Converbs and Adverbial Clauses: A Case Study in Cantonese[*]

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November, 2022

Abstract: This paper investigates an understudied topic in adverbial clauses, converbs, which are verb forms that mark adverbial subordination. Focusing on converbal clauses in Cantonese, I show that they do not share a uniform syntax and should be divided into two classes, formed by central converbs (such as conditional clauses formed by V-*can1*) and peripheral converbs (such as inferential clauses formed by V-*dak1*) respectively. The central class adjoins low to the event/proposition level projections of the main clauses and has an impoverished internal structure, whereas the peripheral class attaches high to the discourse level projections of the main clauses and has an articulated internal structure. The distinction displays a remarkable parallelism with the central-peripheral dichotomy of adverbial clauses proposed by Haegeman (2003a, b, 2010), calling for a unified syntax of adverbial clauses formed by converbs and by subordinators, which is achievable under an agreement analysis of converbs.

Keywords: converbs; adverbial clauses; external syntax; internal syntax; the central-peripheral dichotomy; Cantonese

1. Introduction

A subset of Cantonese verbal suffixes triggers obligatory adverbial subordination (Tang 2018, 2022, Yip 2019). For instance, with the presence of the universal quantificational suffix -*can* in (1), the first clause must be subordinated to a following main clause as a conditional free relative (P. Lee 2017; see also Zhan 1958, Yip 2020, *i.a.*).[1] Another case is -*dak* with a "realization" sense in (2) (Luke 1999, Peng 2010, Shan 2012), where the first clause is a rationale for the main clause's assertion.[2]

(1) [Go   bibi siu-**can**],   go hau   zau   maak-dou hou   daai
    CL   baby laugh-CAN CL mouth then open-till   very big
  'Whenever the baby laughs, his mouth opens wide.'
                         (adapted from Matthews & Yip 1994:228, hereinafter M&Y)

(2) [Keoi wan-**dak** nei],   zau   ganghai jau   kwannaan laa1   (Luke 1999:216)
    3SG find-DAK 2SG   then must   have difficulties SFP
  'Since s/he found you, (s/he) must have some sort of difficulties.'

From a typological perspective, similar verb forms are found in a wide range of languages (Haspelmath 1995b), including Lithuanian, Mongolian, Portuguese, Hindi-Urdu, Korean, Japanese, Modern Greek, etc. They are referred to as *converbs* (not to be confused with **coverbs**), defined as "a nonfinite verb form whose main function is to mark adverbial subordination" (Haspelmath 1995b:3). An analogy is the absolute constructions formed by adverbial participles in English, as in ***Staying in New York, they often visit their parents*** (Greenbaum 1973, Stump 1985).[3] As argued in Yip (2019) and Tang (2022) with close scrutiny, verb forms like V-*can* and V-*dak* mark adverbial subordination and fall into the category of converbs.[4]

Converbs are robust in Cantonese and at least 11 converbs have been identified (Tang 2018, 2022, Yip 2019).[5] Nevertheless, they are understudied in Cantonese

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[1] Cantonese examples are transcribed in *Jyutping* (the Linguistic Society of Hong Kong Cantonese Romanization Scheme, 1993). Tones are represented when necessary, with 1=high level [⁵⁵]/[˥], 2=high rising [³⁵]/[˧˥], 3=mid-level [³³]/[˧], 4=low falling [²¹]/[˨˩], 5=low rising [¹³]/[˩˧], 6=low level [²²]/[˨]. Abbreviations that deviate from the Leipzig Glossing Rules: CL=classifier; MOD=modification marker; RED=reduplication; SFP=sentence-final particle. The Cantonese data in this paper are collected from the literature, naturally occurring examples, and introspection by the author with judgment confirmed by seven native Hong Kong Cantonese speakers (aged from around 20 to 30).

[2] While -*dak* is often accompanied with a "realized" event, there are cases where the event is not yet happened. See Appendix I for an alternative suggestion that -*dak* conveys intention/volition.

