Separable verbs, syllable deletion, and micro-variations

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1 Introduction

In this talk, we discuss an issue concerning the separability of disyllabic verbs in Cantonese.

	Examples	Literal meaning	Meaning
Verb + Object	daam-saam	bear + heart	worry
Verb + Verb	ying-yan	reflect + print	photocopy
Modifier + Verb	zi-sak	self + kill	commit suicide
Verb + Result	laai-coeng	pull + long	lengthen by pulling

Table 1: Various types of disyllabic verbs (w.r.t. the relation between the two morphemes)

While these above verbs commonly allow separation by verbal suffixes, even monomorphemic disyllabic verbs (mostly English loanwords) allow separation.

(1) Separation of monomorphemic verbs

  a. Aaming **feilou**-zo/ **fei**<zo>**lou**
  Aaming fail-PERF/ fail<PERF>
  'Aaming failed.'

  b. Aaming **oukei**-zo/ **ou**<zo>**kei**
  Aaming okay-PERF/ okay<PERF>
  'Aaming said okay.'

The central question is how such separation is sanctioned by the computational system.

(2) Some possibilities
    a. A lexical approach: both alternating forms are listed in the lexicon.
    b. A syntactic approach: (unconventional) syllable movement
    c. A morphological/post-syntactic approach: (adjacent) metathesis (i.e. syllable transposition)
    d. A reanalysis approach: e.g. the two syllables are reanalyzed as a V+O structure.

We propose a hybrid approach to separable verbs, taking advantage of syntactic head movement and a syllable deletion rule in the post-syntactic component.

Road map for today

2   Separable verbs in Cantonese

2.1   Ways of separation

- Separation by verbal suffixes
  The separation patterns are not exclusive to *-zo* but it applies to all the other verbal suffixes, e.g. experiential *-gwo*, progressive *-gan*, modal *-dak* and *-ngaang*, universal *-saai* and *-can* etc.

  (3)   <u>Separation by verbal suffixes</u>

      a.   Aaming **fei**<zo>**lou** (=(1))
               Aaming fail<PERF>
               'Aaming failed.'

      b.   Aaming **fei**<gwo>**lou**
               Aaming fail<EXP>
               'Aaming has failed before.'

- In some cases, certain affixes such as *-can* require obligatory separation, in contrast with *-zo*, which allows non-separation (=(1)).

  (4) Obligatory separation

    a. *Aaming **feilou**-can   dou bei jan   naau
       Aaming fail-WHENEVER all   PASS person scold
       Int: 'Whenever Aaming failed, he got scolded.'

    b. Aaming **fei**<can>**lou**   dou bei jan   naau
       Aaming fail<WHENEVER> all   PASS person scold
       'Whenever Aaming failed, he got scolded.'

- Separation by phrasal elements

  Notably, phrasal elements like frequency phrases may be 'inserted' after the affix, separating the two syllables of the verb. Note that they can only be inserted when the affix is 'infixed' (=b), but not 'suffixed' (=c).

  (5)   Separation by frequency phrases

      a.   feilou-zo **sapgeici**
              fail-PERF   ten.several.time
              'failed a dozen times.'

      b.   fei<zo><**sapgeici**>lou
              fail<PERF><ten.several.time>
              'failed a dozen times.'

      c. *fei<**sapgeici**>lou-**zo**
              fail<ten.several.time>-PERF
              Int.:'failed a dozen times.'

- Other than frequency phrases, affectees may also be 'inserted'. Separation by multiple phrasal elements is also possible as in (b).

(6) Separation by affectees

    a.   Lousi   fei\<zo>\<**keoi**>lou
            Teacher fail\<PERF>\<3SG>
            'The teacher failed him.'

    b.   Lousi   fei\<zo>\<**keoi**>\<**sapgeici**>lou
            Teacher fail\<PERF>\<3SG>\<ten.several.time>
            'The teacher failed him a dozen times.'

2.2 Properties of separable verbs

- Morphological structure

  While the above examples are illustrated with a monomorphemic loanword *failou* 'fail', compound words (i.e. containing more than one morpheme) may also be separated.

(7) <u>Separation of verb-object (VO) compounds</u>

nei bun syu   **ceot**<ZO>**baan** laa

this CL   book publish<PERF> SFP

'This book has been published.'

(8) <u>Separation of non-VO compounds</u>

a.   keoidei dou **ceot**<saai>**faat** laa (Verb-Verb)

3PL   all   depart<ALL>   SFP

'They all departed.'

b.   nei gin si   m-**zi**<dak>**sau**   gaa (Modifier-Verb)

this CL thing NEG-turn.oneself.in«ABLE» SFP

'You can't turn youself in!'

c.   Di-soeng   **fong**<can>**daai**   dou mung (Verb-Result)

CL.PL-photo enlarge<WHENEVER> ALL blur

'Whenever you enlarge a photo, it becomes blurred.'

