

V-stranding with null arguments in coordination and its interpretation*

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Lee, Wooseung and Myung-Kwan Park. 2022. V-stranding with null arguments in coordination and its interpretation. *Linguistic Research* 39(2): 355-388. This paper explores the reasons why V-stranding negative replies allow the interpretation that negates every argument in the antecedent coordinate clause as noted in Russian by Landau (2021). We observed a similar pattern in Korean, where VP ellipsis is not attested, thus V-stranding VP ellipsis is not an analytic option. For an alternative account of the relevant construction, we propose an argument ellipsis analysis with De Morgan's laws syntactically implemented via negation lowering into coordination. In constructions observing De Morgan's laws, the negation of a disjunction is interpreted as the conjunction of the negations while the negation of a conjunction is construed as the disjunction of the negations. We generalize that in the absence of functional heads licensing null categories, negation does not undergo lowering, exerting no influence on the coordinator combining null arguments in V-stranding constructions. This yields a conjunctive interpretation by default, generating a denotation where every conjunct is negated. Effectively, the syntactic process of negation lowering accompanied by coordinator switch feeds the interpretations in compliance with De Morgan's laws, although this process is constrained by diverse configurations such as the presence of adverbial expressions. (Konkuk University · Dongguk University)

Keywords V-stranding, null arguments, De Morgan's laws, conjunction/disjunction, negation lowering

1. Introduction

Preliminary research by Chao (1987: 134) revealed the following V-Stranding example of putative VP Ellipsis (VPE) in Chinese. She claims that "Chinese allows

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Sluicing, VPE, and Null Complement Anaphora-type structures if the verb is overt” (Chao 1987: 133):

- (1) John xihuan chi fan, Peter ye xihuan.
 John like eat rice Peter also like
 ‘John likes (to) eat rice, (and) Peter likes [(to) eat rice] too.’

However, Chao neither discusses how such strings might be generated, particularly whether or not Chinese has V-to-T raising, nor extends the claim to Japanese or Korean. Departing from Chao, Huang (1987, 1988, 1991) and Otani and Whitman (1991) argue that the second coordinate clause of (1) is derived via V-to-T raising and elision of VPE. They further suggest that the VPE-like operation apply in Japanese and Korean as well as Chinese.

Since its inception, V-stranding VPE has been applied to various languages for the past three decades. However, Landau (2020) recently casts doubts on the validity of V-stranding VPE in languages like Hebrew, Hindi, Russian, and Portuguese where such a mode of VPE was reportedly available in previous linguistic literature. In his subsequent work (Landau 2021), he dispels Gribanova’s (2013) claim that V-stranding VPE is attested in Russian. Gribanova (2013) shows that in response to the ‘yes-no’ question with a disjoined VP in (2A), the negative reply in (2B) which includes the stranded main V yields a reading where the negation takes scope over the disjoined VP. She further argues that the elided VP in (2B) and (2C) is within the scope of the negation and is subject to De Morgan’s laws. This generates an interpretation in which each negated conjunct is conjoined with each other, which we call a ‘neither’/strong reading. The same ‘neither’/strong reading is also available to the Stripping sentence in (2C).

- (2) A: Ty položil ručku na stol, ili knigu
 you.NOM put.PST.SG.M pen.ACC on table or book.ACC
 na stol?
 on chair.ACC
 ‘Did you put the pen on the table or the book on the chair?’
 B: Net, ne položil ____.
 no, not put.PST.SG.M
 ‘(Lit.) No, I didn’t put (the pen on the table or the book on the chair).’

= ‘No, I didn’t put the pen on the table. Nor did I put the book on the chair.’

C: Net, ne ____.

no, not

‘No, I didn’t put the pen on the table. Nor did I put the book on the chair.’

Landau (2021) notes that, contrary to Gribanova’s (2013) prediction, the conjunction behaves differently vis-à-vis the negation, unlike the disjunction. The following question-answer pair makes such a point. Specifically, the ‘yes-no’ question in (3A) has a conjoined VP, and the reply after but in (3B) has the negation followed by the stranded main V. If the stranded main V along with the negation in (3B) was interpreted analogously to (2B), this predicts a reading where the negation takes wide scope over the conjoined VP. Specifically, the prediction is that in (3B) we obtain an interpretation in which only one of the two conjuncts is negated. This prediction, however, is not borne out as the denotation in (3B) clearly reveals. As in (2B), the reading available to (3B) is a ‘neither’/strong reading where the negation takes narrow scope below the conjunction without adhering to De Morgan’s laws.

(3) A: Maria položila posudu v bufet i
 Maria put dishes in cupboard and
 polotenca v šlaf?
 towels in closet
 ‘Did Maria put the dishes in the cupboard and the towels in the closet?’

B: Da, a Ivan ne položil.

yes but Ivan not put

‘(Lit.) Yes, but Ivan didn’t put.’

= ‘Yes, but Ivan neither put the dishes in the cupboard nor put the towels in the closet.’ #‘He only put the towels in the closet.’¹

C: Da, a Ivan ne.

yes but Ivan not

‘Yes, but Ivan didn’t. ^{ok}He only put the towels in the closet.’

1 # indicates that this interpretation is not available here.

In contrast to (3B) with V-stranding, (3C) with Stripping has a reading where, as expected, the negation assumes a wider scope over the conjunction. Landau (*ibid.*) concludes that (3B) with the stranded main V is not derived from V-stranding VPE, but from argument ellipsis (AE) in combination with a pragmatic inference. In this paper, we investigate the same type of construction in Korean as in (4) and pursue an alternative analysis with novel empirical evidence (*cf.* Lee and Park 2021). Specifically, we propose an argument ellipsis analysis by resorting to syntactic implementation of De Morgan's laws via negation lowering.²

- (4) A: ne-nun chayk-ul chayksang-ey kuliko kongchayk-ul uyca-ey
 you-top book-ACC desk-on and notebook-ACC chair-on
 noh-ass-ni?
 put-PAST-Q
 'Did you put the book on the desk and the notebook on the chair?'
 B: ani, noh-ci anh-ass-e.
 no put-NEG-PAST-DECL
 '(Lit.) No, I didn't put.'
 = (Strong Reading) 'No, I neither put the book on the desk nor put the
 notebook on the chair.'

This paper is organized as follows. Building on Landau's (2021) paradigmatic example in Russian, Section 2 turns to its counterpart in Korean where VP ellipsis is not available. Since VVPE is a variant of VPE, the V-stranding negative reply that allows a strong/'neither' reading cannot be accounted for by resorting to VVPE. Section 3 goes into the hypothesis that null arguments of the stranded verb have no syntactic structures, finally discarding it. In Section 4, we propose an argument ellipsis analysis with syntactic implementation of De Morgan's laws by negation lowering. Specifically, we suggest that non-compliance with De Morgan's laws in relevant constructions falls out from a failure of negation lowering into both conjuncts/disjuncts. Subsequently, the V-stranding negative replies are given a 'conjunctive' interpretation by default. To further support the proposed analysis, Section 5 examines a variety of contexts where negation or implicit sentence focus head can or cannot undergo lowering into both conjuncts/disjuncts.

² Negation lowering indicates that negators are lowered into coordination, taking part in scope interaction with the coordinators.

2. Issues

Unlike (3B), the following example (5C) as a reply to the ‘yes/no’ question shows that Russian has VPE like English since only the auxiliary verb *budet* ‘will’ can survive with the following main VP elided. In this case, the conjunction of the elided VP assumes narrow scope below the negation, thus yielding a ‘not both’/weak reading in compliance with De Morgan’s laws. The continuation after the response in (5C) is felicitous, which confirms the availability of the weak reading when the conjunction is included in the elided part (i.e., elided VP). Note that on a par with the elided part, its overtly realized counterpart in (5B) also allows the same weak reading in negation—conjunction scope interaction. The parallelism between (5B) and (5C) in light of the reading available renders compelling evidence showing that elided parts like that in (5C) are just phonologically suppressed, but their syntactic structures have been retained.

- (5) A: Maria budet razdavat’ konfety mal’čikam i batončiki
 Maria will give sweets boys.DAT and snack.bars
 devočkam?
 girls.DAT
 ‘Will Maria be giving sweets to the boys and snack bars to the girls?’
- B: Da, a Ivan ne budet razdavat’ konfety mal’čikam i
 yes but Ivan not will give sweets boys.DAT and
 batoniki devočkam. On budet razdavat tol’ko batončiki
 snack.bars girls.DAT he will give only snack.bars
 devočkam.
 girls.DAT
 ‘Yes, but Ivan will not be giving sweets to the boys and snack bars to the girls. He will only be giving snack bars to the girls.’
- C: Da, a Ivan ne budet. On budet razdavat tol’ko
 yes but Ivan not will he will give only
 batončiki devočkam.
 snack.bars girls.DAT
 ‘Yes, but Ivan will not. He will only be giving snack bars to the girls.’