[3] English participles may be adjectival or nominal (gerunds), and hence not converbs in a strict sense.

[4] Since Cantonese does not have morphological marking for finiteness, the first half of Haspelmath's (1995b) definition does not apply. Alternatively, Nedjalkov's (1995) broader definition can be adopted, which includes verb forms that alternate between a finite use and a converbal use.

[5] In total 13 in Tang (2018), 12 in Tang (2022) and 11 in Yip (2019). In this paper, I adopt the inventory in Yip (2019). See Section 2 and footnote 8 for discussions.

linguistics or even Chinese linguistics in general.[6] On the other hand, while there is rich typology literature on converbs across languages (Haspelmath 1995a, b, Nedjalkov 1995), few formal syntactic analyses have been be offered (see, e.g. Peters 2021 for Mongolian).

The goal of this paper is two-fold. First, I examine the syntactic properties of converbs to fill the empirical gap, which enables further cross-linguistic comparison with other languages. Second, I situate converbs in the theory of adverbial clauses by presenting a structural analysis within the generative framework. I show that converbal clauses can be divided into two classes according to their degree of integration into main clauses (*external syntax*), and richness of their clausal structure (*internal syntax*). The first class, represented by V-*can*, has a lower attachment site (to TP) and an impoverished internal structure (as large as defective TP). The second class, represented by V-*dak*, has a higher attachment site (to ForceP) and an articulated internal structure (as large as ForceP). The distinction, together with the clausal relations expressed, is remarkably similar to adverbial clauses formed by subordinators (Haegeman 2003a,b, 2010; *cf.* Wei & Li 2018 for Mandarin). This shows that Haegeman's central-peripheral dichotomy is also attested in converbal clauses, which consequently enriches the empirical coverage of the theory of adverbial clauses. Therefore, I adopt the same terminology and refer to the first class as *central converbs* and the second as *peripheral converbs*.

This paper is organized as follows. Section 2 describes basic properties of Cantonese converbs. Section 3 and 4 examine how central and peripheral converbal clauses differ in their external and internal syntax respectively. Section 5 discusses their parallelism with adverbial clauses formed by subordinators. Section 6 concludes.

2.   Basic properties of converbs in Cantonese

First, as mentioned in the introduction, converbs in Cantonese trigger obligatory adverbial subordination to a main clause. They exhibit rigid "incompleteness effects", which should be distinguished from the incompleteness effects displayed by the perfective suffix like *-zo* in Cantonese or *-le* in Mandarin (Tsai 2008, Tang 2018, Sun 2022, *i.a.*). The converbal clauses cannot standalone, even with temporal adverbs and sentence-final particles (SFPs) under a plausible reading, as shown in (3)-(4).

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[6] Mandarin V-*zhe*-V-*zhe* can also be regarded as a converb that marks a temporal adverbial clause. Yet, it is often not recognized as a converb.

    (i)   [Ta **kan-zhe-kan-zhe** shu],   jiu shui-zhe le
             3SG read-ZHE-read-ZHE book   then sleep-IPFV SFP
             '(He) fell asleep while he was reading books.'

(3) *Go   bibi   <u>batnau</u> (dou) siu-**can**   gaa3
    CL   baby   always all   laugh-CAN   SFP
    Int.: 'The baby always laughs.'

(4) *Keoi   <u>jiging</u>   wan-**dak**   nei   <u>laa3</u>
    3SG   already   find-DAK   2SG   SFP
    Int.: 'S/he has already found you.'

Second, Cantonese converbs encode requirements on clausal relations. Unlike English absolute constructions, which display semantic variability and allow temporal, conditional, causal or concessive interpretations (Stump 1985), Cantonese converbal clauses only express particular clausal relations. They are thus "specialized converbs" in Haspelmath's (1995a) terms, as opposed to "contextual converbs" which allow multiple clausal relations. As exemplified in (5), -*can* clauses are restricted to only an event conditional or a conditional free relative (P. Lee 2017), as marked by overt subordinators *zijiu* 'as long as, (lit.) only if' and *muidong* 'whenever' respectively. Notably, -*can* clauses cannot be interpreted as temporal, casual or concessive.