- Constraints on syllables

  In general, only disyllabic verbs can be separated. Trisyllabic verbs like loanword *intawiu* 'interview' or native verb *cyunkau-faa* 'globalize, (lit.) globe-ize' cannot be separated.

- Root specificity

  Only certain verbs allow separation and they seem to have preference to the elements separating the morphemes/syllables.

3   Previous approaches: reanalysis

Previous studies suggested that separable verbs are reanalyzed as verb-object phrases (Chao 1968, Huang 1984, Packard 2000, Her 2010). It is reasonable for VO compounds to be reanalyzed as VO phrases but the approach also poses some issues as below.

3.1   Conceptual arguments against reanalysis

- Non-VO compounds and monomorphemic verbs

    - It is unclear how the relationship of the two morphemes are coerced into VO (Chao 1968, Zhao & Zhang 1996, Cao & Feng 2003), as in non-VO cases including Verb-Verb, Modifier-Verb and Verb-Result compound verbs.

    - Crucially, monomorphemic verbs only contain one morpheme. It seems not plausible to reanalyze two non-morphemic syllables into a VO structure.

    - A note on stress: Chao (1968) proposes that relative prosodic prominence of two syllables may also facilitate reanalysis, such as verbs involving iambic stress (Weak-Strong), comparable to the Weak-Strong pattern on VO.
    This prosodic account is challenged by the presence of separable trochaic (Strong-Weak) English loanwords in Cantonese, e.g., *sowi* 'sorry', *seaa* 'share', *gugou* 'Google', etc.

- Difficulty in formulation within the generative framework
  Some claim that the phrasal forms of the separable non-VO compounds are stored in the lexicon (Packard 2000, Her 2000). In a classic Y-model in generative grammar, there are three logical possibilities where the reanalysis occurs, each of them faces conceptual difficulties:

  - *Pre-syntactic: lexicon -* learnability and transparency in meaning
  - *Syntactic: narrow syntax -* splitting of nodes
  - *Post-syntactic: PF -* requires metathesis, which is local and not sensitive to constituency (cf. phrasal elements)

- Possbility to capture language variations (see section 6)

3.2 Empirical arguments against reanalysis

- Adnominal modifier marker *ge*

    (9) keoi tai-zo   seng   sapgeijat   **ge** hei   laa
         3SG watch-PERF as.much.as ten.several.day MOD movie SFP
         'He has watched movies for days.'

    (10) *keoi pi-zo   seng   sapgeijat   **ge** -sen   laa
          3SG present-PERF as.much.as ten.several.day MOD present SFP
          'He has been doing presentation for days'

- Thematic objects

  (11) ??keoi jing<zo>jan   [nei fan je]   laa
        3sg photocopy<PERF> this CL thing SFP
        'He made a photocopy of this document.'

(12) a. keoi zoeng [nei fan je]   jing<zo>**jan**   laa
     3sg disp this cl thing photocopy<perf> sfp
     'He made a photocopy of this document.'

   b. keoi lin [nei fan je]   dou jing<maai>**jan** laa
     3sg even this cl thing also photocopy<also> sfp
     'He even made a photocopy of this document.'

(13) a. *keoi zoeng [nei ceot hei]   tai-zo   **hei**   laa
     3sg disp this cl movie watch-perf movie sfp
     Int.:'He watched this movie.'

   b. *keoi lin [nei ceot hei] dou tai-maai **hei**   laa
     3sg even this cl movie also watch-also movie sfp
     Int.:'He even watched this movie.'

4 Proposal: syllable deletion

We suggest that verbal suffixation generally involve syntactic verb movement to the suffix (Tang 2003) and propose an optional PF deletion rule triggered by affixes:

(14) Affix-induced Syllable Deletion
Affixes optionally trigger deletion on an adjacent syllable of their hosts.

(15) Derivation steps for separable verbs
a. [-x [AB]]   (base structure)
b. [<AB>-x [<AB>]]   (verb movement)
c. [<AB̷>-x [<AB>]] = A-x-AB   (affix-induced syllable deletion)
d. [<AB̷>-x [<A̷B>]] = A-x-B   (partial copy deletion)

- An immediate consequence is that it explains why the following patterns below are unattested:

(16)

		Syllable Deletion	Copy Deletion
a. *lou\<zo>fei	(*B-x-A)	✗ non-adjacent deletion	
b. *fei\<zo>fei	(*A-x-A)		✗ fail to apply
c. *lou\<zo>feilou	(*B-x-AB)	✗ non-adjacent deletion	✗ fail to apply
d. *fei\<zo>feilou	(*A-x-AB)		✗ fail to apply

