

A Modal Approach to *no*-clauses in Japanese

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Abstract:

This paper examines the relation of embedding predicates and embedded clause-selection in Japanese, focusing on *no*-clauses. After investigating the distributional tendencies of embedding predicates, this paper proposes that, though *no*-clauses denote a set of events, each embedding predicate provides further conditions for the interpretation, *e.g.*, a condition on a modal base, which is important in the (non)entailment of the proposition expressed by the complement clause, and a restriction on the theta-role of the embedded event.

Keywords: corpus-aided formal semantics, attitude predicates, *no*-clauses, *koto*-clauses, modal bases, obviation effects

1. Introduction

The classification of embedded clauses has been examined with respect to factivity (Karttunen 1971, 1973; Kastner 2015), root phenomena (Emonds 1970; Hooper and Thompson 1973), *wh*-movements (Erteschik-Shir 1973; Cattell 1978) and mood selections (Villalta 2008; Portner 2018). In Japanese, as early as the 1970s, researchers have been interested in the distinction between *no*-clauses and *koto*-clauses (sometimes also with *to*-clauses). Some have proposed that *koto*-clauses depict an abstract concept while *no*-clauses denote a concrete/direct event (Kuno 1973; Josephs 1976; Inoue 1976; Kageyama 1977).

The fact that perception verbs prefer *no* may make us want to propose that the *no*-clause encodes an event (Davidson 1967). For example, in the sentence in (1), a perception verb *mir*- ‘see’ is used with a *no*-clause. With the past tense marker, this sentence seems to entail the proposition expressed by the complement clause, as the unacceptability of the sentence in (2) suggests. Thus, *no*-clauses, together with *koto*-clauses have been sometimes referred to as a factive complementizer (Miyagawa, 2017: 39).¹ To capture this entailment relation, we might want to propose a Neo-Davidsonian semantics like (3), which entails (4).

- (1) *Ore-wa* [_{CP}[_{TP} *monban-ga tobira-o aker-u*]-{*no*/**koto*}]*-o mi-ta.*
 I-TOP gateman-NOM door-ACC open-PRS-{*no*/*koto*}-ACC see-PST
 ‘I saw [the gateman open the door].’
- (2) **Ore-wa* [_{CP}[_{TP} *monban-ga tobira-o aker-u*]-*no*]-*o mi-ta-ga, tobira-wa ak-anak at-ta.*
 I-TOP gateman-NOM door-ACC open-PRS-*no*-ACC see-PST doors-TOP open-NEG be-PST
 ‘I saw [the gateman open the door] but the door did not open (intended).’
- (3) $\exists e. \exists e'. \text{see}(e) \wedge \text{EX}(I, e) \wedge \text{STIMULUS}(e, e') \wedge \text{open}(e') \wedge \text{AG}(e', \text{the gateman}) \wedge \text{PAT}(e', \text{the door}).$
- (4) $\exists e'. \text{open}(e') \wedge \text{AG}(e', \text{the gateman}) \wedge \text{PAT}(e', \text{the door}).$

Though the event analysis sounds very plausible, the idea that the proposition of the complement *no*-clause is always entailed needs to be modified (Inoue 1974). The aim of this paper is to extend this event analysis in such a way that we can analyze both entailment-holding instances and non-entailment-holding examples in a unified fashion. After presenting a non-entailment example in Section 2, this study presents a corpus study to reveal which embedding predicates prefer to take *no*-clauses (Section 3). Based on the results, this paper proposes a modal analysis in Section 4. Though *no*-clauses denote a set of events, each embedding predicate provides further conditions for the interpretations --- *e.g.*, a condition on a modal base, which is important in the (non)entailment of the embedded proposition.

