Semantic identity vs. phonological identity:
Some implications for verb-less coordination in Korean

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1. Introduction

- Verb-less Coordination (hereafter, VLC):
  Coordination in which sharing verbal element is pronounced only in the last conjunct.

(1) a. John-un Mary-lul, (kuliko) Bill-un Sue-lul mannassta (Korean)
    John-Top Mary-Acc and Bill-Top Sue-Acc met
    John (met) Mary, and Bill met Sue.'

b. John-ga Mary-ni, (sosite) Bill-ga Susan-ni atta (Japanese)
    John-Nom Mary-Dat and Bill-Nom Susan-Dat met
    John (met) Mary, and Bill met Susan.'

- Previous approaches to Japanese/ Korean VLCs

(2) Movement analyses
      ▶ Predictions: ATB movement effects?? PF-movements?
      ▶ Problems: non-movement effects (anti-connectivity, no islands effects, non-constituent movements)

(3) Multiple dominance analyses
   ▶ Predictions: distributive effects (plurality dependent expressions: Chung 2004)
   ▶ Problems: vehicle change effects (s-identity), homophony effects (p-identity)

(4) In-situ PF deletion analyses
   a. p-ellipsis + s-ellipsis (Mukai 2003): In-situ PF-deletion based on phonological (and semantic) identity
      ▶ Predictions: non-constituent deletion and no islands effect
      ▶ Problems: homophony, vehicle change effects with no p-identity, distributive effects
      ▶ Predictions: vehicle change effects
      ▶ Problems: homophony, distributive effects
   c. p-ellipsis: In-situ PF-deletion based on phonological identity
      ▶ Predictions: homophony, distributive effects
      ▶ Problems: vehicle change effects with no p-identity

(5) Our dual analysis: p-ellipsis applies only in distributive contexts; elsewhere s-ellipsis applies.
   ▶ Predictions: since p-ellipsis and s-ellipsis are mutually exclusive, they cannot apply to the same VLC.
   ▶ Thus, if there exist contexts where both p-ellipsis and s-ellipsis are forced to apply, the result is *.
2. Against movement analysis

- **NON-CONSTITUENCY:**
  The first conjunct remnant John-un Mary-uy or shared part chayk-ul pillyessta can be a non-constituent in VLC.

  John-Top Mary-Gen Tom-Top Jane-Gen book-Acc borrowed
  John (borrowed) Mary’s (book), and Tom borrowed Jane’s book.’

  (7) a. * John-un1 Mary-uy2, Tom-i Jane-eykey [t1 t2 chayk-ul pillyessta-ko] malhayssta
  John-Top Mary-Gen Jane-Nom wrote article-Acc borrowed-Comp said
  ‘Tom said to Jane that John borrowed Mary’s book.’
  
  b. * Tom-i Jane-eykey [John-i Mary-uy t1 t2 ] malhayssta, [chayk-ul, pillyessta-ko,
  Tom-Nom Jane-Dat John-Nom Mary-Gen said book-Acc borrowed-Comp
  ‘Tom said to Jane that John borrowed Mary’s book.’

  → Neither of the strings in (6), namely, the remnant nor shared part, can be subject to any movement transformation in non-coordinated contexts, as shown in (7).

- **NO ISLANDS EFFECT:**
  VLC doesn’t seem to respect the islands condition: Tom-i in (8) moves out of CNPC.

  (8) John-un Tom-i, Mary-nun [Jane-i ssun kul]-ul ilkessta
  John-Top Tom-Nom Mary-Top Jane-Nom wrote article-Acc read
  ‘John read (the article that Tom wrote), and Mary read the article that Jane wrote.’

  Movement approaches incorrectly predict (8) to be ill-formed as a Subjacency violation, since movements of the embedded subjects Tom-i and Jane-i or ssu-n ‘wrote-adnominalizer’ may violate CNPC in the leftward or rightward movement analysis, respectively.
Mukai’s (2003) in-situ deletion or string deletion (henceforth, SD) analysis

(9) String Deletion: The struck-through part is deleted provided that it is identical to the underlined part as a phonetic string.

\[
\begin{align*}
\text{John} & \quad \text{Mary} & \quad \text{met} & \quad \text{and} & \quad \text{Bill} & \quad \text{Jane} & \quad \text{met} \\
\text{John-Nom} & \quad \text{Mary-Acc} & \quad \text{met} & \quad \text{and} & \quad \text{Bill-Nom} & \quad \text{Jane-Acc} & \quad \text{met} \\
\text{John (met) Mary, and Bill met Susan.’}
\end{align*}
\]

- SD applies to a phonetic string, regardless of its constituency. As a result, non-constituent deletion in (6) and no islands effect in (8) of VLCs are directly captured, as shown in (10).

(10) a. John-un Mary-uy \textit{chayk\text{-}ul pillyessta}, Tom-un Jane-uy \textit{chayk\text{-}ul pillyessta}  \\
b. John-un Tom-i \textit{ssun kul\text{-}ul ilkessta}, Mary-nun Jane-i \textit{ssun kul\text{-}ul ilkessta}

2. Against SD analysis

- SD approach essentially assumes the (PF) parallelism between coordinate conjunction and VLC.
- Chung (2004) provides counterexamples, based on plurality-dependent expressions (hereafter, PDEs) in Korean: i.e., the dummy plural marker \textit{-tul}, the reciprocal \textit{selo} ‘each other’, and the distributive adverb \textit{kakkak} ‘each’. PDEs should be linked to a plural element, and they “are not licensed in a simple or coordinate sentence when no plural element is available in the local domain.” (Chung, 2004, p. 799) However, surprisingly VLC feeds the licensing of PDE unlike its counterpart of coordinate sentences.

