The division of labor in Japanese clausal and predicate ellipsis

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Table of Contents

Introduction

- Two related line of research on anaphoric/elliptical strategies in Japanese.
- **The distribution of VP ellipsis (VPE)**
  - Null object constructions (Otani and Whitman 1991) do not decisively argue for VPE in Japanese (Hoji 1998; Oku 1998, i.a.).
  - But there are new evidence from null adjunct constructions (Fujii 2015; Funakoshi 2016, 2019), among other cases.
  - We further suggest that VPE specifically targets head-less VP.
- **The distribution of *soo*-replacement**
  - Usually discussed in conjunction with *su(ru)* 'do' (Hinds 1973; Hoji 1990; Koizumi 1994, i.a.)
  - But *soo* and *su(ru)* receive a compositional account (Tanaka 2016).
  - Less attention is put on the syntactic restrictions of *soo*.
  - We suggest that *soo* is specifically used to replace (overtly) headed VPs.

Introduction

- The empirical goal of this study is to establish the generalization in (1).

(1) a. *Soo*-replacement cannot target a head-less VP.

b. VPE cannot target an overtly headed VP.

➔ They are in complementary distribution in the VP domain.

- On the theoretical side, we propose that

(2) a. *Soo* involves ellipsis (of its VP complement), i.e., we call it ***soo*-VPE**.

b. The "division of labor" follows from the fact that *soo* blocks verb movement from within its complement VP.

c. **Non-*soo* VPE** applies when *soo*-VPE is inapplicable.

➔ VPE takes two forms, whose choice is subject to a structural constraint related to head movement

Table of Contents

Cases when VPE is preferred over *soo*

- In all the following three cases, we find that VPE is preferred over *soo*.

1. Null adjunct constructions (Funakoshi 2016)
2. *Te*-complement clauses (Hayashi and Fujii 2015)
3. VP in VV compounds (Funakoshi 2019)

- All these constructions are argued to involve head movement.

Case 1: Null adjunct constructions

- **Null object constructions** are taken to support VPE (Otani and Whitman 1991), but alternative analyses are offered (Oku 1998; Hoji 1998, i.a.).
- **Null adjunct constructions** are taken support to VPE (Funakoshi 2016).

(3) *Context: Taroo and Hanako washed their parents cars to get allowance. Taroo was thorough in his work while Hanako was not.*

a. Taroo-wa **teineini** kuruma-o arat-ta.
Taroo-TOP carefully car-ACC wash-PST
'Taroo washed the car carefully.'

b. Hanako-wa Δ araw-anak-atta. Hanako-ga arat-ta ato-no
Hanako-TOP wash-NEG-PST Hanako-NOM wash-PST after-GEN
kuruma-wa kitanak-atta.
car-TOP dirty-PST
'Hanako did not wash the car carefully. The car that Hanako washed was dirty.'

Case 1: Null adjunct constructions

- Arguably, (3b) has the following underlying (simplified) structure, where the verb moves out of VP before VPE.

(4) Verb-stranding VPE ((Funakoshi 2016))

Hanako-wa ~~[$_{VP}$ **teineini** kuruma-o <**araw**$_i$>]~~ araw$_i$-anak-atta.

- Importantly, the same VPE site cannot be replaced by *soo*

(5) Hanako-wa * soo araw-anak-atta.
Hanako-TOP wash-NEG-PST
'Hanako did not wash the car carefully.'

- We obtain our first VPE-over-*soo* case.

Case 2: *Te*-complement clauses

- Hayashi and Fujii (2015) identify two types of ***te*-clauses**, which serve different grammatical functions.

(6) a. *te*-comeplments (also predicates like *kureru*, *hosii*)

Taroo-wa [Ziroo-ni piza-o tukut-**te**] morat-ta.
Taro-TOP Ziro-DAT pizza-ACC cook-TE get-PST
'Taro had Ziro cook pizza.'

b. *te*-adjuncts

Taroo-ga [piza-o tukut-**te**] okane-o morat-ta.
Taro-NOM pizza-ACC cook-TE money-ACC get-PST
'Taro got money by cooking pizza.'

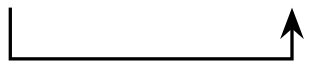
- They argue that the former involve obligatory, cross-clausal verb movement into the matrix clause.
- (For discussions of *te*-adjuncts, see Appendix A.)