2. Problem

Consider the sentence in (5). Here, in place of *mi*- ‘see,’ another embedding verb *mat*- ‘wait’ is used. Contrary to the

¹ **Factivity:** Strictly speaking, the sentence in (1) does not *presuppose* the proposition “the door opened” though it does *entail* it, if we adopt the traditional understanding that ϕ presupposes ψ iff $\phi \models \psi \wedge \neg\phi \models \psi$ (Inoue 1974: 258)

(i) *Ore-wa* [_{CP}[_{TP} *monban-ga tobira-o aker-u*]-*no*]-*wa mi-te-nai-si,*
 I-TOP gateman-NOM door-ACC open-PRS-*no*-TOP see-PRF-NEG-and
somosomo tobira-wa itido-mo ak-anak at-ta-yo.
 to begin with door-TOP once-even open-NEG be-PST-SFP
 ‘I did not see [the gateman open the gate] and, to begin with, the door did not open even once.’

previous example in (1), this sentence does not entail its complement, suggested by the fact that this sentence can be continued by the phrase "... but the gateman did not open the door." The translation in (6) should not be the right one.

(5) [_{CP}[_{TP} *monban-ga tobira-o aker-u*]-{*no*?/*koto*}-*o mat-ta*.
 gateman-NOM door-ACC open-PRS-{*no*/*koto*}-ACC wait-PST

‘(I) waited [for the gateman to open the gate].’

(6) $\exists e. \exists e'. \text{wait}(e) \wedge \text{AG}(I, e) \wedge \text{STIMULUS}(e, e') \wedge \text{open}(e') \wedge \text{AG}(e', \text{the gateman}) \wedge \text{PAT}(e', \text{the door})$.

This observation leads to the following questions. First, in addition to *mi*- ‘see’ and *mat*- ‘wait,’ what verbs can take or prefer to take *no*-clauses? Since the difference between *koto*-clauses and *no*-clauses has been a problem, it is also important to find a natural class, if any, for verbs that dominantly take *no*-clauses. Second, if the entailment does not come from a lexical meaning of the complementizer *no*, how does the entailment property appear in (1) but not in (5)?

(7) Research questions

- a. Question 1: What verbs prefer to take *no*-clauses?
- b. Question 2: How does the entailment property appear in (1) but not in (5)?

3. A corpus analysis

In order to answer the first research question, this study conducts a corpus-survey. Frequently used 116 embedding verbs from BCCWJ are examined with respect to their collocation pattern with *no*, *koto* (and *to*) clauses.

3.1 Data

The data was accessed and collected through a web-interface, Chuunagon (<https://chunagon.ninjal.ac.jp/>), provided by NINJAL (the last access was on November 7th, 2017). Since it is not easy to identify one single formula that collects all instances from this corpus, this study takes the following steps to extract relevant examples.

Step 1 [restriction on main clause uses]. Since Japanese is a language that allows scrambling, the linear order does not match the hierarchical structure. For example, the sentence in (8) contains a string, in which the case-marked *koto*-clause is followed by a verb *yorokob*- ‘become happy.’ Despite their distance in linear order, the case-marked *koto*-clause is an argument of the verb *uketomer*- ‘admit.’ In order to avoid such a spurious case, examples are restricted to verbs that stand in *the main clause*; that is, those followed only by the aspect marker, the addressee-honorific marker, the tense marker before the sentence closes off with a punctuation. The formula in (9) summarizes the pattern.

(8) [[*tasya-ga tasya-de ar-u koto*]-*o* [*yorokon-de*] *uketomer-u*]
 others-NOM others-being COP-PRS koto-ACC become happy-being admit-PRS

‘that you happily admit that others are others’ (PB41_00164)

(9)

verb	to	(+wa)	<i>verb</i>	(+teir)	(+mas)	(+en)	(+des)	(+ta)	+ punctuation.
adjective	koto	(+o)	TOP	PRF	HON _A	(+nai)	HON _A	PST	
auxiliary	no	(+o)				NEG			

Step 2 [Punctuations and conjugations]. Not all the punctuations, however, entail a sentence boundary. In this corpus, for example, emoticons are treated as a type of punctuation. Certainly, they do sometimes mark a sentence boundary, but they can also be used like a comma. In order to rigidly restrict ourselves to sentence-final embedding verbs, this paper adds two more constraints. First, this study filters out instances where the punctuation is a comma (206,654 examples pass this first requirement). Second, this study also rules out instances in which the phrase ends in a conditional form, a negative conjectural form, an adnominal form, an infinitive form, or a provisional form; we have 202,095 examples at this moment.