- No parallelism between coordinate conjunction and VLC

A. Dummy plural marker(DPM) - \textit{tul} (Chung 2004)

- It is not licensed in a simple or coordinate sentence when no plural element is available in the local domain, as shown in (11a) and (11b).

\quad \text{John-Top article-Acc hard-Plural read-Pst-Dec} \\
\quad ‘John read articles hard.’  \\
b. John-un nonmwun-ul \textit{yelsimhi(tul)} ilk-ess-ko  \\
\quad \text{John-Top article-Acc hard-Plural read-Pst-and}  \\
\quad \text{Mary-nun chayk-ul \textit{yelsimhi(tul)} ilk-ess-ta.}  \\
\quad \text{Mary-Top book-Acc hard-Plural read-Pst-Dec}  \\
\quad ‘John reads articles hard and Mary read books hard.’

- However, DPM - \textit{tul} is licensed in VLC constructions as in (12).

\quad \text{John-Top article-Acc and Mary-Top book-Acc hard-Plural read-Pst-Dec}  \\
\quad ‘John reads articles hard and Mary reads books hard.’ (from Chung 2004: (17))
If (12) is derived from (11b), it must be predicted to be unacceptable, contrary to fact.

B. The reciprocal selo ‘each other’ and distributive adverb kakak ‘respectively’

- Both of them are not licensed in a simple or coordinate sentence when no plural element is available in the local domain, as in (11a, b) and (12a, b). However, they are licensed in VLC constructions as in (13c) and (14c).

   John-Top poem-Acc each other-Dat read-E give-Pst-Dec
   # ‘John read poems to each other.’
   b. *John-un si-lul selo-eykey ilk-e cwu-ess-ko
   John-Top poem-Acc each other-Dat read-E give-Pst-and
   Sue-nun sosel-ul selo-eykey ilk-e cwu-ess-ta
   Sue-Top story-Acc each other-Dat read-E give-Pst-Dec
   # ‘John read poems to each other and Sue read stories to each other.’
   c. John-un si-lul (kuliko) Sue-nun sosel-ul selo-eykey
      John-Top poem-Acc and Sue-Top story-Acc each other-Dat
      ilk-e cwu-ess-ta.
      read-E give-Pst-Dec
      ‘John read poems and Sue read stories to each other.’ (from Chung 2004: (18))

(14) a. *Tom-un minyo-lul (*kakkak) pwulu-ess-ta
   Tom-Top folk song-Acc each sing-Pst-Dec
   ‘Tom each sang folk songs.’
   b. *Tom-un minyo-lul (*kakkak) pwulu-ess-ko
   Tom-Top folk song-Acc each sing-Pst-and
   Sue-nun phapsong-ul (*kakkak) pwulu-ess-ta
   Sue-Top pop song-Acc each sing-Pst-Dec
   ‘Tom each sang folk songs and Sue each sang pop songs.’
   c. Tom-un minyo-lul (kuliko) Sue-nun phapsong-ul (kakkak) pwulu-ess-ta
      Top-Top folksong-Acc and Sue-Top pop song-Acc each sing-Pst-Dec
      ‘Tom each sang folk songs and Sue each sang pop songs.’ (from Chung 2004: (19))

C. The presence of sentence-internal reading of kathun ‘same’ and talun ‘different’ (Takano 2002, Chung 2004)

- Sentence-internal reading is not licensed in a coordinate sentence when no plural element is available in the local domain, as in (15a, b).

   John-Top Mary-Dat same book-Acc gave-and Tom-Top Jane-Dat same book-Acc gave
   ‘John gave the same book to Mary, and Tom gave the same book to Jane.’
   (only sentence-external reading)

b. John-un Mary-eykey talun chayk-ul cwuess-ko Tom-un Jane-eykey
   John-Top Mary-Dat different book-Acc gave-and Tom-Top Jane-Dat
talul chayk-ul cwuessta
different book-Acc gave
   ‘John gave a different book to Mary, and Tom gave a different book to Jane.’
   (only sentence-external reading)
However, sentence-internal reading is licensed in VLC constructions as in (16a, b).

\[(16)\]

a. John-un Mary-eykey, kuliko Tom-un Jane-eykey kathun  
   John-Top Mary-Dat and Tom-Top Jane-Dat same  
   chayk-ul cwuessta  (sentence-external and sentence-internal reading)  
   book-Acc gave  
   ‘John gave the same book to Mary, and Tom gave the same book to Jane.’  

b. John-un Mary-eykey, kuliko Tom-un Jane-eykey talun  
   John-Top Mary-Dat and Tom-Top Jane-Dat different  
   chayk-ul cwuessta  (sentence-external and sentence-internal reading)  
   book-Acc gave  
   ‘John gave a different book to Mary, and Tom gave a different book to Jane.’

D. Crossing dependencies (cf. de Vos and Vicente 2005)

- The simple NP/PP coordination in Korean can both display collective or distributive reading.

\[(17)\]

John-i Mary-lul, kuliko Tom-i Jane-ul hakkyo-eyse kuliko cip-eyse mannassta.  
John-Nom Mary-Acc and Tom-Nom Jane-Acc school-at and home-at met  
‘John met Mary at school and Tom met Jane at home (, respectively).’ or ‘John met Mary at school and at home,  
and Tom met Jane at school and at home (, respectively).’

