The Hidden Syntax of Clausal Complementation in Japanese

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1 Introduction

Recent development in the theory of clausal complementation has been observing a radical shift from the traditional Hintikkan approach to attitude reports to the one where intensionality is not an attribute of attitude predicates (Kratzer 2006, Moulton 2009a,b, 2015, Elliot 2018). Under this new conception, the intentionality of attitude reports in e.g. English is introduced by the complementizer *that*. In this paper, I will push this new trend of severing intensionality from the attitude predicate in Japanese, and propose that what introduces an embedded clause is a hidden 'say' verb, given as SAY below. This said, attitude verbs like *omow-* 'think' and *sinzi-* 'believe' do not select embedded clauses, and they are just monadic predicates only selecting an event argument (Elliot 2018; cf. Lohndal 2014).[1] Then, I will propose that the matrix attitude verb and VP that is headed by SAY are semantically combined via Predicate Modification. The proposed analysis explains the distribution of the quotative complementation as well as the behavior of its *pro*-form. To be specific, I will explain why the quotative clause can only appear as an internal argument, why multiple instances of it can be stacked to modify the main verb, and why its *pro*-form *soo* allows covert syntactic movement while banning its overt counterpart (Sakamoto 2016a,b).

This paper goes as follows. In Section 2, I will provide the gist of the recent discussion of dissociating intensionality from the attitude verb, especially focusing on Moulton (2009a,b, 2015) and Elliot (2018). In Section 3, we will consider whether such a new theoretical heading is plausible in Japanese quotative complementation, and I will show that it is not possible as it is due to the "stacking" problem, putting forth an alternative way to introduce the embedded clause in Section 4. Then, in Section 5, we will see that the proposed analysis can explain where the quotative clause can appear as well as where it cannot. Section 6 will be concerned with nature of the *pro*-form of the quotative clause regarding its extractability and the possibility of its cooccurrence with the associated quotative clause. Section 7 will conclude.

[1] More precisely, Kratzer (2006) and Moulton (2009a,b, 2015) argue that attitude verbs take a content individual (plus event and world arguments), whereas Elliot (2018) contends that they only take an event argument.

2 Severing Intensionality from the Attitude Predicate

A recent shift of the theory of attitude report is a departure from the traditional Hintikkan perspective toward the one where intensionality is not the attribute of attitude predicates. That is, attitude predicates only take an event argument (Elliot 2018), or an event argument and an individual argument that has some content (Kratzer 2006, Moulton 2009a,b, 2015), and under this approach, the intentional semantics in the traditional sense is done by the complementizer such as *that* in English. Specifically, Moulton (2015) for example provides the following semantics for *that*:[2]

(1) $[\![\text{that}]\!] = \lambda p_{<w,t>}.\lambda x_c.\lambda w.\text{CONT}(x_c)(w) = p$
where CONT = $\{w' : w'$ is compatible with the intentional content determined by x_c in $w\}$
(based on Moulton 2015, 312)

Therefore, the complement clause like *that Bob is fraud* will denote a set of individuals whose content is that Bob is a fraud as in (2). Then, since under Moulton's analysis content nouns like *idea* also denote a set of content individuals as in (3a), appositive clauses like *idea that Bob is a fraud* will be semantically derived via (Intensional) Predicate Modification (PM) due to CP and the noun both being of type $\langle e, wt\rangle$.

(2) $[\![\text{that Bob is a fraud}]\!] = \lambda x_c.\lambda w.\text{CONT}(x_c)(w) = \lambda w'$ Bob is a fraud in w'.

(3) a. $[\![\text{idea}]\!] = \lambda x_c.\lambda w.\text{idea}(x_c)(w)$
b. $[\![\text{idea that Bob is a fraud}]\!] = \lambda x_c.\lambda w.[\text{idea}(x_c)(w) \wedge [\text{CONT}(x_c)(w) = \lambda w'$ Bob is a fraud in $w']]$.
(based on Moulton 2015, 312–313)

Given this, one question that will naturally arise is how to complement CP to the attitude predicate. In this connection, attitude predicates can also take various content nouns as well as clauses. For instance, the complement of *believe* can take a clause or a content noun as in (4).

(4) a. John believes the rumor.
b. John believes that Bob is a fraud.

Thus, we can assume that *believe* also selects an individual which has some content, so we have (5). In this denotation, *believe* is a function from entity to eventuality to proposition (a set of worlds), hence $\langle e, \langle s, wt\rangle\rangle$. Therefore, a type-mismatch problem arises, since the embedded clause in (2) is of type $\langle e, wt\rangle$.

(5) $[\![\text{believe}]\!] = \lambda x_c.\lambda e.\lambda w.\text{believe}(x_c)(e)(w)$ (Moulton 2009a, 170)

To combine (5) and (2), following Moulton (2009a), let us assume Chung and Ladusaw's (2004)

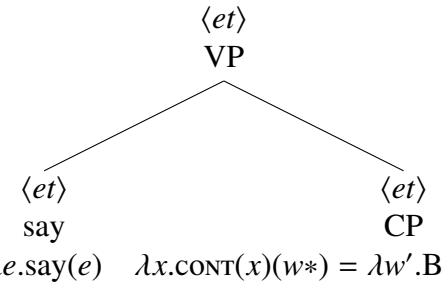
[2] In this paper, I use the following types: entity = e, eventuality = s, and world = w. Then, the variables of each type are: $x, y \ldots \in D_e$, $e \in D_s$, and $w \in D_w$.

Restrict, which restricts the internal argument of (5) via (2). Then, the internal argument is ∃-closed, which leads to (6).

(6) [[believe that Bob is a fraud]] = $\lambda x_c.\lambda e.\lambda w$[believe($x_c$)($e$)($w$) ∧ [CONT($x_c$)($w$) = $\lambda w'$ Bob is a fraud in w']].
(After ∃-closure) $\lambda e.\lambda w.\exists x_c$[believe($x_c$)($e$)($w$) ∧ [CONT($x_c$)($w$) = $\lambda w'$ Bob is a fraud in w']].