Case 2: *Te*-complement clauses

- Their proposed structure for *te*-complement clauses

(7) Obligatory verb movement from within a *te*-complement clause

Taroo-wa [Ziroo-ni piza-o ~~<tukut-te>~~$_i$] tukut-**te**$_i$-morat-ta.



- Only VPE can target the te-complement clauses, but not *soo*

(8) Ken-mo {OK Δ /* soo} tukut-te morat-ta.
Ken-also cook-TE get-PST

- Note that the suggested verb movement is obligatory. In its absence, both VPE and *soo* are disallowed

(9) Ken-mo {* Δ /* soo} morat-ta.
Ken-also get-PST

Case 2: *Te*-complement clauses

- A similar example constructed with an adjunct in the *te*-complement.

(10) a. Taroo-ga [enpitsu-de nigaoe-o ~~kai-te~~] kai-te morat-ta ga,
Taro-NOM pencil-with portrait-ACC draw-TE draw-TE get-PST but
'Taro had his portrait drawn with a pencil, but'

b. Hanako-wa {OK Δ /* soo} kai-te morawa-nakat-ta
Hanako-TOP draw-TE get-NEG-PST
Int. 'Hanako did not have her portrait drawn in pencil.'
(Hanako's painting is drawn with a brush.)

- The availability of the adjunct reading supports VPE over Argument Ellipsis.
- We obtain our second VPE-over-*soo* case.

Case 3: VP in VV compounds

- Syntactic VV compounds involves V_1-V_2 movement (Funakoshi 2019)

(11) Taroo-wa bataa-de tamanegi-o **itame-dasita**.
Taro-TOP butter-with onion-ACC fry-start
'Taro started to fry onions in butter.'

- V_2 is bound morphemes and requires an adjacent verbal element
- This can be satisfied by moving V_1 up

(12) V1-V2 movement
Taroo-wa [bataa-de tamanegi-o ~~<itame>~~$_i$] **itame**$_i$-dasi-ta.

Case 3: VP in VV compounds

- VEP can target the lower VP, in contrast with *soo*.

(13) Hanako-mo {Δ /* soo} itame-dasi-ta.
Hanako-also fry-start-PST
Lit. 'Hanako also started to do so.'

- Note: V-V movement is obligatory.

(14) Hanako-mo {* Δ /* soo} dasi-ta.
Hanako-also start-PST
Lit. 'Hanako also started to do so.'

Table of Contents

Cases when *soo* is preferred over VPE

- In contrast to Case 1-3, there are three cases where the opposite is observed: *soo* is preferred over VPE.

4. Resultative clauses and small clauses
5. Verbal nouns (Hayashi 2015)
6. Focus particles (Fujii 2015; Funakoshi 2019)

- These cases arguably do not involve verb movement.

Case 4: Resultative clauses and small clauses

- To the best of our knowledge, verb movement is not detected in resultative clauses and small clauses
- In this regard, we observe that *soo* can target **resultative clauses**, in contrast to VPE.

(15) a. Taroo-wa kabe-o [**yuki-no yooni siroku**] nut-ta.
Taro-TOP wall-ACC snow-GEN like white paint-PST
'Taro painted the wall white.'

b. Ziroo-wa doa-o {soo /* Δ} nut-ta.
Ziro-TOP door-ACC paint-PST
Lit. 'Ziro so painted the door.'

- In the absence of verb movement, *soo* is preferred over VPE.

Case 4: Resultative clauses and small clauses

- Exactly the same can be said to **small clauses**.

(16) a. Taro-ni-wa tsuki-ga [**akaku**] mie-ta.
Taro-DAT-TOP moon-NOM red look-PST
'The moon looked red to Taro.'

b. watasi-ni-mo tsuki-ga {soo /* Δ} mie-ta.
I-DAT-TOP moon-NOM look-PST
Lit. 'The moon looked so to me, too.'

(17) a. Taroo-wa [**sizuka-ni**] nat-ta.
Taro-TOP quietly become-PST
'Taro became quiet.'

b. Ziroo-mo {soo /* Δ} nat-ta.
Ziro-also become-PST
Lit. 'Ziro became so, too.'

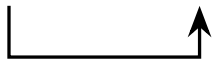
Case 5: Verbal nouns

- In addition to to **Native Japanese Verbs** (NJVs), a class of verbs is derived from **Verbal Nouns** (VNs) by taking *suru* 'do'
- Hayashi and Fujii (2015) and Hayashi (2015) argue that VNs differs from NJVs in that **VNs do not undergo V-T movement**, unlike NJV.

