Ellipsis of SAY, THINK, and DO in Japanese subordinate clauses: A constructional analysis

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Abstract

This paper addresses some Japanese constructions where the predicate heading a subordinate clause – specifically, a suspensive form of IU 'say', OMOU 'think', or SURU 'do' – appears to be elided. I will discuss that these elliptic constructions are subject to certain syntactic and interpretative constraints which do not apply to their non-elliptic counterparts, and develop an SBCG-analysis that aims to model these constraints without postulating a covert element in the place of the missing verb.

1 Introduction

This paper discusses the Japanese constructions exemplified with (1a), (2a), and (3a), which appear to involve "omission" of the predicate heading a subordinate clause. The missing predicate can be "recovered" as a suspensive form (i.e., the gerund or infinitive form) of the lexemes: IU 'say', OMOU 'think', or SURU 'do', as in (1b,c), (2b,c), and (3b).[1]

(1) *SAY-ellipsis construction*

Ken-ga ["Ohayoo" to {a. ∅/b. itte/c. ii}] haitte kita.
K.-Nom good.morning Quot {∅/say.Ger/say.Inf} enter.Ger come.Pst
'Ken came in, (saying) "Good morning".'

(2) *THINK-ellipsis construction*

Ken-wa ["Masaka" to {a. ∅/b. omotte/c. omoi}] furikaetta.
K.-Top no.way Quot {∅/think.Ger/think.Inf} look.back.Pst
'Ken looked back, (thinking to himself) "No way".'

(3) *DO-ellipsis construction*

Ken-wa [akanboo-o se-ni {a. ∅/b. shite}] atari-o shibaraku
K.-Top baby-Acc back-Dat {∅/do.Ger} vicinity-Acc for.a.while
sansaku-shita.
stroll.Pst
'Ken strolled around for a while, (carrying) the baby on his back.'

The existence of these constructions has long been acknowledged. Previous studies of the SAY- and THINK-ellipsis constructions, which I group as the QV-ellipsis construction (QV = quotative verb), include Fujita (2000), Oshima and Sano (2012), Oshima (2013), and Kim (2013). Previous studies of the DO-ellipsis construction include Muraki (1983), Teramura (1983), and Dubinsky and Hamano (2003).

[1]The abbreviations used in glosses are: Acc = accusative, Adv = adverb marker, Asp = aspectual auxiliary, Ben = benefactive auxiliary, Caus = causative, Dat = dative, DP = discourse particle, Gen = genitive, Ger = gerund, Inf = infinitive, Ipfv = imperfective auxiliary, Loc = location, Neg = negation, Nom = nominative, Plt = polite, Psv = passive, Prs = present, Pst = past, Quot = quotative particle, Top = topic.

The constructions in question do not involve the canonical kind of ellipsis, such as the English VP-ellipsis illustrated in (4), where (i) the missing element is semantically recovered with the aid of contextual cues, and (ii) the elliptic and non-elliptic versions are semantically equivalent.

(4) A: Has John left?
B: No, he hasn't {left/∅}.

Rather, they are reminiscent of the English construction which Fillmore et al. (2012) refer to as the **`adjective-as-nominal.Human`** construction:

(5) **The rich** exploit **the poor**, and **the poor** exploit **the poorer**.

Even without contextual information, the "nounless" NPs in (5) can be interpreted as referring to humans. Furthermore, they are not semantically equivalent to their "headed" counterparts, in that they receive the generic interpretation; note that (5) is more properly paraphrased as "Rich people exploit poor people, . . .", than as "*The* rich people exploit *the* poor people, . . .".

My analysis to be proposed below is similar to the one proposed by Lyons (1991) for the nounless NP construction, which in spirit is "constructionalist", as well as to those proposed by Fillmore et al. (2012: 357–360) and Arnold and Spencer (2015 (this volume)), which are explicitly so. (6) illustrates the interpretative rule proposed by Lyons (1991).

(6) *Lyons' (1991) "Adjective Head Rule"* (with some adaptations)
a. The sequence of the form: [*the* + Adj.] may constitute a plural NP referring to humans.
b. If the adjective is [−nationality], then the NP obligatorily receives the generic interpretation. If the adjective is [+nationality], then the NP optionally receives the generic interpretation.

2 Background: Basic facts about the infinitive and gerund clause constructions

The suspensive clause construction (Susp-Cx), which subsumes the infinitive and gerund clause constructions (Inf-Cx and Ger-Cx), refers to a hypotactic structure where the subordinate clause is headed by a predicate in its infinitive form (*ren'yoo* form) or gerund form (*te*-form).

In the literature, the Susp-Cx has often been considered to semantically convey only the logical conjunction of the two component clauses, on a par with the English *and*-coordination structure (e.g., Fukushima 1999; Lee and Tonhauser 2010). This view, however, does not hold scrutiny; if the Inf-Cx and Ger-Cx merely represent logical conjunction, then (7b) is expected not to be pragmatically odd, like

the English sentence provided to illustrate its intended interpretation.[2]

(7) a. Hiroshi-wa man'nenhitsu-o Ginza-no depaato-de
H.-Top fountain.pen-Acc G.-Gen department.store-Loc
{**kai/katte**}, sono man'nenhitsu-o chichioya-ni purezento-shita.
buy.Inf/buy.Ger that fountain.pen-Acc father-Dat present.Pst
'Hiroshi bought a fountain pen at a department store in Ginza, and he gave it to his father.'

b. #Hiroshi-wa chichioya-ni man'nenhitsu-o **purezento-shi**(**te**), sono
H.-Top father-Dat fountain.pen-Acc present.Inf(Ger) that
man'nenhitsu-o Ginza-no depaato-de katta.
fountain.pen-Acc G.-Gen department.store-Loc buy.Pst
(Hiroshi {gave/will give} his father a fountain pen, and he bought it at a department store in Ginza.)