An alternative picture is put forth by Elliot (2018), who assumes that the variables ranging over events (i.e. e) and those ranging over individuals (i.e. x, y, ...) are ontologically the same type, namely, both of them belonging to the domain of entities D_e. Then, just like abstract objects like *idea* can have a propositional content, events and states (e.g. *belief*-state or *saying*-event) can also have such a propositional content. If such contentful eventualities are possible, we can also combine the matrix attitude predicate and the complement CP via PM.[3]

(7)



With either (6) or (7), we can integrate the embedded clause with the matrix verb, and the intensional semantics is now an attribute of the complementizer.

3 Stacking Problem and Quotative Complementation in Japanese

The new picture of attitude reports just shown has numerous consequences in the study of clausal complementation (mostly in English), but we will not discuss them, referring the reader to the references cited in the previous section. Rather, we will consider whether a similar analysis is possible in Japanese. Specifically, we will look into the domain of quotative complementation that is introduced by the reporting particle *to* (henceforth, Rep). Consider for example:

(8) Taroo-wa [Hanako-ga kawaii-to] it-ta.
Taro-TOP Hanako-NOM cute.COP.PRES-REP say-PAST
'Taro said that Hanako was cute.'

In this example, the embedded clause is suffixed by Rep, complemented to the matrix attitude

[3] I ignore the world argument of the verb that will be evaluated in the actual world. Thus, the CONT functor simply has the pronominal argument $w*$ that corresponds to the actual world.

predicate. Then, we can imagine that Rep is endowed with the same semantics as *that* in (1) as in (9)

(9) $[\![to]\!] = \lambda p_{<w,t>}.\lambda x_c.\lambda w.\textsc{cont}(x_c)(w) = p$
where $\textsc{cont} = \{w' : w'$ is compatible with the intentional content determined by x_c in $w\}$

Then, the semantic mode of combining the embedded clause and the matrix verb is Restrict or PM. Either way, the former is a modifier to the latter. In this connection, there is one issue. That is, since embedded clauses are modifiers, they are expected to occur multiply like adjectives in the nominal domain, e.g. *handsome young man*. However, this is impossible for *that*-clauses as in (10).

(10) a. *The rumor that Fred was happy, that he was in Paris. (Moulton 2009b, 29)
b. *Abed believes [$_{CP}$ that Jeff is old] [$_{CP}$ that Shirley is upset]. (Elliot 2018, 182)

The ungrammaticality of (10), as Moulton (2009b) argues, should be reduced to the function status of CONT. That is, if $\textsc{cont}(x_c)(w) = p$ and $\textsc{cont}(x_c)(w) = q$, then $p = q$. Therefore, in case of e.g. (10a), the proposition that Fred was happy and the one that he was in Paris must be interpreted as identical, which cannot be true.[4]

Turning to Japanese, this language exhibits an interesting fact. That is, it allows embedded clauses introduced by *to* to be stacked as shown in (11).

(11) Taroo-wa [Hanako-ga kawaii-to] [kanozyo-wa mote-ru-to]
Taro-TOP Hanako-NOM cute.COP.PRES-REP she-TOP be.liked-PRES-REP
it-ta
say-PAST.
Lit. 'Taro said [that Hanako was cute] [that she was popular (among guys)].'

Note that this is not a case of conjunction of the two embedded clauses, since an adverb that modifies the matrix verb can appear between them as in (12).

[4]As Elliot (2018) observes, this explanation goes through to the extent that the propositional content of an individual (i.e. x_c) is equivalent to a set of worlds, Namely, if we assume that such an content individual is entailed by the proposition denoted by the embedded clause, we can come up with the following semantics.

(i) $\lambda x.\lambda w.\textsc{cont}(x_c)(w) \subseteq \{w' |$ Fred was happy in $w'\}$

If (i) is the right option, two propositions in (10) do not have to be identical. However, there is a piece of evidence showing that (i) is not correct. Consider:

(ii) #Jeff explained a fact that Shirley is upset. (Elliot 2018, 183)

In (ii), the indefinite article invokes an anti-uniqueness presupposition for its domain of quantification. This should be compatible with the semantics of (i), but since (ii) is bad, the relevant assumption that the propositional content of an individual (i.e. x_c) is equivalent to a set of worlds is valid, and we need the definite article instead.

(12) Taroo-wa [Hanako-ga kawaii-to] sarani [kanozyo-wa
Taro-TOP Hanako-NOM cute.COP.PRES-REP furthermore she-TOP
mote-ru-to] it-ta
be.liked-PRES-REP say-PAST.
Lit. 'Taro said [that Hanako was cute], furthermore [that she was popular (among guys)].'

The status of *sarani* 'furthermore' being not a conjunctive but an adverb can be diagnosed. As in (13), *sarai* is optional, and what functions as a conjunctive is the verb form in the first conjunct. Also, as in (14), it can follow the subject in the second conjunct, which is optional.

(13) Hanako-wa bizin-dasi, (sarani) kanozyo-wa sinsetu-da.
Hanako-TOP beautiful.person-COP.CONJ furthermore she-TOP kind-COP.PRES
'Hanko is beautiful, and furthermore she is kind.'

(14) Hanako-wa bizin-dasi, kanozyo-wa (sarani) sinsetu-da.
Hanako-TOP beautiful.person-COP.CONJ she-TOP furthermore kind-COP.PRES
'Hanko is beautiful, and furthermore she is kind.'

(13) and (14) thus clearly show that *sarani* is an adverb rather than a conjunctive.

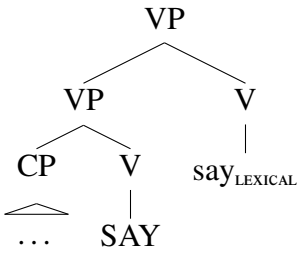
Given (12), we cannot simply carry over what Moulton proposes to the quotative complementation in Japanese. Then, I will next argue that what introduces an quotative embedded clause in Japanese is an invisible verb, which is a grammaticalized form of *iw* 'say', and its meaning is diluted due to grammaticalization, so it does not retain its original lexical meaning.