(18) Schematic representation of their proposal

a. **VN**: Subject ... [$_{VP}$ Object **VN**] do

b. **VJN**: Subject ... [$_{VP}$ Object ~~<NJV$_i$>~~] **NJV**$_i$



- In what follows, we compare VPs headed by these two verbs:
  - VN: *kikoku-suru* 'return (to country)'
  - NJV: *kae-ru* 'return'

Case 5: Verbal Nouns

- We observe that VPs headed by VN is compatible with *soo* but not VPE

(19) VPs headed by Verbal Nouns

a. Taroo-wa [$_{VP}$ hune-de nihon-ni **kikoku**] -si-ta.
Taro-TOP ship-by Japan-LOC retun -do-PST
'Taro returned to Japan by ship.'

b. Hanako-mo { soo /$^{??}$ Δ } si-ta.
Hanako-also do-PST
'Hanako did so, too.'

- *Soo* is preferred over VPE in the absence of verb movement

Case 5: Verbal Nouns

- VPs headed by NJVs show an opposite pattern, assuming V-T movement (**Hoshi:2009**; Funakoshi 2019).

(20) VPs headed by Native Japanese Verbs

a. Taroo-wa [$_{VP}$ hune-de nihon-ni ~~<kaet$_i$>~~] **kaet$_i$**-ta.
Taro-TOP ship-by Japan-LOC return-PST
'Taro returned to Japan by ship.'

b. Hanako-mo {* soo / Δ} kaet-ta.
Hanako-also return-PST
Lit. 'Hanako returned so, too.'

- Note that the movement is obligatory:

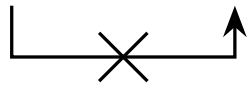
(21) *Taroo-wa [$_{VP}$ hune-de nihon-ni **kaeri**] **si**-ta.
Taro-TOP ship-by Japan-LOC return do-PST
'Taro returned to Japan by ship.'

Case 6: Focus particles on VPs

- **Focus particles** on VPs arguably block V-T movement, establishing an overtly headed VP (Fujii 2015; Funakoshi 2019)

(22) Schematic representation of this idea

Subject ... [$_{VP}$ Object ~~<V>~~]-*sae* V ...



- VPs associated with focus particles can be replaced by *soo*

(23) a. Taroo-wa [$_{VP}$ fugu-o sabaki]-**sae** si-ta. With focus particles
Taro-TOP blowfish-ACC dress-even do-PST
'Taro [$_{VP}$ dressed a blowfish].'

b. Hanako-mo soo si-ta.
Hanako-also do-PST
'Hanako also did so.'

Case 6: Focus particles on VPs

- Consider also VPs without focus particles:

(24) a. Taroo-wa [$_{VP}$ fugu-o ~~<sabai>~~$_i$] sabai$_i$-ta. No focus particles
Taro-TOP blowfish-ACC dress-PST
'Taro [$_{VP}$ dressed a blowfish].'

b. Hanako-mo * soo / Δ sabai-ta.
Hanako-also dress-PST
'Hanako also did [$_{VP}$ dress a blowfish].'

- A complication: VPE is also allowed in this case

(25) As continuation of (23a)
Hanako-mo Δ si-ta.
Hanako-also do-PST
'Hanako also did.'

- Sakamoto (2021) argues that this is a case of Argument Ellipsis, not VPE.

Interim summary

	soo	VPE
1. Null adjunct constructions	✘	✔
2. *Te*-complement clauses	✘	✔
3. VP in VV compounds	✘	✔
4. Resultative clauses and small clauses	✔	✘
5. Verbal nouns	✔	✘
6. Focus particles on VPs	✔	✘ AE in disguise

Table 1: The distribution of *soo* and VPE in Japanese

- In the above cases, we establish the following generalization:

(1) a. *Soo*-replacement cannot target a head-less VP.

b. VPE cannot target an overtly headed VP.

Table of Contents

Analysis

- Formally, the VPs that can(not) be targeted by *soo* and VPE are as follows

(26) The division of labor between *soo* and VPE in Japanese

a. *soo* cannot target [$_{VP}$ … … ~~V~~] cf. *soo* targets [$_{VP}$ … … V]

b. VPE cannot target [$_{VP}$ … … V] cf. VPE targets [$_{VP}$ … … ~~V~~]

- Our proposal (evidence follows)

(27) a. Assumption: *Soo* can be selected by a variety V heads, but not necessarily by *su-* 'do' (Tanaka 2016, *contra* Sakamoto 2020).

