the relevant markers in the scope of tense, negation, or in nominalized constructions. In the following, we will stick to the understanding laid out in the first paragraph above as providing us with a semantically more homogeneous class of phenomena (see Narrog 2005 for related discussion).

Formal semantics standardly employs the tools and techniques of modal logic to capture modal displacement (‘Modality has to do with necessity and possibility,’ Kratzer 1981:39). As we hope to show in the following, the formal semantic framework provides the necessary tools to draw fine-grained distinctions between expressions within the system of one particular language and to compare expressions and constructions across different languages. At the same time, our investigation of the modal system of Japanese will allow us to reflect critically on the current state of the framework, furthering in particular our understanding of distinctions that have long been central to the work on modality in Japanese linguistics, but have only rather recently moved into the focus of attention in formal theories (see Section 6).

In our discussion of Japanese modality, we adopt a threefold distinction that reflects common assumptions in the formal semantic literature (see. Portner 2009): **epistemic modality** (expressions that relate to displacement according to what is known or believed) is opposed to **prioritizing modality** (expressions that characterize what is permitted, required, or desired) as well as to **dynamic modality** (relating to what courses of events are compatible with a particular body of facts and/or an agent's abilities). Following Portner, we thus reserve deontic modality for the subtype of prioritizing modality that is concerned with rules, laws, and regulations of sorts.<sup>1</sup> Our investigation begins with a brief overview of expressions that are conventionally associated with modality in Japanese. It proceeds with a brief introduction to the formal semantic framework that provides the backdrop for the following discussion. Section 4 discusses particular aspects of how modality is expressed in Japanese, specifically the relationship between epistemic modality and evidentiality (4.1), conditional-like constructions expressing prioritizing modality (4.2), the limited overlap between markers used for more than one of epistemic, prioritizing, and dynamic modality (4.3), as well as different types of necessity modals (4.4). We investigate sentential mood in Section 5 and discuss subjectivity from theoretical and empirical points of view in Section 6. Section 7 offers a brief summary of our findings.

## 2. Modal expressions in Japanese

Unlike Indo-European languages, which tend to employ formally more uniform classes like auxiliaries or verbal moods, Japanese does not have a morphologically or syntactically uniform class of expressions devoted to the expression of modality. Notwithstanding, a series of lexical items, morphological markers, and syntactic constructions are standardly used to express notions along these lines, a connection that we take to be due to their conventional semantic meaning. Accordingly, we include them in this discussion of modal expressions.

We structure our presentation along the basic semantic distinctions of epistemic, prioritizing, and dynamic modality. One issue that becomes immediately apparent is that Japanese shows little overlap between the different subcategories; this contrasts sharply with modal verbs like English *may* or Italian *puo* that can, among others, be used to express conjectures (epistemic), give permissions (prioritizing), and describe abilities (dynamic). A few exceptions to this will be pointed out in Section 4.3. For the discussion of modal markers and constructions, it is useful to keep in mind that Japanese distinguishes among two basic tenses, non-past ( $-(r)u$  NPST) and past or completed ( $-ta$  PST), as well as a gerund ( $-te$  GER).<sup>2</sup> Throughout, we will be assuming that modal markers combine with propositional expressions, their **prejacent**s.<sup>3</sup>

### 2.1 Expressions of epistemic modality

The expressions *daroo*, *hazu-da*, *nitigainai*, and *kamosirenai* are conventionally associated with

<sup>1</sup> In contrast, all modal expressions relating to permissions, requirements, and wishes (which we have subsumed under 'prioritizing modality') are oftentimes grouped together under the label of 'deontic modality.'

<sup>2</sup> See e.g. Shibatani (1990) or Martin (1975) for the overall system, relevant allomorphies, and differences in speech style.

<sup>3</sup> For a critical discussion of the arguments against a uniform treatment of modals as propositional operators (all focusing on Indo-European languages), see Bhatt (1998) and Wurmbrand (1999).

the domain of knowledge and belief, that is, epistemic modality. *Daroo* (cf. (1); polite form *desyoo*) is considered a modal verb (e.g. Takubo 2009) or particle (Larm 2009) expressing the outcome of an inferential process (Hara 2006). At the level of form, it differs from *hazu* (originally a noun), which is followed by a form of the copula inflected for tense (we discuss semantic differences in Section 4.4).

- (1) *Ken wa siken ni ukaru daroo.*  
 Ken TOP exam DAT pass-NPST PCONJ  
 ‘Ken will probably pass the exam.’
- (2) *Bīru wa imagoro hiete-iru hazu- da.*  
 beer TOP by.now get.cold-RES should-COP-NPST  
 ‘The beer ought to be cold by now.’

Syntactically complex *nitigainai* (lit. ‘there is no mistake in,’ Narrog 2009:89) and *kamosirenai* (lit. ‘can’t know whether’) mark their prejacent as entailed and as compatible with what is known, respectively.

- (3) *Asita wa ame ga huru nitigaina-i/kamosirena-i.*  
 tomorrow TOP rain NOM fall-NPST must-NPST/may-NPST  
 ‘It {will undoubtedly/may} rain tomorrow.’

Epistemic modality is typically distinguished from evidentiality (Palmer 1986): markers of epistemic modality convey to what extent the information expressed by the prejacent is compatible with the relevant beliefs of the agent, whereas evidentials indicate the source of the information expressed by their prejacent. In Section 4.1, we review some of the arguments that motivate a distinction between the two categories in Japanese. For a more in-depth discussion of evidentiality, see Hara (this volume).

## 2.2 Prioritizing modality

Among modal expressions of this type, including rules, regulations, or laws (all deontic under the traditional as well as under our classification), goals (teleological modality), and wishes (bouletic modality), we find a variety of morphosyntactically diverse constructions. Notably, Japanese uses conditional(-like) constructions involving evaluative predicates (see Section. 4.2).

- (4) *Tabete mo ii.*  
 eat-GER even/also be.good  
 ‘You may eat (it).’ (lit. ‘It is good even if you eat (it).’) (Akatsuka 1992, her (3))
- (5) *Kookoosei wa osake o non-de wa ik-e-na-i.*  
 high.school.student TOP alcohol ACC drink-GER TOP go-POT-NEG-NPST  
 ‘High school students must not drink alcohol.’ (lit. ‘If/when high school students drink alcohol, it can’t go.’)
- (6) *Eiyoo no aru tabemono o tabe-nakerebanarana-i.*  
 nutrition GEN exist-NPST food ACC eat-must-NPST  
 ‘(I) have to eat nutritious food.’ (lit. ‘If (I) don’t eat nutritious food it doesn’t become.’)

The weaker notion that something is recommendable based on practical considerations (without being outright necessary) is often expressed by the comparative construction *hoo ga ii* (lit. ‘the alternative is good/better’).<sup>4</sup>

- (7) *Eiyoo no aru tabemono o tabeta hoo ga i-i yo.*  
 nutrition GEN exist-NPST food ACC eat-PST alternative NOM be.good-NPST SFP  
 ‘You’d better eat nutritious food.’

The formal noun *beki* with the copula *da* is semantically similar, but tends to involve a notion of moral or social appropriateness, which can be absent from *hoo ga ii* (see Narrog 2009:87).

- (8) *Nihon wa keizai taikoku o koe-te doo iu kuni o*  
 Japan TOP economy big.nation ACC exceed-GER how say-NPST country ACC  
*mezasu beki-na-no ka.*  
 aim.for-NPST should-COP-NMLZ Q  
 ‘What kind of country should Japan strive to be, going beyond being an economic power?’  
 (Mainichi Newspaper 1/1998; Narrog 2009:83, his (53))

Various conditional constructions also express weaker endorsements (as compared to (4)–(6)) and are naturally used to give advice, as for example *-tara ii* in (9).

- (9) *Koko de yasun-dara i-i yo.*  
 here LOC rest-COND be.good-NPST SFP  
 ‘You should rest here.’

Desires and wishes can be expressed with the verbal affix *-tai* (cf. (10)). Complex constructions can also be used to express desires when the desire is for an action or event controlled by someone/something other than the speaker, such as *-te hosii* (see (11)) and *-te moraitai* (which contains *-tai*). *-ru tumori da* (see (12)) expresses what the relevant agent plans on doing (reminiscent of Condoravdi and Lauer’s 2016 **effective preferences**).<sup>5</sup>

<sup>4</sup> See Iwasaki (this volume) for a discussion of sentence final particles (SFP) like *yo*.

<sup>5</sup> Note that this holds only for non-past prejacent. Past prejacent receive epistemic interpretations:

- (i) *Watasi narini seiippai yat-ta tumori desu. Seika-o*  
 I in.one’s.own.way hard do-PST intention COP-POL-NPST. result-ACC  
*mi-te kudasai*  
 look.at-GER give.POL

‘I think that, in my own way, I did the best I could. Please look at the results.’

(Nihongo Kizyutu Bunpoo Kenkyuukai 2003: p. 59, our translation)

A somewhat similar effect can be observed with English *think*: ‘AGENT think(s) that AGENT will  $\varphi$ ’ can obtain a planning reading if  $\varphi$  describes a course of events under the control of the respective agent but obtains an epistemic reading otherwise. An anonymous reviewer points out that for Japanese *tumori* as well, non-past may not entirely preclude epistemic readings. Further research will be required to determine what triggers these differences in interpretation.

- (10) *Biiru ga nomi-tai (desu).*  
 beer NOM drink-DES COP-POL-NPST  
 ‘I’d like to drink a beer.’
- (11) *Tabete hosii (desu).*  
 eat-GER want COP-POL-NPST  
 ‘I want you to eat (this).’
- (12) *Sinseiken ni hatarakikake-ru tumori da/desu.*  
 new.government DAT make.approach-NPST intention COP-NPST/COP-POL-NPST  
 ‘I intend to make approaches to the new government.’ (from Kaiser & al., 2001:552)

Finally, imperatives (verbal endings *-e/-yo/-ro*) and *-nasai*, (used with children and for giving instructions) as well as *-te kudasai* (for polite requests, composed of the gerund followed by a fossilized imperative form of the verb *kudasaru* ‘(someone in a superior position to the speaker) gives to the speaker or someone in the speaker’s in-group’), cf. (13), and exhortatives (verbal ending *-(y)oo*), cf. (14), also express notions of prioritizing modality:

- (13) *Kore o {a. tabe-ro, b. tabe-nasai, c. tabe-te kudasai}!*  
 this ACC eat-IMP eat-IMP-POL eat-GER please  
 ‘(Please) eat this.’ [(a) direct command/(b) instruction/(c) polite request]
- (14) *Susi o {tabe-yoo, tabe-mas-yoo}.*  
 sushi ACC eat-COHORT eat-POL-COHORT  
 ‘Let’s eat sushi.’

These markers are often excluded from the study of modality proper, because they are generally taken to determine sentential form types that together with declarative and interrogative sentences form the paradigm of clause types (or sentential moods). The relationship between clause types and modality will be discussed in Section 5.

## 2.3 Dynamic modality

Dynamic modality regards the abilities, skills, and inherent properties of individuals (‘participant-internal modality,’ van der Auwera & Plungian 1998), but it can also take into account facts about the larger situation. This gives rise to a main distinction between ability modality (referring to acquired or inherent skills) and circumstantial modality. Japanese has two expressions that are reserved for dynamic modality: the allomorphic verbal suffixes *-eru* and *-rareru*, and the analytical expression *koto ga dekiru* (lit. ‘thing NOM is possible’). Moreover, some of the conditional(-like) constructions used for prioritizing modality can be used for circumstantial modality as well. (15) and (16) are examples of ability modality. In contrast to other languages (e.g. German, Kratzer 1981), Japanese does not distinguish according to the origin of an ability (learned, innate, or acquired otherwise): *-eru/-rareru* or *-koto ga dekiru* can be used throughout.<sup>6</sup>

<sup>6</sup> Narrog (2008) observes that the use of simple non-past for general abilities is less natural in Japanese than it is in English or German, for instance:

- (i) *Kono erebeetaa wa 800kiro made {hakob-e-ru, hakobu koto-ga-deki-ru, ??hakobu}.*  
 this elevator TOP 800kg up.to carry-POT-NPST carry can-NPST carry-NPST  
 ‘This elevator can carry up to 800 kg.’/‘This elevator carries up to 800kg.’