Step 3 [Restriction on frequency]. This study only focuses on embedding predicates which appear at least 30 times in this corpus, because low frequency predicates may be affected too much by idiosyncratic tendencies specific to the corpus and may prevent us from making a general claim. Finally, we have 142,107 instances of 116 different types of embedding predicates.

3.2 Results

With respect to the frequencies of *no*-clauses, *koto*-clauses and *to*-clauses, each embedding verb is represented as a vector of three dimensions, e.g., the verb *kime*- ‘decide’ has 170 occurrences with *koto*-clauses, 2 tokens with *no*-clauses and 142 examples with *to*-clauses, represented as (10). For comparison sake, it is useful to consider vectors in terms of

their relative frequencies as in (11).

$$(10) \mathbb{V}_{kime- 'decide'}^* = (170, 2, 142)^T$$

$$(11) \mathbb{V}_{kime- 'decide'} = (0.541, 0.006, 0.452)^T$$

When we draw a scatterplot of these vectors, they are distributed on the same two-dimensional plane in Figure 1. Figure 2 represents this two-dimensional simplex. Typical *koto*- and *no*-oriented embedding predicates are highlighted in color, which take one of the clauses at least (around) 70% times of their total uses. This paper does not make a claim that these verbs are *always* used with these clauses (there do exist some instances where those predicates select the other clauses). Rather, what is shown below is a *type-level tendency*.

Figure 1.