Based on such observations, in Oshima (2012) I argued that the Inf-Cx and Ger-Cx have multiple meanings, all of which are more specific than mere logical conjunction, and accordingly postulated three constructs in the SBCG (Sign-Based Construction Grammar) sense.

The Inf-Cx and Ger-Cx may convey either (i) that the eventuality described in the subordinate clause (E_1) *temporally precedes or coincides with* the one described in the main clause (E_2), or (ii) that the propositions described by the two clauses stand in the rhetorical relation of *contrast*. Furthermore, the Ger-Cx, but not the Inf-Cx, has a third interpretation where the *resulting state* of E_1 temporally subsumes E_2; this interpretation is available only when the subordinate predicate belongs to a limited class of telic verbs that includes TATSU 'stand up', KIRU 'put on (clothes)', and MOTSU 'grab, take in one's hand'. The three interpretations are schematically illustrated in (8).

(8) (Eventuality E_1 and proposition P_1 correspond to the subordinate clause, and E_2 and P_2 to the main clause.)

i. *"non-subsequence" interpretation*: $E_1 \leq E_2$
ii. *"contrast" interpretation*: **Contrast**(P_1, P_2)
iii. *"resulting state" interpretation*: **ResultingState**(E_1) $\supseteq$ E_2 (available only with the Ger-Cx)

The "non-subsequence" interpretation is exemplified in (7a) above and (9) below.[3]

[2] In Oshima (2012), it is reported that out of the 22 native-speaker consultants, 15 evaluated (7b) as 'contradictory', two 'not sure', and five 'not contradictory'.

[3] The "non-subsequence" variety of the Susp-Cx can be used to describe a situation where E_1 is a state, E_2 is an event, and E_1 temporally subsumes E_2 ($E_1 \supseteq E_2$)

(i) a. (Kesa) niwa-ni risu-ga ite, sono koto-o kaisha-de
this.morning garden-Dat squirrel-Nom exist.Ger that matter-Acc company-Loc

(9) Kyuu-ni kion-ga **sagatte**, kaze-mo tsuyoku natta.
suddenly temperature-Nom fall.Ger wind-also strong.Inf become.Pst
'All of sudden, the temperature dropped and the wind became stronger, too.'

The "contrast" interpretation is illustrated in (10).

(10) Akira-wa kinoo **toochaku-shi**(**te**), Hiroshi-wa
A.-Top yesterday arrive.Inf(Ger) H.-Top
ototoi toochaku-shita.
the.day.before.yesterday arrive.Pst
'Akira arrived yesterday, and (on the other hand) Hiroshi arrived the day before yesterday.'

(11) illustrates a sentence that allows both "non-subsequence" and "resulting state" readings. On the former reading, it implies that Ken's putting on a hat takes place within the topic time (in Klein's 1994 sense); on the latter, it does not. The former is not, and the latter is, compatible with a situation where Ken has an unusual habit

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dooryoo-ni hanashita.
colleague-Dat tell.Pst
'There was a squirrel in the garden of my house (this morning), and I told my colleagues about it in the office.' ($E_1 \leq E_2$)

b. Magarikado-ni ookina iwa-ga atte, sore-ni jitensha-ga butsukatta.
corner-Dat big rock-Nom exist.Ger that-Dat bicycle-Nom hit.Pst
'There was a big rock on a street corner, and a bicycle ran into it.' ($E_1 \supseteq E_2$)

It cannot be used, on the other hand, to describe a situation where E_1 is an event, E_2 is a state, and E_2 temporally subsumes E_1.

(ii) a. Jooshi-kara idoo-no hanashi-o kiite, ie-ni
superior-from personnel.transfer-Gen speech-Acc hear.Ger home-Dat
kaette-kara-mo kibun-ga omokatta.
return.Ger-since-also feeling-Nom heavy.Pst
'Having heard from my superior that I will be transferred, I felt heavy-hearted even after coming home.' ($E_1 \leq E_2$)

b. #Kaichoo-ga toochaku-shite, subete-no yakuin-ga demukae-no tame
president-Nom arrive.Ger, all executive-Nom greeting-Gen for.purpose
ikkai robii-ni {ita/ atsumatte ita}.
first.floor lobby-Dat exist.Pst gather.Ger Ipfv.Pst
(The president arrived, and all the executives {were/were assembling} in the ground floor lobby to greet him.) ($E_1 \subseteq E_2$)

cf. Kaichoo-ga toochaku-shita toki, subete-no yakuin-ga demukae-no
president-Nom arrive.Pst when, all executive-Nom greeting-Gen
tame ikkai robii-ni {ita/ atsumatte ita}.
for.purpose first.floor lobby-Dat exist.Pst gather.Ger Ipfv.Pst
'When the president arrived, all the executives {were/were assembling} in the ground floor lobby to greet him.'

The analysis in (8-i) is not fully adequate in failing to account for this contrast. In this work, however, I adopt this simplifying analysis for convenience; as I only consider cases where both E_1 and E_2 are events, this simplification should not lead to any practical problem.

of wearing a hat all the time, and has not taken it off for years.

(11) Ken-wa booshi-o **kabutte** e-o kaita.
K.-Top hat-Acc put.on.Ger picture-Acc paint.Pst
i. 'Ken put on a hat and painted a picture.' (the "non-subsequence" interpretation)
ii. 'Ken painted a picture wearing a hat.' (the "resulting state" interpretation)

Logical representations of the two readings of (11) are given in (12), where **TT** stands for topic time and τ represents the temporal trace function (a function from eventualities to their temporal locations; Krifka 1998).