- (15) *John wa tagarogugo o {hanas-e-ru, hanas-u koto ga .*  
 John TOP Tagalog ACC speak-POT-NPST speak-NPST NMLZ NOM  
*deki-ru}*.  
 be.possible-NPST  
 ‘John can speak Tagalog.’ (context: learned ability)
- (16) *Watasi no musume wa yuurei to {hanas-e-ru, hanasu koto-ga-deki-ru}*.  
 I GEN daughter TOP ghost COM speak-POT-NPST speak can-NPST  
 ‘My daughter can speak with ghosts.’ (context: innate ability)

*-eru/-rareru* and *koto ga dekiru* can also express what an individual is able to do by virtue of his or her endowment in conjunction with other aspects of the world:

- (17) *Kanemoti na node, biru o marugoto {ka-e-ru, kau koto-ga-deki-ru}*.  
 rich COP because building ACC whole buy.POT-NPST buy can-NPST  
 ‘Because she is rich, she can buy a whole building.’
- (18) *Kyoo wa harete-iru kara kirei-na syasin o {tor-e-ta,*  
 today TOP become.clear-RES because beautiful-ADN picture ACC take-POT-PST  
*toru koto ga deki-ta}*.  
 take NMLZ NOM be.possible-PST  
 ‘Since the sky was clear today, we were able to take beautiful pictures.’

That *-eru/-rareru* and *koto ga dekiru* can be used to express both what an agent is able to do in principle, and what he or she can do in (potentially limiting) specific circumstances is brought out most clearly by examples that contrast these two interpretations (cf. (20)):

- (19) *Watasi wa piano o hik-e-ru. Sikasi, ima wa yubi o itamete-iru*  
 I TOP piano ACC play-POT-NPST but now TOP finger ACC hurt-RES  
*node hik-e-na-i.*  
 because play-POT-NEG-NPST  
 ‘(In general) I can play the piano. But right now since I’ve hurt my fingers, I can’t play.’

In order to express what is inevitable according to the internal endowment of an organism or to the relevant circumstances, Japanese resorts to complex constructions like *sikata ga nai* (lit. ‘there is nothing one can do about it’), *zaruoenai* (lit. ‘not doing it is not a possibility’), but also *-nakereba naranai* (lit. ‘if not ... it doesn’t become’).

- (20) *Kaze o hiite-iru node watasi wa hana o {kama-zaru o e-nai/*  
 cold ACC catch-RES because I TOP nose ACC blow-NEG ACC be.able-NEG-NPST  
*kama-na-kereba nara-na-i}*.  
 blow-NEG-COND become-NEG-NPST  
 ‘Since I’ve caught a cold, I have to blow my nose’

*-nakereba naranai* is typically associated with prioritizing modality (see. Section 2.2), and is thus one of the expressions that can be used across the major category boundaries (see Section. 4.2 for references and further discussion).

### 3. Modality in formal semantics

Formal semantics investigates the interpretation of natural language sentences against the backdrop of a set of possible worlds  $W$  that jointly represent all conceivable states of affairs, one of which represents the actual world. Each world by itself determines the truth value of all atomic or complex (declarative) sentences that do not involve displacement. In contrast, the truth-value of modal sentences, i.e. sentences that express displacement from what is actually the case, is determined at a given world of evaluation  $w$  in terms of what is the case in other worlds  $w'$  that stand in particular relations to  $w$ .<sup>7,8</sup> For any (complex or atomic) declarative sentence  $\phi$ , the **proposition** expressed by  $\phi$  is identified with the set of possible worlds at which it is true.

Given a careful description of the association between specific constructions and their characteristic conversational functions, formal semantic theories aim to predict these associations from the semantic properties of the expression in connection with a model of the contextual settings (e.g., Stalnaker 1978, Lewis 1979) and a suitable representation of conversational functions (e.g., Austin 1962; Searle 1969). Moreover, formal semantic theories explore meaning relations between different expressions, specifically, which sentences are compatible with each other or entail each other, and how changes in various grammatical parameters (e.g. person or tense) affect the semantic meaning and thereby possibly the functional potential of an expression. The investigation of modal expressions in formal semantics builds largely on the work of Angelika Kratzer (1981, 2012, and others). Focusing originally on modals in English and German, the framework has by now been extended to address modality in an increasing number of typologically unrelated languages, resulting in refinements and modifications, some of which will be discussed in later sections.

Kratzer's analysis relies on basic assumptions from modal logic. Modal verbs like *must* and *may* are taken to express universal or existential quantification over a suitable set of possible worlds (understood as complete specifications of hypothetical or actual states of affairs) that conform to a particular body of information. They thereby reflect what is known (epistemic modality), what is commanded (deontic modality), what is necessary to reach one's goals (teleological modality), what is compatible with the circumstances or one's abilities (dynamic modality), or what is desired (bouletic modality). For each expression, we can distinguish between its **modal force** (existential vs. universal quantification) and its **modal flavor** (the nature of the relevant body of information). Kratzer observes that one and the same expression can convey different modal flavors, and she proposes to treat this as an instance of context dependence rather than lexical ambiguity. To capture this in the simplest form, like an operator in classical modal logic, a modal like *must* or *may* is evaluated with respect to a parameter  $R$  (an **accessibility**

<sup>7</sup> The crucial contribution of modal logic is thus not a fixed inventory of two quantifiers over possible worlds (i.e., it does not 'narrow down the object of research to two easily identifiable categories' Narrog 2009:8). Rather, its innovative contribution is that the interpretation of certain constructions can depend on the semantic values of expressions at worlds other than the one of evaluation, where these other worlds are related to the world of evaluation in reflecting what is known, believed, permissible, desired, etc. at the world of evaluation. This makes it possible to capture inference patterns between different modal as well as modal and non-modal sentences.

<sup>8</sup> Assumptions about non-declarative sentences are more varied. See Portner (2018) for an overview and Section 5 for clause types in relation to modality.

**relation**) that represents the relevant body of information relative to the world of evaluation  $w$  by relating  $w$  to all and only the worlds in which the body of information is true (for instance, a specific  $R_{\text{Speaker-epi}}$  relates any world  $w$  to just the worlds in which everything that the speaker knows in  $w$  is true). An accessibility relation  $R$  is thus a set of pairs of worlds  $\langle w, v \rangle$  such that  $v$  is accessible from  $w$  (in view of whatever criteria  $R$  is supposed to represent). Technically, an accessibility relation is a subset of the Cartesian product of the set of worlds with itself ( $R \subseteq W \times W$ , for all accessibility relations  $R$ ).<sup>9</sup>

Modal expressions can then be interpreted as quantifiers over the sets of possible worlds that are accessible according to such a contextually given accessibility relation.

(21) ‘*must*  $\phi$ ’ is true w.r.t.  $w$  and  $R$  iff  $\phi$  is true at all worlds  $v$  s.t.  $\langle w, v \rangle \in R$ .

(22) ‘*may*  $\phi$ ’ is true w.r.t.  $w$  and  $R$  iff  $\phi$  is true at some world  $v$  s.t.  $\langle w, v \rangle \in R$ .

The modal flavor of *must* and *may* results from which accessibility relation  $R$  is salient in the context of the conversation in which the modal expression is used. For instance, if the accessibility relation that is salient in the context of the conversation represents the knowledge of the speaker of the conversation, we obtain a speaker epistemic interpretation (e.g., *It must be raining.* = ‘At all worlds that are compatible with what I know, it is raining.’).

In the philosophical literature, conditional clauses like (23) are often treated as expressing material implication (cf. (24); see Grice (1975) for a defense of this view).

(23) *If Jon is in his office, the lights are on.*

(24) Sentence (23) is true at  $w$  iff it is not the case that Jon is in his office in  $w$  and the lights are off in  $w$ .

However, the currently prevalent view in linguistic (formal) semantics sees conditionals as a complex modal construction. It is pointed out that sentences like (23) have a reading on which the modal *must* does not seem to contribute anything over and above what is expressed by the conditional construction as such (i.e., (25) is interpreted roughly like (23)). The truth conditions of the entire construction can be captured if we assume that *must* is evaluated with respect to a modified accessibility relation  $R_{+A}$  that results from rendering inaccessible any worlds at which the antecedent  $A$  is not true (i.e.,  $R_{+A} = \{\langle w, v \rangle \in R \mid v \in A\}$ , the set of all pairs  $\langle w, v \rangle \in R$  such that  $A$  is true at  $v$ ).

<sup>9</sup> In contrast to classical modal logic, Kratzer models accessibility of worlds through conversational backgrounds, which are functions  $f$  from worlds to sets of propositions. If only one conversational background is employed, the corresponding accessibility relation can be defined easily as  $R_f = \{\langle w, v \rangle \in W \times W \mid \text{for all } p \in f(w), v \in p\}$  (this is the set of all pairs of worlds  $\langle w, v \rangle$  such that world  $v$  makes true all propositions in the set  $f(w)$ ). In a more refined version of the framework (graded modality), Kratzer individuates accessible worlds through two parameters: a modal base that reflects inviolable background information (facts, knowledge), and an ordering source that represents possibly conflicting criteria (stereotypes, laws, preferences, ...) and selects from all the worlds compatible with the modal base those that are ideal in the relevant sense. Abstracting away from considerations of infinite approximation to an ideal (as per the Limit Assumption of Lewis (1973)), the resulting domain of quantification can again be represented by an accessibility relation derived from these parameters.



(25) *If Jon is in his office, the lights must be on.*

(26) Sentence (25) is true at  $w$  w.r.t.  $R$  iff ‘must [the lights be working]’ is true at  $w$  w.r.t.  $R^{+ \text{Jon}}$  is in his office’. Hence, (25) is true at  $w$  w.r.t.  $R$  iff ‘the lights are working’ is true at all worlds  $v$  s.t.  $\langle w, v \rangle \in R$  and ‘Jon is in his office’ is true at  $v$ .

If the speaker’s knowledge is used as the accessibility relation, (25) is predicted to be true at those worlds  $w$  that are such that all worlds  $v$  that are compatible with what the speaker knows in  $w$  and at which Jon is in his office, the lights are on. Conditional clauses like (23) that do not contain an overt modal verb in the consequent are generally taken to contain a covert version of the overt epistemic *must* in (25).<sup>10</sup>

In the following we will aim to show that, even though developed against the backdrop of languages like English and German, Kratzer’s framework is very useful for the study of the Japanese modal system as well.

## 4. Particularities of the Japanese modal system

### 4.1 *Epistemic modality and evidentiality*

In contrast to epistemic markers, which qualify the plausibility of a proposition according to the beliefs of an agent, evidential markers indicate the source of information for the sentence they modify.<sup>11</sup> This distinction is not always easy to draw for actual linguistic markers. In fact, it is a matter of on-going debate if it is possible to draw a clear-cut line between these two notions at all. Some authors argue that epistemic modals even in languages like English or German should be treated as evidentials (Westmoreland 1998, Drubig 2001). Other authors suggest that only certain expressions combine both aspects (for Japanese, McCready and Ogata 2006). In Japanese, the markers standardly classified as epistemic modality (*daroo*-class) and those classified as evidentials (*yoo-da*-class) have been argued to pattern differently on at least the following parameters (list from Narrog 2009:118;123, see further references there). Firstly, they differ in terms of what adverbs they can combine with (*daroo*-like markers cannot combine with *doomo/dooyara* ‘apparently,’ Morimoto 1994; *kitto* ‘surely’/*tabun* ‘probably’/*hyottosuruto* ‘maybe’ cannot occur with *yoo-da*, Takubo 2006) and in how other adverbs are interpreted (*imagoro* ‘around this time,’ Takubo 2006, 2009). Secondly, the two classes are argued to differ in their inferential behavior: *daroo*-like elements are used for deduction (reasoning to results), whereas *yoo-da*-like elements are used for abduction (reasoning to causes) or induction (Takubo 2009). Thirdly, *daroo*-like but not *yoo-da*-like elements can be embedded under *omou* ‘think’.