4 What is Hidden in the Quotative Complementation in Japanese?

Following H. Saito (2017, 2018a,b) and Shimamura (2018), I contend that there is an invisible verb involved in the quotative complementation for the cases like (8), repeated here in (15). Specifically, I propose the structure in (16), where the lexical verb takes the VP that is headed by SAY. Note that in this structure, SAY is phonologically null, hence invisible (or inaudible, more precisely).

(15) Taroo-wa [Hanako-ga kawaii-to] it-ta.
Taro-TOP Hanako-NOM cute.COP.PRES-REP say-PAST
'Taro said that Hanako was cute.'

(16)



For the semantics of SAY and lexical attitude predicates, I propose the following:[5]

(17) a. $[\![\text{SAY}]\!] = \lambda p.\lambda e.e \text{ in } w^* \wedge \text{SAY}(e) \wedge \forall w \in \text{CON}(e) : p(w)$
where $\text{CON}(e) = \cap\wp = \{p \mid p \text{ is a belief of the agent/experiencer of } e \text{ at } \tau(e)\}$
b. $[\![\text{say}_{\text{LEXICAL}}]\!] = \lambda e.\text{say}(e)$

This semantics is due to Hacquard (2006), who argues that attitude predicates denote a belief state or event, whose content is an attitude holder's belief, denoted via propositions.[6] Although I do not follow her in assuming that attitude predicates have event-relativized intensionality, I adopt her semantics for SAY, so that SAY is a function of type $\langle wt, st\rangle$. I also assume that the meaning of SAY is abstract, only signifying an "expressing" event, so it may involve vocal sound as well as some mental representation. Therefore, it is compatible with a "saying" event and "thinking" state. Given this, the mode of semantic composition between SAY's VP and the lexical verb is PM. Note that the lexical verb is just a monadic predicate that only selects an eventuality argument. In this connection, recent literature on the argument structure has been arguing for the total elimination of it. Namely, not only Agent but also Theme should be severed from the verb (see Lohndal 2014 and references therein). Elliot (2018) also maintains that the internal argument of attitude predicates should be severed, and it is introduced by a syntactic head independent of attitude predicates. If this line of reasoning is on the right track, postulating (17b) should be possible.

One advantage of dissociating the internal argument from attitude predicates is that some of them can select a nominal argument as well as a propositional argument, e.g. *sinzi-* 'believe'.

(18) a. Taroo-wa [obake-ga i-ru-to] sinzi-tei-ru.
Taro-TOP ghost-NOM exist-PRES-REP believe-ASP-PRES
'Taro believes that ghosts exist.'
b. Taroo-wa obake-o sinzi-tei-ru.
Taro-TOP ghost-ACC believe-ASP-PRES
'Taro believes in ghosts.'

Indeed, we can imagine that *sinzi-* has two specifications in the lexicon with respect to its valency. However, under the proposed analysis, the verbs in (18a) and (18b) are the same. In (18b), the verb is combined with a functional projection F that introduces the relevant nominal argument as Lohndal (2014) proposes. That is, we have (19), where the internal argument is merged to Spec-FP. Recall that the verb is of type $\langle st\rangle$. Therefore, the argument-introducer F

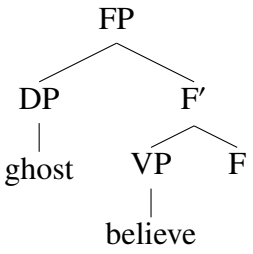
[5]Let us abstract away from the world arguments of SAY and the matrix predicate for the brevity's sake. They are just interpreted as the actual world.

Also, the semantics of (17a) works only for attitude verbs like *sinzi-* 'believe' and *omow-* 'think', and SAY for other attitude verbs like *iw-* 'say' should have a more relaxed semantics since they are compatible with a proposition whose truth the matrix subject does not commit herself to, e.g. telling a lie. Therefore, we need the intensionality in such cases to be defined by a set of possible worlds that is compatible with what the matrix subject utters/expresses in a given matrix context. I thank Elin McCready for raising this issue.

[6]I assume that the attitude holder will be introduced by Voice (Kratzer 1996).

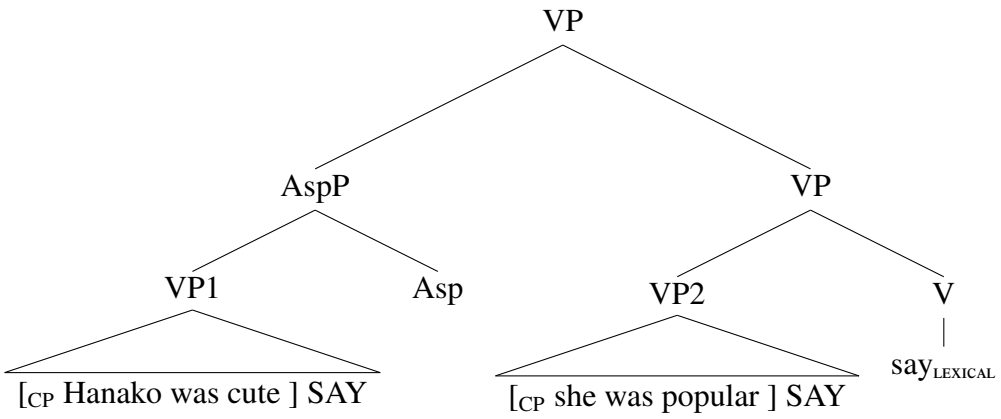
should be of type $\langle e, st \rangle$. Thus, the mode of semantic merger of F and VP should be Event Identification (EI) (Kratzer 1996).[7]

(19)



Turning to the clausal stacking, the proposed analysis can straightforwardly explain why it is possible in Japanese. Under the current analysis, quotative clauses that are introduced via *to* involve SAY. Thus, we have two independent instances of SAY for the stacking cases like (11). This state of affairs is thus equivalent to having two independent verbs, each of which introduces a propositional argument. Specifically, I propose that the structure of (11) is (20).