(12) a. ("non-subsequence" interpretation of (11))
$\exists e_2[\exists e_1[$**put.on.hat**$(e_1,$ **hiroshi**$) \wedge \tau(e_1) \subseteq$ **TT** $\wedge \tau(e_1) \leq \tau(e_2) \wedge$ **draw.picture**$(e_2,$ **hiroshi**$) \wedge \tau(e_2) \subseteq$ **TT** $\wedge \tau(e_2) <$ **now**$]]$
b. ("resulting state" interpretation of (11))
$\exists e_2[\exists e_1[\exists e_3[$**put.on.hat**$(e_1,$ **hiroshi**$) \wedge$ **RS**$(e_3, e_1) \wedge \tau(e_3) \supseteq$ **TT** $\wedge$
$\tau(e_3) \supseteq \tau(e_2) \wedge$ **draw.picture**$(e_2,$ **hiroshi**$) \wedge \tau(e_2) \subseteq$ **TT** $\wedge$
$\tau(e_2) <$ **now**$]]]$

For the ease of exposition, in the following I will leave out reference to the topic time in semantic representations.

Below I will argue that the QV-ellipsis construction is a special subtype of the suspensive clause construction with the "non-subsequence" meaning, and that the DO-ellipsis construction is a special subtype of the gerund clause construction with the "resulting state" meaning.

3 Constraints on the QV-ellipsis construction

QV-ellipsis constructions generally can be paraphrased using the gerund or infinitive form of IU 'say' or OMOU 'think'. It is not always possible, however, to elide a form of IU/OMOU heading a suspensive clause. The possibility of ellipsis depends on both syntactic and semantic factors.

On the syntactic side, the subordinate clause in the QV-ellipsis construction must consist solely of the (direct or indirect) quotative phrase, and cannot contain any other (explicit) dependent.

(13) a. [**Oogoe-de** "Dareka imasen-ka?" to *(itte)] doa-o
loud.voce-by anybody exist.Plt.Neg-DP Quot say.Ger door-Acc
tataita.
knock.Pst
'He knocked on the door, saying "Is anybody here?" in a loud voice.'

b. [**Boku-ni** “Jaa-na” to *(itte)] dete itta.
I-Dat bye Quot say.Ger exit.Ger go.Pst
‘He left the room, saying “Bye” to me.’

The subject of the subordinate clause is not necessarily co-referential with the one of the main clause; however, conforming to the aforementioned constraint, it cannot be explicitly expressed (Fujita 2000).

(14) a. [(***Shujin-ga**) “Omachidoosama” to] soba-ga
manager-Nom sorry.to.have.kept.you.waiting Quot soba.noodle-Nom
okareta.
put.Psv.Pst
‘(The restaurant manager) said “Sorry to have kept you waiting”, and a bowl of *soba* noodles was put in front of me.’

b. [(**Shujin-ga**) “Omachidoosama” to itte]
manager-Nom sorry.for.having.you.wait Quot say.Ger
soba-ga okareta.
soba.noodle-Nom put.Psv.Pst
‘*idem*’

On the semantic side, the interpretation of the QV-ellipsis construction is more restricted than that of the “non-subsequence” variety of the suspensive clause construction (Oshima and Sano 2011).

As mentioned above, the suspensive clause construction on the “non-subsequence” interpretation entails that P_1 and P_2 both hold, and that E_1 is *not* temporally subsequent to E_2. Due to pragmatic enrichment, oftentimes it further conversationally implicates a more specific relation between P_1 and P_2 or E_1 and E_2, in a way similar to how the English *and*-coordination construction might implicate a causal relation, manner relation, etc. (e.g., “Hans pressed the spring and the drawer opened” may conversationally implicate that the drawer opened *because* Hans pressed the spring in order to open the drawer, that Hans pressed the spring *in order to* open the drawer, etc.; Levinson 2000).

(15) a. Ha-o **migaite**, hige-o sotta.
tooth-Acc brush.Ger beard-Acc shave.Pst
‘He brushed his teeth and (then) shaved.’ (temporal precedence)

b. Kyuu-ni kion-ga **sagatte**, kaze-mo tsuyoku natta.
suddenly temperature-Nom fall.Ger wind-also strong.Inf become.Pst
‘All of sudden, the temperature dropped and the wind became stronger.’
(temporal coincidence)

c. Basu-ni **notte**, kaisha-ni itta.
bus-Dat ride.Ger company-Dat go.Pst
‘He went to work, taking a bus.’ (manner relation)

d. Ishi-ni **tsumazuite**, koronda.
stone-Dat stumle.Ger fall.Pst
'He stumbled on a stone and fell.' (causal relation)

Interestingly, the SAY-ellipsis construction cannot be used to describe a situation where P_1 is (naturally inferred to be) the cause/reason of P_2; in other words, it entails that P_1 is *not* the reason of P_2.

(16) a. Hiroshi-wa ["Futorimashita-ne" to #(**itte**)] Yumi-o azen-to
H.-Top become.fat.Pst.Plt-DP Quot say.Ger Y.-Acc appalled-Adv
saseta.
do.Caus.Pst
'Hiroshi appalled Yumi, saying "You've gained some weight, haven't you?".' (causal relation present)

b. Hiroshi-wa ["Futorimashita-ne" to (**itte**)] Yumi-no hara-o
H.-Top become.fat.Pst.Plt-DP Quot say.Ger Y.-Ger belly.Acc
tsutsuita.
poke.Pst
'Hiroshi poked Yumi's belly, (saying) "You've gained some weight, haven't you?".' (causal relation absent)

The THINK-ellipsis construction, on the other hand, requires that either the causal relation hold between P_1 and P_2, as in (17a), or the manner relation hold between E_1 and E_2, as in (17b).

(17) a. ["Moo doose maniawanai" to (**omotte**)]
already anyway be.on.time.Neg.Prs Quot think.Ger
hashiru-no-o yameta.
run.Prs-Nominalizer-Acc stop.Pst
'He stopped running, (thinking) "I won't make it anyway".' (causal relation present)

b. ["Dare-ni-demo shippai-wa aru" to (**omotte**)] jibun-o
who-Dat-even mistake-Top exist.Prs Quot think.Ger self-Acc
nagusameta.
console.Pst
'He consoled himself, (thinking) "Anyone can make a mistake".' (manner relation present)

(18a) illustrates that, when neither the causal nor manner relation holds, the THINK-ellipsis construction cannot be felicitously used.