<sup>10</sup> In fact, many speakers do not perceive (23) and (25) to be entirely equivalent. One possible answer to this is that the covert and the overt modal require slightly different accessibility relations (for instance, what the speaker knows vs. what the speaker takes to be most plausible). See Kaufmann and Kaufmann (2015) for extensive discussion of conditionals in Kratzer’s framework and related accounts.

<sup>11</sup> Aikhenvald (2004) supports a particularly strong notion of evidentiality under which it pertains only to languages in which source of evidence is encoded obligatorily. This is not the case in Japanese – absence of evidentiality marking in tensed sentences is generally not seen as committing the speaker to being in the possession of direct evidence. See Hara (this volume) for discussion.

Fourthly, the two classes are supposed to differ in their scope taking behavior with respect to other quantificational operators.

Unfortunately, these criteria fail to neatly divide the respective markers into two categories. For instance, *hazu da* and *nitigainai* are generally considered epistemic modals and tend to pattern with *daroo* on three of the four criteria. Yet *nitigainai* patterns with the evidentials in allowing inferences to reasons (abduction), whereas *hazu da* does not.<sup>12</sup> Narrog (2009:102) exemplifies this with the following example from Okabe (2004):

- (27) *Karada ga daru-i. Kaze o hii-ta ni-tigai-na-i/*  
 body NOM be.languid-NPST cold ACC catch-PST DAT-mistake-not.be-NPST/  
*?hazu-da.*  
 should-COP-NPST  
 ‘I feel listless. I must have caught a cold.’

To the best of our knowledge, neither the list of characteristics nor the exceptions observed have been accounted for in the literature, and we currently have nothing to add to that. The contrasts mentioned above provide enough of an empirical motivation to retain the traditional distinction; accordingly, evidentials are discussed separately in this handbook (Hara, this volume).

#### 4.2 *Conventionalized evaluative conditional constructions*

In contrast to the better studied modal systems of Indo-European languages, which build largely on auxiliary verbs, at least for prioritizing modality, the Japanese system makes heavy use of conditionalized evaluative constructions (CECs). Formally, these look like conditional clauses with (just) an evaluative predicate (roughly ‘good’/‘bad’) in the consequent. CECs are commonly used to express what is obligatory, wanted, or a necessary means to achieve one’s goals, and to express compatibility with what is permissible, desirable, or planned: compare (4)–(6) from Section 2.2, repeated here.

- (4) *Tabete mo ii.*  
 eat-GER even/also be.good  
 ‘You may eat (it).’ (lit. ‘It is good even if you eat (it).’) (Akatsuka 1992, her (3))
- (5) *Kookoosei wa osake o non-de wa ik-e-na-i.*  
 high.school.student TOP alcohol ACC drink-GER TOP go-POT-NEG-NPST  
 ‘High school students must not drink alcohol.’ (lit. ‘If/when high school students drink alcohol it can’t go.’)
- (6) *Eiyoo no aru tabemono o tabe-na-kereba-nara-na-i.*  
 nutrition GEN exist-NPST food ACC eat-NEG-COND-become-NEG-NPST  
 ‘(I) have to eat nutritious food.’ (lit. ‘If (I) don’t eat nutritious food it doesn’t become.’)

As these complex constructions serve for similar speech acts, and are translated naturally as sentences with modal verbs in English, it is tempting to analyze the material attached to the apparent conditional antecedents as atomic expressions that are interpreted roughly like their

<sup>12</sup> Takubo (2009) describes *nitigainai* as having both evidential and epistemic uses.

English equivalents. Indeed, *-te mo ii* and *-nakereba naranai* are routinely glossed as ‘must’ and ‘may’ in English (see for instance Johnson 1994, Larm 2006, Moriya and Horie 2009).<sup>13</sup> But even if such constructions are conventionalized to a high degree, it is far from clear that they should be treated as atomic expressions in this sense.<sup>14</sup> Kaufmann (2017) emphasizes that in assessing the status of CEC items, one should distinguish between the question of whether or not an item is an atomic chunk morphosyntactically (and should thus correspond to a single lexical entry) from whether or not an expression’s interpretation is equivalent to that of its closest counterpart in English. At least three morphosyntactic or semantic aspects shed doubt on an analysis of CECs as lexical elements. Firstly, Japanese has a large class of different conditional markers (see Takubo (this volume, Section IV). Most of them can be used for CECs, that is, to express necessity or possibility along the lines of what is exemplified in (4) to (6).<sup>15</sup> In this, each marker displays the same morphophonological properties (contractions, dialectal variations) as do ordinary conditionals. Secondly, for each choice of a particular conditional marker, there is a large and possibly open class of expressions that can appear in the consequent position. Following Akatsuka (1992:4), the general schema for CECs can be given as in (28), with a variety of different lexical instantiations for GOOD, BAD, and the conditional connectives.<sup>16</sup>

(28) ‘IF p, (Not) GOOD/BAD,’ where GOOD/BAD is the speaker’s evaluation.

GOOD: *ii, uresii, yorosii, daizyoubu, kamawanai,...*  
 be good, be happy, be fine, all right, not mind

BAD: *ikenai, dame-da, iya-da, zannen-da, komaru, tae-rare-nai,...*  
 can’t go, be not good, dislike, be unfortunate, be dismayed, can’t bear

IF: *-tara, -(re)ba, -to, -te (mo/wa)*

Thirdly, Kaufmann (2017) shows that adverbs like *zettai* ‘absolutely’ can be inserted between the conditional marker and the evaluative predicate as in *-nakereba zettai naranai* (pace Hanazono 1999).

Independently of whether CECs are lexical atoms or full-fledged bi-clausal structures, a semantic theory has to assign a suitable interpretation to these expressions. Still, the

<sup>13</sup> Note that it is not always clear to what extent the authors commit themselves to the position that these strings constitute semantically opaque units that are interpreted like their English counterparts. For instance, Johnson (1994:64) writes that *ni-tigai-nai* ‘is interpreted as the English modal “must.” One difference, however, is that *ni-tigai-nai* does not express logical necessity in Japanese.’

<sup>14</sup> In the Japanese literature, the issue is discussed by Hanazono (1999), who argues that, for instance, *-nakereba naranai* ‘if ...not, BAD<sub>1</sub>’ behaves more like a unit syntactically than the more colloquial *-nakereba dame* ‘if ...not, BAD<sub>2</sub>.’

<sup>15</sup> The conditional marker *nara* appears to constitute an exception, but see the discussion in Kaufmann (2017).

<sup>16</sup> The situation is further complicated by the fact that, in some conditional constructions, the evaluative predicate can be replaced by an interrogative (cf. (i); see Staniak (2012) for discussion):

(i) *Moo sukosi yasun-dara doo desu ka?*  
 more a.little.bit rest-COND how COP-POL-NPST Q

‘Why don’t you rest a little more?’ (lit. ‘If you rested a little more, how would that be?’)

(Staniak 2012:91, her (93))

In some cases, the evaluative consequent can be omitted, with the conditional marker itself specifying the evaluation as either GOOD or BAD (see S. Fujii (2004)).

morphosyntactic status impacts the theoretical choices of how we interpret an expression, and insights into the actual interpretation can possibly provide feedback about the morphosyntactic status. Unless an expression is fully lexicalized, formal semantic theories typically impose **compositionality** as a desideratum on the interpretation process; that is, we expect the meaning of a complex expression to be determined by the meaning of its immediate parts (and, possibly, their mode of combination).<sup>17</sup> Therefore, if CECs were shown to be interpreted in a way that cannot reasonably be related to the meanings of their (apparent) parts, we would obtain indirect evidence that they are atomic. In contrast, if their overall interpretation is compatible with what could be derived from their parts no evidence has been gained regarding their morphosyntactic nature.

Rather than providing a semantic interpretation for the constructions in question, most of the previous literature classifies CECs directly in terms of ‘obligation,’ ‘permission,’ etc., that is, in terms of the speech acts they are typically used to perform (e.g. Akatsuka 1992, Narrog 2009, S. Fujii 2004). Kaufmann (2017) argues that this association cannot be primitive but should be derived from the expression’s semantic interpretation (as for other clauses) for at least the following reasons.<sup>18</sup> Firstly, CECs are more flexible in use than what is suggested by these labels (for instance, see examples (6) and (20), and Section 4.3 for more discussion). Secondly, changes in person, the presence or absence of negation, and differences in clause type (declarative vs. interrogative) all give rise to predictable changes in functional potential. For instance, in matrix declaratives *-te mo ii* ‘it’s good also/even if’ as in (29a) is often associated with ‘permission,’ but a change from non-first to first person subject makes it more naturally interpreted as an offer (cf. (29b)). Similarly, transforming it into an interrogative turns what is naturally used as a permission into what will typically constitute a request for permission (cf. (29c)).

- (29) a. *It-te mo ii.*  
 go-GER even/also be.good  
 lit. ‘It’s OK even/also if you go.’ (≈ ‘You may go.’)
- b. *Watasi ga it-te mo ii desu.*  
 I NOM go-GER also/even be.good-NPST POL  
 lit. ‘It’s OK even/also if I go.’ (≈ ‘I can go,’ ‘I don’t mind going.’)  
 (Narrog 2009; Larm 2006:217, his example)
- c. *It-te mo ii desu ka?*  
 go-GER even/also be.good POL Q  
 lit.: ‘Is it OK even/also if (I) go?’ (≈ ‘May I go?’)

Intuitively, such effects should reduce to independently motivated changes in semantic interpretation that are explained by a theory about the interface between semantic interpretation and conversational functions. For instance, the content of a permission is typically required to describe a course of events that involves the addressee as an agent (Searle 1969), whereas propositions described with the speaker in the role of the agent can be the content of an offer. Specifying the subject as first person thus effects a change in canonical function. Moreover, (29) shows that the functional profile of CECs is affected by changes in clause-type marking: the

<sup>17</sup> For a discussion of compositionality in formal semantics, see Zimmermann (2011).

<sup>18</sup> S. Fujii (2004) also argues in favor of a compositional interpretation but does not herself develop one; see discussion below.

distinction between declarative, interrogative, imperative, and possibly more sentence types is generally taken as one of the core indicators of conversational function.<sup>19</sup> Interrogative marking canonically indicates questioning and appears to be incompatible with giving permission in any direct sense.<sup>20</sup> Interrogative marking also influences what constitutes the relevant source of evaluation (see Section 6.2), and with that, (29c) is used most naturally not as a permission, but as a question about what is permissible (or possibly as a request for permission). Thirdly, associating CECs with conversational functions directly is also problematic because many of them can occur in embedded positions. Consider for instance *-te mo ii* in (30a), where it appears embedded under past tense, and (30b), where it appears in a relative clause (Larm 2006, his (158) and (160)):

- (30) a. *Kodomo no toki koo hii o non-de mo yokat-ta.*  
 child GEN time coffee ACC drink-GER even/also be.good-PAST  
 ‘When (I) was a child I was allowed to drink coffee.’ .  
 b. *Taka-ku hyooka-si-te mo ii hito da.*  
 be.high-INF evaluate-GER even/also be.good-NPST person COP-NPST  
 ‘(S/he) is a person whom one may think highly of.’

In neither of these examples does the *te mo ii*-marked sentence serve to carry out a permission; instead, it contributes a description of what was/is permissible. A functionally underspecified interpretation avoids the problems that result from a direct link to a conversational function.

The challenge is, of course, what semantic interpretation to assign. In the absence of compelling evidence for the atomic status of CECs, we assume that it is obtained compositionally. Given the conditional structure of CECs, it would seem natural to apply a standard analysis of conditionals (see. Section 3). For this, we need to determine what proposition is expressed by the evaluative consequent, and it is not immediately obvious what expressions like *ii* ‘be good’ or *naranai* ‘doesn’t come about’ are predicated of. Kaufmann (2017) considers the possibility of treating them as zero-place predicates, i.e. true/false at a world simpliciter (cf. (31a)). Following Kratzer’s analysis of modality (see. Section 3), the flexibility in modal flavor of CECs (ranging over various sorts of prioritizing modality as well as circumstantial dynamic modality, and even epistemic modality in certain constructions) is captured by the contextual parameter for the accessibility relation. From standard assumptions about conditionals (cf. (26)), for a sentence like (29a) we derive that all those courses of events that (i) seem sufficiently plausible to the speaker, and (ii) are such that you go, are good according to the contextually salient modal flavor (e.g., the rules imposed by the speaker).<sup>21</sup>

- (31) a. *ii* is true at  $w$  and  $R$  iff  $\langle w, w \rangle \in R$ , for a suitable prioritizing accessibility relation  $R$ .  
 b. (29a) is true at  $w$  and  $R_{\text{speaker-epi}}$  and  $R_{\text{speaker-rules}}$  iff for all  $v$  s.t.  $\langle w, v \rangle$  in  $R_{\text{speaker-epi} + \text{you go}}$  :  
 $\langle v, v \rangle \in R_{\text{speaker-rules}}$ .