- Motivation for the affix-induce deletion

  Some suffixes prefer to attach to a monosyllabic verb (Tang 2002, 2003, 2015), e.g. epistemic *-ngaang* 'must' and *-can* 'whenever'. This correlates with their obligatory separation on some verbs. Deletion is induced by the monosyllabic requirement imposed on the verbal host.
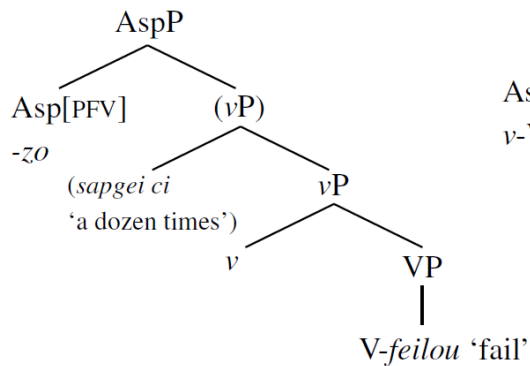
- Copy deletion

  While deleting the whole lower copy is the default option (Chomsky 1995, Nunes 1995, 2004, Boškovic & Nunes 2007), chain reduction is sensitive to the status of the higher copy. If the higher copy is not fully spelt out, the remaining part would be spelt out in the lower copy.
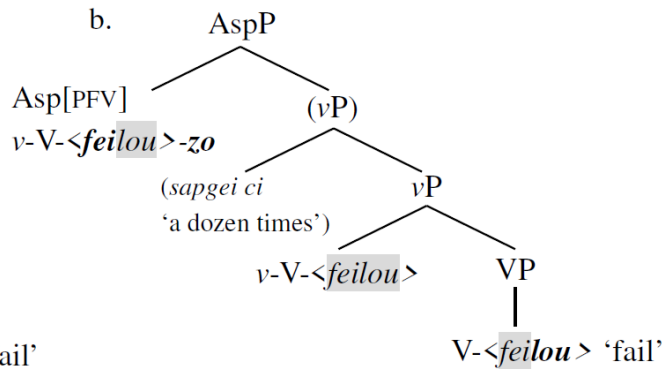
- Derivation of insertion of phrasal elements

(17)   a.   fei<zo><**sapgeici**>lou   (=5b)

fail<PERF><ten.several.time>

'failed a dozen times.'

(18)

a.

```
                AspP
              /      \
      Asp[PFV]       (vP)
        -zo         /    \
           (sapgei ci    vP
           'a dozen times')  /  \
                           v    VP
                                |
                          V-feilou 'fail'
```

b.

```
                      AspP
                    /      \
        Asp[PFV]           (vP)
   v-V-<feilou>-zo        /    \
              (sapgei ci       vP
              'a dozen times')  /   \
                    v-V-<feilou>    VP
                                     |
                              V-<feilou> 'fail'
```

5 Extension to other cases

- Partial verb fronting: *lin* 'even'-focus construction

- Partial reduplication: A-not-A (not being discussed today)

5.1 Partial verb fronting: *lin* 'even'-focus construction

- *Data.* Apparently, the second syllable may be fronted, leaving the first syllable stranded:

(19) (Apparent) partial verb fronting

    a. lin   **sen**   Aaming dou mou **pi**
        even present Aaming also NEG present
        'Aaming even didn't present.'

    b. lin   **wi**   Aaming dou **so**-maai
        even sorry Aaming also sorry-ADDITIVE
        'Aaming even said sorry.'

Interestingly, full copying of both syllables is also possible:

(20) (Full) verb doubling

    a. lin   **pisen** Aaming dou mou **pisen**
        even present Aaming also NEG present
        'Aaming even didn't present.'

- *Analysis.* Syllables are not terminals and cannot undergo syntactic movement. It should be the whole verb moving. We suggest that (19) is derived by (20) through syllable deletion, by assuming *lin* 'even' to be a prefixal element:

(21) Derivation steps for partial verb fronting

    a.   [even- [Aaming [also [not [pi-sen]]]]]   (base structure)

    b.   [even-<pi-sen> [Aaming [also [not [<pi-sen>]]]]]   (focus movement of verb, =(20))

    c.   [even-<p̸i̸-sen> [Aaming [also [not [<pi-sen>]]]]]   (*pre*fix-induced syllable deletion)

    d.   [even-<p̸i̸-sen> [Aaming [also [not [<pi-s̸e̸n̸>]]]]]   (partial copy deletion, =(19))

Crucially, the deletion is sensitive to the direction of affixation: while a suffix deletes the second syllabl, a prefix deletes the first syllable.