D: Da, a Ivan ne budet razdavat'.
 yes but Ivan not will give
 #On budet razdavat tol'ko batončiki devočkam.
 he will give only snack.bars girls.DAT
 'Yes, but Ivan will not do either. #He will only be giving snack bars to the girls.'

(Landau 2021: 8)

Effectively, the reply in (5D) with the negated stranded main V only allows a strong reading that is available when the conjunction takes wide scope over the negation. The infelicity of the continuation after this reply sentence confirms that the reading available to the first sentence of (5D) is strong. Accordingly, Landau (2021) confirms that (5D) does not derive from V-stranding VPE. Contrarily, he suggests that (5D) derives from argument ellipsis.

Conclusively, modeled after the examples containing a conjunction in (5), we test the following examples containing a disjunction:

- (6) A: Maria budet razdavat' konfety mal'čikam ili batončiki
 Maria will give sweets boys.DAT or snack.bars
 devočkam?
 girls.DAT
 'Will Maria be giving sweets to the boys or snack bars to the girls?'
- B: Da, a Ivan ne budet razdavat' konfety mal'čikam ili
 yes but Ivan not will give sweets boys.DAT or
 batoniki devočkam. On budet razdavat tol'ko batončiki
 snack.bars girls.DAT he will give only snack.bars
 devočkam.
 girls.DAT
 '(Strong Reading) Yes, but Ivan will not be giving sweets to the boys or snack bars to the girls. #He will only be giving snack bars to the girls.'
- C: Da, a Ivan ne budet. On budet razdavat tol'ko
 yes but Ivan not will he will give only
 batončiki devočkam.
 snack.bars girls.DAT

‘(Strong Reading) Yes, but Ivan will not. #He will only be giving snack bars to the girls.’

D: Da, a Ivan ne budet razdavat’.
yes but Ivan not will give

On budet razdavat tol’ko batončiki devočkam.
he will give only snack.bars girls.DAT

‘Yes, but Ivan will not do either. #He will only be giving snack bars to the girls.’

Both the overtly realized VP containing the disjunction and its elided counterpart in (6B) and (6C) yield a ‘neither’/strong reading where both disjunct VPs are negated in compliance with De Morgan’s laws. In addition, (6D) with the stranded main V also yields a ‘neither’/strong reading, like (6B) and (6C). Therefore, the empirical generalization drawn from (2)-(6) is that when a VP undergoes ellipsis, both overtly realized and elided VPs are collectively negated with conjunction/disjunction in them. Unlike canonical ellipsis, the structure derived from V-stranding in (5D) and (6D) only allows a ‘neither’/strong reading, which Landau (2021) takes to show that the elliptical structure concerned here can be accounted for by AE.

While Landau’s (2021) conclusion based on Russian is inspiring, since Russian evidently allows VP ellipsis, V-stranding VPE may be precluded in this language. Since VP ellipsis is a more generally available operation, it may in turn bleed the more marked strategy of V-stranding VPE. Therefore, we focus on Korean, in which since VPE is not available, V-stranding VPE presumably does not bleed VPE.

Modeled after Gribanova’s (2013) examples in (2), the following replies to (7A) containing the conjunction *kuliko* ‘and’ are ambiguously interpreted when they have the fully spelled-out VP in (7B) or the anaphoric VP *kulehkey ha-* ‘do so’ in (7C). Specifically, in addition to ‘neither’/strong reading, they allow ‘not both’/weak reading as well, in which only one of the conjunct is negated. Since Korean is generally believed to not allow VPE (Park 1994), we use the anaphoric VP form rather than VPE. Unlike these two replies, the V-stranding reply in (7D) only allows a strong/‘neither’ reading, which is not in compliance with De Morgan’s laws:³

3 Korean uses bound morphemic coordinators such as *-wa* ‘and’ and *-na* ‘or’ as well as free morphemic coordinators such as *kuliko* ‘and’ and *ttonun/hokum* ‘or’. In this paper we concentrate on the latter type since they are, by assumption, parallel to their Russian and English counterparts.

- (7) A: Cheli-ka pheyn-ul thakca wi-ey kuliko
 Cheli-NOM pen-ACC table on and
 chayk-ul uyca wi-ey noh-ass-ni?
 book-ACC chair on put-PST-Interr
 ‘Did Cheli put the pen on the table and the book on the chair?’
- B: Ani, Cheli-nun pheyn-ul thakca wi-ey kuliko
 no Cheli-TOP pen-ACC table on and
 chayk-ul uyca wi-ey noh-ci anh-ass-e.
 book-ACC chair on put-NM not.do-PST-INFORMAL
 ‘(Strong/Weak reading) No, Cheli didn’t put the pen on the table and the book on the chair.’
- C: Ani, Cheli-nun kuleh-key ha-ci anh-ass-e.
 no Cheli-TOP so-ADVER do-NM not.do-PST-DCL
 ‘(Strong/Weak reading) No, Cheli didn’t do so.’
- D: Ani, Cheli-nun noh-ci anh-ass-e.⁴
 no Cheli-TOP put-NM not.do-PST-DCL
 ‘(Strong reading only) (Lit.) No, Cheli didn’t put.’

The same pattern holds in (8), where the disjunction instead of the conjunction occurs. The replies in (8B) and (8C) in response to the ‘yes/no’ question in (8A) with the disjunction are interpreted ambiguously, displaying the parallelism between the full-form VP and the anaphoric VP in negation-disjunction scope interaction. By contrast, the V-stranding structure in (8D) only allows a strong/‘neither’ reading, like (7D) containing the conjunction:

- (8) A: Cheli-ka pheyn-ul thakca wi-ey ttonun/hokun
 Cheli-NOM pen-ACC table on or

4 The difference between (7C) and (7D) in scope relation between negation and conjunction can be confirmed by the continuation in (i). It is true that (7C) and (7D) both allow for the reading where the conjunction takes wide scope over the negation. Unlike (7C), however, (7D) does not allow for the reading where the negation takes wide scope below the conjunction, thereby yielding a ‘not both’ reading. The continuation in (i) preceded by (7D) induces discourse infelicity, while that preceded by (7C) does not.

(i) Cheli-nun pheyn-ul thakca wi-ey noh-ki-man ha-yss-ta.
 Cheli-TOP pen-ACC table top-at put-NM-only did
 ‘Cheli only put the pen on the table.’

chayk-ul uyca wi-ey noh-ass-ni?

book-ACC chair on put-PST-Interr

‘Did Cheli put the pen on the table or the book on the chair?’

B: Ani, Cheli-nun pheyn-ul thakca wi-ey ttonun/hokun

no Cheli-TOP pen-ACC table on or

chayk-ul uyca wi-ey noh-ci anh-ass-e.

book-ACC chair on put-NM not.do-PST-INFORMAL

‘(Strong/Weak reading) No, Cheli didn’t put the pen on the table or the book on the chair.’

C: Ani, Cheli-nun kuleh-key ha-ci anh-ass-e.

no Cheli-TOP so-ADVER do-NM not.do-PST-DCL

‘(Strong/Weak reading) No, Cheli didn’t do so.’

D: Ani, Cheli-nun noh-ci anh-ass-e.

no Cheli-TOP put-NM not.do-PST-DCL

‘(Strong reading only) No, Cheli didn’t put.’

We now focus on the examples in (9) with the conjunction and (10) with the disjunction, which are modeled after Landau’s (2021) examples in (3) and (5) containing the conjunction and our examples in (6) containing the disjunction. Although (9) and (10) are analogous to (7) and (8), respectively, the former differs from the latter in that the responses are composed of the positive polarity answer particle *ung* ‘yes,’ followed by *haciman* ‘but’ clause. Despite this adjustment in the replies, (9) and (10) exhibit the same pattern as (7) and (8) in negation—conjunction/disjunction scope relation. The replies with the full-form VP or the anaphoric VP are construed as ambiguous, but the reply with the stranded main V only has a strong/‘neither’ reading, regardless of whether the antecedent ‘yes/no’ question sentence contains a conjunction or disjunction:

(9) A: Cheli-ka pheyn-ul thakca wi-ey kuliko

Cheli-NOM pen-ACC table on and

chayk-ul uyca wi-ey noh-ass-ni?

book-ACC chair on put-PST-Interr

‘Did Cheli put the pen on the table and the book on the chair?’