(5) <u>Clausal relations of -*can* clauses</u>
    a. [(<u>Zijiu</u>/   <u>muidong</u>) keoi jam-**can**   naai], go tou   zau   tung
        only.if   whenever 3SG drink-CAN milk   CL stomach then   ache
        'Whenever s/he drank milk, his/her tummy will feel bad.'
    b. {*<u>dong</u>/??<u>jyugwo</u>/*<u>janwai</u>/ *<u>geijin</u>/ *<u>seoijin</u> } keoi jam-**can**   naai, …
        when   if   because since   although 3SG drink-CAN milk

Similarly, -*dak* clauses express an inferential/rationale or premise conditional relation (in Haegeman's 2003a sense). The converbal clause is the rationale/premise of the main clause's assertion, compatible with *geijin* 'since' and *jyugwo* 'if' in (6)a.[7] Again, -*Dak* clauses cannot be interpreted as temporal, event conditional, causal or concessive (=(6)b). Similar requirements are shared by other converbs (see Appendix II for a complete list supplemented by naturally occurring examples).

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[7] An anonymous reviewer points out that (ii) with *dak* is not natural. The converbal and main clauses do not share the same subject in (ii). Among the seven native Hong Kong Cantonese speakers I consulted, four found it acceptable and three found it degraded. Interestingly, the variations in judgment seem to be related to age difference. The speakers who fully accept the sentence are around 20 years old, and the rest who do not are around 30 years old. It is also worth noting that cases with different subjects in both clauses are attested in naturally occurring data, such as (60) in Appendix II.
    (ii)   %[(Geijin/ jyugwo) <u>keoi</u>   jam-**dak**   naai], <u>go tou</u>   zau (sat) tung gaa3 laa1
               since if   3SG   drink-DAK   milk   CL stomach then   must ache SFP SFP
             'Since/if he drank milk, it's certain that his tummy will feel bad.'

(6) <u>Clausal relations of *-dak* clauses</u>

    a. [(<u>Geijin</u>/ <u>jyugwo</u>) keoi jam-**dak** naai (gewaa)],

         since if   3SG drink-DAK milk in.case

      zau jatding wui toutung   (gaa3 laa1)

      then must   will stomach.ache SFP SFP

      'Since/if s/he drank milk, it's certain that his/her tummy will feel bad.'

    b. {*<u>Muidong</u>/??<u>dong</u>/ *<u>zijiu</u>/ ??<u>janwai</u>/ *<u>seoijin</u> } keoi jam-**dak**   naai, …

      Whenever when only.if because although 3SG drink-DAK milk

The inventory of converbs in Cantonese is summarized in (7). Anticipating a central-peripheral dichotomy (as will be argued in Section 3-4), the converbs are classified into two classes. The clausal relations expressed by central converbs are closely related to propositions/events, regarding temporal anchoring or truth conditions of the main clauses. Peripheral converbs, on the other hand, is concerned with the discourse such as illocutionary force or background assumptions.

(7) <u>The inventory of converbs in Cantonese</u>[8]

Class I: Central		**Class II: Peripheral**	
VV-*haa2* (VV 吓)	Temporal (simultaneous/posterior)	**V-*dak1*** (V 得)	Inferential/ premise conditional
V-*loeng5*-V (V 兩 V)	Temporal (posterior)		
V-*hei2…soeng5lai4* (V 起…上嚟)	Temporal/conditional	**V-*hoi1*** (V 開)	Inferential/ premise conditional
V-*hei2* (V 起)	Temporal/conditional		
V-*can1* (V 親)	Conditional	**V-*gik6*** (V 極) (degree)[9]	Concessive/ unconditional
V-*gik6* (V 極) (quantificational)	Unconditional	**V-*dak1…lai4*** (V 得…嚟)	Mixed temporal/ conditional assertion
V-*lai4*-V-*heoi3* (V 嚟 V 去)	Unconditional		