<sup>19</sup> Bierwisch (1980) calls grammatical markers along these lines illocutionary force indicators. Some discussion of clause type marking in Japanese and its relation to modality can be found in Section 5.

<sup>20</sup> Indirect speech acts constitute an independent factor that complicates the discussion; see Searle (1975) for discussion.

<sup>21</sup> We are abstracting away from the contribution of *mo*. See Kobuchi-Philip (2009) for a discussion of its different usages as well as fn. 28.

(i.e., all worlds  $v$  compatible with what the speaker knows in  $w$  and at which you go are such that all the rules the speaker imposes in  $v$  are obeyed)

Kaufmann (2017) rejects this analysis based on two considerations. Firstly, (29a) can be felicitously used as a permission, even if the speaker does not rule out courses of events at which the addressee commits other ‘crimes’ and which therefore do not count as ‘good’ in the relevant sense for independent reasons. Secondly, embedding the evaluation in the conditional construal has the effect that the rules, preferences, goals, etc. taken into account are not the ones holding at the actual world of evaluation, but rather at each of the individual antecedent worlds; while this is unproblematic in a case where the relevant body of information is stable across all the worlds quantified over by the conditional (i.e., plausible enough for the speaker), it seems to make wrong predictions for cases where the addressee’s leaving somehow impacts what the rules, preferences, goals, etc. are. Both concerns carry over to alternative construals for the consequent, for instance with *ii/naranai* as a predicate of events that gets applied to the hypothetical event introduced by the antecedent. Chung (2017) suggests to build a semantics for deontic modals in general that follows the structure of Japanese CEC, and sketches a way of forcing evaluation of the consequent at the actual world. Provided that certain technical issues can be overcome, this would avoid the second, but not the first problem.

Kaufmann (2017) proposes to revisit the conditional make-up of CECs: Williams (1974) observes that English conditionals like (32) appear to have two different readings as reflected in the paraphrases in (32a) and (32b).

(32) *I would be glad if you came.*

- a. ‘If you came I would be glad about something.’
- b. ‘(If you came) I would be glad about the fact that you came.’

While (32a) is the standard reading obtained from any standard treatment of hypothetical conditionals, (32b) appears to use the *if*-clause twice: as the antecedent of a standard conditional, but also as filling a clausal argument position of the evaluative predicate *be glad*. The subsequent literature argues that the reading sketched in (32b) is indeed an independent one resulting from an underlyingly different syntactic structure. The construal interpreted as in (32b) is called a **non-logical conditional**. It is argued that, in such a case, the *if*-clause syntactically constitutes an argument of the evaluative predicate and patterns with other complement clauses in failing to license negative polarity items (NPIs) and allowing *wh*-extraction (Pullum 1987, Rocchi 2010, Grosz 2011). Independently of this discussion of non-logical conditionals, S. Fujii (2004) had already suggested a logical structure along these lines for Japanese CECs.<sup>22</sup> On any such theory,

<sup>22</sup> An additional complexity is encountered with the possibility-like construction *-te mo ii* (lit. ‘-GER even/also GOOD’), often translated as ‘it is good even if,’ in analogy to the use of *-te mo* to express a concessive conditional. S. Fujii (1994) emphasizes that non-evaluative conditionals of this type need not convey that the antecedent describes the most unlikely state of affairs under which the consequent is true, as would result from interpreting *mo* in the concessive sense of ‘even.’ The CEC *-te mo ii*, too, need not express that its prejacent is the most unlikely course of events to be ‘good,’ but typically involves a merely additive interpretation for *mo* similar to that in (i):

the antecedent has to be interpreted as a proposition or as a plurality of possible worlds (a straightforward consequence on a **referential theory** of conditional antecedents, cf. Schein 2003, Schlenker 2004), and the evaluative predicates *ii*, *naranai*,... have to have an interpretation as predicates that apply to objects of that type (see Kaufmann 2017 for a specific implementation that avoids the two problems pointed out for an analysis as standard hypothetical conditionals).

Given a sufficiently specific theory of conversational functions (speech acts), a compositional interpretation along these lines offers a good starting point for deriving the actual functions of utterances of CECs depending on (i) various properties of the utterance context (specifically, what modal flavor is salient), and (ii) the specific content of the antecedent proposition. At the same time, this focus on a compositional semantic interpretation appears to be at odds with various aspects of conventionalization that have been observed regarding possible instantiations of Akatsuka's schema in (28) (Akatsuka 1992, 1997, S. Fujii 2004, Staniak 2012, among others). Some of them can be captured by independent properties of the different conditional markers. For instance, even in full-fledged conditionals, *-te wa* can only occur with consequents that express courses of events that are contextually evaluated as negative, as shown in (33), and similarly *-te wa* can not instantiate the schema (28) with a form of GOOD in its consequent, as shown in (34).

- (33) *Ikasi-te oi-tewa nani o syaber-are-ru ka wakara-na-i./*  
 let.live-GER leave-COND what ACC say-PASS-NPST Q know-NEG-NPST/  
*#nanika no yaku ni tatu daroo.*  
 something GEN use DAT stand-NPST probably

'If we let him live, there's no telling what he might say on us/he may be useful.'

(Akatsuka and Sohn 1994: (1a))

- (34) *#Tabe-tewa ii.*  
 eat-COND be.good-NPST  
 Intended meaning: 'It's good if you eat (it).' or 'You should eat (it).'

Other restrictions, however, seem to be specific to CECs. On the one hand, these regard differences in modal flavor and strength. For instance, *-te mo ii* (lit. '-GER also/even good') is typically used for permissions (deontic possibility), whereas *-te ii* (lit. '-GER good') is used for recommendations (teleological weak necessity), see Narrog (2009:80f). On the other hand, possible instantiations of Akatsuka's schema (28) are constrained by syntactic polarity. For instance,  $\phi$ -*reba naranai* with the conditional marker (*re*)*ba* and the consequent *naranai* (lit. 'doesn't become') can be used to express that  $\phi$  is necessary only if  $\phi$  is syntactically negative. Kaufmann (2017) argues that this is a genuinely formal restriction. She compares (35) and (36) in a context where the addressee is about to draw a number and will only be able to continue the game if she draws an even number:

- (i) *Watasi mo paati ni ikimasu.*  
 I also/even party GOAL go-POL-NPST  
 'I will also come to the party.' [*mo*-additive]

An analysis along these lines predicts that, thanks to a presupposition of additivity,  $\phi$ -*te mo ii*, unlike English *may*  $\phi$ , should entail (rather than conversationally implicate) that  $\phi$  is not necessary (and that, hence, *must*  $\phi$  is false). This prediction turns out to be surprisingly hard to test and will thus be left for further research.

- (35) #*Kisuu o hike-ba nara-na-i.*  
 odd.number ACC draw-COND become-NEG-NPST  
 Intended meaning: ‘If you draw an odd number, it doesn’t work.’/‘You must draw an even number.’
- (36) *Guusuu o hika-nake-reba nara-na-i.*  
 even.number ACC draw-NEG-COND become-NEG-NPST  
 ‘If you don’t draw an even number it doesn’t work.’/‘You must draw an even number.’

Intuitively, in this context, the two antecedents express the exact same proposition, which makes it hard for a functional or cognitive account to explain the difference in felicity. Relying on a more general cognitive effect of the presence of negation is problematic in view of the conditionals in the English translations of (35) and (36): while equally unidiomatic, they are equally felicitous. Kaufmann (2017) proposes to capture restrictions along these lines by arguing that all CECs involve referential *if*-antecedents. While the regular conditional marker *reba* occurring in hypothetical conditionals is neutral with respect to the contextual status of the proposition expressed by its host sentence,<sup>23</sup> there are two variants of referential conditional markers, *reba* and *nakereba*, that are marked for positive and negative evaluation (like *tewa*), respectively. This excludes (36), which cannot contain neutral *reba* (because it is non-referential), or referential *reba* (because it is marked for positive evaluations). The grammatical CEC (36) contains referential *nakereba*, which is marked for negative evaluation and hence felicitous with a BAD predicate like *naranai*.

S. Fujii (2004) aims to account for the observed restrictions in a different way. She assumes that knowledge of Japanese is best modelled as encompassing a layer of **construction types** and **construction schemes**, which represent the conventional association of CECs with typical effects (conversational implicatures) observed with certain occurrences of full-fledged conditionals.<sup>24</sup> An account along these lines, however, faces the challenge of how exactly this additional layer interacts with the compositional semantic interpretation (see discussion above) to predict the actual infelicity of sentences like (35).

Other aspects about systematic gaps in the paradigm of actually occurring CECs remain equally mysterious from the perspective of formal semantics and from the perspective of construction grammar approach. For instance, in contrast to the productive use of concessive conditional-like constructions to convey possibility (*-te mo ii* ‘even/also if’), there is no systematic use of ‘only if’-conditionals to convey necessity.<sup>25</sup>

<sup>23</sup> As an example of the *reba* marked for positive evaluation, consider the proverb in (i), where living in a particular place is not contextually presupposed to be positive or negative:

(i) *Sume-ba miyako.*  
 live(there)-COND capital  
 ‘The capital/best place is where(ever) you live.’

<sup>24</sup> S. Fujii (2004) argues that her account can also capture the existence of **reduced CECs**, that is, instantiations of (28) in which the evaluative predicate is omitted but is interpreted reliably as either GOOD or BAD. A systematic discussion of when this is possible can be found in Larm (2006).

<sup>25</sup> ‘Only if’ conditionals are often expressed more naturally with a temporal connective *toki*. These constructions cannot serve as the basis of CECs, either.



- (37) *Nakama to kyooryoku-site koso/(?)nomi/?dake seikoo -deki-ru.*  
 partner COM cooperate -GER precisely/only/only succeed-POT-NPST  
 ‘You will succeed only if you cooperate with your partners.’
- (38) \**Atarasi-i kuruma o kat-te koso/nomi/dake na-ru/ i-i.*  
 new car ACC buy-GER precisely/only/only become-NPST/be.good-NPST  
 Intended: ‘It is/will be good only if you buy a new car.’/‘You must/should buy a new car.’

Another problematic aspect is an asymmetry in what modal flavors are expressed by conditional constructions to begin with: while some of the constructions discussed in this section seem to have epistemic readings in addition to their prioritizing and the more marginal dynamic ones (see Section 4.3), the markers that are typically discussed as expressing epistemic modality are non-conditional (*daroo*, *hazu*, and *kamosirenai*, see Section 2). It is, however, perfectly conceivable to express the notion of something being an epistemic possibility (roughly equivalent in meaning to *kamosirenai* ‘maybe’) by saying that it is unsurprising if it occurs. And, in fact, (39) is not entirely unidiomatic.

- (39) *Ame ga hut-te mo okasiku-na-i.*  
 rain NOM fall-GER also/even be.strange-NEG-NPST  
 ‘It’s not strange if it rains.’ (≈: ‘It might rain.’)

Still, *-te mo okasikunai* is not normally discussed as an expression of epistemic modality, which has to be motivated by independent criteria of grammaticalization (see Narrog 2012). It remains to be seen to what degree formal approaches to natural language semantics (or generative grammars, more generally) can make room for restrictions that do not pertain to fixed, semantically opaque sequences (idioms), as well as for patterns in what constructions become conventionalized in the aforementioned sense to begin with. Japanese CECs offer themselves as testing grounds for this enterprise.