B: Ung, haciman Yengi-nun pheyn-ul thakca wiew kuliko

yes but Yengi-TOP pen-ACC table on and

chayk-ul uyca wiew noh-ci anh-ass-e.
 book-ACC chair on put-NM not.do-PST-INFORMAL
 ‘(Strong/Weak reading) Yes, but Yengi didn’t put the pen on the table
 and the book on the chair.’

C: Ung, haciman Yengi-nun kuleh-key ha-ci
 yes but Yengi-TOP so-ADVER do-NM
 anh-ass-e.
 not.do-PST-INFORMAL

‘(Strong/Weak reading) Yes, but Yengi didn’t do so.’

D: Ung, haciman Yengi-nun noh-ci anh-ass-e.
 yes but Yengi-TOP put-NM not.do-PST-INFORMAL
 ‘(Strong reading only) (Lit.) Yes, but Yengi didn’t put.’

(10) A: Cheli-ka pheyn-ul thakca wi-ey ttonun/hokun
 Cheli-NOM pen-ACC table on or
 chayk-ul uyca wi-ey noh-ass-ni?
 book-ACC chair on put-PST-Interr

‘Did Cheli put the pen on the table or the book on the chair?’

B: Ung, haciman Yengi-nun pheyn-ul thakca wiew ttonun/hokun
 yes but Yengi-TOP pen-ACC table on or
 chayk-ul uyca wiew noh-ci anh-ass-e.
 book-ACC chair on put-NM not.do-PST-INFORMAL

‘(Strong/Weak reading) Yes, but Yengi didn’t put the pen on the table
 or the book on the chair.’

C: Ung, haciman Yengi-nun kuleh-key ha-ci
 yes but Yengi-TOP so-ADVER do-NM
 anh-ass-e.
 not.do-PST-INFORMAL

‘(Strong/Weak reading) Yes, but Yengi didn’t do so.’

D: Ung, haciman Yengi-nun noh-ci anh-ass-e.
 yes but Yengi-TOP put-NM not.do-PST-INFORMAL
 ‘(Strong reading only) (Lit.) Yes, but Yengi didn’t put.’

Considering Russian and Korean together, we note that VP anaphora as well as VPE
 behave analogously to their full-form VP counterparts in negation—

conjunction/disjunction scope interaction. Second, given that Korean lacks VPE, Korean may employ the alternative strategy: V-stranding VPE. Contrary to this expectation, the V-stranding structure is in sharp contrast in light of the scope interpretation at issue with VPE and VP anaphora. The sentences with the V-stranding structure only allows a strong/‘neither’ reading.

The Korean and Russian pattern applies to English, which is restrictive in the intransitive use of a transitive verb. However, as noted by Fillmore (1986), there is a particular set of English verbs that allow lexically determined omission of a complement. One such case is the verb *give*, which we use to test the contrast between VP ellipsis and V-stranding structure in negation—conjunction/distinction scope interaction, as follows. First, in a response to the ‘yes/no’ question containing a disjunction in (11A), the elided/anaphoric VP in (11C) as well as the full-form VP in (11B) preferentially allows a strong/‘neither’ interpretation, meaning that Mary didn’t give at all, i.e., Mary gave none to either. Likewise, the V-stranding structure in (11D) unmarkedly does the same.⁵

- (11) A: Did John give to Korean charities or to Japanese charities?
 B: Yes, but Mary didn’t give to Korean charities or to Japanese charities.
 C: Yes, but Mary didn’t (do so).
 D: Yes, but Mary didn’t give.

We turn now to the replies to the ‘yes/no’ question containing a conjunction. The preferential reading of (12B) with the full-form VP or (12C) with the elided/anaphoric VP is that the negation takes a wide scope over the conjunction, meaning that maybe Mary gave to one, but not both; this reading is facilitated when the focal accent is put on the conjunction ‘and’ in the preceding ‘yes/no’ question. By contrast, as in Russian and Korean, (12D) with the V-stranding structure only has an interpretation of the conjunction apparently taking wide scope over the negation, meaning that she didn’t give at all.

- (12) A: Did John give to Korean charities and to Japanese charities?
 B: Yes, but Mary didn’t give to Korean charities and to Japanese charities.

⁵ The readings available to the examples in (11A-D) and (12A-D) are attributed to Michael Berrie, who we thank for his help with sharing the intuition on them.

C: Yes, but Mary didn't (do so).

D: Yes, but Mary didn't give.

(12D) confirms that Landau's (2021) observation on Russian and our observation on Korean also apply to English. The V-stranding structure as part of a reply to the 'yes/no' question with the conjunction evidently has a strong/'neither' reading, which does not comply with De Morgan's laws.

3. Investigating the identity of V-stranding structure

Based on the discussions in the previous section, in line with Landau (2021) we can argue that the V-stranding structure at issue is not derived via VPE. If it was, it would contrarily yield a weak/'not-both' reading in such examples as Russian (5D), Korean (9D), and English (12D) containing a conjunction. The cross-linguistic consistency in the reading available to the V-stranding structure in these examples squarely rejects a V-stranding VPE analysis for it.

In addition, the following examples in (13) and (14) of Korean provide compelling evidence in identifying the nature of the V-stranding structure at issue. The striking aspect of these examples is that in Korean, the apparently non-constituent string (in fact, two disjuncts/conjuncts each composed of the two arguments selected by *noh*- 'put') can be replaced by *kulehkey* 'so' before the stranded main verb, as in the (B)- and (C)-examples of (13) and (14). Unlike the V-stranding structure that only allows a strong/'neither' reading, the (B)- and (C)-examples of (13) and (14) with *kulehkey* abide by De Morgan's laws. Therefore, those of (13) can be interpreted as having a strong/'neither' reading, and those of (14) as having a weak/'not both' reading.

- (13) A: Cheli-ka pheyn-ul thakca wi-ey ttonun/hokun
 Cheli-NOM pen-ACC table on or
 chayk-ul uyca wi-ey noh-ass-ni?
 book-ACC chair on put-PST-Interr
 'Did Cheli put the pen on the table or the book on the chair?'
 B: Ani, Cheli-nun kulehkey noh-ci anh-ass-e.
 no Cheli-TOP so put-NM not.do-PST-DCL

(Lit.) ‘No, Cheli didn’t put so.’

C: Ung, haciman Yengi-nun kulehkey
yes but Yengi-TOP so
noh-ci anh-ass-e.
put-NM not.do-PST-INFORMAL

(Lit.) ‘Yes, but Yengi didn’t put so.’

(14) A: Cheli-ka pheyn-ul thakca wi-ey kuliko
Cheli-NOM pen-ACC table on and
chayk-ul uyca wi-ey noh-ass-ni?
book-ACC chair on put-PST-Interr
‘Did Cheli put the pen on the table and the book on the chair?’

B: Ani, Cheli-nun kulehkey noh-ci anh-ass-e.
no Cheli-TOP so put-NM not.do-PST-DCL
(Lit.) ‘No, Cheli didn’t put so.’

C: Ung, haciman Yengi-nun kulehkey noh-ci
yes but Yengi-TOP so put-NM
anh-ass-e.⁶
not.do-PST-INFORMAL
(Lit.) ‘Yes, but Yengi didn’t put so.’

These examples reinforce the peculiarity of the V-stranding structure at issue, which is markedly distinguished in light of available interpretations from VP ellipsis, VP anaphora, and *kulehkey* ‘so’ anaphora.

Dismissing the V-stranding structure in question as not involving VP ellipsis, nor VP anaphora, nor *kulehkey* ‘so’ anaphora, we now assess whether the structure in question is derived from the *pro* strategy. Since Landau (2021) identifies the *pro* strategy with the more recent argument ellipsis (AE) strategy, the immediate question is whether AE can really account for the peculiar scope of conjunction/disjunction vis-à-vis negation. Considering Barbosa’s (2019) proposal that AE is not a DP but an NP ellipsis, we use English to inspect how disjunction/conjunction as part of NP ellipsis interacts with negation. The following examples make a point:

6 See Yang (1996), among others, for the use of *kuleha-* ‘do so’ and other variant forms in Korean that can be used to substitute for VP, AP, AdvP, TP, and CP. *Kulehkey* in (13) and (14) substitutes for PP (See the footnote 12 for the relevant discussion.).