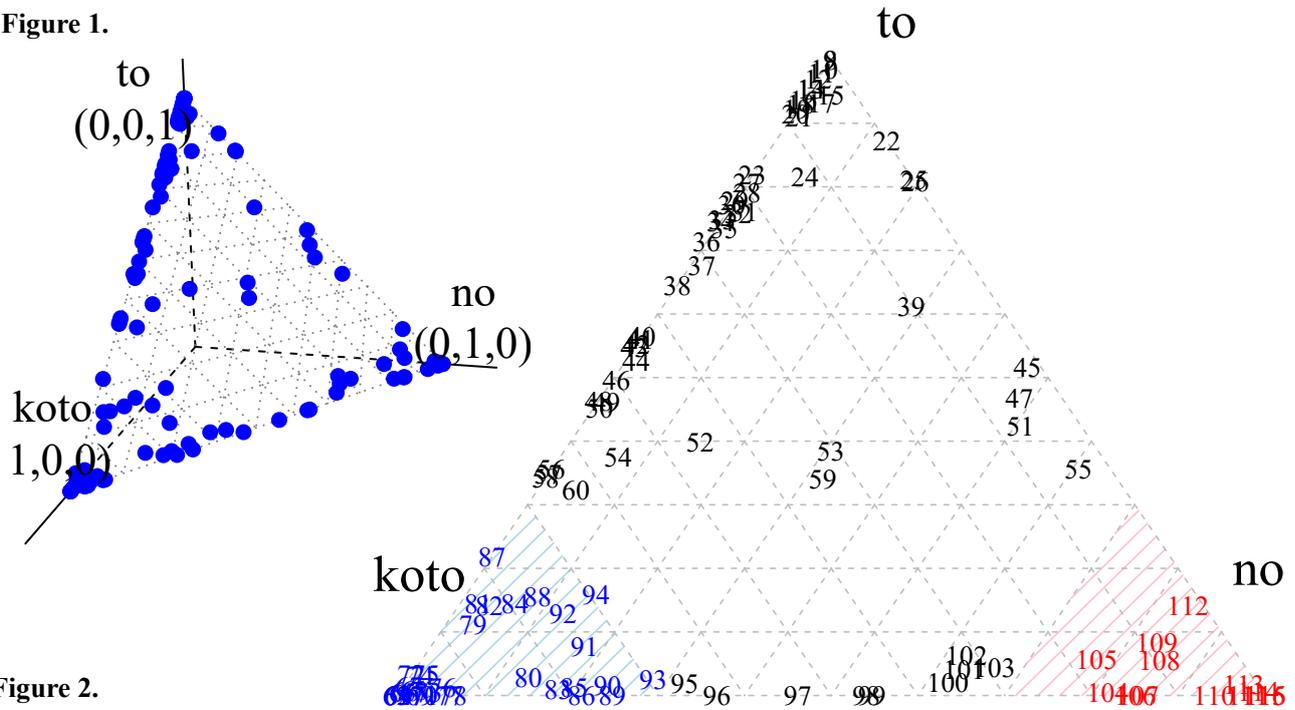


Figure 2.

1 sur- (archaic) 'do, regard'	21 sinzur- 'believe'	41 tutae- 'tell'	61 yoosur- 'need'	81 susum-e- 'recommend'	101 matigaw- 'make a mistake'
2 minas- 'regard'	22 kaisur- 'understand'	42 meizur- 'order'	62 okir- 'happen'	82 inor- 'pray'	102 tameraw- 'hesitate'
3 iikir-e- 'can assert'	23 nobe- 'state'	43 tuge- 'tell'	63 ar- (archaic) 'be'	83 gozar- 'be'	103 medat- 'stand out'
4 kagir- 'limit'	24 kik- 'listen to'	44 sadame- 'determine'	64 deki- 'be able to'	84 nozom- 'desire'	104 yame- 'stop'
5 omoikom- 'assume'	25 tasukar- 'be saved, be helpful'	45 komar- 'be perplexed'	65 simes- 'show'	85 yurus- 'forgive'	105 yurus-e- 'can forgive'
6 omow-e- 'can think'	26 odorok- 'be surprised'	46 hanas- 'talk'	66 okor- 'happen'	86 erab- 'select'	106 huseg- 'prevent, defend'
7 tutome- 'strive'	27 omoitat- 'decide'	47 kanzi- 'feel'	67 arawas- 'express'	87 kokorogake- 'be aware'	107 mituke- 'find'
8 omow- 'feel, think'	28 kokoromi- 'try'	48 osie- 'teach'	68 monogatar- 'recount, show'	88 mitome- 'recognize'	108 i- 'be, exist'
9 zonzur- 'feel, think'	29 katar- 'narrate'	49 negaw- 'wish'	69 mezas- 'aim'	89 inam-e- 'can deny'	109 ik-e- 'can go'
10 kotae- 'answer'	30 ronzur- 'discuss'	50 kime- 'decide'	70 age- 'raise'	90 tasikame- 'ascertain'	110 tetudaw- 'help'
11 iihar- 'insist'	31 uttae- 'claim'	51 kanzur- 'feel'	71 sas- 'refer to'	91 wakar- 'recognize'	111 nagame- 'watch, view'
12 iw-e- 'can say'	32 mous- 'say (Teichogo)'	52 yorokob- 'become happy'	72 manab- 'learn'	92 kurikaes- 'repeat'	112 mie- 'can see'
13 iw- 'say'	33 tok- 'preach'	53 tigaw- 'is different'	73 ukaga-e- 'can guess'	93 osore- 'fear'	113 kikoe- 'hear'
14 sur- 'do, regard'	34 houzur- 'report'	54 sator- 'sense'	74 motome- 'seek'	94 sir- 'come to know'	114 mat- 'wait'
15 kiduk- 'notice'	35 kak- 'write'	55 mi- 'look at'	75 nakunar- 'perish'	95 omoidas- 'recall'	115 mikake- 'see, run into'
16 tanom- 'ask'	36 ossyar- 'say (S-HON)'	56 akas- 'reveal'	76 ar- 'be'	96 kiraw- 'dislike'	116 mimamor- 'watch over'
17 ganbar- 'not give up'	37 sirus- 'write, note'	57 tikaw- 'swear'	77 miidas- 'detect'	97 konom- 'like'	
18 mouside- 'offer, propose'	38 tukekuwae- 'add'	58 mousiage- 'say (O-HON)'	78 yomitor-e- 'can read'	98 wasure- 'forget'	
19 nar- 'become'	39 de- 'come up, go away'	59 akirame- 'give up'	79 kimar- 'be decided'	99 sake- 'avoid'	
20 kangae- 'think'	40 itas- 'do, regard'	60 omoituk- 'come up with'	80 yar- 'do, send'	100 oboe- 'remember'	