- Under collective reading, the adverbial in the shared part, hakkyo-eyse kuliko cip-eyse ‘at school and at home’, is interpreted as conjoined locatives for both verbs (i.e., ‘John met Mary at school and at home, and Tom met at school and at home.)
- Under a distributive reading, each PP in the adverbial is interpreted as an exclusive locative of each verb in the two clauses (i.e., ‘John met Mary at school and Tom met Jane at home.)
- In the case of a distributive reading, crossing dependencies are allowed, but nesting dependencies are not. (cf. de Vos and Vicente 2005)

\[(18)\]

a. John met Mary at school and Tom met Jane at home(, respectively).  
   (crossing dependency)  

b. #John met Mary at home and Tom met Jane at school(, respectively).  
   (nesting dependency)

- This crossing dependencies of VLC cannot be captured by the SD analysis since the corresponding coordinated conjunction in (17) cannot allow crossing dependencies in (18a).

\[(19)\]

John-i Mary-lul hakkyo-eyse kuliko cip-eyse mannassta, kuliko  
John-Nom Mary-Acc school-at and home-at met and  
Tom-i Jane-ul hakkyo-eyse kuliko cip-eyse mannassta.  
Tom-Nom Jane-Acc school-at and home-at met
Yoon & Lee's (2005) alternative analysis: Ellipsis with displacement

- The PDEs in the shared predicate portion of VLC constructions occur in an unreduced sentential coordination, taking scope over the entire structure.

(20) John-i cip-ey kassta kuliko Mary-ka hakkyo-ey kassta, kakkak.  
    John-Nom home-to went and Mary-Nom school-to went each  
    ‘John and Mary went to the school respectively.’  (Yoon & Lee 2005: (27))

The shared part in the second conjunct is optionally displaced into the PDEs, following ellipsis.

(21) Ellipsis without displacement
   a. John-i cip-ey kassta kuliko Mary-ka hakkyo-ey kassta, kakkak.  (without displacement)
   b. John-i cip-ey kassta kuliko Mary-ka hakkyo-ey kassta kakkak.  (ellipsis)

(22) Ellipsis with displacement
   a. John-i cip-ey kassta kuliko Mary-ka hakkyo-ey kakkak kassta.  (with displacement)
   b. John-i cip-ey kassta kuliko Mary-ka hakkyo-ey kakkak kassta  (ellipsis)

- They argue that displacement explains why kakkak cannot occur in the first conjunct in VLC constructions (which allows correlates other than the subject NP, yielding VLC).

(23) a. John-i ecey kuliko Mary-ka onul kakkak ttenassta  
    John-Nom yesterday and Mary-Nom today each left  
    b. *John-i ecey kakkak kuliko Mary-ka onul ttenassta  
    John-Nom yesterday each and Mary-Nom today left  (Yoon & Lee 2005: (29))

- However, the following example cannot be explained under their analysis.

(24) John-un Tom-i, Mary-nun [Jane-i kakkak ssun nonmwun]-ul ilkoissta.  
    John-Top Tom-Nom Mary-Top Jane-Nom each wrote paper-Acc be.reading  
    ‘John is reading the paper Tom wrote, and Mary is reading the paper Jane wrote.’  
    = ‘John and Mary are reading the papers that Tom and Jane each wrote.’

(25) John-un Tom-i ssun nonmwun-ul ilkoissta, kuliko  
    John-Top Tom-Nom wrote paper-Acc be.reading and  
    Mary-nun Jane-i ssun nonmwun-ul ilkoissta kakkak.  
    Mary-TOP Jane-Nom wrote paper-Acc be.reading each  
    ‘John is reading the paper Tom wrote, and Mary is reading the paper Jane wrote.’  
    = ‘John and Mary each are reading the papers that Tom and Jane wrote.’

→ It is predicted that (24) and (25) may have the same semantic interpretation. However, kakkak in (25) can only have reading of matrix reading, while this reading is absent in (24).

4. Against multiple dominance approach

- Chung's (2004) proposes a MD structure for the VLC to account for the licensing of PDE in the shared part.
(26) a. John-Top Mary-Gen and Tom-Nom Sue-Gen paper-ACC each help-PST-DECL
   'John (helped) Mary's (paper), and Tom helped Sue's paper, respectively.'

b. TP1 &P &'
   SU1 VP & TP2
   OB1 V                           SU2                     VP
   NP                       OB2
   NP
   N*               V'

• Note that MD analysis predicts that the shared part must be identical in all sense for both conjuncts in VLC. As depicted in (26b), the licensing of PDE kakkak 'each' can be captured directly: the PDE in the shared part is simultaneously c-commanded by the objects in both conjuncts, therefore the PDE kakkak can be properly licensed in local domains of both conjuncts under MD analysis. ← This is the beauty of the MD analysis.

• Counter-evidence: No strict identity of the shared parts in VLCs

A. Honorification mismatch¹

VLC is predicted to be impossible under MD analysis when the elliptical verb in the first conjunct and its correlate in the second conjunct have different shapes or different morpho-syntactic features: in other words,

¹ Russian also shows agreement mismatch.