### 4.3 Specifically flavored

In contrast to the flexibility in modal flavor that modal expressions of the Indo-European languages are known for, the modal expressions of Japanese tend to be restricted to only epistemic or only prioritizing or only dynamic flavors. At the same time, just like the Indo-European ones, Japanese modal expressions are lexically specified for modal force, which distinguishes Japanese from languages like Salish with modals that are lexically specified for modal flavor but are variable in

- (i) *Kanozyo wa tasuke-te hosi-i toki {dake, nomi} denwa o kake-te ku-ru.*  
 she TOP help-GER want.NPST time only phone ACC call-GER come-NPST  
 ‘She calls (me) only if she wants help.’
- (ii) \**Atarasi-i kuruma o kau {toki, baai} {nomi, dake} {na-ru, i-i}*  
 be.new-NPST car ACC buy-NPST {time, case} only {become-NPST, be.good-NPST}  
 Intended meaning: ‘It is/will be good only if you buy a new car.’/‘You must/should buy a new car.’

Interestingly, Korean expresses necessity along the lines of (38) (see Takubo 2006, Ch. 1), which suggests that this is an accidental gap of Japanese (we are indebted to an anonymous reviewer for pointing this out to us).

modal force (Rullmann, Matthewson, and Davis 2008).

Flexibility in modal flavor was more widespread at earlier stages of Japanese: some expressions have lost readings available to them at earlier stages. For example, the precursors *besi* of *beki* (now exclusively deontic) and *-mu* of exhortative *-(y)oo* (now exclusively prioritizing) both had epistemic readings in Old Japanese, and for *-(y)oo*, epistemic uses are still to be found in early Modern Japanese (Horie 1997).<sup>26</sup>

It is disputed to what extent, if at all, any of the modern Japanese modal markers can be used across modal flavors. Adverbial expressions like *kanarazu* ‘necessarily, by all means’ can occur both with epistemic and non-epistemic modals. However, they seem to be unable to express modal notions by themselves, and rely on a co-occurring modal expression as listed in Section 2 (see Narrog 2009:75). Among those that are considered genuinely modal, the primarily epistemic marker *hazu da* has uses that suggest an analysis in terms of deontic modality (see Narrog 2009 for discussion). Moreover, as we have already seen in Section 2, while predominantly prioritizing, the CECs *-nakereba naranai* and *-nakute wa naranai* can also express dynamic modality. They have, in addition, been claimed to marginally express epistemic modality. Yet, intuitions are not entirely clear-cut. An example from Narrog (2008) (his (24)) is given in (40).

- (40) *Daawin sinkaron ga zettaiteki-ni tadasi-i to suru-nara, sinka*  
Darwin evolution.theory NOM absolutely be.right-NPST COMP assume-COND evolution  
*wa ima sinkoo-tyuu de-nake-reba nara-na-i.*  
TOP now progress-during COP -NEG-COND become-NEG-NPST  
‘If Darwin’s theory of evolution is absolutely right, then evolution must be in progress now.’

While some of the putatively epistemic examples with *-nakereba naranai* could also be analyzed as involving circumstantial necessity, this is hard to maintain for (40), which suggests that *must* depends on the contents of Darwin’s theory (together with the assumption that it is correct). The contents of a theory constitute an epistemic and not a circumstantial conversational background.<sup>27</sup>

The only markers that seem to uncontroversially express both prioritizing and epistemic notions in themselves in modern Japanese are the CECs *-te wa ikenai* and *-te mo ii*. In addition to their more widely known prioritizing or dynamic uses, Larm (2006) cites and confirms the following examples from Nihongo Kizyutsu Bunpō Kenkyūkai (2003):

- (41) *Ni-zikan mae ni syuppatu-sita no nara, moo tootyaku-site-i-naku-te wa*  
two-hours before TMP depart-PAST NMLZ COND already arrive-RES-NEG-GER TOP  
*ik-e-na-i.*  
go-POT-NEG-NPAST

<sup>26</sup> Moriya and Horie (2009:fn. 5) point out that *beki* has an adnominal use in which it still allows for both deontic and epistemic usages, as in *kuru beki hito* ‘a person who (morally) should come’ or ‘a person who is (epistemically) supposed to come.’

<sup>27</sup> A good test, of course, would be to replace *nakereba naranai* in (40) with a marker like *zaruenai* that unambiguously selects for circumstantial and not epistemic necessity and to see if the reading remains the same. Unfortunately, *zaruenai* requires the presence of a lexical verb and cannot be used with a nominal form such as *sinkoo tyuu*. Yutaka Ohno (p.c. to first author) points out that translating English scientific texts into Japanese might have influenced this use of *-nakereba naranai*.

‘If (s/he) departed two hours ago, then (s/he) must have arrived by now.’

(Larm 2006:210, his (110))

- (42) *Tanaka san wa, ni-zikan mae ni ie o dete-iru soo-da-kara*  
Tanaka Mr. TOP two-hours before TMP house ACC leave-RES-NPAST EVID-because  
*sorosoro kotira ni tootyaku-{si-te mo i-i,*  
soon here GOAL arrive -GER also/even be.good-NPAST,  
*su-ru kamosirena-i}*.  
-NPST may-NPST

‘I hear that Mr Tanaka left the house two hours ago, so he may be here soon.’

According to Nihongo Kizyutsu Bunpō Kenkyūkai (2003) and Larm (2006), *ikenai* in (41) can be replaced by *naranai* but not the more colloquial *dame da* ‘it’s no good’. The felicitous variants are reported to express a notion similar to *hazu da*. For (42), *-te mo ii* is considered similar to epistemic *kamosirenai* (Larm 2006:217).

To the best of our knowledge, a satisfactory account for the crosslinguistic presence or absence of polyfunctionality across the boundaries of epistemic, prioritizing and dynamic modality remains to be developed. Yet it is suggestive to relate the situation in Japanese to the heavy use of largely semantically transparent complex constructions, and one might predict that, with semantic bleaching occurring as grammaticalization progresses, the dividing line between the three main types of modal flavors would get weakened. The present status of the most conventionalized CECs *-nakereba naranai* (possibly in contrast to *-nakereba dame*), *-te mo ii*, and *-te wa ikenai*, with their relatively unspecified evaluative predicates might constitute evidence in favor of such a development (see Moriya and Horie 2009 for considerations along these lines).

#### 4.4 Fine-tuning modal force: weak and strong necessity

The standard version of Kratzer’s theory of modality as introduced in Section 3 above distinguishes possibility and necessity modals and accounts for their different behavior in conjunctions with contradictory prejacent.

- (43) a. *You can/may leave, and you can/may stay.*  
b. *#You have to/must/should/ought leave, and you have to/must/should/ought stay.*

By this test, *nitigainai*, *hazu-da*, *beki* and *-nakereba naranai* can be categorized as expressing necessity, whereas *kamosirenai* expresses possibility.<sup>28</sup> Still, as described informally in Section 2,

<sup>28</sup> An independent complication arises for *daroo*, which cannot be embedded under a conjunction marker. The equivalent of the conjunction test for *-te mo ii*, which was argued to be a transparently evaluative construction, would be as in (i), following the pattern of regular alternative concessive conditionals like (ii) from S. Fujii (1994):

- (i) *Tabete mo tabe-naku-te mo i-i.*  
eat-GER also/even eat-NEG-GER also/even be.good-NPST.  
‘Whether or not you eat it, it’s OK/good.’ (roughly: ‘You can eat it and you can also not eat it.’)  
(ii) *Nai-te mo wara-tte mo happyoo made ato iti-niti-da.*  
cry-GER also/even laugh-GER also/even presentation until more one-day-COP  
‘Whether (you) cry or laugh, there is only one day left before the presentation.’ (her (7))

even for a given modal flavor, single expressions with one and the same modal force differ considerably. Building on von Fintel and Iatridou (2008), the recent formal semantic literature contrasts specifically **weak necessity modals** (like *ought* and *should*) with **strong necessity modals** (like *must* and *have to*). The distinction in strength is motivated by two types of contrasts. Firstly, strong necessity modals can reinforce weak ones, but not the other way round (cf. (44)). Secondly, weak necessity modals are compatible with the negation of strong necessity modals, but not the other way around (cf. (45a) vs. (45b)).

- (44) a. *You ought to wash your hands – in fact, you have to.*  
 b. ??*You have to wash your hands – in fact, you ought to.*  
 (von Fintel and Iatridou 2008, their (5a,b))
- (45) a. *You ought to do the dishes but you don't have to.*  
 (von Fintel and Iatridou 2008, their (3))  
 b. ??*You have to do the dishes but it's not the case that you ought to.*

The literature on Japanese modals suggests that a similar contrast obtains between *beki da* and *-nakereba naranai/ikenai* in the deontic domain, and *hazu da* and *nitigainai* in the epistemic domain (see Larm 2006, Narrog 2009). A contrast similar to (44) is illustrated in (46), where what is considered as best (*beki*) for all students in the speaker's university is called necessary for the students majoring in linguistics (*-nakereba naranai*); exchanging the modals or using the same modal in both conjuncts would result in an infelicitous sequence.<sup>29</sup>

- (46) *Uti no gakusei wa mina 3-tu izyoo no gaikokugo o*  
 we GEN student TOP all 3-CLF above GEN foreign.language ACC  
*benkyoo-suru beki-da ga, gengogaku senkoo no gakusei wa*  
 study-NPST ought-COP but linguistics major GEN student TOP  
*3-tu izyoo benkyoo-si-nake-reba nara-na-i.*  
 3-CLF above study-NEG-COND become-NEG-NPST  
 'All our students should study three or more foreign languages, but linguistics major students have to study three or more.'

In the epistemic realm, Okano and Mori (2014) observe that *hazu* patterns with the weak necessity modal *should* rather than the strong necessity modals *must* or *have to* in allowing for the prejacent to be false (see Copley 2005 for discussion of the English data).

- (47) *The beer {should, #has to, #must} be cold by now, but it isn't.*  
 (48) *Biiru wa imagoro hiete-iru {hazu-da, #nitigaina-i} ga*  
 beer TOP by.now get.cold-RES-NPST should-COP-NPST, must-NPST but  
*hiete-i-na-i.*  
 get.cold-RES-NEG-NPST  
 'The beer should/#must be cold by now, but it isn't.'

<sup>29</sup> Related contrasts concerning *beki* and *hoo ga ii* are noted in so far unpublished work by Carla DiGirolamo (p.c. with first author). Note, however, that not all native speakers find the sequence in (46) fully natural without additional material to make explicit the difference in strength.

Further research will be needed to determine the extent of the parallelism.<sup>30</sup> From a theoretical perspective, the distinction between weak and strong modality is subject to on-going research (see von Stechow and Iatridou 2008, Lassiter 2011, Rubinstein 2012, Portner and Rubinstein 2016, among others.).<sup>31</sup>

## 5. Modality and clause types

### 5.1 Theories of clause types

Defining ‘modality’ as the category of grammatical markers that express displacement from the actual situation raises the question of how the notion relates to sentential mood (or, sentence types) and the morphological markers that indicate sentential mood. Sadock and Zwicky (1985) understand sentence types as sentential form types that are conventionally associated with a particular speech act type. They observe that languages tend to distinguish **declaratives** (canonically used for assertions), **interrogatives** (canonically used for yes-no questions), and **imperatives** (canonically used to ‘indicate the speaker’s desire to influence future events’), and that many languages mark additional minor types.<sup>32</sup> Studies that define modality as the class of

<sup>30</sup> Note for instance (i) from Narrog (2009: his (91)), which displays a use of *hazu da* that is impossible for weak necessity modals in English:

(i) *Zenkai no toki ni o-kotowari-site oita hazu yo. Kekkon-aite*  
last.time GEN time TMP decline-HUM-GER put-PST should SFP marriage-partner  
*gurai zibun-de mituke-ru.*  
extent by.oneself find-NPST

‘I presume I (already) declined the other day. I can find a partner for marriage by myself.’

Narrog observes that ‘For the speaker, it is a fact that she declined to be introduced to prospective marriage partners. She only rhetorically presents this as a supposition.’ (p. 102) Neither *ought* nor *should* can be used in this way.