- (15) A: Did John read Alex's book or article?
 B: Yes, but Mary didn't read Mark's book or article.
 C: Yes, but Mary didn't read Mark's.
- (16) A: Did John read Alex's book and magazine?
 B: Yes, but Mary didn't read Mark's book and article.
 C: Yes, but Mary didn't read Mark's.

Both (15C) and (16C) with a null NP are ambiguously interpreted, like (15B) and (16B) with its disjoined/conjoined overt counterpart. Effectively, (15C) as a reply to the 'yes/no' question with a disjunction in (15A) can allow a strong/'neither' reading, while (16C) as a reply to the 'yes/no' question with a conjunction in (16A) can allow a weak/'not both' reading. Both the readings comply with De Morgan's laws. Like full-form and elided VPs, full-form and elided NPs in English are analogous in negation-disjunction/conjunction scope relation.

Besides evidence from English, Korean also apparently renders evidence that it is not plausible to postulate a null argument in the V-stranding structure. Whether a null argument derives via the *pro* or AE strategy in Korean, it bears features like [Number].⁷ Therefore, when the two null objects are combined by a conjunction, they correspond to a plural pronoun. When the two null objects are combined by a disjunction, they correspond to a singular pronoun. We now use the null objects and their overt pronouns to test the scope interaction of conjunction/disjunction with negation:

- (17) A: Cheli-ka phyenuycem-eyse ancwu ttonun/hokun kansik-ul
 Cheli-NOM conve.store-in side.dish or snack-ACC
 sassta.
 bought
 'Cheli bought a side dish and a snack in a convenient store.'
- B: Ung, haciman Yengi-nun ancwu ttonun/hokun kansik-ul
 yes, but Yengi-TOP side.dish or snack-ACC
 sa-ci anhassta.
 buy-didn't

⁷ One of the reviewers pointed out that both *kukes* 'it' and *kukestul* 'them' are available as the overt pronominal counterparts of the null arguments found in these constructions. We admit that there is a speaker variation as for the overt pronominalization of the unrealized arguments.

‘Yes, but Yenghi didn’t buy a side dish or a snack there.’

C: Ung, haciman Yengi-nun kukes-ul sa-ci anhassta.

yes, but Yengi-TOP it-ACC buy-didn’t

‘Yes, but Yenghi didn’t buy it there.’

D: Ung, haciman Yengi-nun sa-ci anhassta.

yes, but Yengi-TOP buy-didn’t

‘Yes, but Yenghi didn’t buy it there.’

- (18) A: Cheli-ka phyenuycem-eyse ancwu kuliko kansik-ul sassta.
 Cheli-NOM conve.store-in side.dish and snack-ACC bought
 ‘Cheli bought a side dish and a snack in a convenience store.’

B: Ung, haciman Yengi-nun ancwu kuliko kansik-ul
 yes, but Yengi-TOP side.dish and snack-ACC
 sa-ci anhassta.

buy-didn’t

‘Yes, but Yenghi didn’t buy a side dish and a snack there.’

C: Ung, haciman Yengi-nun kukestul-ul sa-ci anhassta.

yes, but Yengi-TOP them-ACC buy-didn’t

‘Yes, but Yenghi didn’t buy them there.’

D: Ung, haciman Yengi-nun sa-ci anhassta.

yes, but Yengi-TOP buy-didn’t

‘Yes, but Yenghi didn’t buy them there.’

It is worth noting that, as expected from the discussion of Korean ‘do so’ and ‘so’ anaphora, the sentences containing pronouns in (17C) and (18C) are ambiguously interpreted analogously to those containing overtly realized disjoined/conjoined NPs in (17B) and (18B), respectively. This aspect of interpretation for the sentences that contain pronouns replacing the disjoined and the conjoined NPs is strikingly different from that for the sentences having the V-stranding structure in (17D) and (18D). The latter only allows a strong/‘neither’ interpretation, which is consistent with the pattern observed so far.

4. The peculiarity of V-stranding structure vis-à-vis negation

Apparently, based on the discussion in the previous section, we may conclude that

there is no syntactic structure for internal arguments in V-stranding structure. In the last five decades, however, almost nobody in generative grammar makes such an extreme claim, though there have been different theories of null arguments in East Asian languages, such as null pronominal *pro*, bare noun, VPE, AE, and NP ellipsis.⁸ We rehearse several pieces of evidence supporting the postulation of syntactic structure for null arguments in V-standing structure from a theory-neutral stance.

First, as Takahashi (2008) notes, in the following dialogue (rehearsed in Korean) the null argument [e] needs to retain the structure that its antecedent has, namely, a reflexive.

- (19) A: Cheli-ka_i [cakicasin-ul]_i pinanhayssta.
 Cheli-NOM himself-ACC blamed
 ‘Cheli blamed himself.’
 B: Toli-to [e] pinanhayssta.
 Toli-NOM blamed
 ‘Toli blamed [e].’

Just the postulation of a pronominal in (19B) would invite a violation of Binding Condition (C), contrary to fact.

Second, according to Takahashi (2008), the null argument in (20B) needs to be reconstructed with its antecedent QP for the non-E-type pronoun interpretation that it allows:

- (20) A: Kim kyoswu-ka [haksayngtul taypwupwun-ul] myentamhayssta.
 Kim Prof.-NOM students most-ACC consulted
 ‘Prof. Kim consulted most students.’
 B: Pak kyoswu-to [e] myentamhayssta.
 Pak Prof.-also consulted
 ‘Prof. Park consulted [e].’

Third, as Saito (2004) noted, the null argument in (21B) obtains a sloppy reading. Assuming that the pronoun/reflexive interpreted as a bound variable is reconstructed to obtain such a reading, the null argument in (23B) is taken to have the same structure

⁸ Li (2014) exceptionally argues in her discussion of Chinese covert pronominals that what is traditionally postulated as *pro* in this language is generated with an empty category.

as its antecedent:

- (21) A: Cheli-nun [caki-uy cha-lul] takkassta.
 Cheli-TOP self-GEN car-ACC washed
 ‘Cheli washed self’s car.’
 B: Yengi-nun [e] takk-ci anhassta.
 Yengi-TOP wash-didn’t
 ‘Yengi didn’t wash [e].’

Fourth, as noted by Park (2003) and Takahashi (2008), (22B) on top of (22A) in the following dialogue is scopally ambiguous. The QP-QP scopal interaction in this example renders compelling evidence that the null argument in (22B) preposed similar to its antecedent in (22A) needs to be postulated to have the same quantificational structure and also undergo scrambling:

- (22) A: [Haksayng motwu-lul] cokyo han myeng-i myentamhayssta.
 student every-ACC assistant one CL-NOM consulted
 ‘All the students, one assistant consulted.’
 B: [e] Kyoswu han pwun-to myentamhayssta.
 professor one CL-also consulted.
 ‘All the students, one professor consulted.’

We are now in a dilemma. When we examine the interaction of conjunction/disjunction with negation in V-stranding structure, it appears that there is no structure for an internal argument of the part after the stranded main V. However, when we examine the null arguments substituting for a reflexive, an NP containing a sloppy pronoun, and a quantified expression, they have syntactic structure in the analogous form of their antecedents.

To resolve this puzzle, we advance the following generalization:

- (23) Negation participates in scope interaction only via a functional head that licenses a null category.

In English, C, T, and D license TP (Sluicing), VP (more recently, vP), and NP

ellipsis, respectively. In addition to their roles as an ellipsis-licensing head, these heads serve as a link that assigns negation scope to the elements such as conjunction and disjunction inside TP/VP/NP ellipsis. As elaborated in the next section, negation scope assignment in this ellipsis context containing conjunction/disjunction feeds meeting De Morgan's laws. By contrast, null arguments or portions before stranded Vs in Korean are not derived by such licensing relations that functional heads endorse. The absence of such ellipsis-licensing functional heads for null arguments or portions before stranded Vs has an effect on precluding negation scope from affecting conjunction/disjunction inside them. Consequently, the negation with V-stranding structure ends up only negating the stranded V, i.e., denying the event described by the verb, which accounts for the availability of a strong/'neither' reading to the negated V-stranding reply to a 'yes/no' question containing a conjunction/disjunction.