(18) ('I was watching a baseball game. The team I was supporting had a big lead, but at the ninth inning the opponent team closed to within two runs . . .')

a. ["Nandaka kumoyuki-ga ayashiku natte kita-na" to
somehow weather-Nom strange become.Ger Asp.Pst-DP Quot
#(**omotte**)] kansen-shite iru-to, kekkyoku surii-ran
think.Ger watch.game.Ger Ipfv.Prs-after eventually three-run
hoomuran-ga tobidashite gyakuten-make-o kisshite shimatta.
home.run-Nom pop.Ger reversal-loss-Acc receive.Ger end.up.Pst
'I was watching the game, thinking to myself "Darn, the tide is turning", and then a three-run home run of the opponent team turned around the game and we ended up losing.' (neither causal nor manner relation present)

b. ["Nandaka kumoyuki-ga ayashiku natte kita-na" to
somehow weather-Nom strange become.Ger Asp.Pst-DP Quot
(**omotte**)] yakimoki-shite iru-to, kekkyoku suriiran
think.Ger chafe.Ger Ipfv.Prs-after eventually three-run
hoomuran-ga tobidashite gyakuten-make-o kisshite shimatta.
home.run-Nom pop.Ger reversal-loss-Acc receive.Ger end.up.Pst
'I was being restless, thinking to myself "Darn, the tide is turning", and then a three-run home run of the opponent team turned around the game and we ended up losing.' (causal relation present)

To summarize the section:

(19) i. The SAY-ellipsis construction can be paraphrased with *itte* (gerund) or *ii* (infinitive); the THINK-ellipsis construction can be paraphrased with *omotte* (gerund) or *omoi* (infinitive).
ii. In both SAY- and THINK-ellipsis constructions, the subordinate clause must consist solely of the quotatitve phrase accompanied by *to*, and must not contain an explicit subject or an adverbial modifier.
iii. The SAY-ellipsis construction implies that there is no causal relation between P_1 and P_2.
iv. The THINK-ellipsis construction implies that there is a causal relation between P_1 and P_2, or a manner relation between E_1 and E_2.

4 Constraints on the DO-ellipsis construction

The DO-ellipsis construction can be classified into two major types (Teramura 1983), which I refer to as the HOLD-type and the "accompanying circumstance"-type. In the HOLD-type, elided *shite* can be regarded as a predicate of possession.

(20) *The HOLD-type*

a. Watashi-wa [saifu-o katate-ni {a. ∅/b. **shite**}] heya-o
I-Top wallet-Acc one.hand-Dat {∅/do.Ger} room-Acc
tobidashita.
dash.out.Pst
'I dashed out of the room, (holding) my wallet in my hand.'

b. Ken-wa [akanboo-o se-ni {a. ∅/b. **shite**}] atari-o shibaraku
K.-Top baby-Acc back-Dat {∅/do.Ger} vicinity-Acc for.a.while
sansaku-shita.
stroll.Pst
'Ken strolled around for a while, (carrying) the baby on his back.'

In the "accompanying circumstance"-type, on the other hand, the semantic contribution of *shite* is unclear and possibly absent.

(21) *The "accompanying circumstance"-type*

a. Sono senshu-wa [tairyoku-no otoroe-o riyuu-ni
that athlete-Top strength-Gen decline-Acc reason-Dat
{a. ∅/b. **shite**}] sakunen intai-shita.
{∅/do.Ger} last.year retire.Pst
'That athlete retired last year, the reason being the decline of his physical strength.'

b. Keisatsu-wa [hisseki-o tegakari-ni {a. ∅/b. **shite**}] memo-o
police-Top handwriting-Acc clue-Dat {∅/do.Ger} note-Acc
kaita jinbutsu-o tokutei-shita.
write.Pst person-Acc identify.Pst
'The police identified the person who wrote the note, using the traits of the handwriting as a clue.'

This work focuses on the HOLD-type, leaving the formal treatment of the "accompanying circumstance"-type to future research.

SURU as a verb of possession refers to a telic, punctual process (i.e., an achievement), rather than a state.

(22) Ken-wa kan-biiru-o te-ni shita.
K.-Top can-beer-Acc hand-Dat do.Pst
'Ken took a can of beer in his hand.'
NOT: 'Ken was holding a can of beer in his hand.'

The gerund clause headed by possessive *shite* is ambiguous between the "non-subsequence" and "resulting state" interpretations (or, between the "take" and "hold" interpretations); the infinitive clause headed by possessive *shi*, on the other hand, allows only the "non-subsequence" interpretation.

(23) Ken-wa [kan-biiru-o te-ni **shite**], uta-o utatta.
K.-Top can-beer-Acc hand-Dat do.Ger song-Acc sing.Pst
i. 'Ken took a can of beer in his hand, and sang a song.' (non-subsequence reading); OR
ii. 'Ken sang a song, holding a can of beer in his hand.' (resulting state reading)

(24) Ken-wa [kan-biiru-o te-ni **shi**], uta-o utatta.
K.-Top can-beer-Acc hand-Dat do.Inf song-Acc sing.Pst
'Ken took a can of beer in his hand, and sang a song.' (non-subsequence reading only)

The DO-ellipsis construction allows only the "resulting state" interpretation.

(25) Ken-wa [kan-biiru-o te-ni ∅], uta-o utatta.
K.-Top can-beer-Acc hand-Dat song-Acc sing.Pst
'Ken sang a song, holding a can of beer in his hand.' (resulting state reading only)

The subject of the subordinate clause of the DO-ellipsis construction must (i) not be explicitly expressed and (ii) be coreferential with the matrix subject. This property is shared by gerund clauses on the resulting state reading in general; to illustrate, (26), where the subjects of the subordinate and main clauses are referentially disjoint, does not allow the resulting state interpretation.