3.2.1 *koto*-clauses

Based on the results in Figure 2, we can see that *koto*-oriented verbs are classified into (i) *verbs-of-description* and (ii) *modal/aspectual verbs*, as in (12) and (13).² First, verbs-of-description denote a referential relation and importantly they have a tense-distinction in the embedded clause (and usually the subject is a non-animate NP, e.g., *the data shows* ...). Second, the other verbs are modals and aspectual predicates. Most of them do not have a tense-distinction in the complement clause.

(12) *koto*-clauses (transitive predicates)

- a. **verbs-of-description:** ⁷¹*sas-* ‘refer to’, ⁶⁵*simes-* ‘show’, ⁶⁷*arawas-* ‘express’, ⁷⁰*age-* ‘raise, point out’, ⁶⁸*monogatar-* ‘recount, show’
- b. **modals**
 - (i) **teleological predicates:** ⁷⁴*motome-* ‘seek’, ⁷²*manab-* ‘learn’, ⁶⁹*mezas-* ‘aim’, ⁹⁰*tasikamer-* ‘ascertain’
 - (ii) **bouletic predicates:** ⁸⁴*nozom-* ‘desire’, ⁸²*inor-* ‘pray’, ⁴⁹*negaw-* ‘wish’, ⁵⁷*tikaw-* ‘swear’
 - (iii) **epistemic predicates:** ⁸⁸*mitome-* ‘recognize’, ⁹⁴*sir-* ‘come to know’, ⁷⁷*miidas-* ‘discover, find out (by detecting)’
 - (iv) **deontic predicates:** ⁶¹*yoosur-* ‘need’
 - (v) **decision predicates:** ⁸⁶*yurus-* ‘forgive’, ⁸⁶*erab-* ‘select, decide’
- c. **aspects**
 - ⁹²*kurikae-* ‘repeat’

(13) *koto*-clauses (intransitive predicates)

- a. **modals**
 - (i) **decision predicates:** ⁷⁹*kimar-* ‘be decided’
 - (ii) **epistemic predicates:** ⁷⁸*yomitor-e-* ‘can be read off’, ⁷³*ukaga-e-* ‘can be inferred’, ⁹¹*wakar-* ‘be known’
 - (iii) **ability:** ⁶⁴*deki-* ‘can’
- b. **aspects:** ⁷⁵*nakunar-* ‘perish’, ⁸³*gozar-* ‘be’, ⁷⁶*ar-* ‘be’, ⁶³*ar-* ‘be (archaic)’

3.2.2 *no*-clauses

Prototypical *no*-oriented predicates, on the other hand, show different tendencies as summarized in (14) and (15). First, perception predicates prefer to take *no*-clauses. The sentence in (1) belongs to this first case. Second, some intensional predicates also select *no*-clauses. In addition to *mat-* ‘wait,’ which we saw earlier in (5), we can find verbs such as ¹⁰⁶*huseg-* ‘prevent’, ¹⁰⁵*yurus-* ‘allow, forgive’, and ¹¹⁰*tetudaw-* ‘help,’ e.g., (16) and (17).