(20)



Here, VP1 containing the first clause is adjoined to VP whose head is the lexical verb. Crucially, I assume that the adjunction of VP1 is mediated by a covert aspectual head Asp. This is because there is a temporal precedence relation between the first clause and the second clause (cf. Oshima 2017). Also, the utterance event of the first clause cannot be temporally distant from that of the second clause. Adjunct quotative clauses all obey this temporal constraint. For instance, observe:

(21) Taroo-wa [ima isogasii-to] #(it-te) yagate denwa-o kit-ta.
Taro-NOM now busy.COP.PRES-REP say-TE in.short.while telephone-ACC cut-PAST
'Taro hung up the phone, a while after saying that he was busy.' (Oshima 2017, 7)

[7]Lohndal (2014) does not concern himself with the semantic merger of F and VP, since he proposes that VP independently undergoes Spell-Out when the object DP is merged, and that VP is semantically interpreted independently of F(P), constituting a conjunct of the Neo-Davidsonian event semantic denotation. Although I adopt such an event semantics, I will not follow Lohndal's radical Spell-Out system.

In (21), the event of Taro's saying that he was busy cannot be temporally distant from that of his hanging up the phone. When the lexical attitude verb is overt, such a temporal dislocation is possible. Then, I take (21) to mean that the relevant Asp head is involved. To be specific, I assume that *-te* has two possible structural spots, Asp and T. In this connection, Nakatani (2004) argues that *-te* appears as the past marker when T is not selected by C, whereas Kusumoto (2001) maintains that it can be a participial head (Part), which I assume corresponds to Asp. Then, I assume that they are both right. Consider:

(22) Taroo-wa sono yoru moo gohan-o tabe-te-i-te, boku-to issyoni yuusyoku-ni
Taro-TOP that night already meal-ACC eat-TE1-COP-TE2 I-with together dinner-DAT
ika-nakat-ta.
GO-NEG-PAST
'Since Taro had already eaten dinner, he didn't eat out with me that night.'

The *-te* glossed as TE1 is Asp, and that glossed as TE2 is T, to the extent that Kusumoto (2001) and Nakatani (2004) are on the right track.[8] Then, under the current analysis, the invisible SAY, when it is an adjunct, is introduced with a covert Asp that corresponds to TE1, not T. Why this state of affairs holds at all is, I admit, a fundamental question, but I leave this issue for my future research, presuming that postulating Asp for (invisible) SAY just suffices to explain (21). Also, having Asp prevents the event variable of VP1 and that of VP2 in (20) from being identified under PM, so that we have no propositional contradiction unlike the English clausal stacking; I assume that Asp ∃-closes VP1's event.

The proposed analysis can also explain why the *pro*-form of the embedded clause is *soo* 'so', which is adverbial, whereas the attitude predicate can select *sore* 'that', which is pronominal, when the antecedent is nominal. Witness:

(23) a. Taroo-wa [obake-ga i-ru-to] sinzi-tei-ru. Ziroo-mo {soo/*sore-o}
Taro-TOP ghost-NOM exist-PRES-REP believe-ASP-PRES Jiro-also so/that-ACC
sinzi-tei-ru.
believe-ASP-PRES
'Taro believes that ghosts exist. Jiro also believes so.'

b. Taroo-wa obake-o sinzi-tei-ru. Ziroo-mo {sore-o/*soo} sinzi-tei-ru.
Taro-TOP ghost-ACC believe-ASP-PRES Jiro-also that-ACC/so believe-ASP-PRES
'Taro believes in ghosts. Jiro also believes in them.'

In (23a), *soo* refers to SAY's VP (cf. HH. Tanaka 2014). In contrast, *sore* in (23b) refers to the object DP. Therefore, this contrast is also naturally captured by severing the internal argument, be it clausal or nominal, from the attitude predicate.

[8]Note that I have glossed TE1 and its combination with COP as ASP elsewhere. However, more precisely, glossing in (22) is more accurate, although I will keep using ASP for the other examples.

5 The Distribution of the Quotative Clause

Given the present analysis, the quotative clause that is introduced by *to* necessarily accompanies SAY covertly, and the VP headed by SAY and the matrix verb are semantically combined with each other under PM. This explains why the quotative clause only appears as an internal argument. Observe:

(24) a. Taroo-wa [asita Ziroo-ga ku-ru-to] kii-ta.
Taro-TOP tomorrow Jiro-NOM come-PRES-REP hear-PAST
'Taro head that Jiro will come tomorrow'

b. *[Taroo-ga Ziroo-o sikat-ta-to] watasi-o odorok-ase-ta.
Taro-NOM Jiro-ACC scold-PAST-REP I-ACC surprise-CAUS-PAST
Intended 'That Taro scolded Jiro surprised me.'

c. *Taroo-wa [Ziroo-ga kaet-ta-to]-kara heya-o soozisi-ta.
Taro-TOP Jiro-NOM leave-PAST-REP -from room-ACC clean-PAST
Intended 'Taro cleaned the room because Jiro left.'

d. [Taroo-ga ku-ru-to] omow-are-ru.
Taro-NOM come-PRES-REP think-PASS-PRES
'It seems that Taro will come.'

In fact, this paradigm is, as Baker (2011) shows, replicated in Sakha, where the embedded clause is mediated by the complementizer *dien*, which historically stems from *die* 'say'.

(25) a. Sardaana [büün Aisen kel-er dien] ihit-te.
Sardaana today Aisen come-AOR.3SG.S that hear-PAST.3SG.S
'Sardaana heard that Aisen is coming today.'

b. *[Saaska Baaska-ny üöx-te dien] bihigi-ni sohup-put-a.
Saaska Baaska-ACC scold-PAST.3SG.S that us-ACC surprise-PTPL-3SG.S
Intended 'That Saaska scolded Baaska surprised us.'

c. *Masha [Misha bar-da dien] kytta djie-ni xomuj-da.
Masha Misha leave-PAST.3SG.S that with house-ACC clean-PAST.3SG.S
Intended 'Masha cleaned the house with (immediately after) Misha left.'

d. [Masha ehiil Moskva-qa bar-ya dien] cuolkajdan-na.
Masha next.year Moscow-DAT go-FUT.3SG.S that become.certain-PAST.3SG.S
'It became clear that Masha will go to Moscow next year.'