<sup>31</sup> Interestingly, not all sequences that appear to instantiate inverse patterns of (47) are infelicitous:

(i) *Taberu mae ni wa te o arawa-nake-reba nara-na-i si,*  
eat-NPST before TMP TOP hand ACC wash-NEG-COND become-NEG-NPST and  
*arau beki-da.*  
wash-NPST ought-COP-NPST

‘We have to wash our hands before we eat, and we should.’

Examples along these lines seem to be at least marginally acceptable in English as well, suggesting that the parallels drawn between the English and Japanese expressions are correct, but that more work is required to understand and model the contrast between weak and strong necessity. For *beki* vs. *-nakereba naranai*, Nihongo Kizyutu Bunpoo Kenkyukai (2003) and Narrog (2009: 82–84) describe the difference as necessity according to ‘objective rules or laws’ in contrast to necessity according to preferences or views of the speaker. Yanovich (2014) reaches a similar conclusion: building on English and East Slavic data, he argues that the distinction between weak and strong necessity should be captured as a distinction in what modal flavors an element can combine with.

<sup>32</sup> In an actual conversation, expressions of any form type can be used for basically any function. It needs to be determined if all of the non-canonical cases should be explained as Searlean indirect speech acts (Sadock and Zwicky 1985), or if some of them can be derived from a functionally underspecified layer of semantic meaning (Portner 2007, Kaufmann 2012).

expressions and constructions that convey the speaker's attitude to the propositional content expressed by an utterance typically include a discussion of sentence types. In contrast, the formal semantic literature tends to treat modality as part of the propositional content expressed by an utterance. Differences in sentence type are reflected either at a separate layer of conventional meaning (e.g., Stenius 1967, Bierwisch 1980), or else amount to a type-theoretical distinction (e.g., Hamblin 1973 identifies the denotation of an interrogative clause with the set of propositions that constitute possible answers). Imperatives have recently been argued to belong to modality proper, in that a modal operator similar to *must* or *should* is responsible for their conventional link to directive speech acts (Han 1999, Schwager 2006, Grosz 2009, Medeiros 2013, among others; see Portner 2007 for a non-modal alternative). The minor clause types of optatives and exhortatives have received less attention but might be similarly related to subtypes of prioritizing modality. The relation between sentence types and modality is particularly complicated in Japanese, which does not display a formally uniform system of clause types. In the following, we will briefly consider imperative clauses and exhortatives.<sup>33</sup>

## 5.2 Imperative clauses

We use 'imperative markers' to refer to verbal morphology or particles that mark a clause as belonging to the imperative clause type of a given language, that is, a sentence form, whose canonical use is to command or order (Sadock and Zwicky 1985).<sup>34</sup> In Japanese, the inflectional ending *-e* (with allomorphs *-yo/-ro* depending on verbal inflection class), *-nasai*, and *-te kudasai* can be considered subtypes of the imperative clause type. These differ slightly in canonical function: *e/yo/ro* is used for direct commands, *nasai* is used with children and for giving instructions, and *-te kudasai* is used for polite requests.

- (49) *Kono hon o (a) yom-e/ (b) yomi-nasai/ (c) yon-de kudasai.*  
 this book ACC read-IMP/ read-HON-IMP/ read-GER please  
 '(Please) read this book.' [(a) direct command/(b) instruction/(c) polite request]

Like many imperative markers of other languages, *e/yo/ro* and *nasai* do not co-occur with sentential negation, instead, in the plain style, the non-past form followed by *na* is used for negative commands, as in (50). In contrast, the polite construction *-te kudasai* can be formed from the negated form of the verb as well, as in (51).

- (50) *Kono hon o yom-u na!*  
 this book ACC read-NPST NEG-IMP  
 'Don't read this book.'
- (51) *Kono hon o yoma-nai-de kudasai.*  
 this book ACC read-NEG-GER please  
 'Please don't read this book.'

<sup>33</sup> Another construction that merits investigation in this connection but has to await future research is the optative *yoo ni*. For a recent treatment of optative clauses in formal semantics, see Grosz (2011).

<sup>34</sup> For further discussion of Japanese imperatives see also Davis (2011) and Svahn (2016).

In line with a cross-linguistically stable generalization (Han 2000), the semantic contribution of the imperative marking cannot appear in the semantic scope of clausemate negation: (50) and (51) express orders, requests, advice, etc. to not act in the way described.

As in many other languages, the subject of Japanese imperatives can be realized by a second person pronoun or be left out, resulting only in a difference in information structure. Like in German or English, subjects other than second person are generally ungrammatical (Nitta 1991:241, Narrog 2009:1999), unless they can be construed as quantifiers over a plural addressee (see Zanuttini 2008, Kaufmann 2012). Specific to Japanese, proper names referring to the addressee are acceptable as subjects (note that, unlike in the English translation, they do not constitute vocatives). These findings support the assumption that whatever is responsible for imperative meaning combines with a propositional prejacent.

- (52) a. *Omae ga/ \*kare ga ugok-e.*  
you NOM/ he NOM move-IMP  
'YOU move.'/ Intended meaning: 'HE move'  
b. *Dareka/ Minna/ Takesi ga ugok-e.*  
someone/ everyone/ Takeshi NOM move-IMP  
'Somebody/everybody/you, Takeshi, move!'  
c. *Daremo ugoku na.*  
anyone move NEG-IMP  
[lit.] "Don't anybody move!" = 'Nobody move!'

As in other languages, depending on issues of politeness, imperatives can be used naturally (and without signs of indirectness, see Kaufmann 2012 for discussion) for a variety of speech acts other than orders or commands as well. A series of different accounts in the recent formal literature tend to capture this in terms of the relation between imperative clauses and modality: imperative clauses either express modalized propositions similar to 'You should  $\phi$ ' (see Kaufmann 2012 for details), or update the parameters with respect to which a subsequent prioritizing modal is interpreted (Portner 2007). This means that, in addition to deontic modality, they can also express teleological or bouletic modality, as long as a modal flavor is considered to guide the addressee's choice of action or express the speaker's wishes (Kaufmann 2012). While imperatives invariably express that their prejacent is true in the best courses of events according to the respective modal flavor, their use for instructions or advice shows that the speaker need not have an actual desire for this to come about.

- (53) A: *How do I get to the station?*  
B: *Take bus number 17.*

On their more canonical uses, imperatives require the addressee to have control over the state of affairs described in the prejacent. Imperatives of non-agentive predicates are consequently marked. In English, they are acceptable in contexts of coercion (e.g. *Be blond!* in the sense of 'see to it that your hair is blond (for a specific occasion)') or as wishes uttered in soliloquy (imagining a specific addressee). Also, imperatives from stativized predicates are fine if a specific reference time is salient or indicated overtly (see the chapters in Section III of this volume for the semantics of tense). In Japanese, these pragmatic restrictions on imperatives of stative predicates are reflected

more strongly in actual grammatical restrictions: imperatives cannot be formed from stative predicates other than *iru* ‘(animate) to be, to exist.’ When available, stative imperatives behave similarly to their counterparts in English: (54) provides an example of an imperative used in a soliloquy, and (55) is a case where the reference time is specified explicitly:

- (54) *Kono heya ni i-ro/ i-nasai/ i-te kudasai.*  
 that room LOC be-IMP/be-POL-IMP /be-GER please  
 ‘Please be in this room!’ (hoping that the missing sister has returned and will be in her room)<sup>35</sup>
- (55) *Zyoosi ga tootyaku-suru toki wa genkan de matte-iro/inasai.*  
 boss NOM arrive-NPST time TOP entrance LOC wait-PROG-IMP/HON-IMP  
 ‘Be waiting in the entrance when your boss arrives.’

Many languages impose strong restrictions on imperatives in embedded contexts (to the point of banning them altogether), but Japanese allows imperative markers in *to*-marked complements of speech reporting predicates. While *to* can, in principle, introduce either direct speech (quotational constructions) or indirect speech, Kuno (1988) adduces examples like (56) (his (4.1)), where the interpretation of pronouns like *kanozjo* ‘her’ allows one to exclude the direct speech construal:

- (56) *Hanako ga [kanozjo no ie ni sugu koi] to*  
 Hanako NOM her GEN house GOAL immediately come-IMP QUOT  
*denwa o kake-te ki-ta.*  
 telephone.call ACC place-GER come-PST  
 ‘Hanako called me and said that I should come to her house immediately.’

Kuno regards such examples as instances of ‘blended discourse’ that integrate quotational pieces into an indirect speech complement. But as Kuno himself acknowledges, even the allegedly quotational parts need not be literal quotes and are, for instance, subject to the ban on polite verbal forms from embedded clauses. In view of this and in line with more recent findings of embedded imperatives in other languages, the relevant constructions are now generally considered bona fide examples of indirect speech (Oshima 2006, Schwager 2006, T. Fujii 2006, M. Saito 2012, H. Saito 2016, Kaufmann 2012).<sup>36</sup>

<sup>35</sup> Our Japanese rendering of the English original as occurring in Mary Higgins-Clark’s novel *Daddy’s Girl*.

<sup>36</sup> Masahiro Yamada (p.c. to first author) points out that Japanese might also allow for embedded imperatives in certain types of relative clauses:

- (i) *kanarazu yom-e teki-na hon*  
 certainly read-IMP kind.of book  
 ‘the book you must certainly read’
- (ii) *kanarazu yom-e mitai-na hon*  
 certainly read-IMP like book  
 ‘the kind of book you should certainly read’

Imperatives embedded in restrictive relative clauses are crosslinguistically rare (see Medeiros 2013 for instances in Ancient Greek and Stegovec & Kaufmann 2015 for Slovenian). H. Saito (2017) analyzes Japanese cases like (i, ii) as forms of speech reports.



### 5.3 Exhortative clauses

Predicates carrying the verbal affix *-(y)oo* (attaching to both the plain and the polite form) are generally considered to mark the sentential form of an exhortative clause. They are canonically used in suggestions for joint action.

- (57) a. *Asita kaimono ni ik-oo.*  
tomorrow shopping DAT go-COHORT  
'Let's go shopping tomorrow.'  
b. *Maturi de wa kimono o ki-yoo.*  
festival LOC TOP kimono ACC wear-COHORT  
'Let's wear kimono at the festival.'

Under particular pragmatic conditions, *-(y)oo* can also be used to express one's willingness to do something for the benefit of the addressee. Therefore, the form is sometimes considered ambiguous between exhortative and the cross-linguistically rare promissive:

- (58) *Obasan o-tetudai-si-mas-yoo.*  
Auntie help-HUM-POL-COHORT  
'Auntie, let me help you!'  
(Higuchi 1992:182)

Narrog (2009:154f) argues that such examples are pragmatically marked and should thus not be seen as evidence in favor of a genuine promissive reading. Interestingly, *-(y)oo* can occur in indirect speech and alternates there between an intentive and an exhortative reading depending only on the syntactic and semantic properties of the embedding construction (T. Fujii 2006, his (15b,c)).

- (59) *Yoko wa boku no beeguru o tabe-yoo to keikaku-sita (yoo-da)*  
Yoko TOP I GEN bagel ACC eat-COHORT COMP plan-PST EVID-COP-NPST  
'(It seems that) Yoko planned to eat my bagel.'  
(60) *Yoko wa Hiroshi ni boku no beeguru o tabe-yoo to teian-sita*  
Yoko TOP Hiroshi DAT I GEN bagel ACC eat-COHORT COMP propose-PST  
(*yoo-da*)  
EVID-COP-NPST  
'(It seems that) Yoko proposed to Hiroshi that they eat my bagel.'

In line with modal theories of imperatives, this behavior of *-(y)oo* could be taken to indicate that it expresses a more general notion of necessity according to a modal flavor that reflects the joint interests of speaker and hearer. This assumption might shed light on a crucial difference between imperatives and exhortatives: the latter, but not the former, can appear in the scope of the interrogative particle *ka* to express suggestions that await confirmation, as in (61). Semantically, A's utterance can be treated as a polar question about whether it is best for the group of conversational participants to follow a certain course of events or not, which results compositionally from the interrogative marker outscoping a suitably flavored necessity modal.