(26) Hiroshi-ga booshi-o kabutte, Yumi-ga sono sugata-o
H.-Nom hat-Acc put.on.Ger Y.-Nom that appearance-Acc
shashin-ni totta.
photograph-Dat take.Pst
'Hiroshi put on a hat, and Yumi took a picture of him wearing it.' (non-subsequence reading only)

As is the case with the QV-ellipsis construction, the subordinate clause of the DO-ellipsis construction appears to resist occurrence of an adverbial modifier.

(27) a. [Roopu-o te-ni (**shite**)] furiotosarenai yoo-ni
rope-Acc hand-Dat do.Ger shake.off.Psv.Neg.Prs in.purpose.to
funbatta.
stand.firm.Pst
'I stood firm holding a rope in my hand so as not to fall off.'
b. [Roopu-o **shikkari-to** te-ni ?(**shite**)] furiotosarenai
rope-Acc tightly hand-Dat do.Ger shake.off.Psv.Neg.Prs
yoo-ni funbatta.
in.purpose.to stand.firm.Pst
'I stood firm holding a rope tightly in my hand so as not to fall off.'

To summarize the section:

(28) i. The DO-ellipsis construction has two varieties: the HOLD-type and the "accompanying circumstance"-type.
ii. The subordinate clause of the DO-ellipsis construction consist solely of the dative and accusative NP's.
iii. The DO-ellipsis construction (or at least the HOLD-type thereof) can be paraphrased with *shite* (gerund), but not by *shi* (infinitive).
iv. In the HOLD-type, the subject of the subordinate clause must be coreferential with the matrix subject. This property is shared by – or is inherited from – the non-elliptic counterpart.

5 Evidence for the bi-clausal structure

One might be tempted to consider that the QV-ellipsis and DO-ellipsis constructions are mono-clausal (QuotP = quotative phrase).

(29) (= (1a))
a. Ken-ga [$_{\text{QuotP}}$ "Ohayoo" *to*] haitte-kita. (mono-clausal analysis)
b. Ken-ga [$_{\text{S}}$ [$_{\text{QuotP}}$ "Ohayoo" *to*]] haitte-kita. (bi-clausal analysis)

(30) (= (3a))
a. Ken-wa [$_{\text{AdvP}}$ akanboo-o se-ni] atari-o . . . (mono-clausal analysis)
b. Ken-wa [$_{\text{S}}$ akanboo-o se-ni] atari-o . . . (bi-clausal analysis)

One piece of evidence against the mono-clausal analysis comes from the scopal interaction between the putative subordinate clause and negation in the matrix clause. When the matrix predicate is negated, the putative subordinate clause of a QV- or DO-ellpsis construction does not necessarily fall under the scope of negation, patterning the same as the suspensive subordinate clause in general.

(31) ["Hara-wa hette masen" to (itte)] kuchi-o
stomach-Top lessen.Ger Ipfv.Prs.Plt Quote say.Ger mouth-Acc
tsukenakatta.
put.Neg.Pst
'He did not even have a bite, (saying) "I'm not hungry".'

(32) Ken-wa [yari-o te-ni (shite)] dare-mo toosanakatta.
K.-Top spear-Acc hand-Dat do.Ger anybody let.pass.Neg.Pst
'Ken did not let anyone in, (holding) a spear in his hand.'

Non-clausal adverbials, on the other hand, cannot escape from the scope of negation on the predicate (as in: *John did not sing* {***loudly***/***in the office***}), except for discourse-oriented ones (as in: ***Fortunately****, John did not sing*). It can thus be concluded that the quotative phrase in the QV-ellipsis constriction, and the "X-o Y-ni" phrase in the DO-ellipsis construction, are not non-clausal adverbiabls.

6 An SBCG analysis

This section provides a formal analysis of the SAY-, THINK-, and DO-ellipsis constructions in the framework of Sign-Based Construction Grammar (SBCG; Sag 2012). In the version of SBCG used in the current work, Montagovian semantics (rather than Frame Semantics or Minimal Recursion Semantics) is used as the primary means of semantic representation.

6.1 Background assumptions

I will assume the general construction (constraint) for Japanese clauses to be (33), and the one for the declarative clause to be (34).

(33) *clause-construct* ⇒

$$\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \textit{clause} & \\ \text{SYN} & / \boxed{1} \,!\, \begin{bmatrix} \text{VAL} & \langle\,\rangle \end{bmatrix} \\ \text{SEM}|\text{LF} & / \downarrow_\omega(\downarrow_\beta(\ldots(\downarrow_\psi(\downarrow_0(\downarrow_\alpha)\ldots(\downarrow_1))))) \end{bmatrix} \\
\text{HD-DTR} & / \boxed{2} \begin{bmatrix} \text{SYN} & \boxed{1} \begin{bmatrix} \text{CAT} & \textit{predicate} \\ \text{VAL} & \boxed{\text{A}} \end{bmatrix} \\ \text{SEM}|\text{LF} & \uparrow_0 \\ \text{ARG-ST} & \boxed{\text{B}}\ \langle \text{X}_1{:}[\text{LF}\uparrow_1], \ldots, \text{X}_n{:}[\text{LF}\uparrow_\alpha]\rangle \\ \text{DEPS} & \boxed{\text{B}} \oplus \langle \text{Y}_1{:}[\text{LF}\uparrow_\beta], \ldots, \text{Y}_n{:}[\text{LF}\uparrow_\psi]\rangle \end{bmatrix} \\
\text{DTRS} & / \boxed{\text{A}} \oplus \langle\, \boxed{2} \,\rangle \\
\text{CX-CONT} & \uparrow_\omega
\end{bmatrix}$$

(34) **Declarative Clause Cx**
declarative-clause-construct ⇒

$$\begin{bmatrix} \text{HD-DTR} & \begin{bmatrix} \text{SYN}|\text{CAT}|\text{PRDFORM} & \textit{finite} \end{bmatrix} \\ \text{CX-CONT} & \lambda P_{\langle v,t\rangle} \exists e_0[P(e_0)] \end{bmatrix}$$

Some background assumptions and notational conventions are explained below:

(35) i. Type *sem-obj*, the value of SEM(ANTICS), has two attributes: INDEX and L(OGIAL)F(ORM). LF in function corresponds to Sag's (2012) FRAMES, and its value is an expression of lambda calculus.
ii. Subscripted arrow symbols are meta-variables over logical expressions. The direction of arrows (upward or downward) is just for expositional ease.
iii. The value of CX-CONT is the meaning component contributed by the construct itself (Copestake et al. 2005).

iv. "/" indicates that the constraint on the right is a default constraint. "!" indicates that the feature structure on the right is exempted from the domain of structural identity (Sag 2012: note 71).

v. Following Bouma et al. (2001), it is assumed that typically adverbials, including adverbial clauses, are dependents of a predicate, rather than adjuncts on a clause.

vi. It is assumed that Japanese clauses generally have a "flat" structure, where the subject appears on the same level as more oblique arguments and adverbials.

Declarative clauses are thus required to satisfy the constraints shown in (36), which incorporates the ones posed by *declarative-clause-construct* with the ones inherited from its supertype *clause-construct*.

(36)
$$\left[\begin{array}{ll}
\textit{declarative-clause-cxt} & \\
\textsc{mtr} & \left[\begin{array}{ll}
\textsc{syn} & \boxed{1}\,!\left[\textsc{val} \quad \langle\,\rangle\right] \\
\textsc{sem}|\textsc{lf} & \downarrow_\omega(\downarrow_\beta(\ldots(\downarrow_\psi(\downarrow_0(\downarrow_\alpha)\ldots(\downarrow_1)))))
\end{array}\right] \\
\textsc{hd-dtr} & \boxed{2}\left[\begin{array}{ll}
\textsc{syn} & \boxed{1}\left[\begin{array}{ll}
\textsc{cat} & \left[\begin{array}{ll} \textit{predicate} & \\ \textsc{prdform} & \textit{finite} \end{array}\right] \\
\textsc{val} & \boxed{A}
\end{array}\right] \\
\textsc{sem}|\textsc{lf} & \uparrow_0 \\
\textsc{arg-st} & \boxed{B}\,\langle \mathrm{X}_1{:}[\textsc{lf}\uparrow_1], \ldots, \mathrm{X}_n{:}[\textsc{lf}\uparrow_\alpha]\rangle \\
\textsc{deps} & \boxed{B} \oplus \langle \mathrm{Y}_1{:}[\textsc{lf}\uparrow_\beta], \ldots, \mathrm{Y}_n{:}[\textsc{lf}\uparrow_\psi]\rangle
\end{array}\right] \\
\textsc{dtrs} & \boxed{A} \oplus \langle\,\boxed{2}\,\rangle \\
\textsc{cx-cont} & \uparrow_\omega\!: \lambda P \exists e_0[P(e_0)]
\end{array}\right]$$

The meaning of a clause is generally calculated by the following steps: (i) the meaning of the heading predicate (corresponding to $\uparrow_0/\downarrow_0$ in (36)) is cyclically applied to those of the arguments, from the most oblique to the least oblique (i.e., the subject), (ii) if there are any adjuncts, their meanings are cyclically applied to the result of step (i), and (iii) the "constructional meaning" ($\uparrow_\omega/\downarrow_\omega$) is applied to the result of steps (i) and (ii). In the case of the declarative clause, step (iii) is existential closure of the eventuality variable. To illustrate with a specific example, the meaning of declarative clause (37a) is calculated as in (38), via the β-conversion shown in (39).[4]

(37) [$_{\mathrm{S}}$[$_{\mathrm{NP}}$ Hiroshi-ga] [$_{\mathrm{NP}}$ Yumi-o] [$_{\mathrm{AdvP}}$ Shinjuku-de] [$_{\mathrm{V}}$ mita]].
H.-Nom Y.-Acc S.-Loc see.Pst
'Hiroshi saw Yumi in Shinjuku.'

[4] A box surrounding an AVM indicates that the AVM is a description of a specific linguistic entity, rather than a description of a grammatical entity (grammatical constraint, etc.); see Sag (2012).

(38)
$$\left[\begin{array}{ll} \textit{declarative-clause-cxt} & \\ \text{MTR} & \left[\begin{array}{ll} \text{SYN} & \boxed{1}\,!\left[\text{VAL} \quad \langle\,\rangle\right] \\ \text{SEM|LF} & \exists e_0[\textbf{see}(e_0, \textbf{h}, \textbf{y}) \wedge \tau(e_0) < \textbf{now} \wedge \textbf{in}(e_0, \textbf{s})] \end{array}\right] \\ \text{HD-DTR} & \left[\begin{array}{ll} \text{SYN} & \boxed{1}\left[\begin{array}{ll} \text{CAT} & \left[\begin{array}{ll} \textit{predicate} & \\ \text{PRDFORM} & \textit{finite} \end{array}\right] \end{array}\right] \\ \text{SEM|LF} & \lambda y[\lambda x[\lambda e_1[\textbf{see}(e_1, x, y) \wedge \tau(e_1) < \textbf{now}]]] \\ \text{ARG-ST} & \boxed{\text{B}}\,\langle \text{NP:[LF } \textbf{h}], \text{NP:[LF } \textbf{y}]\rangle \\ \text{DEPS} & \boxed{\text{B}} \oplus \langle \text{AdvP:[LF } \lambda Q_{\langle v,t\rangle}[\lambda e_2[Q(e_2) \wedge \textbf{in}(e_1, \textbf{s})]]]\rangle \end{array}\right] \\ \text{CX-CONT} & \lambda P \exists e_0[P(e_0)] \end{array}\right]$$