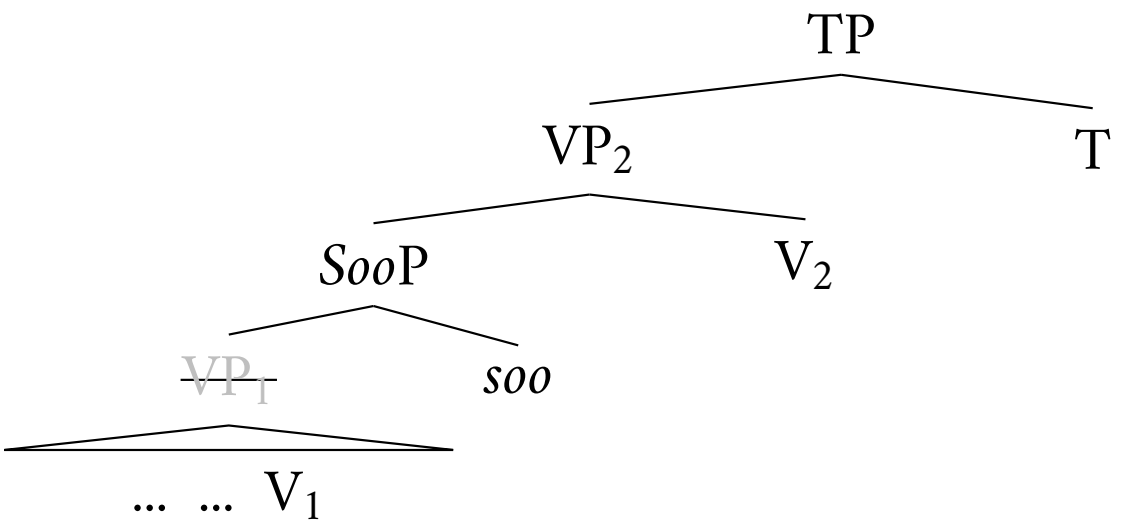
b. ***Soo* takes a VP as its complement.** (cf. Sakamoto 2016)

c. ***Soo*-replacement involves VPE on its complement VP.**
We call it ***soo*-VPE**, in contrast with non-*soo* VPE.

Analysis - why division of labor

- We propose the following structure for ***soo*-VPE**

(28)



(29) Deriving the division of labor

a. ***Soo* blocks verb movement** from within its complement VP (in a way similar to focus particles, e.g. *-sae* 'even')

b. VPE in Japanese can in principle apply to headed or head-less VPs, but the more marked ***soo*-VPE competes with non-*soo* VPE**

Analysis - ❶ *soo* involves VP ellipsis

- Evidence from overt A-extraction (passives) (Sakamoto 2020, modified)

(30) a. **Akai** **nanika**$_1$-ga [$_{VP}$ dono heya-ni-mo t_1 ok]-are-ta-no-wa
red sth-NOM every room-in-MO$_\forall$ put-PASS-PST-NML-TOP
'I knew that something red was put in every room, but ...'
(some > all ; all > some)

b. **Aoi** **nanika-ga** [$_{SooP}$ ~~VP~~ soo]-s-are-ta-no-wa sira-nakat-ta.
blue sth-NOM so-do-PASS-PST-NML-TOP know-NEG-PST
(Lit.) 'I didnt know that something blue was done so.'
(some > all ; all > some)

- The argument ***Aoi nanika-ga*** is passivized and corresponds to the object from within the VP replaced by *soo*

Analysis - ❶ *soo* involves VP ellipsis

- A reinterpretation of Hoji (1990, p.13), given obligatory V-T movement

(31) John-ga [$_{VP}$ **kooriame-o** kamikudak]-u to, Bill-wa **kurumi-o**
John-NOM ice.candy-ACC bite.crush when Bill-TOP walnut-ACC
[$_{SooP}$ ~~VP~~ soo] sita.
so did
(Lit.) 'When John crunched an ice candy (into small pieces), Bill did so a walnut.'

- Note the contrastive reading is crucial

(32) ??... Bill-mo **kooriame-o** soo si-ta.
... Bill-also ice.candy-ACC do-PST
(Lit.) '... Bill also did so an ice candy.'