(Baker 2011, 1169)

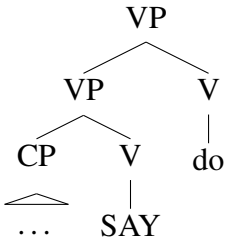
The parallelism between Japanese and Sakha in (24) and (25) lends further support to the proposed analysis.

The presence of SAY can also elucidate the quotative complementation without attitude predicates. For instance, *su-* 'do' can apparently take a quotative clause when it appears in the Control construction. Consider:

(26) Taroo-wa [ratefu-o benkyoo-si-yoo-to] si-ta.
Taro-TOP LaTeX-ACC study-do-MOD-REP do-PAST
'Taro tried to learn how to use LaTeX.'

In (26), the embedded clause has the volitional modal marker *yoo*, and Fujii (2006) contends that when a clause with this modal is embedded, it functions as a Subject (and Split) Control complement. We are not concerned with the specific details of Control in Japanese, but what is of importance here is the question of how *su-*, which is not an attitude verb, can select the sentential complement. Under the current analysis, this question is straightforwardly answered in terms of the hidden structure. That is, the embedded clause is mediated by SAY, which projects its own VP, and this VP and *su-* are combined via PM. Therefore, the structure is (28), where the SAYing (expressing) event modifies the doing event.

(27)



6 Referring Back to SAY's VP

6.1 Extraction from *Soo*

Sakamoto (2016a,b) observes that the *pro*-form of the quotative clause, *soo*, allows the following extraction patterns with respect to Ā-movement:

(28) a. Fugu-o$_1$ Hanako-wa [$_{CP}$ Taroo-ga t_1 tabe-ta-to] omot-tei-ru kedo,
blowfish-ACC Hanako-TOP Taro-NOM eat-PAST-REP think-ASP-PRES but
Lit. 'Although blowfish$_1$, Hanako thinks that Taro ate t$_1$, '

b. Dokuturutake-o$_2$ Sachiko-wa [$_{CP}$ Taroo-ga t_2 tabe-ta-to] omot-tei-ru.
destroying.angel-ACC Schiko-TOP Taro-NOM eat-PAST-REP think-ASP-PRES
Lit. 'Destroying angels$_2$, Sachiko thinks that Taro ate t_2.'

c. *Dokuturutake-o$_2$ Sachiko-wa [$_{CP}$ soo] omot-tei-ru.
destroying.angel-ACC Schiko-TOP so think-ASP-PRES
Lit. 'Destroying angels$_2$, Sachiko thinks so.'

(Sakamoto 2016b, 112)

(29) a. [$_{PP}$ OP$_1$ [$_{CP}$ Taroo-ga t_1 yon-da-to] Kanako-ni iw-are-tei-ru yori(mo)]
Taro-NOM read-PAST-REP Kanako-by say-PASS-ASP-PRES than
Hanako-wa takusan ronbun-o yon-dei-ru.
Hanako-TOP many paper-ACC read-ASP-PRES

Lit. 'Hanako read more papers than [OP_1 it is said by Kanako that Taro read t_1].'

b. Sarani, [$_{PP}$ OP_2 [$_{CP}$ Taroo-ga t_2 yon-da-to] Ayaka-ni iw-are-tei-ru
furthermore Taro-NOM read-PAST-REP Ayaka-by say-PASS-ASP-PRES
yori(mo)] kanozyo-wa takusan ronbun-o yon-dei-ru.
than she-TOP many paper-ACC read-ASP-PRES
Lit. 'She read more papers than [OP_2 it is said by Ayaka that Taro read t_2].'

c. Sarani, [$_{PP}$ OP_2 [$_{CP}$ soo] Ayaka-ni iw-are-tei-ru yori(mo)]
furthermore so Ayaka-by say-PASS-ASP-PRES than
kanozyo-wa takusan ronbun-o yon-dei-ru.
she-TOP many paper-ACC read-ASP-PRES
Lit. 'She read more papers than [OP_2 it is said by Ayaka so].'

(Sakamoto 2016b, 114)

As in (28c), overt Ā-movement (so-called long-distance scrambling discussed by M. Saito (1985) among others) from the embedded clause is impossible when we have the *soo* anaphor. In contrast, covert Ā-movement (OP-movement) is possible as (29c) shows.[9,10]

Turning to A-movement, Sakamoto (2016a,b) also shows that Raising-to-Object (RTO), which is assumed to be a case of cross-clausal A-movement, is implementable from *soo*.

(30) a. Taroo-wa Ayaka-o_1 orokanimo [$_{CP}$ t_1 tensa-da-to] omot-tei-ru.
Taro-sc top Ayaka-ACC stupidly genius-COP.PRES-REP think-ASP-PRES
Lit. 'Taro, $Ayaka_1$, stupidly thinks that t_1 is a genius.'

[9]See Kikuchi (1987) for the derivation of the comparative clause where a covert operator moves.

[10]Sakamoto also argues that another case of covert Ā-movement, namely Quantifier Raising, is possible. Specifically, he shows that the focused DP in (i) can take the embedded scope or the matrix scope, giving rise to the ambiguity in (ii), and this also holds for (ib).

(i) a. John-wa [Mary-ga oisii ringo-sae tabe-ta-to] omot-tei-nai.
John-TOP Mary-NOM tasty apple-even eat-PAST-REP think-ASP-NEG.COP.PRES
'John does not think that Mary ate even a tasty apple.'

b. Bill-mo soo omot-tei-nai.
Bill-also so think-ASP-NEG.COP.PRES
'Bill also does not think so.' (Sakamoto 2016b, 114)

(ii) a. EMBEDDED CONSTRUAL: John does not think that Mary ate a tasty apple in addition to some other things.

b. MATRIX CONSTRUAL: Even for a tasty apple, John does not have an idea that Mary ate it, in addition to some other ideas about some other things.