- (61) A: *Tabemas-yoo ka?*                      B: *Hai, tabemas-yoo.*  
           eat-POL-COHORT Q                      yes, eat-POL-COHORT  
 A: ‘Shall we eat?’                              B: ‘Yes, let’s eat.’

While the embedding of *-(y)oo* under the interrogative particle *ka* can be taken to indicate lack of subjectivity, on the view sketched below, the particular modal flavor *-(y)oo* expresses is subjective after all: it expresses an evaluation in view of the joint preferences or goals of speaker and hearer, either in the actual utterance context or in a context introduced by a *verbum dicendi* (see Section 6).

## 6. The notion of subjectivity

### 6.1 Pragmatic versus lexico-grammatical conception

Works in Japanese linguistics as well as general cognitive and functional studies of modality have long drawn attention to a cluster of phenomena that the formal semantic frameworks introduced in Section 3 have turned to only recently. The phenomena in question are generally subsumed under the notions of **subjectivity** and/or **performativity**, and relate to the observation that certain modal expressions ‘subjectively express the speaker’s state of mind at the time of the utterance’ (Kindaichi 1953, translation by Larm 2009:62) or ‘serve the ‘locutionary agent’s (the speaker’s or writer’s, the utterer’s) expression of himself or herself in the act of utterance’ (Lyons 1995:337). This is often related to Austin’s (1962) notion of performative utterances as opposed to constative ones (Verstraete 2001, Larm 2009). While the phenomenon as such is broadly acknowledged (as well as the assumption that it eludes a purely truth-conditional explanation), there is considerable disagreement about a scientifically viable definition; intuitions also differ widely on whether subjectivity should be contrasted with objectivity, intersubjectivity, or both (see for instance Nuyts 2012, Portner 2009:122-129, Narrog 2012:23-46). Authors disagree moreover on whether the distinction is to be drawn between linguistic expressions (the **strict lexico-grammatical conception**, e.g. Kindaichi 1953, Larm 2009, Langacker 1985, 2002) or between occurrences of linguistic expressions (the **pragmatic conception**, Traugott and Dasher 2002, Lyons 1977). For example, on the pragmatic view, *-te mo ii* is subjective in (62), but not in (63); on the strict lexico-grammatical conception, examples like (63) (from Larm 2006, his (158)) prove that *-te mo ii* is not subjective.<sup>37</sup>

- (62) *Tabete mo i-i desu yo.*  
       eat-GER also/even be.good-NPST COP-POL-NPST SFP  
       ‘It’s all right if you eat (it)’/‘You can eat (it)!’
- (63) *Kodomo no toki koohee o non-de mo yokat-ta.*  
       child GEN time coffee ACC drink-GER also/even be.good-PAST  
       ‘When (I) was I child I was allowed to drink coffee.’

<sup>37</sup> Advocates of the strict lexico-grammatical position could assume that the construction (or a relevant part of it, depending on its morphosyntactic status, see Section 2.2) is ambiguous. This would result in a most likely unmotivated proliferation of ambiguity and it would call for a theory of what constrains the respective appearances of self-expressing and non-self-expressing variants.

In view of such findings, more recent proponents of the strict lexico-grammatical position maintain that subjectivity is a graded concept, and can be defined by a series of grammatical properties which an expression may exemplify only partially. For Japanese, Larm (2006, 2009) builds on Kindaichi's work to determine which of the categories of **Maximum, High, Intermediate, Low, or Zero Subjectivity** a modal marker belongs to. He employs the following criteria: inability to occur (i) in the scope of past tense, (ii) in the scope of negation, (iii) in an adnominalization, (iv) in the scope of an objective modal, (v) in the antecedent of a conditional, (vi) under an attitude predicate like *know*, (vii) under *node* 'because,' and (viii) in a question construction; moreover (ix) subjective modality may be expressed only once (although possibly in more than one place, Lyons 1977:808).<sup>38</sup> For Larm, subjectivity is a matter of degree in that a given element may come with only a subset of these properties, and he points out that a characterization along these lines relies on specific criteria rather than the researcher's impression. While we fully agree with Larm in the last respect, this graded lexico-grammatical approach is not unproblematic, either. First of all, it is not entirely clear if scope is understood semantically or syntactically—while these two coincide for the compositional interpretation of regular truth-conditional at-issue meaning (at least if an abstract syntactic representation possibly different from the surface order is assumed), the two notions of scope can easily come apart for other layers of conventional meaning. Consider specifically expressive meaning as conveyed by the English noun *bastard*. The negative evaluation conveyed is subjective in the sense that it is a self-expression of the speaker in the here and now of the utterance, but it can be freely embedded in arbitrary syntactic depth, as in (64):

- (64) a. *If that bastard shows up here once more, I'll call the police.*  
 b. *I haven't seen that bastard in a long time.*

So, expressions like *bastard* can occur for instance in the antecedents of conditionals or under tense and negation, but contribute expressive meaning that semantically and/or pragmatically 'escapes' the morphosyntactically encoded embedding construction.<sup>39</sup> Secondly, as evidenced in the above discussion of imperatives and exhortatives (see Section 5), not even the markers with maximum subjectivity display the full-range of subjectivity properties (independently of whether 'scope' is understood syntactically or semantically): both can appear in speech reports, exhortative *-(y)oo* can occur in interrogatives, and imperatives may be able to occur in relative clauses (see fn. 36). Thirdly, in order for it to be fully satisfactory, one would want to know if the division into five classes of subjectivity follows an implicational hierarchy, and if so, whether one level of subjectivity, that is, a particular selection of these nine properties, corresponds to a single underlying property shared by the items in that class. Fourthly, the gradable notion fails to shed light on the observation that many expressions identified as having zero or low subjectivity (e.g., *-te mo ii*) still display a strong tendency for being anchored to the perspective of the speaker in

<sup>38</sup> Larm's classification is a more fine-grained version of Hengeveld's (1988), who relies on (i,ii,v,viii) in addition to 'the possibility of questioning the source of modal judgment' (see Narrog 2012:31f for discussion).

<sup>39</sup> Potts (2005) treats such aspects of conventionally encoded meaning as **conventional implicatures** and offers a compositional treatment on a layer parallel to the regular at-issue meaning; see also Tonhauser et al. (2013) for a general discussion of **projective meaning**.

matrix declaratives (compare the behavior of items like English *must* as discussed in Section 6.2).

The pragmatic account avoids many of the issues that remain problematic for the graded lexico-grammatical position. However, in its strict form, it fails to explain why expressions differ in what contexts allow for them to be used non-subjectively, and why certain expressions seem to resist non-subjective interpretations categorically.

We conclude that the actual subjective or non-subjective use of an expression results from an interplay between its conventional meaning and the conversational settings (similarly to Narrog 2012) and that an expression's tendency to be used subjectively or non-subjectively in particular linguistic and non-linguistic contexts has to be explained in terms of its conventional meaning. Additionally, items may come with syntactic restrictions on possible contexts of embedding. As it stands, this suggests genuine independence between syntactic and semantic restrictions, which fails to reflect obvious connections: markers that tend to be used subjectively in unembedded contexts are often subject to restrictions against embedding (e.g., imperatives, exhortatives, Japanese *daroo*, English *might*), but not all of them are (cf. (64)). Formal theories of the syntax-semantics interface aim to identify linguistic structures that both account for the syntactic restrictions and encode the aspects of subjectivity observed with the items in question (see Section 6.3).

## 6.2 Subjectivity effects relating to modals from the formal semantic perspective

In view of the findings in the previous section, we maintain that there is an aspect to Lyon's classification of 'subjectivity' as self-expression of the speaker in the here and now of the utterance that has to be understood at the lexico-grammatical level, but also that existing lexico-grammatical theories of subjectivity are not entirely satisfactory. Instead, we will advocate the following **weak lexico-grammatical understanding of subjectivity**:

- (65) Subjectivity is a property of a linguistic expression  $\alpha$  (a lexical item or a construction) such that the default meaning or use of the expression  $\alpha$  in syntactically unembedded position cannot be captured correctly without making reference to the speaker in his/her actual here and now,<sup>40</sup> and such that  $\alpha$  displays *some sort of obstinacy* against this dependence being manipulated, where manipulation is either (i) pragmatic, through changes in the contextual setting of the utterance, or (ii) grammatical, through syntactic embedding under a scope-taking operator.<sup>41</sup>

This definition is kept deliberately general to cover what we take to be a range of underlyingly different phenomena that all fall under Lyon's characterization. Such phenomena may, however, have quite different properties and may thus require quite different analyses.<sup>42</sup> 'Some sort of obstinacy' is meant as a cover term for a range of phenomena discussed in the literature (see below for specific examples); obstinacy against grammatical manipulation, in particular, covers both

<sup>40</sup> See Zimmermann (2012) for standard conceptions of the utterance context.

<sup>41</sup> Note that we are using 'manipulated' rather than the more intuitive 'shifted' in order for the definition to extend to negation.

<sup>42</sup> While it does not presuppose it, this view is perfectly compatible with hierarchical implications between different degrees of subjectivity.

restrictions against an expression's appearance in the syntactic scope of other expressions *and* effects of non-local interpretation (**projective meaning** as evidenced above for conventional implicatures, as in (64)). The definition leaves room for discussion as to whether or not a particular phenomenon constitutes 'obstinacy' in the relevant sense, but we are positive that there are enough clear-cut cases to get the discussion started. Finally, it may be worth pointing out that subjectivity thus understood does not require a positively defined counterpart—expressions simply do not have the property if (i) their meaning can be captured without reference to speaker/here/now of the actual conversation, and if (ii) in arbitrary depths of syntactic embedding, they interact with their linguistic context according to standard assumptions of compositional semantics. While our definition remains silent as to whether subjectivity has to be encoded syntactically, classes of items in which it systematically co-occurs with restrictions against syntactic embedding strongly suggest a treatment in terms of structural properties (e.g., Speas and Tenny 2003, Truckenbrodt 2006, see also Section 6.3).

Work in formal semantics oftentimes does not address the issue of subjectivity as such, but there is a considerable body of literature that addresses specific linguistic phenomena pertaining to modality (in Japanese and elsewhere) that are related more or less directly to subjectivity along the lines of (65). A common insight from all these discussions is that propositional meaning alone fails to capture specifics of discourse behavior and an inherent notion of **perspective**.

Consider first the work on modal verbs and adverbials in Indo-European languages. According to the Kratzer-style framework as outlined in Section 3, we would expect for these to be interpreted with respect to arbitrary conversational backgrounds, thus reflecting the beliefs of the speaker or of any other salient individual, or, for deontic modality, the rules or goals of the speaker as well as of any other individual. There are, however, systematic restrictions correlating closely with what we have called subjectivity (see Kratzer 1981, Portner 2009). Epistemic modals occurring in main clause declaratives, for instance, will normally relate to the belief state of the speaker (Kratzer 1981), giving rise to the infelicity in (66a), although it is well-known that a purely solipsistic interpretation will make wrong predictions in many cases (see von Stechow and Gillies 2007 for discussion). Epistemic modals are sometimes claimed to take widest scope with respect to clause-mate operators (Drubig 2001, von Stechow and Iatridou 2003) or to at least strongly prefer to do so, and they can be hard to interpret in embedded positions such as conditional antecedents (as in (66b) from Papafragou 2006, her (8a,b)). We consider these patterns 'obstinacy' enough to classify epistemic modals in English as displaying subjectivity.

- (66) a. #*It might be raining but I don't think that it is raining.*  
b. ?*If Max must/may be lonely, his wife will be worried.*

Provided enough context, *might* can, however, express compatibility with a salient belief state or source of information different from that of the speaker. Consider (67) from Egan, Hawthorne and Weatherson (2005), where Bill can use *might* to explain Ann's otherwise surprising behavior to his fellow on-looker Chris. Salience of another belief state or source of information can render otherwise infelicitous occurrences as in conditional antecedents fully acceptable, as shown in (68).