Analysis - ❶ *soo* involves VP ellipsis

- Crucially, the extraction possibility is different in the apparent case of "VPE" (discussed in (25)).
- Namely, "VPE" of VPs with focus particles:

(33) a. Taroo-wa **Mary$_{1/i}$-o** [$_{VP}$ t_1 sikari]-**sae** si-ta.
Taro-TOP Mary-ACC scold-even do-PST
'Taro did Mary$_1$ even-[$_{VP}$ scold t_1].'

b. *Hanako-mo **kanozyo$_i$-o** [$_{VP}$ Δ] si-ta.
Hanako-also she-ACC do-PST
(Lit.) 'Hanako also did her [$_{VP}$ Δ]'

- A-extraction from the ellipsis site is disallowed
- We agree with Sakamoto (2021) that (33b) should be analyzed as Argument Ellipsis, instead of VPE.

Analysis - ❷ *soo* takes VP complements

- We suggest that *soo* must take VP complements
- It cannot target **adverbials**, e.g., PP or AdvP (they are sub-clausal)

(34) a. Taroo-wa [**{basu-de/otooto-to}**] kaet-ta.
Taro-TOP base-bu/brother-with return-PST
'Taro returned {by bus/with his brother}.'

b. Hanako-mo * soo kaet-ta.
Hanako-also return-PST
Lit. 'Hanako returned so, too.'

(35) Taroo-ga [**hayaku**] hasit-ta. Ziroo-mo * soo hasit-ta.
Taro-NOM fast run-PST Ziro-also run-PST
Lit. 'Taro ran fast. Ziro ran so, too.' (so = fast) (Tanaka 2016)

Analysis - ❷ *soo* takes VP complements

- Also, the complement of *soo* cannot be clausal adverbials, which are syntactically largely than a VP.

(36) a. Reason clauses

Taroo-wa [okane-o tame-ta-i **kara**] zisui-si-teiru.
Taro-TOP money-ACC save-want-PRES because self-cook-do-ASP
'Taro cooks by himself because he wants to save money.'

b. Purpose clauses

Taroo-wa [okane-o tame-ru **tame-ni**] zisui-si-teiru.
Taro-TOP money-ACC save-INF sake-for self-cook-do-ASP
'Taro cooks by himself to save money.'

c. Hanako-mo * soo zisui-si-teiru.
Hanako-also self-cook-do-ASP
Lit. 'Hanako cooks by herslef so, too.'

Table of Contents

Beyond the VP

- The division of labor between *soo* and VPE is restricted to VP
- *Soo* behaves less consistently beyond the VP domain
  ➔ there is another form of *soo* that serves as deep anaphora.

  1. ^{OK}Non-VP antecedents
  2. ^{OK}Non-linguistic antecedents

- Ellipsis of “larger" clauses can target headed (and head-less) phrases
  ➔ there is no more competition with *soo*, hence its flexibility

  1. Headed: TP ellipsis in **Sluicing** (Takahashi 1994)
  2. Headed: TP/ModalP ellipsis in **Particle Stranding** (Sato and Maeda 2019)
  3. Head-less: FocusP/PolarityP ellipsis in **Verb Echo Answers** (Sato and Maeda 2021)

On *soo*: ❶ Antecedent clauses other than VPs

- *Soo*-replacement may have a non-VP antecedent

(37) A series of clauses (Hinds 1973, p.49-50)

Taroo-wa	[hawai-ni	tomodati-ni	ai-ni	it-te,	nihon-ni
Taro-TOP	Hawaii-LOC	friend-DAT	meet-PURP	go-TE	Japan-DAT
kaet-te	ki-ta]	ga,	sono-maeni	[kankoku-ni-mo	yot-te
return-TE	come-PST	but	that-before	Korea-LOC-also	stop-TE
ki-ta];	Ziroo-mo	soo	si-ta.		
come-PST	Ziro-also		do-PST		

'Taro went to Hawaii to meet a friend and returned to Japan, but before return- ing he also stopped in Korea; Jiro did so too.'

On *soo*: ❷ Antecedent clauses other than VPs

- Also, *soo*-replacement is compatible with non-linguistic antecedents

(38) Non-linguistic antecedents

a. yappari soo kuru ka.
as.I.expected so come SFP
'I knew it.'

b. [**Context**: Looking at a student writing down a correct answer of a math problem.]
Soo !
so
'That's right.'

- In these cases, *soo* behaves more similarly to deep anaphora.

On ellipsis: ❶ Clausal ellipsis in Sluicing

- Sluicing involves clausal ellipsis (Takahashi 1994, i.a.)