(Sakamoto 2016b, 114)

However, in Shimamura (2018), I suggested another way to derive this ambiguity in terms of the reverse of scaler implicature of *-sae* 'even' under negation. That is, *-sae* 'even' is lexically ambiguous, so that it has its NPI counterpart as discussed by Rooth (1985). Details aside, I do not hold that (i) constitutes a convincing argument for covert extraction from *soo*.

b. Ziroo-wa Kanako-o$_2$ orokanimo [$_{CP}$ t_2 tensa-da-to] omot-tei-ru.
JIro-sc top Kanako-ACC stupidly genius-COP.PRES-REP think-ASP-PRES
Lit. 'Jiro, Kanako$_2$, stupidly thinks that t_2 is a genius.'

c. Ziroo-wa Kanako-o$_2$ orokanimo [$_{CP}$ soo] omot-tei-ru.
JIro-sc top Kanako-ACC stupidly so think-ASP-PRES
Lit. 'Jiro, Kanako$_2$, stupidly thinks so.'

(Sakamoto 2016b, 113)

However, I would like to hold a skeptical attitude to (30), since the status of RTO as long-distance A-movement has been controversial, and a number of researchers put forth different ideas to derive RTO (Hiraiwa 2005, Hoji 1991, Takahashi 2011, Takano 2003, HK. Tanaka 2002, Yoon 2007, to name some). For instance, HK. Tanaka (2002) argues that it is a case of A-movement out of CP while Hiraiwa (2005) contends that such A-movement is optional, and that the embedded subject marked with the accusative case can stay in situ. In contrast, Hoji (1991) and Takano (2003) argue for a base-generation analysis of RTO. What's more, a careful semantic treatment of RTO data divulges various semantic factors (Horn 2008), which may be bad news for those who want to study RTO only with the syntactic perspective. In any case, I refrain, in this paper, from deciding which approach is correct, only suggesting that both movement and base-generation may be possible (cf. Goto 2014).

Probably, we can assume that *soo* targets a smaller syntactic unit. To consider this possibility, let us see another instance of clausal embedding, where the embedded copula is in the infinitival form. Incidentally, the continuation from the finite complement to the nonfinite complement is just fine as (32) shows.

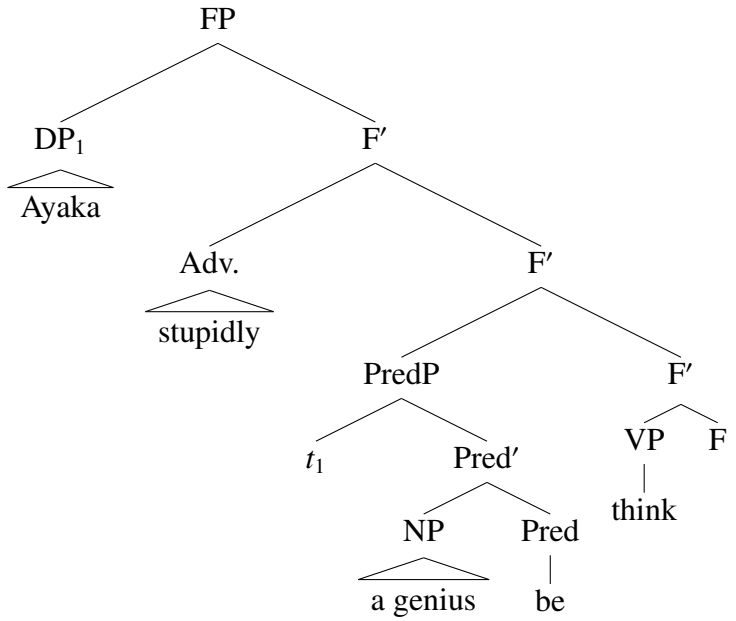
(31) Taroo-wa Ayaka-o$_1$ orokanimo [t_1 tensai-ni] omot-tei-ru.
Taro-sc top Ayaka-ACC stupidly genius-COP.INF think-ASP-PRES
Lit. 'Taro, Ayaka$_1$, stupidly considers t_1 to be a genius.'

(32) Yuuta-wa Minami-o itiban-da-to omot-tei-ru-ga, Koozi-wa Haru-o
Yuta-TOP Minami-ACC best-COP.PRES-REP think-ASP-PRES-but Koji-TOP Haru-ACC
itiban-ni omot-tei-ru.
best-COP.INF think-ASP-PRES
'Yuta thinks that Minami is the best, but Koji considers Haru to be the best.'

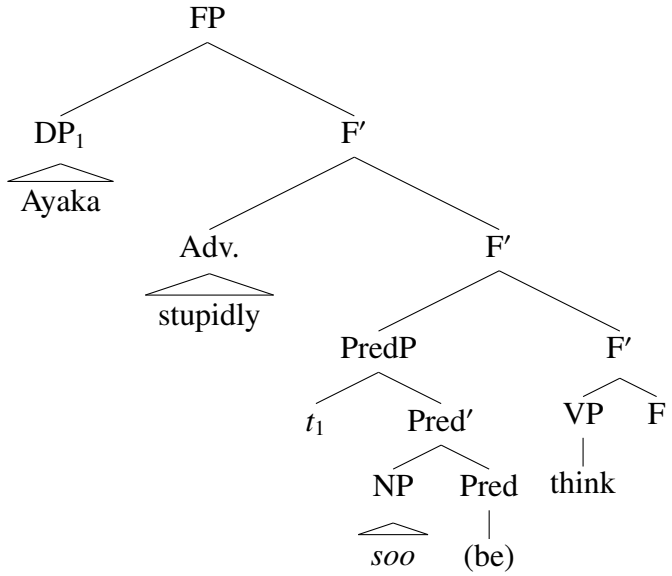
There are a couple of proposals for the pertinent infinitival complement on the market: the structure of it can be full-fledged CP (Takahashi 2017) or more reduced structures like TP/IP (Takezawa 1987) or even Small Clause (Kikuchi and Takahashi 1991). Whatever it is, (31) is propositionally identical to (30a). However, since the embedded infinitival clause in (31) is not quotative, SAY cannot be used under the current analysis. In addition, as discussed above, the attitude predicate does not select a propositional complement. Therefore, I assume, following Lohndal (2014), that the complement clause in (31) is introduced by the argument introducer F,

so I argue that (33) is the structure of the infinitival complementation.[11,12] Then, if we assume that (30c) is derived by having *soo* refer to the embedded predicate, we have (34).