(14) *no*-clause (intransitive predicates)

- **perception predicates:** ¹⁰³*medat-* ‘stand out’, ¹¹²*mie-* ‘can see’, ¹¹³*kikoe-* ‘can hear’

(15) *no*-clauses (transitive predicates)

- a. **verbs-of-visual perception:** ¹⁰⁷*mituke-* ‘find’, ¹¹⁶*mimamor-* ‘watch, care *sb* by watching’, ¹¹⁵*mikake-* ‘see’, ¹¹¹*nagame-* ‘watch, view’
- b. **intensional event predicates:** ¹⁰⁶*huseg-* ‘prevent’, ¹⁰⁵*yurus-e-* ‘cannot allow, forgive’, ¹¹⁰*tetudaw-* ‘help’, ¹¹⁴*mat-* ‘wait’

(16) [_{CP} *Iki-o koraete himei-ga more-ru-no*]-o *husei-da.*
 breath-ACC hold-and scream-NOM leak-PRS-no-ACC prevent-PST

‘(she) prevented [her scream from going out (from her mouth) by holding her breath].’ (OB3X_00119)

(17) *Watasitati-wa* [_{CP} *obaayan-ga santakuroosu-ni tegami-o kak-u-no*]-o *tetudat-ta.*
 we-TOP grammar-NOM Santa Claus-DAT letter-ACC write-PRS-no-ACC help-PST

‘We helped [our grammar to write a letter to Santa Claus].’ (LBs9_00297)

4. Analysis

Following the traditional analysis that *no*-clauses are eventive, I propose that *no*-clauses denote a set of events, as shown in (18). For example, the complement clause in (1) is given the following denotation:

² **Corpus research vs. the grammaticality judgement:** The classification reported in previous studies has been based on grammaticality judgement. Though some may find the results are not so different from those of previous studies which relied on grammaticality judgement, there is an important difference. For example, though ⁹¹*wakar-* ‘be known’ has been claimed to take both clauses and indeed it does, Figure 2 suggests that this verb is *more* leaned toward the *no*-clause. This tendency does not seem to be an idiosyncratic property of this verb or this corpus, because other synonymous predicates (which are involved with a shift in one’s knowledge), e.g., ⁸⁸*mitome-* ‘recognize’, ⁷⁷*miidas-* ‘find out (by detecting),’ are also distributed around in the same region on the simplex in Figure 2. If categorization is based only on the grammaticality judgement, these verbs cannot be used to characterize the nature of the *koto*-clause, since they do take both clauses. But this study considers that such a tendency is worth observing as well and, here, we will interpret, e.g., that the *koto*-clause ‘gravitates’ epistemic predicates. Figure 2 and the lists presented in this paper are, thus, NOT a simple repetition of the findings of previous studies.

(18) $\llbracket \text{monban ga tobira o akeru no} \rrbracket = \lambda e. \lambda w. \text{open}(e, w) \wedge \text{PAT}(e, w, \text{the door}) \wedge \text{AG}(e, w, \text{the door man})$

Notice that the event term e is not existentially bound at this moment. This is crucial in two important ways. First, this clause has not yet been ready to entail that *the gateman opened the door*, *i.e.*, the semantics in (4), in which the event term is existentially bound. This paper assumes that the embedding predicate closes off the event term. For example, a perception verb *mi-* ‘see’ has the denotation in (19). Due to the bold-faced elements in this denotation, the sentence *I saw the gateman open the door* entails that *the gateman opened the door*.

(19) $\llbracket \text{mi 'see'} \rrbracket = \lambda p. \lambda a. \lambda e. \lambda s. \text{EX}(e, s, a) \wedge \exists e'. [p(e')] \wedge \exists x. \text{AG}(e', w, x) \wedge a \neq x]$.