The advantage of the proposed generalization in (23) is that it can also account for the scope that negation has vis-à-vis a null subject composed by a conjunction/disjunction. In Korean, a null argument can occur in subject as well as in object position. Since a null subject is not licensed by a selecting functional head, it is predicted to behave similar to a null object. The following examples in (24D) and (25D) fulfil the prediction:

- (24) A: Nwun-ina/hokun/ttonun pi-ka onul sewul-ey naylyessni?
snow-or rain-NOM today Seoul-in fell
'Did snow or rain fall in Seoul today?'
- B: Ung, haciman Cheli-nun [nwun-ina/hokun/ttonun pi-ka
yes, but Cheli-TOP snow-or rain-NOM
nayli-ci anhasstako] malhayssta.
fall-didn't-COMP said
'Yes, but Cheli said that snow or rain didn't fall there today.'
- C: Ung, haciman Cheli-nun [kukes-i naylici anhasstako] malhayssta.
yes but Cheli-NOM it-NOM fall-didn't said
'Yes, but Cheli said that it didn't fall there today.'
- D: Ung, haciman Cheli-nun [[e] naylici anhasstako] malhayssta.
yes but Cheli-NOM fall-didn't said
'Yes, but Cheli said that [e] didn't fall there today.'
- (25) A: Nwun-kwa/kuliko pi-ka onul sewul-ey naylyessni?

- snow-and rain-NOM today Seoul-in fell
 ‘Did snow and rain fall in Seoul today?’
- B: Ung, haciman Cheli-nun [nwun-kwa/kuliko pi-ka
 yes, but Cheli-TOP snow-and rain-NOM
 nayli-ci anhasstako] malhayssta.
 fall-didn’t-COMP said
 ‘Yes, but Cheli said that snow and rain didn’t fall there today.’
- C: Ung, haciman Cheli-nun [kukestul-i naylici anhasstako]
 yes but Cheli-NOM they-NOM fall-didn’t
 malhayssta.
 said
 ‘Yes, but Cheli said that they didn’t fall there today.’
- D: Ung, haciman Cheli-nun [[e] naylici anhasstako] malhayssta.
 yes but Cheli-NOM fall-didn’t said
 ‘Yes, but Cheli said that [e] didn’t fall there today.’

In response to (24A) with a disjunction or (25A) with a conjunction, (24B) & (25B) with an overt subject and (24C) & (25C) with an overt pronoun subject are ambiguously interpreted, having both a strong/‘neither’ and a weak/‘not-both’ reading. By contrast, (24D) and (25D) apparently only have a strong/‘neither’ reading. Based on (23), we can say that the absence of a selecting functional head for a null subject also precludes the negation from assigning its scope to conjunction/disjunction inside the null subject.

5. How our proposed generalization meets a pragmatic inference account

Lee and Park (2021) explore an alternative, pragmatic inference-based account for the fact that the negated V-stranding reply to the ‘yes/no’ question containing a conjunction is not subject to De Morgan’s laws, only allowing a strong/‘neither’ interpretation. After rejecting the V-stranding VPE analysis as a way of accounting for the elliptical conjunctive construction as reintroduced in (26), they entertain the other competing alternative analysis, i.e., AE. To account for how to warrant a strong/‘neither’ reading in (26C) as a response to the ‘yes/no’ question in (27A), Lee and Park (ibid.) follow Landau (2021) to pursue an AE analysis coupled with a pragmatic inference for (26C)

(cf. Kurafuji 2018).

- (26) A: Ne-nun chayk-ul chayksang-ey kuliko/{hokun, ttonun}
 you-TOP book-ACC desk-on and/or
 kongchayk-ul uyca-ey noh-ass-ni?
 notebook-ACC chair-on put-PAST-Q
 ‘Did you put the book on the desk and the notebook on the chair?’
- B: Ung, kulentey Yuni-nun aniya.
 Yes but Yuni-TOP not-DECL
 ‘Yes, but Yuni didn’t.’
- C: Ung, kulentey Yuni-nun noh-ci anh-ass-e.
 Yes but Yuni-TOP put-NEG-PAST-DECL
 ‘(Lit.) Yes, but Yuni didn’t put.’
- = (Strong Reading) ‘Yes, but Yuni didn’t put the book on the desk.
 Nor did she put the notebook on the chair.’

Lee and Park’s account for (26C) versus (26B) proceeds as follows. As mentioned above, there is a fundamental difference between the Stripping reply in (26B) and the V-stranding reply in (26C) as an answer to (26A). The Stripping reply without the main lexical verb solely negates the preceding proposition denoted by the positive polarity answer. If the proposition concerned is the one composed by a conjunction, the reply yields a weak/‘not both’ reading. Conversely, if the proposition is a disjunction, the reply yields a strong/‘neither’ reading. This interpretive difference is determined by the interaction of the grammatical system and De Morgan’s laws. In brief, what feeds into interpretation of the Stripping reply in (26B) is no other choice but the preceding proposition for the antecedent of the elided proposition.⁹

Things are different for the V-stranding negative reply to a conjunctive question in (26C). Specifically, the V-stranding reply cannot be interpreted on its own since the stranded lexical verb needs to be saturated in terms of semantic and categorial selectional restrictions. Without internal argument/arguments, the V-stranding negative reply cannot be interpreted since the verb alone does not provide any information for exactly which conjunct(s) in the preceding discourse should be chosen. Consequently, it may crash in

9 Here, the topic *Yuni-nun* and the negation *anh* are assumed to evacuate TP prior to TP ellipsis. The negative element is subsequently supported by the copular verb *-ita* ‘be.’

due course. How do you then obtain the intended meaning? According to Landau (2021), the maxim of quantity gives rise to a pragmatic scalar implicature that the elliptical reply 'I didn't put ___ ___' is as much informative as needed. Now, this enables us to infer that the V-stranding negative reply highlights both events involved in the question, i.e., I didn't put the book on the desk and I didn't put the notebook on the chair. Landau (2021) thus claims that the conjunctive, strong reading in the elliptical reply like (26C) does not arise from syntax, but from pragmatics.

We depart from Landau (2021), based on the proposed generalization in (23), repeated below:

- (23) Negation participates in scope interaction only via a functional head that licenses a null category.

Why does this restriction hold? We suggest that this restriction has to do with De Morgan's laws such as (i) NOT (A and B) = NOT A or not B; (ii) NOT (A or B) = NOT A and NOT B. De Morgan's laws are formulated in logic, but they are implemented in language via lowering of negation into both conjuncts/disjuncts.¹⁰ To determine its scope, negation outside a conjunction/disjunction lowers into both conjuncts/disjuncts, simultaneously either switching the intervening conjunction to a disjunction or the disjunction to a conjunction.¹¹ According to (23), the lowering of negation into both conjuncts/disjunctions to determine negation scope is generally allowed in ellipsis structures involving TP/VP/NP ellipsis that functional heads license. Therefore,

10 This Neg lowering operation is analogous to Neg raising or Neg transportation in that they both do not necessarily occur in any syntactic environments and can execute De Morgan's laws, yielding relevant interpretations. These two operations diverge in that the former manifests itself at covert syntax while the latter overtly.

11 Coordinator switch accompanied by negation lowering is taken to be analogous to a switch in the mode of interpretation for a QP when crossed by another QP. The following sentence is scopally ambiguous:

(i) Sensayngnim han pwun-ul haysang motwu-ka t conkyenghanta
 teach one CLF-ACC student every-NOM respect
 'One teacher every student respects.'