(i) a. ja vodu pil, i Anna vodka pila
   I water drank and Anna vodka drank
   'I drank water, and Anna drank vodka.' (coordinate conjunction)

b. ja vodu, i Anna vodka pila
   I water and Anna vodka drank
   'I (drank) water, and Anna drank vodka.' (Ross 1970; recited from Duman 2003)

In (i-a), the verb pil(a) 'drank' in each conjunct of the coordinate conjunction agrees with its subject. However, in (i-b), the shared verb chooses Anna as its subject to agree with, as the verb pila indicates (Here, too, adjacency requirement on agreement seems to be forced in Russian VLC on a par with Korean VLC).

Agreement mismatch is also found in Brazilian Portuguese, as observed in Hornstein et al. (2005: 326).

(ii) Os gatos são bonitos e
    the.MASC.PL cat.MASC.PL are[3,PL] beautiful.MASC.PL and
    a gata também é (bonita).
    The.FEM.SG cat.FEM.SG also is[3.SG] beautiful.FEM.SG
    'The tomcats are beautiful and so is the cat.'

Thus, agreement mismatch seems to take place in ellipsis constructions cross-linguistically.
“strict” identity is required in MD analysis. But this prediction is not borne out in the following example:

(27) na-nun thayngo-lul, apenim-un disukho-lul chwu-si-ess-ta.
I-Top tango-Acc father-Top disco-Acc dance-HON-Pst-Dec
'I danced (non-HON) tango and Father danced (HON) disco.’ (Chung 2005: (7))

* Adjacency requirement on subject honorification in VLC (An 2006: 6)
In VLCs, honorification marking in the shared part is only allowed when the subject of the final conjunct is honorific.

(27)* apenim-un thayngo-lul, na-nun disukho-lul chwu-si-ess-ta.
father-Top tango-Acc I-Top disco-Acc dance-HON-Pst-Dec
'Father danced (non-HON) tango and Father danced (HON) disco.’

Æ The nature of ill-formedness seems to have nothing to do with the status of ellipsis under identity since the subject-verb (honorific) agreement mismatch in the second conjunct independently results in deviance regardless of V-ellipsis in the first conjunct. This adjacency requirement is problematic for MD analysis.

B. Number mismatch (Ha 2006a)

John-Top one CL-Gen and Bill-Top several:CL-Gen book-PL-Acc read-Pst-Dec
'John read one, but Bill read several books.’ (Ha 2006a: (26))
Bill-Top several:CL-Gen and John-Top one CL-Gen book-PL-Acc  read-Pst-Dec
'*John read several, but Bill read one books.’

Æ Here too, a-sentence is allowed via ellipsis under generalized sloppy identity of V, while b-sentence is ruled out via Adjacency requirement in the second conjunct. By contrast, MD analysis cannot predict this asymmetry.

C. Asymmetric interpretation for tense and aspect morphemes
(contra judgments in Chung 2005)

(29) a. ? apenim-un caknyen-ey, emenim-un cikum pyeng-ulo nwuwekyesi-n-ta.
father-Top last;year-in mother-Top now disease-due;to lie;in;bed-PRES-Dec
'My father (was lying in bed) last year and my mother is lying in bed now due to an illness.’
(Chung 2005: (6))
b. * emenim-un cikum, apenim-un caknyen-ey pyeng-ulo nwuwekyesi-n-ta.
mother-Top now father-Top last;year-in disease-due;to lie;in;bed-PRES-Dec
'My father was lying in bed) last year and my mother is lying in bed now due to an illness.’

John-Top certainly Mary-Top probably dance-Pst-GUESS-Dec
'John certainly (danced) and perhaps Mary may have danced.’ (Chung 2005: (6), (8))
Mary-Top probably John-Top certainly dance-Pst-GUESS-Dec
'John certainly (danced) and perhaps Mary may have danced.’
Here too, a-sentences are allowed via predicate vehicle change (a la Hoji 2006), while b-sentences are ruled out via adjacency requirement in the second conjunct. By contrast, the MD analysis predicts both of these to be incorrectly ruled out unless it posits some additional assumptions.

**D. Different interpretation for homophones in each conjunct**

   -TOP letter-ACC and -TOP poem-ACC wrote/ used
   ‘John wrote a letter and Jane used a computer.’

   -TOP knife-ACC -TOP lightbulb-ACC sharpened/ changed
   ‘John sharpened a knife, and Mary changed a light bulb.’

If the shared verb-forms ssessta and kalassta in (29) have the different meaning in VLC, the sentence would be predicted to be ruled out under the MD analysis since the shared part should not only meet phonological identity (hereafter, p-identity) but necessarily semantic identity (hereafter, s-identity), too. However, the sentences are marginally acceptable.

**E. Case mismatch**

- VLC is expected to be impossible under the MD analysis when an NP in the first conjunct and its correlate in the second conjunct have different morphological Cases.

     John-Top Osaka-to Mary-Top Tokyo-Nom go-want-Pst-Dec

     John-Top Osaka-Nom Mary-Top Tokyo-to go-want-Pst-Dec

     John-Top Osaka-acc Mary-Top Tokyo-Nom go-want-Pst-Dec

     John-Top Osaka-Nom Mary-Top Tokyo-Acc go-want-Pst-Dec

e. John-un O saka-ey, Mary-nun Tokyo-lul ka-ko.siph-ess-ta
     John-Top Osaka-to Mary-Top Tokyo-Acc go-want-Pst-Dec

f. John-un O saka-lul, Mary-nun Tokyo-ey ka-ko.siph-ess-ta
     John-Top Osaka-acc Mary-Top Tokyo-to go-want-Pst-Dec

‘John wanted to go to Osaka, and Mary wanted to go to Tokyo.’