6   Micro-variations with Mandarin

- Separable verbs

  Unlike Cantonese, Mandarin generally disallows separation of non-VO compounds and monomorphemic words. Even for VO compounds, Mandarin disfavors separation as compared to Cantonese:

- Obligatory separation in Cantonese, optional separation in Mandarin:

(22) Cantonese: *batjip* 'graduate, (lit.) end-business'

a. ??**bitjip**-zo   saam-nin
   graduate-PERF   3-year
   Int.:'graduated for 3 years'

b. **bit**<zo>**jip**   saam-nin
   graduate-<PERF>   3-year
   'graduated for 3 years'

(23) Mandarin: *biye* 'graduate, (lit.) end-business'

a. **biye**-le   san-nian
   graduate-PERF   3-year
   Int.:'graduated for 3 years'

b. **bi**<le>**ye**   san-nian
   graduate-<PERF>   3-year
   'graduated for 3 years'

- Optional separation in Cantonese, non-separation in Mandarin:

(24) Cantonese: *ceot-baan* 'publish, (lit.) out-plate'

    a.   bun-syu **ceotbaan**-zo mei?
        CL-book publish-PERF NEG
        'Did the book get published?'

    b.   bun-syu **ceot**<zo>**baan** mei?
        CL-book publish-<PERF> NEG
        'Did the book get published?'

(25) Mandarin: *chu-ban* 'publish, (lit.) out-plate'

    a.   Na-ben-shu **chu-ban**-le meiyou?
        thatCL-book publish-PERF NEG
        'Did the book get published?'

    b. ??Na-ben-shu **chu**<le>**ban** meiyou?
        thatCL-book publish<PERF> NEG
        Int.'Did the book get published?'

- Under the current syllable deletion account, the micro-variations can be captured by the obligatoriness of the syllable deletion rule.

- A-not-A (not being discussed today)

7   Concluding remarks

7.1   Syllable deletion vs. reanalysis

- **Formulation within the generative framework**

    - Our syllable deletion account derives separable verbs by adopting a move-and-copy theory in syntax and a syllable deletion rule in PF/phonology. There are no novel, specialized operations outside the generative framework.

    - Reanalysis, on the other hand, is a rather ad-hoc mechanism and faces difficulty in terms of formalization in the generative theory.

- **Capturing micro-variations**

  – A syllable deletion account is also empirically superior in being able to capture micro-variations between Cantonese and Mandarin, by stating the obligatoriness of the deletion rule.

  – Yet, it is unclear how to capture this under a reanalysis account given that reanalysis is not a rule.

7.2 Implications under a syllable deletion account

- **A head movement approach to complex words**
  There is a prevailing debate on at which part of grammar complex words are formed, in both generative theories and Chinese linguistics:

  - *A lexicalist approach*: Complex words, including affixed words, are formed and stored in the lexicon. (Chomsky 1970, 1995, 2000; Gu 1995, Huang, Li & Li 2009)

  - *A non-lexicalist approach*: No complex objects can be stored in lexicon. They are all derived in syntax or a post-syntactic component. (Halle & Marantz 1993 *et seq.*; Tsai 2001, Tang 2003)

  This paper provides novel support for the latter non-lexicalist approach, where verbs move to a syntactic head host by affixes, creating copies for syllable deletion. Affixation is derived in syntax by head movement but not in the lexicon.

- **Distributed deletion on the word level**

  - Copy Deletion does not necessarily delete a full copy. Sub-parts of copies may also be deleted, i.e. Distributed (Copy) Deletion (Fanselow & Cavar 2002). It has been attested on the phrasal level (e.g. discontinuous noun phrases in German, Croatian, Polish).

  - This paper shows that Copy Deletion interacts with PF operations such as the proposed syllable deletion rule and can be scattered, leading to Distributed Deletion on the word level.

- **Cross-linguistic: German and Dutch separable verbs**

  German and Dutch also have separable complex verbs, where a prefix (generally particles, but could also be a noun or an adjective) may be 'separated' from the verbal stem:

(26)   <u>Separable complex verbs in German</u> (Polzin 1997:4)

    a.   ... daβ Peter die Suppe **aufiβt**
             that Peter the soup up-eat
         '...that Peter finishes the soup.'

    b.   Peter **iβt** die Suppe **auf**
          Peter eats the soup up
         'Peter finishes the soup.'

(27) <u>Separable complex verbs in Dutch</u> (Booij 1990:46)

    a.   dat John [PRO me t_i] wil   **opbellen$_i$**

        that John   me   want up-ring
        'that John wants to phone me.'

    b.   dat John [PRO me **op** t_i] wil   **bellen$_i$**

        that John   me up   wants ring
        'that John wants to phone me.'

Given the similarity of these examples with the partial verb fronting in Cantonese, it is worthwhile to explore how a syllable deletion account may extend to German and Dutch.