Different embedding predicates, however, not only provides an existential quantifier for the event term but they are also equipped with a modal base. For example, the verb *mat-* ‘wait’ has a denotation in (20). The $\text{AG}(e, s, a)$ is read as a is the agent in event e in situation s . The Sim function is taken from Heim’s analysis on attitude predicates; $\text{Sim}_w(q) = \{w' : w' \in q \wedge w' \text{ resembles } w \text{ no less than any other world in } q\}$ (where q denotes a set of worlds) and $P \prec_{\langle \text{stereotypical, bouletic, } s \rangle} Q$ says that for all the pairs of worlds $\langle w_p, w_q \rangle$ in $P \times Q$, w_p is ranked higher to the thinking participant of s than w_q with respect to his stereotype and his desire; Heim 1992; Villalta 2000, 2006, 2008; Portner 2018). For all the worlds compatible with the circumstantial modal base of the situation s , the set of worlds in $\text{Sim}_w(p(e'))$ is stereotypically and bouletically better than the set of worlds in $\text{Sim}_w(\neg p(e'))$. If this is applied, the event term in (18) is no longer free. But the complement clause does not tell us anything about the real world. Thus, the entailment does not appear at all with this embedding predicate.

(20) $\llbracket \text{mat 'wait'} \rrbracket = \lambda p. \lambda a. \lambda e. \lambda s. \text{AG}(e, s, a) \wedge \forall w \in R_{\text{cir}}(s). \exists e'. [\text{Sim}_w(p(e')) \prec_{\langle \text{stereotypical, bouletic, } s \rangle} \text{Sim}_w(\neg p(e'))] \wedge \exists x. \text{AG}(e', w, x) \wedge a \neq x]$.

Second, the denotation in (18) predicts that one can add more conditions on the event e in the subsequent derivation. For example, embedding predicates may impose a particular requirement on theta-roles associated with this event. This prediction is borne out by the AGENT-OBVATION EFFECT (*cf.*, Farkas 1992). Notice that when perception verbs in (15)a or verbs in (15)b, such as ¹⁰⁶*huseg-* ‘prevent’, ¹¹⁰*tetudaw-* ‘help’ and ¹¹⁴*mat-* ‘wait,’ are used, the subject of the main clause should not be the same as the agent of the embedded clause; *e.g.*, when *X sees/hears/perceives* (for) *Y* to do/doing something, *Y* must NOT be *X* himself. If the event term in (18) is left open, the embedding verbs can make the bold-faced requirement on this event term, as in (21) and (22). In this way, this analysis can give a semantic account for the obviation effect and the entailment problem at the same time.

(21) $\llbracket \text{mi 'see'} \rrbracket = \lambda p. \lambda a. \lambda e. \lambda s. \text{EX}(e, s, a) \wedge \exists e'. [p(e') \wedge \exists x. \text{AG}(e', w, x) \wedge a \neq x]$.

(22) $\llbracket \text{mat 'wait'} \rrbracket = \lambda p. \lambda a. \lambda e. \lambda s. \text{AG}(e, s, a) \wedge \forall w \in R_{\text{cir}}(s). \exists e'. [\text{Sim}_w(p(e')) \prec_{\langle \text{stereotypical, bouletic, } s \rangle} \text{Sim}_w(\neg p(e'))] \wedge \exists x. \text{AG}(e', w, x) \wedge a \neq x]$.

The presented analysis captures (a) the variation and (b) the commonality among the *no*-oriented predicates. First, *no*-oriented verbs differ as to whether they have a modal base or not (*i.e.*, (19) vs. (20)), leading to the division in (15). Second, all the prototypical *no*-oriented verbs take an event clause and impose a mismatch condition on the theta-role of the event depicted by the complement clause (*i.e.*, (21) and (22)). The lack of controllability/responsibility, or the availability of the lambda-bound event term, is an important factor of the complementizer selection.