- Given the prediction that the shared/elided elements must be “morpho-syntactically” identical, MD approach cannot account for these kinds of mismatches since different Cases are usually assumed to be licensed by different types of head-selection syntactically (this assumption might be controversial, however).

- To recap, the core prediction of MD analysis regarding VLCs is that the shared/elided elements must be identical phonologically, syntactically and semantically. However, this “strict-identity” requirement can be violated in VLCs, as observed in Ahn & Cho (2006), and also independently indicated in An (2006) and Ha (2006). Thus, the MD analysis of VLCs seems untenable.²

² There are two potential counter-examples to ellipsis under semantic identity in English. First, Lasnik (2005: 262) observes that sloppy identity is disfavored if there is a mismatch of agreement features:
5. Toward an explanation

- Some of mismatch data like homophones and Case alternation may not be problematic for SD analysis since the shared parts of both conjuncts are phonologically identical.
- By contrast, mismatch in Agreement and Tense/Modality, henceforth “vehicle change” data, is truly problematic for SD analysis (let alone MD analysis) since the shared parts of both conjuncts are phonologically distinct.

What Ellipsis Analysis Can Do

- Vehicle change effects in VLCs cannot be handled by the p-ellipsis but by s-ellipsis.

What Ellipsis Analysis CANNOT Do

- Distributive PDE licensing in VLCs cannot be properly treated by s-ellipsis.

An alternative solution by SD analysis?

- Under the SD analysis, one may possibly postulate “null” morphemes of tense, modality, Agr for apparent mismatch (cf. Chung 2005). Thus, for example, tense interpretation mismatch can be handled as follows:

\[(33) \text{a. } \{\&P[\text{MP Na-nun caknyen-ey thongkyeyhak-ul tul-ess-ta}],\]
\[\text{I-Top last.year-in statistics-Acc take-PST-DEC}\]
\[\{\&[\text{MP John-un olhay-ey thongkyeyhak-ul tut-nun-ta}]\}.
\[\text{-Top this.year-in statistics-Acc take-PRS-DEC}\]
\[\text{‘I took statistics last year, and John is taking it this year.’}\]

\[(33) \text{b. } \{\text{MP[\&P[\text{TP Na-nun caknyen-ey thongkyeyhak-ul tut-∅PAST}]},\}
\[\text{I-Top last.year-in statistics-Acc take}\]
\[\{\&[\text{TP John-un olhay-ey thongkyeyhak-ul tut-nun}-ta]\}.
\[\text{John-Top this.year-in statistics-Acc take-PRS-DEC}\]
\[\text{‘I took statistics last year, and John is taking it this year.’}\]

- (33a) is excluded outright because of its violation of the p-identity.
- (33b) can be a TP coordination in which the first conjunct has a zero morpheme for the past tense, and the verbal stem is elided by the p-identity with the verbal stem in the second conjunct. Since the null morpheme is not visible at PF, it does not have any harmful effect on ellipsis.
- However, null morpheme analysis must be independently motivated, otherwise the postulation of null entities in grammar goes against Occam’s Razor or null hypothesis.

Multiple Fragments Analysis

(i) a. Bill washed his car, and John did wash his car too. (sloppy reading possible)
   b. Mary washed her car, and John did wash his car too. (sloppy reading less likely)

Secondly, Lasnik (1995) extensively notes that finite form of be in the following cannot antecede the elliptical infinitive:

(ii) *Mary is a doctor and John will be a doctor too.

Thus, it seems that the formal (morpho-syntactic) identity is forced in some cases (see also some relevant discussion in S.Chung 2005).
Vehicle change effects in VLCs cannot be handled by the SD.

We, instead, suggest that vehicle change effects in VLCs must be understood as one of typical outcomes of ellipsis phenomena per se, as noted by Fiengo & May (1994), Merchant (2001; 2004), and independently put forward by Hoji (2002; 2006) as predicate vehicle change for similar facts in Japanese VLCs.

We basically follow Merchant's (2004: 700) idea that “positing syntactic structure in the ellipsis site does not commit one to claiming that ellipsis is regulated by (morpho)syntactic identity.” In other words, ellipsis is not regulated by strict morphosyntactic form identity. Instead, he proposes that identity condition on deletion is regulated by semantic identity. Thus, vehicle change can be covered under ellipsis approach without further theoretical apparatus.

However, PDE licensing, sentence-internal reading of kathun ‘same’ and talun ‘different’, and distributive reading of NP coordination cannot properly be treated by (vehicle change) ellipsis approach to VLCs.

Our proposal: We further propose that for VLC involving PDE as in (34a), there is an alternative possibility that may parse each of the correlate conjuncts and the shared part into separate sentential fragments, as shown in (34b).

      John-Top book-Acc, Mary-Top CD-Acc each bought
      ‘John (bought) a book, and Mary bought a CD, respectively.’

b. [John1-un chaky3-ul <sassta>, [Mary2-nun CD4-lul <sassta>], [e1+2 e3+4 kakkak sassta]

Under this parse, the VLC construction (34a) is analyzed as multiple fragmental sentences (here, two fragments plus one full sentence with null pronouns). With this tripartite structure, we can account for PDE licensing and other problematic (non-vehicle-change-oriented) interpretational mismatches of VLC construction as discussed earlier.

Multiple fragment (hereafter, MF) analysis may account for the distributive interpretation fact, but it cannot explain some facets of interpretational mismatches (vehicle change effects) as shown in section 4. Thus, MF analysis suffers from identical problems as MD analysis, and hence it only selectively applies to the VLCs under distributive contexts.