(33)



(34)



In (34), the NP predicate is replaced by *soo*. Since I assume that *soo* replaces ⟨*st*⟩, a set of eventualities (covering events and states), it should be that NP also denotes such a semantic type. Relevant to this, *soo* and the copula can cooccur in the matrix context as in (35).

[11]The intensionality should be brought into the structure by F.

[12]In (33)/(34), I assume with Nishiyama (1999) that the pertinent infinitival clause is bare PredP, which is the minimal structure, so it may project up to TP or CP as other authors say, but I will not concern myself with it.

(35) Taroo-wa gakusei-da. Ziroo-mo soo-da.
Taro-TOP student-COP.PRES Jiro-also so-COP.PRES
Lit. 'Taro is a student. Jiro is also so.'

However, *soo* and the infinitival copula cannot cooccur as (36) shows.

(36) Taroo-wa gakusei-ni mi-e-ru. Ziroo-mo soo(?*-ni) mi-e-ru.
Taro-TOP student-COP.INF see-can-PRES Jiro-also so-COP.PRES see-can-PRES
Lit. 'Taro looks like a student. Jiro also looks like so.'

Presumably, this is a matter of morphology, although further detailed scrutiny is needed. However, insofar as the contrast between (35) and (36) is real, it is plausible to assume that the infinitival copula exists covertly in (34).

Given the above discussion, the emerging picture regarding extractability from *soo* is that only covert extraction (OP-movement in (29c)) is possible.

6.2 LF-replacement of *Soo*

Since the predicate replacement for ⟨*st*⟩ is what *soo* does, I argue, departing from Sakamoto (2016a,b) but following the insight of Sakamoto (2019), that the antecedent of *soo* is LF-copied. That is, in cases like (37), VP headed by SAY is copied where *soo* appears.

(37) Taroo-wa [obake-ga i-ru-to] sinzi-tei-ru. Ziroo-mo soo
Taro-TOP ghost-NOM exist-PRES-REP believe-ASP-PRES Jiro-also so
sinzi-tei-ru.
believe-ASP-PRES
'Taro believes that ghosts exist. Jiro also believes so.'

Therefore, OP-movement in (29c) applies after LF-copying SAY's VP from the antecedent. Assuming that OP-movement is covert, we have the following derivation.

(38) a. $\ldots[_{VP}\ \boxed{[_{VP}\ [_{CP}\ \ldots \text{OP} \ldots \text{C}\ ]\ \text{SAY}\ ]}\ \text{say}\ ]\ \ldots$ $\qquad$ $\ldots[_{VP}\ \textit{soo}\ \text{say}\ ]\ \ldots$
LF-COPYING

b. $\text{OP}_2\ \ldots[_{VP}\ [_{VP}\ [_{CP}\ \ldots t_2 \ldots \text{C}\ ]\ \text{SAY}\ ]\ \text{say}\ ]\ \ldots$
COVERT OP-MOVEMENT

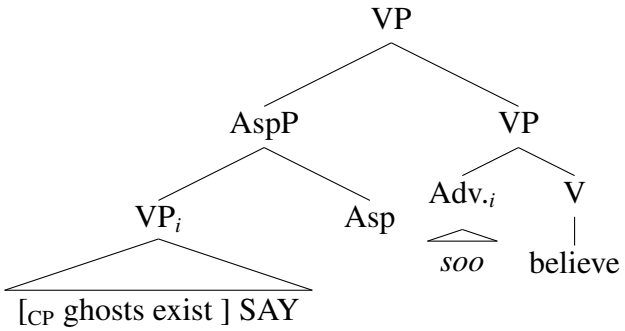
In (38a), SAY's VP is LF-copied from the antecedent sentence to the one where *soo* is employed. Then, from the copied VP, OP-movement is launched covertly.

Now, what is of interest here is that the embedded quotative complement and *soo* can cooccur as (39) illustrates (Funakoshi 2014, Sakamoto 2016a,b, HK. Tanaka 2008).

(39) Taroo-wa [obake-ga i-ru-to] soo sinzi-tei-ru.
Taro-TOP ghost-NOM exist-PRES-REP so believe-ASP-PRES
Lit. 'Taro believes so: that ghosts exist.'

Structurally, I argue that (39) has (40), where the quotative clause is an adjunct to the lexical verb, so it has an additional structure of Asp as discussed above. Then, *soo* is merged to the lexical verb as its complement, but the semantic mode of concatenating *soo* and the lexical verb is PM. Crucially, the referent of *soo* is VP in the adjunct clause. Therefore, *soo* and SAY's VP have the same index, and the latter is copied to replace *soo* at LF.

(40)



In contrast, although the sequence of the quotative clause and *soo* is possible, the reversed order is ungrammatical (Sakamoto 2016a,b).

(41) *Taroo-wa soo [obake-ga i-ru-to] sinzi-tei-ru.
Taro-TOP so ghost-NOM exist-PRES-REP believe-ASP-PRES
Lit. 'Taro believes so: that ghosts exist.'