(39) Takahashi (1994, p.266, modified)

a. Mary-ga nanika-o kat-ta rasii ga,
Mary-NOM something-ACC buy-PST likely but
'It is likely Mary bought something, '

b. boku-wa [nani-o Δ ka] wakara-nai.
I-TOP what-ACC Q know-not
'but I don't know what.'

- Δ = headed

On ellipsis: ❷ Clausal ellipsis in Particle Stranding

- Particle stranding can strand *to* or *kadooka*, eliding their complement TP (also observed with *mitai*, *rashii*, and *nara*)

(40) Sato and Maeda (2019, p.362)

a. John-wa kita-no?
John-TOP came-Q
'Did John come?'

b. Δ **-to** omoi-masu-kedo.
C think-POL-though
'I think that he came.'

c. Δ **-kadooka-wa** tyotto wakari-masen-ne.
whether-TOP a bit know-POL.NEG-PRT
'I am a little unsure whether he came or not.'

- Δ = headed

On ellipsis: ❸ Clausal ellipsis in Verb Echo Annswers

- Sato and Hayashi (2018) and Sato and Maeda (2021) argue that Verbal Echo Answers involve V-T-C movement, followed by TP ellipsis

(41) Sato and Maeda (2021)

a. Taroo-wa pan-dake kat-ta-no?
Taro-TOP bread-only buy-PST-Q
'Did Taro buy only bread?'

b. ~~[TP … … <kaw-anaka-ta>]~~ Kawa-nakat-ta-yo.
buy-NEG-PST-PRT
'Didn't buy.' (??only > Neg, Neg >only)

- Δ = head-less

Table of Contents

Conclusions

- By examining six different cases, we established the following observation:

(42) The division of labor between *soo* and VPE in Japanese

a. *soo* cannot target [$_{VP}$ ... ... ~~V~~] cf. *soo* targets [$_{VP}$ ... ... V]

b. VPE cannot target [$_{VP}$ ... ... V] cf. VPE targets [$_{VP}$ ... ... ~~V~~]

- To account for the division of labor, we proposed:

(43) a. *Soo* takes a VP as its complement (Sakamoto 2016)

b. *Soo*-replacement involves VPE on its complement VP.

c. VPE comes in two forms: ***Soo*-VPE** and non-*soo* VPE.
➔ the former blocks verb movement from its VP complement
➔ the latter applies when the former is inapplicable

Conclusions

Implications

1. New evidence for **verb movement** in Japanese
   ➔ The choice of VPE is sensitive to the availability of head movement
2. Further support to **an elliptical account on *soo***
   ➔ *soo* is sensitive to the internal structure of its antecedent VP
   ➔ it also blocks verb movement from within its complement VP
3. Ellipsis strategy involves **lexical/syntactic competition**
   ➔ The division of labor is restricted to VP, but not beyond
   ➔ This can be attributed to the sectional property of *soo*, i.e., it selects VP but not higher clauses
4. **The typology of VPE**
   ➔ The variety patterns of VPE across languages may be due to the availability of other elliptical options in that language

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Table of Contents

Appendix A: *soo* and *te*-adjunct clauses

- *Te*-adjunct clauses arguably lack verb movement to the matrix clause.
- But they are not possible target of *soo*-replacement.

(44) a. Taroo-ga [mado-o wat-te] ie-ni haitta node,
Taro-NOM window-ACC break-TE house-LOC entered since
'Since Taro broke a window and entered the house, '

b. *Ziroo-mo soo ie-ni haitta.
Taro-NOM so house-LOC entered
Lit. 'Ziro also entered the house so.'

(45) a. Taroo-wa [piano-o hii-te] utatta.
Taro-TOP piano-ACC play-TE sang
'Taro played the piano and sang.'

b. *Ziroo-mo soo utatta.
Ziro-also so sang
Lit. 'Ziro sang so too.'

Appendix A: *soo* and *te*-adjunct clauses

- This may be because these adjunct clauses are subject to "Law of Coordination of Likes" (Williams 1978; Haegeman 2012; Endo and Haegeman 2019).

(46) a. Ziroo-mo [$_{VP}$ soo yat-te] ie-ni hait-ta.
Taro-NOM so do-TE house-LOC enter-PST
Lit. 'Ziro also entered the house so.'

b. Ziroo-mo [$_{VP}$ soo yat-te] utat-ta.
Ziro-also so do-TE sing-PST
Lit. 'Ziro sang so too.'

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