6. Further predictions and implications of our analysis

Prediction 1. S-identity (vehicle change) in distributional contexts
Our analysis predicts that VLC is not possible when both s-ellipsis and (p-ellipsis) MF are forced to be assigned onto the identical structure. In other words, vehicle change cannot occur in distributive contexts.

(36) Honorary agreement mismatch
   a.  na-nun ppang-ul, apenim-un lamyen-ulo capswusiessta
       I-Top  bread-Acc, father-Top ramen-Acc  ate (HON)
       ’I (ate (non-Hon)) bread and Father ate (Hon) ramen.’
   b. *na-nun ppang-ul, apenim-un lamyen-ulo kakkak capswusiessta
       I-Top  bread-Acc, father-Top ramen-Acc  respectively ate (HON)
       ’I (ate (non-Hon)) bread and Father ate (Hon) ramen, respectively.’

(37) Tense interpretation mismatch
   a.  John-un caknyen-ey, Bill-un cikum pyeng-ulo nwuweissta
       John-Top last year-at, Bill-Top now illness-by lie in bed (PRES)
       ’John (was lying in bed) last year and Bill is lying in bed now due to an illness.’
   b. *John-un caknyen-ey, Bill-un cikum pyeng-ulo kakkak nwuweissta
       John-Top last year-at, Bill-Top now illness-by respectively lie in bed (PRES)
       ’John (was lying in bed) last year and Bill is lying in bed now due to an illness, respectively.’

→ (36b) and (37b) are predicted to be ruled out since vehicle change is forced in distributive contexts.

Prediction 2. P-identity (strict phonological identity) in distributional contexts
Homophones (lexical mismatch) and Case mismatch, by contrast, do not exhibit sharp contrasts with respect to the presence or absence of distributors since they do not induce vehicle change (=semantic identity).
(38) **Homophones (lexical mismatch)**

a. John-un khal-ul, Bill-un cenkwu-lul kalessta
   John-Top knife-Acc Bill-Top light.bulb-Acc sharpened/ changed
   'John (sharpened) a knife, Bill changed a light bulb, respectively.'

b. John-un khal-ul, Bill-un cenkwu-lul kakkak kalessta
   John-Top knife-Acc Bill-Top light.bulb-Acc respectively sharpened/ changed
   'John (sharpened) a knife, Bill changed a light bulb, respectively.'

(39) **Case mismatch**

a. na-nun pizza-lul, Mary-nun spaghetti-i mek-ko.siph-ess-ta
   I-Top pizza-Acc, Mary-Top spaghetti-Nom eat-want-Pst-Dec
   'I wanted to eat pizza, and Mary wanted to eat spaghetti.'

b. na-nun pizza-ul, Mary-nun spaghetti-i kakkak mek-ko.siph-ess-ta
   I-Top pizza-Acc, Mary-Top spaghetti-Nom respectively eat-want-Pst-Dec
   'I wanted to eat pizza, and John wanted to eat spaghetti respectively.'

\[\rightarrow (38-39) \text{ are uniformly analyzed as (p-ellipsis) MF under our analysis, hence no discrepancy arises here.}\]

**Prediction 3. Comp deletion asymmetry in VLCs**

Comp-deletion is possible in complement (V-governed) position in Korean.

(40) a. John-kwa Mary-nun Sue-ka papola-(ko) sayngkakhayssta
   John-and Mary-Top Sue-Nom be-stupid-(Comp) thought
   'John and Mary thought that Sue is stupid.'

b. John-kwa Mary-nun Sue-ka papola-(ko) kakkak sayngkakhayssta
   John-and Mary-Top Sue-Nom be.stupid-(Comp) respectively thought
   'John and Mary respectively thought that Sue is stupid.'

\[\rightarrow \text{Note: Strict adjacency of null Comp to the governing verb seems not to be forced, although (40b) is slightly worse than (40a).}\]

- The paradigm involving Comp deletion in VLCs.

   John-Top Bill-Nom be-stupid-Comp, (and) Mary-top Sue-Nom be.stupid-Comp thought
   'John (thought) that Bill is stupid, and Mary thought that Sue is stupid.'

b.*John-un Bill-i papola, (kuliko) Mary-nun Sue-ka papola-ko sayngkakhayssta

c.?John-un Bill-i papola-ko, (kuliko) Mary-nun Sue-ka papola sayngkakhayssta

\[\rightarrow (41b) \text{ is expected to be ruled out since null Comp in the first conjunct cannot be licensed by the elided verb, following Saito (1987). What is not expected is (marginally) accepted (41c) which should also be ruled out under RNR approach like Saito (1987). Under our approach, however, we can derive (41c) via in-situ ellipsis of shared verb in the first conjunct. Immediate consequence of this proposal is that the null Comp in the second conjunct is now able to be governed by the matrix verb, hence the contrast follows.}\]
• Note, however, the distributor like kakkak ‘respectively’ appears, Comp deletion in the second conjunct is not possible:

(42) *John-un Bill-i papola-ko, (kuliko) Mary-nun Sue-ka papola kakkak sayngkakhayssta
John-Top Bill-Nom be.stupid-Comp, (and) Mary-top Sue-Nom be.stupid each thought
‘John (thought) that Bill is stupid, and Mary thought that Sue is stupid.’