Assuming that the scope ambiguity of (i) is derived by optionally reconstructing the scrambled phrase to its base-generated position, we note that with the scrambled phrase on the surface position, the subject universal QP is construed as a group-denoting one, whereas with reconstruction, the subject QP is construed as a distributively interpreted one.

such functional heads not only serve as a licensing element for TP/VP/NP ellipsis, but also as a link through which negation lowering or scope-marking is executed, switching from one type of coordinator to another. A null argument is selected by a main verb, but not by a corresponding functional head. The absence of such a functional head with the V-stranding reply as in (26C) cannot license negation's lowering into each conjunct/disjunct consisting of null arguments, eventually failing to finalize coordinator switch. The result is that confronting a failure in the De Morgan's law-obeying interpretation of a conjunction/disjunction combining null arguments, the negative reply with the stranded V ends up being interpreted as a negation of the main verb alone. However, since the main verb as part of the negated V is a ditransitive verb, it needs to be interpreted along with the two argument NPs, which are recovered from the discourse context given. Note that though the conjunction/disjunction combining the null arguments in (26C) does not feed into a proper interpretation, the null arguments themselves are syntactically represented.¹² The evidence comes from the following examples:

- (27) A: Kim kyoswu-nun [caki-uy haksayng-eykey] [chwiephalako]
 Kim Prof.-NOM self-GEN student-to get.a.job
 kuliko [caki-uy cokyoy-eykey] [tayhakwen-ey kalako]
 and self-GEN assistant-to graduate.school-to go
 malhayss-ni?
 said-Q
 'Did Prof. Kim tell his student to get a job and his assistant to enter
 graduate school?'
 B: Ung, haciman Lee kyoswu-nun _____ malha-ci anhasse.
 yes but Lee Prof.-TOP say-didn't
 '(Lit.) Yes, but Prof. Lee didn't say.'
 (28) A: Kim kyoswu-nun [caki-uy haksayng-eykey] [chwiephalako]
 Kim Prof.-NOM self-GEN student-to get.a.job

12 We follow Pesetsky (1995) in postulating the internal structure of a ditransitive VP. Specifically, we propose that in the V-stranding elliptical coordinate constructions as in (26C), the overt verb selects a coordinated PP. Since this PP undergoes ellipsis under identity with the one in the antecedent clause, there is no need for VP ellipsis. In the proposed structure, the two internal arguments-theme and locative-respectively occupy the specifier and the complement position of a prepositional phrase.

ttonun/hokun [caki-uy cokyoyeykey] [tayhakwen-ey kalako]
 or self-GEN assistant-to graduate.school-to go
 malhayss-ni?
 said-Q

‘Did Prof. Kim tell his student to get a job or his assistant to enter
 graduate school?’

B: Ung, haciman Lee kyoswu-nun _____ malha-ci anhasse.
 yes but Lee Prof.-TOP say-didn’t
 ‘(Lit.) Yes, but Prof. Lee didn’t say.’

(27A) and (28A) have a conjunction and disjunction in the ‘yes/no’ question, respectively. Like (26C), the V-stranding negative replies to them in (27B) and (28B) only elicit a strong/‘neither’ reading. Assuming that a sloppy reading available to the reflexive as part of the null argument in (27B) and (28B) stems from their being syntactically represented like their antecedents, we suggest that the recovery of the null arguments with the stranded main verb *noh-* ‘put’ in (26C) is made with reference to their full syntactic representations. Since the negated main verb gives rise to a negation of both conjuncts/disjuncts, the V-stranding negative reply in (26C) eventually yields a strong/‘neither’ reading.

We want to emphasize that the failure in a proper interpretation of the conjunction/disjunction in compliance with De Morgan’s laws in such cases like (26C) arises only in the scope of negation with the conjunction/disjunction combining null argument, which undergo lowering into both conjuncts/disjuncts. Alternatively, the conjunction/disjunction is retained in the interpretation of the structure where null arguments are combined by it, as follows:

- (29) a. Cheli-ka [e] nohun taylo/kes-chelem, Yengi-ka [chayk-ul
 Cheli-NOM put in.the.same.way Yengi-NOM book-ACC
 chayksang-ey kuliko kongchayk-ul uyca-ey] nohassta.
 table-on and notebook-ACC chair-on put
 ‘As Cheli did, Yengi put the book on a table and the notebook on a
 chair.’
 [e] = [chaykul chayksangey kuliko kongchaykul uycaey]
 b. Cheli-ka [e] nohun taylo/kes-chelem, Yengi-ka [chayk-ul

Cheli-NOM put in.the.same.way Yengi-NOM book-ACC
 chayksang-ey ttonun/hokun kongchayk-ul uyca-ey] nohassta.
 table-on or notebook-ACC chair-on put
 ‘As Cheli did, Yengi put the book on a table or the notebook on a chair.’
 [e] = [chaykul chayksangey kuliko kongchaykul uycaey]

The V-stranding clauses in (29a) and (29b) are not negative but positive. These clauses without a negation have nothing to do with De Morgan’s laws, which enforce a lowering of the negation into conjuncts or disjuncts. Therefore, without such a lowering the conjunction/disjunction combining null arguments in (29a) and (29b) can be appropriately interpreted, corresponding to the one combining overt arguments in the antecedent clauses.

The following sets of examples demonstrate that on top of V-stranding positive clauses as in (29a) and (29b), V-stranding negative clauses in certain structural contexts can also retain the conjunction/disjunction corresponding to its counterpart in antecedent clauses. Meanwhile, (30B) and (30C) correspond to (26B) and (26C), respectively, but the V-stranding negative replies come with an additional adjectival or adverbial element. Interestingly, though, unlike (26B), (30B) as well as (30C) is interpreted as retaining the conjunctive coordinator in the parallel way to its counterpart that conjoins the overt arguments in (30A), not complying with De Morgan’s laws. Moreover, (30B) and (30C) with an adjectival or adverbial element (in the negative contexts) are intriguing in that they do not comply with De Morgan’s laws nor do they produce a strong/‘neither’ reading unlike other examples without those elements.

- (30) A: Cheli-ka chayk-ul chayksang-ey kuliko
 Cheli-NOM book-ACC table-on and
 kongchayk-ul uyca-ey cosimsulepkey nohassni?
 notebook-ACC chair-on carefully put
 ‘Did Cheli put the book on a table and the notebook on a chair?’
 B: Ung, kulentey Yengi-nun ____ cosimsulep-ci anhasse.
 yes, but Yengi-TOP careful-wasn’t
 ‘Yes, but Yengi wasn’t careful.’
 ‘both’-reading & NOT.CAREFUL
 C: Ung, kulentey Yengi-nun ____ cosimsulepkey nohci anhasse.

yes, but Yengi-TOP carefully put-didn't
 'Yes, but Yengi didn't put carefully.'
 'both'-reading & NOT.CAREFULLY

A similar interpretation is obtained in (31B) with an adjective and (31C) with an adverb, which are replies to the 'yes/no' question containing the disjunction in (31A). Both (31B) and (31C) have an interpretation retaining the disjunction, contrary to De Morgan's laws.

- (31) A: Cheli-ka chayk-ul chayksang-ey ttonun/hokun
 Cheli-NOM book-ACC table-on or
 kongchayk-ul uyca-ey cosimsulepkey nohassni?
 notebook-ACC chair-on carefully put
 'Did Cheli put the book on a table or the notebook on a chair?'
 B: Ung, kulentey Yengi-nun ____ cosimsulep-ci anhasse.
 yes, but Yengi-TOP careful-wasn't
 'Yes, but Yengi wasn't careful.'
 'either'-reading & NOT.CAREFUL
 C: Ung, kulentey Yengi-nun ____ cosimsulepkey nohci anhasse.
 yes, but Yengi-TOP carefully put-didn't
 'Yes, but Yengi didn't put carefully.'
 'either'-reading & NOT.CAREFULLY

Evidently, (30B/31B) and (30C/31C) as well as (26C) contradict De Morgan's laws. When V-stranding replies in the presence of the negation undergo interpretation, not being subject to De Morgan's laws, the negation is apparently not allowed to lower into both conjuncts/disjuncts, thereby not warranting a switch from conjunction to disjunction or the other way around. Despite this commonality, (30B/31B) and (30C/31C) differ from (26C) with regard to the final interpretation. In the former cases, the negation is attracted to the manner adverb or its adjective counterpart. The focus of the negation on these elements precludes it from lowering into both conjuncts/disjuncts. By contrast, since the focus of the negation in (26C) is on the coordinator combining null arguments, the negation requires to be lowered into each of the two conjuncts/disjuncts but it fails; remember that its lowering is a way of realizing an interpretation in line with De

Morgan's laws. Confronting a potentially anomalous interpretation, (26C) resorts to the alternative interpretive strategy suggested above. In this strategy, the stranded V in (26C) is considered to denote one event, but given the discourse context, the event consists of two sub-events. The V-stranding reply in (26C) is construed as negating the two sub-events at hand, yielding a strong/'neither' reading.

To reiterate, our account for (26C) based on (23) does not rely on pragmatic inference suggested in Landau (2021). When the conjunction/disjunction combining null arguments comes with a negation, to comply with De Morgan's laws the latter is required to undergo a lowering into both conjuncts/disjuncts, but fails owing to the lack of a functional category licensing a null argument. Consequently, the V-stranding negative reply is interpreted as a negated V. Specifically, it is construed as negating the event denoted by the V.¹³ Null argument(s) as its internal argument(s) are syntactically fully represented with reference to their corresponding ones in the antecedent clause. The conjunction/disjunction is not retained, however, since it is not appropriately licensed in the context at hand; rather the negated V picked up for interpretation entails that all the events at issue are negated, thereby yielding a strong/'neither' interpretation, regardless of whether the 'yes/no' question contains a conjunction or disjunction.