(39) $\lambda P[\exists e_0[P(e_0)](\lambda Q_{\langle v,t\rangle}[\lambda e_2[Q(e_2) \wedge \textbf{in}(e_1, \textbf{s})]](\lambda y[\lambda x[\lambda e_1[\textbf{see}(e_1, x, y) \wedge \tau(e_1) < \textbf{now}]]](\textbf{y})(\textbf{h}))) \Rightarrow_\beta \exists e_0[\textbf{see}(e_0, \textbf{h}, \textbf{y}) \wedge \tau(e_0) < \textbf{now} \wedge \textbf{in}(e_0, \textbf{s})]$

6.2 Regular suspensive clauses

Turning now to (regular, non-elliptic) suspensive clauses, I propose (40) as a construction that licenses the "non-subsequence" variety of the suspensive clause:

(40) **"Non-Subsequence" Suspensive Clause Cx**
temporal-suspensive-clause-construct $\Rightarrow$
$$\left[\begin{array}{ll} \text{HD-DTR} & / \left[\text{SYN|CAT} \left[\begin{array}{ll} \text{PRDFORM} & \textit{suspensive} \\ \text{SELECT} & \left[\text{SYN|CAT} \quad \textit{predicate}\right] \end{array}\right]\right] \\ \text{CX-CONT} & / \lambda P[\lambda Q_{\langle v,t\rangle}[\lambda e_2[\exists e_1[P(e_1) \wedge Q(e_2) \wedge \tau(e_1) \leq \tau(e_2)]]]] \end{array}\right]$$

This will assign meaning (12a) to (11) (except that reference to the topic time is omitted). Note that here suspensive clauses are, like other adverbials (see (35v)), treated as dependents of a predicate. In this regard I depart from Oshima (2012), where they are treated as adjuncts on a clause.

The construction that licenses the "resulting state" variety of the gerund clause is given in (41):

(41) **"Resulting State" Gerund Clause Cx**
resultingstate-gerund-clause-construct $\Rightarrow$
$$\left[\begin{array}{ll} \text{HD-DTR} & / \left[\begin{array}{ll} \text{SYN|CAT} & \left[\begin{array}{ll} \text{PRDFORM} & \textit{gerund} \\ \text{SELECT} & \left[\begin{array}{ll} \text{SYN|CAT} & \textit{predicate} \\ \text{ARG-ST} & \langle \text{Z}_i, \ldots\rangle \end{array}\right] \end{array}\right] \\ \text{ARG-ST} & \langle \textit{pro}_i, \ldots\rangle \end{array}\right] \\ \text{CX-CONT} & / \left(\begin{array}{l} \lambda P[\lambda Q[\lambda e_2[\exists e_1[\exists e_3[P(e_1) \wedge Q(e_2) \wedge \\ \textbf{RS}(e_3, e_1) \wedge \tau(e_3) \supseteq \tau(e_2)]]]]] \end{array}\right) \end{array}\right]$$

This will assign (12b) to (11) (again, except that reference to the topic time is omitted).

6.3 Special suspensive clauses

I propose, finally, (42)–(44) as the constructions that license elliptic, headless suspensive clauses. Specifically, (42) and (43) respectively license the subordinate clause of the SAY-ellipsis construction and the THINK-ellipsis construction (which involve a direct quotative phrase); (44) licenses the subordinate clause the DO-ellipsis construction (of the HOLD-type). Their DTRS attributes are specified to be singleton and doubleton, which guarantees the absence of an explicit subject or an adverbial within it.

(42) **Special Suspensive Clause Cx (SAY, direct quote)**
elliptic-speech-temporal-suspensive-clause-construct ⇒

$$\left[\begin{array}{ll}
\text{MTR} & \left[\begin{array}{ll}
\text{SYN} & \left[\begin{array}{ll}
\text{CAT} & \left[\begin{array}{lll} \textit{predicate} & & \\ \text{PRDFORM} & \textit{suspensive} & \\ \text{SELECT} & \left[\text{SYN}|\text{CAT} \quad \textit{predicate}\right] & \end{array}\right] \\
\text{VAL} & \langle\,\rangle
\end{array}\right] \\
\text{SEM}|\text{LF} & \downarrow_3(\mathbf{say}_{dir}(\downarrow_2)(\downarrow_1)) \\
\text{ARG-ST} & \langle \textit{pro}{:}[\text{LF}\uparrow_1], \boxed{1}\,\rangle
\end{array}\right] \\
\text{HD-DTR} & \textit{none} \\
\text{DTRS} & \langle\,\boxed{1}\,\text{QuotP}{:}[\text{MRKG } \textit{to}, \text{LF}\uparrow_2]\rangle \\
\text{CX-CONT} & \uparrow_3{:}\left(\begin{array}{l}
\lambda P[\lambda Q[\lambda e_2[\exists e_1[P(e_1) \wedge Q(e_2) \wedge \tau(e_1) \leq \tau(e_2) \wedge \\
\neg\exists\langle t_1, t_2\rangle[\mathbf{because}(\hat{}\exists e_3[P(e_3) \wedge \tau(e_3) = t_1], \\
\hat{}\exists e_4[Q(e_4) \wedge \tau(e_4) = t_2]) \wedge t_1 \leq t_2]]]]
\end{array}\right)
\end{array}\right]$$

(43) **Special Suspensive Clause Cx (THINK, direct quote)**
elliptic-thought-temporal-suspensive-clause-construct ⇒