- (67) Context: Chris sees Ann hide behind the bushes as a bus arrives and asks Bill why she is behaving so weirdly, to which Bill replies

*I might be on that bus.*

- (68) *If there might have been a mistake, the editor will have to reread the manuscript.*  
(von Fintel and Gillies 2007, their (11))

*Might* is perfectly felicitous in attitude ascriptions, where, in the absence of strong contextual clues, it receives a **harmonic interpretation**, that is, it is interpreted with respect to the belief state described in the matrix sentence, as in (69a). In interrogatives, as in (69b), epistemic modals like *might* seem to be anchored to the belief state of the addressee (**perspective shift**, Mitchell 1986, or **interrogative flip**, Tenny and Speas 2004):

- (69) a. *John thinks that it might be raining.*  
b. *Might he be in Boston?*

For prioritizing modals, subjectivity effects are often linked to **performativity** (following Austin's distinction between performative and constative utterances). Speakers can, for instance, use deontic modals to change what is permissible rather than merely describe such a state of affairs. There are, however, two aspects to this use: (i) an actual change in what is permissible, and (ii) use of a modal flavor that has its source with the speaker (for instance, the speaker's rules) or is endorsed by the speaker as a guidance in decision-making (for instance, when giving advice). For imperatives, in particular, Kaufmann (2016) argues that what is crucial is the second aspect, as imperatives do not just express commands or orders (inducing changes in the content of the relevant rules), but also advice or wishes. Building on observations by Frank (1996), Kaufmann uses constructions as in (70a) to show that speakers are committed to endorsing the modality expressed by imperatives and certain modals. In this connection, Ninan (2005) argues that performative uses of necessity modals cannot be conjoined felicitously with the claim that preajacent will not come true, and he observes that *must* is inherently performative—in contrast to *have to*, for instance, which can be used descriptively, too, as in (70b).

- (70) a. *Go to Paris, #but I don't want you to.*  
b. *Sam {has to/#must} go to confession, but he won't.*

Japanese imperatives trigger effects similar to (70a). The CEC markers of prioritizing necessity, in contrast, seem to behave like English *have to* in lacking subjectivity effects along these lines: *nakereba naranai* allows the speaker to continue with an assertion that the preajacent will not be met (as in (71)), or according to him/her does not actually have to be met (as in (72), note that, in this context, nominalization with *...n desu* is preferred if not required). *-te mo ii* can be used to describe a set of rules independent of the speaker and comment on them (for instance, when studying a set of guidelines). In such cases, the rules exist independently of the speaker and are not changed by him/her.

- (71) *Jiroo wa asita ronbun o dasa-nake-reba nara-na-i.*  
Jiroo TOP tomorrow paper ACC hand.in-NEG-COND become-NEG-NPST.  
*Demo, kitto dasa-na-i.*  
but most.likely hand.in-NEG-NPST  
'Jiroo has to hand in his paper tomorrow. But most likely he won't.'

- (72) *Kimi wa asita ronbun o dasa-nake-reba nara-na-i n da*  
 you TOP tomorrow paper ACC hand.in-NEG-COND become-NEG-NPST NMLZ COP-NPST  
*kedo maa, monku o iw-are-ru made wa daizyoobu daroo ne.*  
 but FL complaint ACC say-PASS-NPST until TOP all.right PCONJ SFP  
 ‘You have to hand in your paper tomorrow. But, frankly, as long as they don’t complain  
 it’ll probably be fine.’ [speaker implies: ‘I wouldn’t worry about complying with  
 this.’]
- (73) *MIT de wa nakaniwa ni tyuusya-site mo i-i desu.*  
 MIT LOC TOP courtyard LOC park-GER even/also be.good-NPST COP-POL-NPST  
*Bakageta kimari desu ne.*  
 stupid rule COP-POL-NPST SFP  
 ‘At MIT, one can park in the courtyard. That’s a stupid rule, isn’t it.’

CECs are particularly interesting in that they can also be related to subjectivity effects as observed with **taste predicates** (e.g. *fun, tasty, good,...*), which—like modal verbs—appear on the list of expressions that according to Speas and Tenny (2003) depend on a **source of evaluation**. Like epistemic modals, in the unembedded case, taste predicates typically depend on the speaker (as in (74a)), but undergo interrogative flip when appearing in matrix interrogatives (as in (74b)):

- (74) a. *Natto is tasty.*  
 b. *Is natto tasty?*

The same effect is observed for CECs, which, in the absence of a highly salient other set of rules (as in (73)), are anchored to the speaker in declaratives, and to the hearer in interrogatives, giving rise to the flip between permissions and requests for permissions (see Section 4.2) A similar shift is also observed with the morphological bouletic marker *-tai*, which (in the absence of evidential marking) depends on the speaker in main clause declaratives but shifts to the addressee in interrogatives:

- (75) a. *Biiru ga nomi-tai desu.*  
 beer NOM drink-DES COP-POL-NPST  
 ‘I want to have a beer.’  
 b. *Biiru ga nomi-tai desu ka?*  
 beer NOM drink-DES COP-POL-NPST Q  
 ‘Do you want to drink beer?’

Stephenson (2007a) points out that taste predicates and modals differ in the ease with which they can be anchored to sources other than the actual speaker: in this respect, Japanese CECs behave more like taste predicates, for which this is relatively easy.

### 6.3 Brief overview of types of formal semantic approaches

**Indexicals** like the English first person pronoun *I* and its Japanese equivalents *watasi, boku, ore,...* (differing in formality and gender identification) normally refer to the utterance speaker, independently of the depth of their syntactic embedding (Kaplan 1978). They are thus considered

a prime case of subjectivity on many understandings of the term (Benveniste 1971, Iwasaki 1993, Lyons 1995). Following Kaplan (1978), it is standardly assumed that natural language expressions have two dimensions of meaning, where the first (the **character**, a function applied to the utterance context) results in the usual **content** (e.g., the proposition expressed by a declarative sentence) as soon as the values of all indexicals have been filled in with the corresponding parameters of the utterance context. Subjectivity effects as described for modals above are sometimes captured as a form of indexicality (**contextualist account**): like *I*, certain modals relate to the speaker and possibly further parameters of the utterance context (e.g., Kratzer 1981, Papafragou 2006 for epistemic modality; Kaufmann 2012 for imperatives). In contrast to *I* or *watasi*, which will refer to the actual speaker even if embedded in a speech report, markers like *might* or *daroo* and similarly deontic modals or imperatives have been shown to prefer a **harmonic interpretation** in that they get anchored to the modality described by the embedding attitude predicate. At first glance, this may look like strong evidence against a treatment as indexicals. This problem vanishes, however, in view of relatively recent findings that many languages have indexical expressions that, while invariably anchored to a speaker, may also be anchored to the speaker of a context that is described in the matrix clause of a speech or attitude report (Schlenker 2011). Hara (2006) argues specifically that *daroo* is a shiftable indexical and can be anchored to the speaker of a non-actual context, but, unlike English *might* (e.g., in (67) above), cannot be shifted to the agent of a reasoning process. Shiftable indexicality is also attributed to imperatives in Slovenian by Stegovec and Kaufmann (2015) and in Korean (within a non-modal account of imperatives) by Pak, Portner, and Zanuttini (2008). McCready (2007) treats Japanese taste predicates as shiftable indexicals. Note that for any expression that can undergo interrogative flip (for instance, bouletic *-tai*) the relevant parameter of the utterance context cannot be the speaker, a parameter that is unaffected by interrogative formation. Instead, it could be a different parameter reflecting who counts as source of evaluation or source of knowledge in the given context (Speas and Tenny 2003), and which, by default, is identical to the speaker.

Lasersohn (2005) argues that a contextualist account fails to predict disagreement patterns with taste predicates: *No, it isn't* is perfectly fine in reply to (74a), but seems infelicitous as a response to (76), which, according to Lasersohn, is predicted to be a paraphrase of (74a) on a contextualist account.

(76) *Natto is tasty for me.*

He proposes a **relativist account**, on which the content of a sentence (i.e., once all contextual parameters are filled in) is evaluated for truth not only at a world and a time, but at a world, a time, and a **judge**. Two speakers uttering (75a) thus express the exact same content (the basis for disagreement), but their utterance is evaluated at different points of evaluation (so, the sentence can indeed be true for the one and false for the other, **flawless disagreement**). Stephenson (2007b) extends this account to epistemic modals. A different kind of relativist account for epistemic modals is offered by Yalcin (2007). He assumes that epistemic modals are evaluated with respect to a world, a time, and the belief state relevant to the on-going conversation. To capture interrogative flip and harmonic interpretations in attitude reports, relativist theories can analyze the relevant grammatical constructions as shifting the additional third parameter of evaluation (the judge or the belief state).



The third main type of approach assumes that the relation between perspective and illocutionary force of a sentence is **syntactically encoded**. An early account along these lines is Ross's **Performative Hypothesis** (Ross 1970), which assumes that any sentence is headed by a covert projection representing the speech act that is to be carried out (*I claim that, I order you to, I promise you that,...*). However, Speas and Tenny (2003) point out that grammatical structures cannot be specified for particular speech acts. Instead, sentences should be taken to constrain what speech acts they can be used for by delimiting general roles of speaker and addressee, similar to theta roles as assigned to the arguments of lexical predicates. They assume that sentences contain a speech act projection and a sentence projection, which determine how speaker and hearer relate to **point of view** and **source of knowledge**. While their rich representations have been criticized on a number of syntactic and semantic points (e.g., Gärtner and Steinbach 2006), the recent literature emphasizes a series of findings that speak in favor of a syntactic treatment. Differences in clause type correlate not only with differences in perspective or source of evaluation, but covary also with what appear to be syntactic phenomena such as verbal agreement (**conjunct-disjunct marking**, Hale 1980, Zu 2016), **obviation effects** (Schlenker 2005, Zu 2016), and obligatory self-ascription in control-constructions (**de se**-reports, Chierchia 1987). Pearson (2012, 2013), for instance, treats sentential meanings as properties and adopts speech act operators ASSERT and QUESTION that encode self-ascription to the speaker or the hearer, respectively. Stegovec (2019) extends Pearson's account to capture restrictions on the person parameter in embedded imperatives and directive subjunctives in Slovenian.

To conclude, while formal semantic and morphosyntactic approaches do not typically present themselves as trying to address the overarching question of subjectivity, from the brief sketch above, it should be obvious that there are a large number of recent theories for various types of phenomena relating to this concept. We hope that the discussion lets emerge a clear enough picture of how subjectivity can be approached in such frameworks, and what insights can be gained from the predictions made by different types of accounts. Linguistic markers have been shown to differ in what linguistic or non-linguistic factors can induce perspective shift and in the ease with which it occurs (e.g., Hara 2006, Stephenson 2007a); moreover, different markers in one and the same sentence can depend on different perspectives. This suggests that the various accounts are not in strict competition. Rather, a combination of accounts may be needed to achieve fully accurate predictions.

## 7. Conclusions

In this chapter, we have offered a brief overview of forms and constructions in Japanese that express displacement from the actual here and now and that are typically considered part of the grammatical system of the language, and we have aimed to relate our discussion of them to the state of the art in formal semantic and pragmatic theories.

We began with a short overview of the relevant items used to express modality in Japanese in Section 2, and provided in this chapter a more detailed discussion of specifics of the Japanese system, specifically the distinction between epistemic and evidential markers (Section 4.1), the use of conditional evaluative constructions (CECs) for prioritizing modality (Section 4.2), the absence of polyfunctionality across modal flavors (Section 4.3), and expressions that encode different types of necessity (Section 4.4). We have complemented the more descriptive parts with

a brief introduction to the formal semantic literature on modality in general (Section 3), and we have tried to apply, or at least show options for applying, this framework throughout. This has informed in particular our discussion of conditional evaluative constructions (CECs) in Section 4.3 and the brief Section 4.4 on weak vs. strong modality, as well as our discussion of clause types (Section 5) and of various manifestations of subjectivity (Section 6).

Given limited space, we have only been able to provide a glimpse of what there is to be discovered on modality, and we have by no means been able to do full justice to the existing literature, especially outside of the formal semantic tradition. We hope, however, to have offered a fresh take, highlighting fascinating observations and investigations that address the Japanese system in particular, as well as illustrating what we take to be the strong points of formal semantics (and formal pragmatics). We hope that our investigation, by doing so, can help to inspire further work on Japanese modality across frameworks and traditions.

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