This line of analysis for (26C) gains support from the interaction of the additive particle and the V-stranding positive continuation after a disjunctive clause. Modeled after Landau's (2021) paradigm of Russian examples, Lee and Park (2021) note that after the disjunctive clause in (32A), the verbless Stripping 'also'-continuation in Korean has a disjunctive meaning as specified in the English annotation of (32B), while the V-stranding continuation has no meaningful denotation as the acceptability of (32C) is marginal.

- (32) A: Yuna-nun chayk-ul chayksang-ey ttonun
 Yuna-TOP book-ACC desk-on or
 kongchayk-ul uyca-ey noh-ul ke-ya.
 notebook-ACC chair-on put-CONJEC-DECL

13 Landau (2021) specifically claims that Grice's (1975) maxim of quantity is at work in the interpretation of the stranded V. We suggest instead that what is at stake in this interpretation is the maxim of relation. If the stranded V was construed as denoting a general event, it would be infelicitous to the discourse at hand. To make it relevant to the discourse at hand, it or its sub-events needed to be specified reflecting the discourse.

‘Yuna will put the book on the desk or the notebook on the chair.’

B: Yuni-to.

Yuni-also.

‘Yuni will also put the book on the desk or the notebook on the chair.’

C: ??Yuni-to ____ noh-ul ke-ya.

Yuni-also put-CONJEC-DECL.

Lee and Park again note that the VSVPE account faces difficulty in accounting for the semantic anomaly in (32C), which should have the same reading as (32B), given the VSVPE analysis proposed in Gribanova (2014). Specifically, on the VSVPE analysis, the derivation of (32B) and (32C) would be identical except the fact that only in (32C) the verb is raised and survives deletion. These similar derivational processes further predict that those two continuations would be assigned the same structure and interpretation at LF.¹⁴ This prediction, however, is not borne out since (32C), not (32B) is judged as uninterpretable. Accordingly, Lee and Park suggest that a disjunctive VP not be posited at the ellipsis site in (32C).

Landau’s (2021) line of analysis that Lee and Park assume, that is, AE with the aid of pragmatic inference, predicts (32C) to yield indeterminacy in terms of semantic interpretation. In Landau’s (ibid.) analysis, this indeterminacy is caused by the coexistence of *-to* ‘also’ and disjunction. Specifically, (32C) can be read either as *Yuni will put the book on the desk* or as *Yuni will put the notebook on the chair*. Nevertheless, (32A) does not entail either *Yuni will put the book on the desk* or *Yuni will put the notebook on the chair* since a disjunction is not capable of entailing either disjunct. This can be restated in the following set-theoretic terms: (32A) entails no member of $S1=\{p : p = x \text{ will put the book on the desk}\}$ and no member of $S2=\{p : p = x \text{ will put the$

14 For (32B) and (32C), one can assume the identical LF structure as in (i). Specifically, the deleted part under identity to the preceding utterance is placed back to the original position.

(i) Yuni-to chayk-ul chayksang-ey ttonun kongchayk-ul uyca-ey
 Yuni-also book-ACC desk-on or notebook-ACC chair-on
 noh-ul ke-ya.
 put-CONJEC-DECL

This assumption, however, is discarded due to a grammatical contrast between (32B) and (32C). Instead, Lee and Park (2021) resort to a pragmatic account since syntax alone has a difficulty in accounting for the contrast between the two.

notebook on the chair}. Consequently, (32C) is judged to be marginal or unacceptable.

In our proposed analysis based on (23), contrary to the negative counterpart, the positive form of stranded V as in (32C) is construed as an affirmation of the event described by the V, i.e., asserting the occurrence of the event at hand. As noted by Lee and Park (2021), the critical element that engenders the interpretational marginality of (32C) is the additive particle *-to* on the subject NP in this example, which requires interpretational parallelism between the event of the antecedent VP in (32A) and that of the stranded V in (32C).¹⁵ Despite this requirement, what the stranded V in (32C) can recover from the antecedent clause is both sub-events or either one entailed by them, thus not meeting the parallelism that the additive focus particle calls for.

Corresponding to negation, we suggest that the implicit sentential focus head associated with the additive focus particle *-to* on the subject NP (as suggested in Chomsky (1957) and Laka (1990)) undergoes lowering into both conjuncts/disjuncts. Therefore, the generalization in (23) accommodating such an implicit sentential focus head is modified as in (23') below:

- (23') Focus-bearing elements such as negation and the (implicit) sentential focus head associated with the additive particle can participate in scope interaction only via a functional head that selects a null category.

This generalization is based on the fact that negation lowering is a type of focus attraction. Unlike overt or anaphoric forms, elliptical parts have no lexical sources that attract the focus-bearing negative head. Given that functional heads drive negation

15 Unlike in the context of the additive particle *-to* 'also,' when a variety of other focus particles are attached on a subject NP, a disjunctive interpretation of null arguments is allowed as in (iB):

- (i) A: Namhaksayng cwungeyse-nun Cheli-nun/man/maceto/kkacito/cochato
 male.students among-TOP Cheli-TOP/ONLY/EVEN
 chayk-ul chayksang wicy ttonun/hokun kongchayk-ul uyca-ey nohasse.
 book-ACC table on or notebook-ACC chair-on put
 'Among male students, it was Cheli that/only Cheli/even Cheli put the book on a table and the notebook on a chair.'
- B: Yehaksayng cwungeysenun Yengi-nun/man/maceto/kkacito/cochato
 female.students among-TOP Yengi-TOP/ONLY/EVEN
 — nohasse.
 put
 'Among female students, it was Yengi that/only Yengi/even Yengi put the book on a table and the notebook on a chair.'

lowering, it is natural that V-stranding elliptical constructions do not allow negation lowering. Rather, the focus of negation falls on the stranded verb itself. Note further that an implicit sentential focus head fails to undergo lowering into both conjuncts/disjuncts owing to the lack of a functional head that licenses null arguments. Consequently, in those structural contexts as in (32C) above, the stranded V alone undergoes interpretation, asserting the occurrence of the event described by it, with its internal arguments recovered from the discourse. Since the event at hand represents two sub-events (denoted by the two disjunct VPs in the antecedent clause), the stranded V asserts these two sub-events or either one entailed by them, which is short of meeting the parallelism to the disjunctive arguments in the antecedent clause.

The following example lends support for the analysis of (32C) based on lowering the implicit sentential focus head associated with *-to* ‘also’ into both disjuncts. Recall that the attraction of negation to a manner adverb obviates its lowering into both conjuncts/disjuncts, thereby the conjunction/disjunction combining null arguments being retained in the interpretation of a V-stranding negative reply. Effectively, (33B) having the stranded V with a manner adverb can also maintain the disjunction for its interpretation given that like the negation attracted to a manner adverb in (30C) and (31C), the implicit sentential focus head associated with the additive particle *-to* is attracted to a manner adverb. Accordingly, such an implicit sentential focus head does not undergo lowering, thereby the disjunction combining null arguments feeding into an interpretation as it is, eventually meeting the interpretational parallelism between the two VPs in (33A) and (33B):

- (33) A: Cheli-nun chayk-ul chayksang wiey ttonun/hokun
 Cheli-TOP book-ACC table on or
 kongchayk-ul uyca-ey cosimsulepkey nohasse.
 notebook-ACC chair-on carefully put
 ‘Cheli put the book on a table or a notebook on a chair carefully.’
 B: Yengi-to ____ cosimsulepkey nohasse.
 Yengi-also carefully put
 ‘(Lit.) Yengi also put ____ carefully.’

We also assume by parity of logic that the lowering of the implicit sentential focus head associated with the additive particle *-to* ‘also’ applies to (34B) as well, where

unlike that in (32C) after the disjunctive VP in (32A), the stranded V after the conjunctive VP in (34A) sounds natural. In our analysis, the naturalness of (34B) falls out since the conjunctive meaning needed for the stranded V stems from the by-default ‘conjunctive’ specification of the two sub-events for the event denoted by it.