$$\begin{bmatrix}
\text{MTR} & \begin{bmatrix}
\text{SYN} & \begin{bmatrix}
\text{CAT} & \begin{bmatrix} \textit{predicate} & & \\ \text{PRDFORM} & \textit{suspensive} & \\ \text{SELECT} & \begin{bmatrix}\text{SYN}|\text{CAT} & \textit{predicate}\end{bmatrix} \end{bmatrix} \\
\text{VAL} & \langle\,\rangle
\end{bmatrix} \\
\text{SEM}|\text{LF} & \downarrow_3(\textbf{think}_{dir}(\downarrow_2)(\downarrow_1)) \\
\text{ARG-ST} & \langle \textit{pro}{:}[\text{LF}\uparrow_1], \boxed{1}\,\rangle
\end{bmatrix}
\end{bmatrix} \\
\text{HD-DTR} & \textit{none} \\
\text{DTRS} & \langle\, \boxed{1}\, \text{QuotP}{:}[\text{MRKG } \textit{to}, \text{LF}\uparrow_2]\rangle \\
\text{CX-CONT} & \uparrow_3{:} \begin{pmatrix}
\lambda P[\lambda Q[\lambda e_2[\exists e_1[P(e_1) \wedge Q(e_2) \wedge \tau(e_1) \leq \tau(e_2) \wedge \\
\textbf{[by.means.of}(e_1, e_2) \vee \exists\langle t_1, t_2\rangle[\textbf{because}(\hat{}\exists e_3[P(e_3) \wedge \\
\tau(e_3) = t_1], \hat{}\exists e_4[Q(e_4) \wedge \tau(e_4) = t_2]) \wedge t_1 \leq t_2]]]]]]
\end{pmatrix}
\end{bmatrix}$$

(44) **Special Gerund Clause Cx (DO, HOLD-type)**
elliptic-possession-resultingstate-gerund-clause-construct ⇒

$$\begin{bmatrix}
\text{MTR} & \begin{bmatrix}
\text{SYN} & \begin{bmatrix}
\text{CAT} & \begin{bmatrix} \textit{predicate} & & \\ \text{PRDFORM} & \textit{gerund} & \\ \text{SELECT} & \begin{bmatrix}\text{SYN}|\text{CAT} & \textit{predicate} \\ \text{ARG-ST} & \langle\, \text{X}_i, \ldots\,\rangle\end{bmatrix} \end{bmatrix} \\
\text{VAL} & \langle\,\rangle
\end{bmatrix} \\
\text{SEM}|\text{LF} & \downarrow_4(\textbf{take.in}(\downarrow_3)(\downarrow_2)(\downarrow_1)) \\
\text{ARG-ST} & \langle \textit{pro}_i{:}[\text{LF}\uparrow_1], \boxed{1}\,, \boxed{2}\,\rangle
\end{bmatrix} \\
\text{HD-DTR} & \textit{none} \\
\text{DTRS} & \langle\, \boxed{1}\, \text{NP}{:}[\text{CASE } \textit{acc}, \text{LF}\uparrow_2], \boxed{2}\, \text{NP}{:}[\text{CASE } \textit{dat}, \text{LF}\uparrow_3]\rangle \\
\text{CX-CONT} & \uparrow_4{:} \begin{pmatrix}
\lambda P[\lambda Q[\lambda e_2[\exists e_1[\exists e_3[P(e_1) \wedge Q(e_2) \wedge \\
\textbf{RS}(e_3, e_1) \wedge \tau(e_3) \supseteq \tau(e_2)]]]]
\end{pmatrix}
\end{bmatrix}$$

In (42) and (43), $\textbf{say}_{dir}$ and $\textbf{think}_{dir}$ are logical predicates corresponding to IU 'say' and OMOU 'think' selecting a direct quotative phrase. To deal with QV-ellipsis constructions with an indirect quotative phrase, slightly different constructions will be required. In (44), **take.in** is a predicate that selects, besides the eventuality argument, (i) the possessor argument, (ii) the possessum argument, and (iii) the location argument.

The semantics of (42)–(44) are more specific than those of (40) and (41). In all of (42), (43), and (44), the meaning of the mother sign has one less "open slot", the place for the predicate meaning being filled by a constant. (42) and (43), furthermore, convey a more specific meaning than their non-elliptic counterpart

which merely conveys the temporal relation of "E_1 precedes or coincides with E_2". These provide justification for treating the elliptic clauses as subtypes of the regular suspensive clauses. It should be noted that the absence of the causal relation encoded in the SAY-ellipsis construction, and the presence of the causal or manner ("by means of") relation encoded in the THINK-ellipsis construction, are presumably part of the "not-at-issue" (conventionally implicated) meaning, rather than the "at-issue" (proffered) meaning. To represent them in more precise terms, a more elaborate apparatus for semantic representation, where multiple levels/dimensions of meaning can be distinguished, will be required (see, e.g., Potts 2005; McCready 2010).

The mother sign of each of these constructs (i.e., a headless clause) is specified to have the ARG-ST attribute; this is required to constrain long-distance anaphoric binding into the headless subordinate clause, as in (45a,b), as well as to express the obligatory coreference between the subjects of the main and subordinate clause in the DO-ellipsis construction.[5]

(45) a. Hiroshi$_i$-wa [[kimi-ga jibun$_i$-o kizukatte kurenai] to
H.-Top you-Nom self-Acc be.concerned.Ger Ben.Neg.Prs Quot
(itte)] namida-o nagashite ita-yo.
say.Ger tear-Acc shed.Ger Ipfv.Pst-DP
'Hiroshi$_i$ was shedding tears, saying that you don't care about him$_i$ at all.'

b. Ken$_i$-ga [jibun$_i$-no yari-o te-ni (shite)] tachihadakatta.
K.-Nom self-Gen spear-Acc hand-Dat do.Ger block.way.Pst
'Ken$_i$ blocked the way, holding his$_i$ spear in his$_i$ hand.'

7 Summary

This paper discussed the syntactic and semantic properties of three "special" hypotactic constructions in Japanese, where the heading predicate of the subordnate clause is not explictly present. The subordinate clauses of the three constructions respectively involve "omission" of a suspensive form of IU 'say', OMOU 'think', and SURU 'do'. It was shown that the elliptic subordinate clauses have more specific meanings than the corresponding canonical subordinate clauses (headed by a suspensive form of a verb), and thus the former can be sensibly regarded as special subtypes of the latter. Using the framework of Sign-Based Construction Grammar, a formal analysis of the three constructions was presented, which does not postulate a phonologically null element serving as the head of a subordinate clause.

[5] See Przepiórkowski (2001) for justification for allowing phrasal (non-lexical) expressions to have ARG-ST (and its extension DEPS).

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