→ Unlike (41c), (42) is predicted to be ruled out since (42) should be an instance of MF(p-ellipsis) under our approach as shown in (43):

(43) [John-un Bill-i papola-ko sayngkakhayssta], (kuliko) [Mary-nun Sue-ka papola sayngkakhayssta],
John-Top Bill-Nom be.stupid-Comp thought, (and) Mary-top Sue-Nom be.stupid thought
[(kutul-un) (kutul-ul) (kulehkey) kakkak sayngkakhayssta]
(they-Top) (they-Acc) (so) respectively thought
‘John thought that Bill is stupid, Mary thought that Sue is stupid, and they respectively thought so.’

→ Notice that in MF (43), the null Comp in the second conjunct cannot be properly licensed since it no longer is governed by an overt verb, which minimally contrasts with the one in (41c).

Prediction 4. Apparent sloppy identity

• Ha (2006: 7) proposes the following as an instance of sloppy identity to support a s-ellipsis analysis of VLCs:

(44) Johni-un ahop-ci-ey [caki\_juy cip-ey kas-ko], Mary\_j nun yeul-si-ey
John-Top 9 o’clock-at self-Gen house-to go-Pst-and Mary-Top 10 o’clock-at
[caki\_juy cip-ey kas-ta].
self-Gen house go-Pst-Dec
‘John went to John’s house at 9, and Mary went to Mary’s house at 10.’ (Sloppy identity) (Ha 2006b: (24))

→ But note that Korean reflexive caki can be employed as a distributor, as in (45):

(45) John-kwa Mary\_j nun ahop-si-wa yeul-si-ey caki\_juy cip-ey kas-ta.
John-and Mary-Top 9 o’clock and 10 o’clock-at self-Gen house-to go-Pst-Dec
‘John and Mary went to their house(, respectively).’ (Sloppy identity)

→ With this in mind, we can also reanalyze (44) as another instance of MF:

(46) John\_un ahop-ci-ey [caki\_juy cip-ey kas-ta], Mary\_j nun yeul-si-ey
John-Top 9 o’clock-at self-Gen house-to go-Pst-Dec Mary-Top 10 o’clock-at
[caki\_juy cip-ey kas-ta], (kuliko) (kutul-un) (ku sikan-ey) (kakkak) [caki\_juy cip-ey kas-ta].
self-Gen house go-Pst-Dec and they-Top that time-at each self-Gen house go-Pst-Dec

In (46), the reflexive caki appears in the final conjunct, and it can be interpreted distributively. Thus, sloppy identity reading of (44) can be derived without recourse to elliptical property, and hence (44) can’t be no longer crucial evidence to support s-ellipsis analysis of VLCs in Korean. In fact, (44) can be another evidence
6. Conclusion

- VLCs in Korean can be derived by backward ellipsis under semantic identity or multiple fragments formation. We have provided interpretational mismatches as crucial evidence for s-ellipsis analysis on the one hand, and plurality-dependent contexts for p-ellipsis MF analysis on the other. The similarity of the two operations is that they are both PF elliptic operations. The s-ellipsis exhibits vehicle change effects such as mismatches in honorification and tense/modality. The MF, namely, p-ellipsis is only sensitive to surface forms; hence it can target homonyms/polysyms and Case mismatches triggered by homophonous complex predicates.

Appendix A: Saito’s (1987) Principle C violation

- Saito (1987) observes that Principle C violation can be neutralized by movement such as scrambling (we example here in Korean):

he-Nom today John-Acc see-want-Rel man-Acc visited
‘*He₁ visited the man who wanted to see John₁.’

b. [John₁-ul pokok-sipheha-nun salam-ul] ku₁-ka onul chacakassta
John-Acc see-want-Rel man-Acc he-Nom today visited
‘the man who wanted to see John₁ He₁ visited.’

→ (47a) is a standard Principle C violation. Interestingly, Principle violation is rescued when movement occurs as in (47b). Note, however, that VLCs in Korean display interesting paradigms concerning Principle C. First, consider the following:

Mary-Nom yesterday, (and) he-Nom today John-Acc see-want-Rel man-Acc visited
‘*Mary (visited him) yesterday, and he₁ visited today the man who wanted to see John₁.’

→ (48) is expected to be a Principle C violation since the shared part is not moved under our proposal (contra Saito’s RNR analysis). Now observe the contrast between (48) and the following:

(49) ?ku₁-ka ecey, (kuliko) Mary-ka onul [John₁-ul pokok-sipheha-nun salam-ul] kakkak chacakassta
ku-Nom yesterday, (and) Mary-Nom today John-Acc see-want-Rel man-Acc visited
‘Lit. He₁ (visited him) yesterday, and Mary visited today the man who wanted to see John₁.’

→ To us, (49) is remarkably better than (48), and this contrast is expected since in (48) Principle C can be ameliorated via vehicle change as a result of ellipsis in the first conjunct. Note further that this option is not available if the distributive context is enforced as in (50):

ku-Nom yesterday, (and) Mary-Nom today John-Acc see-want-Rel man-Acc respectively visited
'Lit. Respectively, he1 yesterday, and Mary today visited the man who wanted to see John1.'

→ (50) yields Principle C violation as opposed to (49), since (50) is an instance of MF while (49) involves the ellipsis of the first conjunct. In other words, Principle C violation occurs in the third conjunct (but not in the first conjunct) in (50), as shown in (51): i.e., kutul ‘they’ binds John.