- (34) A: Yuna-nun chayk-ul chayksang-ey kuliko kongchayk-ul
 Yuna-TOP book-ACC desk-on and notebook-ACC
 uyca-ey noh-ul ke-ya.
 chair-on put-CONJEC-DECL
 ‘Yuna will put the book on the desk or the notebook on the chair.’
 B: Yuni-to noh-ul ke-ya.
 Yuni-also put-CONJEC-DECL

Note that (32C) is initially interpreted through the by-default ‘conjunctive’ specification of the two sub-events for the event denoted by the stranded verb, which will not meet the interpretational parallelism between the two VPs in (32A) and (32C) imposed by the additive particle. Although it is preferentially induced by the disjunction combining overt arguments in the antecedent clause, the specification of one single sub-event entailed by the two sub-events will not meet the interpretational parallelism, either.

We do not deny that, given the two sub-events introduced in (32A), it is possible, albeit quite difficult, to infer the disjunctive relation of them, thus perceiving (32C) as felicitous to the discourse at hand. Note, however, that (32C) differs from the Stripping version in (32B) above and the anaphoric VP/vP versions in (35A-B) below as a continuation of (32A). Meanwhile, (35A) and (35B) each sound natural since the disjunction can be recovered syntactico-semantically in terms of the way of interpreting ellipsis/anaphora.

- (35) A: Yuni-to kulehkey noh-ul ke-ya.
 Yuni-also so put-CONJEC-DECL
 B: Yuni-to kulehkey ha-l ke-ya.
 Yuni-also so do-CONJEC-DECL

This contrast reinforces the thesis that unlike its counterpart in (35A-B), the stranded

V in (32C) recovers the disjunctive relation of the two sub-events as part of its antecedent VP not via syntactic/semantic reconstruction, but via consideration of the discourse given, i.e., the preceding sentence and the V-stranding interpretational processes resorting to (23').

To recap, like negation the implicit sentential focus head associated with the additive particle *-to* 'also' undergoes lowering into conjuncts/disjuncts, but in the absence of a functional head that selects a null argument, it fails to lower. Therefore, the V-stranding clause with the additive particle on a subject undergoes interpretation, asserting an affirmation of the event denoted by the stranded V. The event at hand represents the two sub-events introduced by the VP in the antecedent clause, either sub-event, or a disjunction of them, the latter two of which come via entailment from the two sub-events. Accordingly, the culprit of the interpretational marginality for (32C) is that in the course of its interpretation the stranded V can hardly retrieve the disjunction from its antecedent clause in (32A).

5. Summary and conclusion

Gribanova (2013) proposes a V-stranding VP ellipsis analysis for V-stranding negative replies to 'yes/no' disjunctive questions in Russian, which like Stripping counterparts yield a strong/'neither' interpretation in compliance with De Morgan's laws. Conversely, Landau (2021) argues against such an analysis, demonstrating that unlike Stripping counterparts, V-stranding negative replies to 'yes/no' conjunctive questions allow for a strong/'neither' interpretation and do not conform to De Morgan's laws. Building on these two works, we examine Korean V-stranding replies to verify that the same pattern as in Russian holds in Korean. Given that VP ellipsis is unavailable in Korean, V-stranding does not derive from V-stranding VP ellipsis, which reinforces Landau's (2021) analysis resorting to Argument Ellipsis. Based on English, in which some transitive verbs are realized without their internal arguments, we assessed the hypothesis that the internal arguments of a stranded verb have no syntactic structures. This hypothesis, however, has been discarded due to empirical evidence that supports the existence of full-fledged structures within the internal arguments. Subsequently, as an account for a strong/'neither' reading in V-stranding negative replies to 'yes/no' conjunctive/disjunctive questions, we propose that interpretations in compliance with De

Morgan's laws are fed by negation lowering accompanied by a switch of the intervening coordinator. We suggest that the absence of functional heads bleeds this syntactic process in V-stranding negative constructions with a conjunction/disjunction combining null arguments. Specifically, in V-stranding negative replies to 'yes/no' conjunctive/disjunctive questions, negation stays in-situ without lowering, and the elliptical part is assigned a conjunctive interpretation by default, producing a strong/'neither' reading. To bolster the proposed analysis, we examined other related contexts as well. In V-stranding positive replies, the conjunction/disjunction combining null arguments is recovered as it is from the antecedent clause. Similarly, when the focus of negation does not fall on the stranded verb itself but other elements such as a manner adverb, negation lowering does not occur, with the original coordinator retained in the interpretation of V-standing negative replies. We further demonstrated that the implicit sentential focus head associated with the additive particle can undergo lowering only in the presence of a functional head. Taken together, we could account for a gamut of interpretations concerning elliptical coordinate constructions by lowering operation of a variety of focus-bearing heads. This work adds more empirical evidence to the claim that De Morgan's laws do not account for natural languages as they do work for propositional logic (Lee and Park 2021, a.o., cf. Krivochen 2019).

References

- Barbosa, Pilar P. 2019. *pro* as a minimal nP: Toward a unified approach to *pro*-drop. *Linguistic Inquiry* 53(3): 487-526.
- Chao, Wynn. 1987. *On ellipsis*. PhD Dissertation. Amherst, MA: University of Massachusetts.
- Chomsky, Noam. 1957. *Syntactic structures*. The Hague: Mouton.
- Fillmore, Charles. 1986. Pragmatically controlled zero anaphora. *Proceedings of the Berkeley Linguistics Society* 12: 95-107.
- Gribanova, Vera. 2013. A new argument for verb-stranding verb phrase ellipsis. *Linguistic Inquiry* 44(1): 145-157.
- Grice, H. Paul. 1975. Logic and conversation. In Peter Cole and Jerry Morgan (eds.), *Syntax and semantics*, 41-58. New York: Academic Press.
- Huang, C.-T. James. 1987. Remarks on empty categories in Chinese. *Linguistic Inquiry* 18(2): 321-337.
- Huang, C.-T. James. 1988. Comments on Hasegawa's paper. In Wako Tawa and Mineharu Nakayama

- (eds.), *Proceedings of Japanese syntax workshop: Issues on empty categories*, 77-93. New London: Connecticut College.
- Huang, C.-T. James. 1991. Remarks on the status of the null object. In Robert Freidin (ed.), *Principles and parameters in comparative grammar*, 56-76. Cambridge, MA: The MIT Press.
- Krivochen, Diego Gabriel. 2019. De Morgan's laws and NEG-raising: A syntactic view. *Linguistic Frontiers* 1(2): 112-121.
- Kurafuji, Takeo. 2018. Pragmatic effects on interpretations of null arguments: Evidence from disjunctive antecedent cases. *Words and their twists* 6, *A collection of memorials to Professor Sachiko Shimazu*: 227-242. Kyoto, Japan: Ritsumeikan University.
- Laka, Itziar. 1990. *Negation in syntax: On the nature of functional categories and projections*. PhD Dissertation. Cambridge, MA: Massachusetts Institute of Technology.
- Landau, Idan. 2020. On the non-existence of verb-stranding VP-ellipsis. *Linguistic Inquiry* 51(2): 341-365.
- Landau, Idan. 2021. Ellipsis with a coordinated antecedent: An alternative to V-stranding VP-ellipsis. *Studia Linguistica* 75(1): 1-23.
- Lee, Wooseung and Myung-Kwan Park. 2021. Argument ellipsis vs. V-stranding VP ellipsis: Evidence from conjunctive/disjunctive constructions in Korean. *Studies in Generative Grammar* 31(4): 515-536.
- Li, Yen-Hui Audrey. 2014. Born empty. *Lingua* 151(Part A): 43-68.
- Otani, Kazuyo and John Whitman. 1991. V-raising and VP-ellipsis. *Linguistic Inquiry* 22(2): 345-358.
- Park, Bum-Sik. 2003. When can scope economy be violated? *Proceedings of the 4th GLOW in Asia 2003, Generative Grammar in a broader perspective*: 525-544. Seoul: Hankwukmwunhwasa.
- Pesetsky, David. 1995. *Zero syntax*. Cambridge, MA: The MIT Press.
- Saito, Mamoru. 2004. Ellipsis and pronominal reference in Japanese clefts. *Nanzan Linguistics* 1: 21-50. Nagoya: Nanzan University.
- Takahashi, Daiko. 2008. Quantificational null objects and argument ellipsis. *Linguistic Inquiry* 39(2): 307-326.
- Yang, Myung-Hee. 1996. *Hyentay Kwuke Tayyonge-ey kwanhan yenkwu* (A study on the substitutes in the modern Korean language). PhD Dissertation. Seoul: Seoul National University.

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