Before closing the section, a comment needs to be made about the agent obviation effect. In place of (23), one may wonder if we can propose a claim like (24). Certainly, in most cases, this hypothesis does make a similar prediction. But the acceptability of the sentence in (25) suggests that the external argument (= the subject) of the embedded verb *can* be the same as the main clause subject, which is not predicted by the claim in (24). On the other hand, the (complex) embedded predicate *a-e-* ‘can see’ is not the agent because it cannot be modified by a volition-oriented adverb, *e.g.*, *issyookanmei* ‘in a dedicated way.’ Since the embedded subject is not the agent, it does not violate the claim in (23). Therefore, the obviation effect is a requirement on the theta-role, *not* the syntactic position, and, thus, supports the presented analysis that a non-existentially bound event term is available for the embedding predicate.

(23) **Requirement on Agent obviation:** the agent of the embedded event must not be the same as the external argument of the matrix clause.

(24) **Requirement on Subject obviation:** the subject of the embedded event must not be the same as the external argument of the matrix clause.

(25) $[[\text{Haru-o mat-u-yooni}] [\text{mata GLAY-ni raibu-de a-e-ru-no}]-o \text{ mat-u}]$.
 Spring-ACC wait-PRS-as again GLAY-DAT live concert-at meet-can-no-ACC wait-PRS
 ‘Just like I wait for the Spring to come, I wait [for me to see GLAY at a live concert again] (lit.).’ (OY04_01880)

In this respect, *no*-clauses are closed to subjunctive clauses (Farkas 1992; Szabolcsi 2009), though Japanese lacks any subjunctive verbal mood morphology (*cf.*, Modern Greek, Giannakidou 2009; Roussou 2009).

5. Remaining problems

There are two remaining problems. First, it is a legitimate question to ask whether or not *koto*-clauses, which in many cases compete with *no*-clauses, also denote an event. On the one hand, some data seem to suggest that they have a status different from *no*-clauses; *e.g.*, (i) perception predicates repel *koto*-clauses; (ii) some verbs in (12)b, *e.g.*, *sir-* ‘know’ and *mitome-* ‘acknowledge,’ do not show an obviation effect and (iii) some verbs allow tense-distinction. Other embedding predicates in (12)b, on the other hand, have a condition on the theta-role of the event of the complement clause; *e.g.*, *deki-* ‘can’ and *tikaw-* ‘swear’ cannot take an embedded agent different from the matrix subject (*i.e.*, *deki-* lacks the reading of *enable*) while *negaw-* ‘wish’ cannot be used when the matrix subject can control the action of the event clause and has an agent-obviation effect. Besides, some verbs take both *no-* and *koto*-clauses. So, perhaps, *koto*-clauses also denote an event but there are other semantic/syntactic factors regulating the selection. More studies need to be done.

Second, it is also necessary to acknowledge the exception to the generalization in (23), *i.e.*, the compound verb ¹⁰⁵*yurus-e-* ‘can allow, forgive,’ as in (26). This verb consists in the verb *yurus-* and the morpheme *-e* ‘can’ and it is typically used as a phrase *-no-ga yurus-e-nai* ‘cannot forgive.’³ Without this *-e*, however, the root ⁸⁵*yurus-* ‘forgive,’ usually takes *koto*-clauses, as in (12)b(v). That is, the presence of other morphemes in the matrix clause (*-e* ‘can’ and *-nai*) affects the clause selection. Though a proper account is not given in this paper, it is also a problem to any theory that tries to explain the clause selection *w.r.t.* the *c/s*-selectional property of the embedding predicate.

(26) [*tensuu-de hito-no nooryoku-o kimer-u-no*]-*ga yurus-e-nak at-ta.*
 socore-by person-GEN ability-ACC decide-PRS-GEN-FOC forgive-can-NEG be-PST
 ‘I could not tolerate (their) determining one’s ability based on one’s score.’

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³ **ga**-marked complement clause: The complement clause of this verb ¹⁰⁵*yurus-e-* is also marked either by *ga* or *wa* (focus markers), not an accusative marker, unlike ⁸⁵*yurus-* ‘forgive,’ which takes the accusative marked clause.