(51) *[ku₁-ka ęcey ...], (kuliko) [Mary-ka onul ...], [kutul₁-ı ... [John₁-ul ...] kakkak chassakassta]

**Appendix B: Ha’s (2006) treatment of PDE effects in VLCs**

- Ha (2006) further tries to derive PDE effects in VLCs in non-uniform ways. Let us first consider his treat of Dummy Plural Marker (DPM) - tu₁. He deals with - tu₁ as semantically vacuous item which has no influence on entailment relationships between the conjuncts (see Merchant 2001 for the notion, semantic entailment, to license PF-ellipsis). Thus, he proposes that the underlying structure of (52a) is (52b) where DPM is absent in the first conjunct:

(52) a. Sue-nun yagu-lul kuliko Jane-un nonggu-ul cal-tu₁ han-ta
    Sue-Top baseball-Acc and Jane-Top basketball-Acc well-DPM do-Dec
    ‘Sue plays baseball well, and Jane plays basketball well.’ (Ha 2006b: (27))

b. [TP Sue-nun YAGU-lul cal-Ø han-ta], kuliko [TP Jane-un NONGGU-lul cal-tu₁ han-ta.]
    Sue.-Top baseball-Acc well do-Dec, and Jane-Top basketball-ACC well-DPM do-Dec
    TPₐ = Jane plays basketball well-DPM. F-clo(TPₐ) = ∀x. ∃y. y plays x well-DPM
    TPₖ = Sue plays baseball well- Ø F-clo(TPₖ) = ∀x. ∃y. y plays x well-Ø
    (Ha 2006b: (30a))

→ However, it is not clear how he can account for the ill-formedness of (53), the counterpart of (52b) except that it doesn’t undergo ellipsis in the first conjunct.


→ Additional requirements might be needed in his approach to rule out (53), in addition to rule in (52b).

- As for the RM kakkak, Ha (2006: 10) assumes that it adjoins outside the conjunct, so the overt RM is not present in the first conjunct prior to ellipsis:

(54) a. [TP₁ Mary-ka Chayk-ul ilk-ess] (ta), (kuli)ko [TP₂ John-i sinmwun-ul t₁v] kakkak ilkessta.
    Mary-Nom book-Acc read-Pst-Dec Conj John-Nom newspaper-Acc respectively read
    ‘Mary read a book and John read a newspaper, respectively.’
However, it is not clear how he can handle the following example (55) where the subject John-i interrupts between RM and the inflected verb cwuessta.

Mary-to-Top book-Acc Sumi-to-Top CD-Acc respectively John-Nom give-Pst-Dec
'John gave a book to Mary, (and gave) a CD to Sumi, respectively.'

Note that the RM projection is hierarchically sandwiched between &P and CP in (54), and RM must be adjacent to C-head. His analysis perhaps needs massive amount of leftward and/or right movements to derive (55) from the underlying structure of the sort like (54).

Our MF analysis with the representation (56), by contrast, does not suffer from any complication to account for (55).

(kuliko) [kakkak John-i (kutul-eykey) (kukestul-ul) cwu-ess-ta].

No special mechanisms are called for to explain (55). It's just another instance of MFs in our approach. Ha's treatments of PDEs further face difficulty with the following data:

(57) Cheolsu-nun John-eykey, Yeonghuy2-nun Mary-eykey selo_1+2-uy/ selo_1+2-ka
Cheolsu-Top John-Dat, Yeonghuy-Top Mary-Dat each.other-Gen/each.other-Nom
manu-n CD-lul cwu-ess-ta
make-/adnominalizer CD-Acc give-Pst-Dec

Note that selo_1+2-uy/ selo_1+2-ka mantu-n cannot be treated as semantically vacuous elements like -tul or &P modifier like kakkak.4 Thus, (57a-b) are more severely problematic for Ha's proposal. Under our MF

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4 Similar cases that are problematic for Ha's analysis are the following:

Cheolswu-Top book-Acc Mary-Top CD-Acc Minswu-to each give-Pst-Dec
analysis, (57) can be handled on a par with other MF examples involving PDEs. Thus, the parses of (57) are the following MF (58), and the distributive properties of anaphors provide us with possible interpretations.

(58) a. Cheolsu-nun John-eykey CD-lul cwu-ess-ta, Yeonghuy_2-nun Mary-eykey

Cheolsu-Top John-Dat, Yeonghuy-Top Mary-Dat
CD-lul cwu-ess-ta (kutul-un) (kutul-eykey) selo_{1+2}-uy/selo_{1+2}-ka
CD-Acc give-Pst-Dec they-Top them-to each-other-Gen/each-other-Nom
mantu-n CD-lul cwu-ess-ta
make-adnominalizer CD-Acc give-Pst-Dec

b. Cheolsu-nun John-eykey CD-lul cwu-ess-ta, Yeonghuy_2-nun Mary-eykey

Cheolsu-Top John-Dat, Yeonghuy-Top Mary-Dat
CD-lul cwu-ess-ta (kutul-un) (kutul-eykey) caki-tul_{1+2}-uy/caki-tul_{1+2}-ka
CD-Acc give-Pst-Dec they-Top them-to self-PL-Gen/self-PL-Nom
mantu-n CD-lul cwu-ess-ta
make-adnominalizer CD-Acc give-Pst-Dec

(Notice that under our MF analysis, the nominal modifier selo_{1+2}-uy/selo_{1+2}-ka mantu-n do not have to appear in the first and second conjuncts underlyingly. In other words, p-identity requirements are still satisfied in (58) (i.e., the first & second conjuncts share CD-lul cwu-ess-ta with the last conjunct), and hence (58) can be properly generated without additional stipulation.)


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