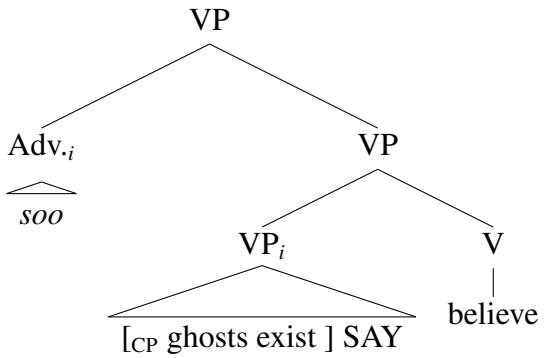
This is explained by (42), where *soo* c-commands SAY's VP with the same index. That is, I maintain that this is a case of Condition C violation like *He$_j$ likes John$_j$*.[13]

[13]Since the Binding Theory is considered to concern the coindexation of DPs, one may wonder whether it is plausible to apply Condition C to the relevant case. Maybe, we can understand Condition C as a pragmatic/semantic constraint as Schlenker (2005) proposes. Specifically, he proposes (i).

(i) MINIMIZE RESTRICTORS!
A definite description *the A B* [where order of *A* and *B* is irrelevant] is deviant if A is redundant, i.e. if:
a. *the B* is grammatical and has the same denotation as *the A*, and
b. *A* does not serve another purpose.
(Schlenker 2005, 391)

This is also intended to deal with DPs. However, we can assume that the semantic restriction is the factor at stake, and semantic types do not matter. Then, *soo* and VP headed by SAY in (42) are also modifiers and hence the restrictors of the main verb event. Assuming that the eventualities of them are contextually ι-closed at TP, we can say that 'the *soo*(-believe)$_A$-[[ghosts exists SAY]-believe]$_B$' event and 'the [[ghosts exists SAY]-believe]$_B$' event are referentially the same. However, (40) is fine since the adjunct clause involves more structure which is semantically meaningful, i.e. Asp, and *soo* is more minimally restricted.

(42) *



Note that LF-copying SAY's VP to *soo* cannot involve AspP since there is, to begin with, no AspP to be copied in (42). That being so, we cannot eschew the configuration where the copied VP c-commands the original VP.

Then, there is one prediction. That is, if the index of *soo* and that of VP headed by SAY are different, the order of *soo* and the quotative clause becomes possible. This prediction is indeed borne out as (43) shows. Since the antecedent of *soo* in (43b) is the first quotative clause and hence its VP headed SAY plus Asp in (43a), what we copy from (43a) is AspP as in (44).

(43) a. Taroo-wa [Hanako-ga kawaii-to] [kanozyo-wa mote-ru-to]
Taro-TOP Hanako-NOM cute.COP.PRES-REP she-TOP be.liked-PRES-REP
it-ta
say-PAST.
Lit. 'Taro said [that Hanako was cute] [that she was popular (among guys)].'

b. Ziroo-mo soo [kanozyo-wa mote-ru-to] it-ta
Jiro-TOP so she-TOP be.liked-PRES-REP say-PAST.
Lit. 'Jiro also said so (= that Hanako was cute) that she was popular (among guys).'

(44) (43a): . . . [$_{VP}$ [$_{AspP}$ [$_{VP}$ [$_{CP}$ . . . C] SAY] Asp]] [$_{VP}$ [$_{CP}$ . . .] SAY] say] . . .
(43b): . . . [$_{VP}$ *soo* [$_{VP}$ [$_{CP}$ . . .] SAY] say] . . .
LF-COPYING

Before we conclude, let us discuss the impossibility of forming an interrogative question with the cooccurrence of the quotative clause and *soo* (Sakamoto 2016a). Observe:

(45) *Taroo-wa [dare-ga kawaii-to] soo it-ta-no.
Taro-TOP who-NOM cute.COP.PRES-REP SO say-PAST-Q.
Lit.'Who$_1$ did Taro say so: that t_1 was cute?'

One may say that since the quotative clause in (45) is an adjunct involving covert AspP, it is

In passing, considering AspP in light of the Binding Theory may be problematic because it can be regarded as a functional head. However, if we assume that the relevant Asp is low/lexical in the sense of Travis (2010), it should be possible to see it as a lexical part of the verbal projection.

simply an adjunct island effect. However, the argument interrogative is not sensitive to the adjunct island as in (46); see Watanabe (2003) for the properties of WH-questions in Japanese.

(46) Taroo-wa [dare-ga ku-ru-maeni] kaet-ta-no.
Taro-TOP who-NOM come-PRES-before go.home-PAST-Q
Lit. 'Who$_1$ did Taro go home before t_1 came?'

Therefore, we cannot simply attribute the impossibility of (45) to the adjunct island. However, notice that the quotative clause is the antecedent of anaphoric *soo*, which means that it is informationally given. That is, it can be said that it is semantically subordinate in the sense of Erteschik-Shir (1973), who argues that extraction is possible only from the semantically dominant domain (roughly speaking, the asserted domain, hence neither presupposed nor referential in a given discourse). Then, if the quotative clause is not the antecedent of *soo*, it is predicted to allow a WH-question. This prediction is indeed borne out: observe (47).

(47) a. Taroo-wa [wain-o nomi-sugi-ta-to] [kinoo-no zibun-ga
Taro-TOP wine-ACC drink-exceed-PAST-REP yesterday-GEN self-NOM
baka-dat-ta-to] omot-tei-ru.
stupid-COP-PAST-REP think-ASP-PRES
Lit.'Taro thinks that yesterday's self was stupid, with the thought that he drank too much wine.'

b. Ziroo-mo [nani-o nomi-sugi-ta-to] soo omot-tei-ru-no.
Jiro-TOP what-ACC drink-exceed-PAST-REP so think-ASP-PRES-Q
Lit. 'What$_1$ did Jiro also thinks so (= that he was stupid) that he drank t_1 too much?'

7 Conclusion

It has been argued throughout this paper that the quotative complementation in Japanese involves a covert verb SAY, which is a grammaticalized verb stemming from *iw-* 'say'. This analysis explains why clausal stacking is possible in Japanese unlike English while complying with the idea of severing intensionality from the attitude predicate. Furthermore, it explains the distribution of the quotative clause and the distribution of its *pro*-form plus the syntactic behavior of it regarding the patterns of syntactic extraction from it.

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