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[8] Tang (2018, 2022) also includes V-*lok6*, V-*zyu6* and V-*zoek6*. However, V-*lok6* expresses a topic-like reading and may be treated as middle constructions, whereas V-*zyu6* and V-*zoek6* do not need a main clause when certain SFPs are present (Yip 2019; see also Lai & Chin 2018 for V-*zoek6*). Note that V-*hoi1* is excluded in Tang (2022), which is treated as a derived use of the non-converbal habitual V-*hoi1*. V-*dak1* is also not discussed in Tang (2018, 2022).
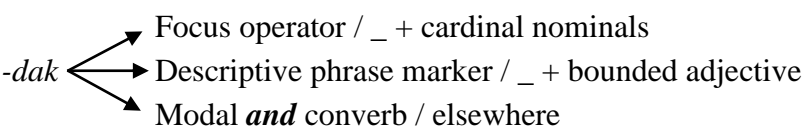
[9] V-*gik6* has two uses: quantifying over events (with eventive predicates) and over degrees (with gradable predicates), dubbed as "quantificational" and "degree" respectively in Tang (2015a). They express different clausal relations (see Appendix II) with distinct internal and external syntax (see Section 3-4), and are tentatively treated as two converbs here.

Most converbal suffixes have homophonous non-converbal counterparts (except *-gik* & *-dak…lai*). Synchronically, they have different core meanings, and also distinct grammatical properties like restrictions on predicates, objects and subjects, aspectual properties, and/or even tones (e.g. *-haa2* vs. *-haa5*). I discuss *-can* and *-dak* below.

-Can has a non-converbal "adversative" use in addition to the converbal "habitual" use (M&Y 1994), which may be treated as different lexical items (Gao 1980, Tang 2015a; but see Sio 2020 for a unified analysis). First, non-converbal *-can_{advers}* takes a limited subset of verbs that denote a specific manner of activity and marks the adversity results of the activities (e.g. *zuk-can* 'choke (on liquid)', Gu & Yip 2004). Converbal *-can_{cvb}*, in contrast, takes any verbs that denote dynamic events (i.e. non-states) and signals universal quantification over the events (Yip 2020). Second, *-can_{advers}* may be followed by aspectual suffixes, whereas *-can_{cvb}* cannot be followed by any suffix, as illustrated in (8).

(8) a. Nei   haak-**can**_{advers}(-<u>zo</u>) keoi   b. Nei jam-**can**_{cvb}(*-<u>zo</u>) naai, …
    2SG   scare-CAN-PFV   3SG   2SG drink-CAN-PFV   drink
    'You scared her'.   (M&Y 1994:228)   'Whenever you drank milk, …'

-Dak, apart from the converbal "realization/intention" use, can also be used as a modal, a descriptive phrase marker, or a focus operator. As argued by Tang (2002), the three (non-converbal) uses have complementary distribution regarding post-verbal elements. Modal and converbal *-dak*, however, may occur in the same syntactic contexts, as represented in (9) (reproduced from Tang 2002:303 with converbal *-dak* added). As pointed out by the anonymous reviewers, how to tease modal and converbal *-dak* apart is a non-trivial question. I direct interested readers to Appendix I for a detailed discussion on their differences in predicate and subject requirements.

(9)   Focus operator / _ + cardinal nominals
   -dak   Descriptive phrase marker / _ + bounded adjective
            Modal **and** converb / elsewhere

In the following sections, I show that converbs in Cantonese are not uniform regarding internal and external syntax. For space reasons, I will focus on central *-can* clauses and peripheral *-dak* clauses, but the patterns also apply to other converbs.

3.   The external syntax of converbal clauses
This section examines the external syntax of central and peripheral converbal clauses by three groups of diagnostics: ordering, embeddability and relative scope with SFPs.

3.1. Ordering

First, *-can* clauses must follow *-dak* clauses, but not the other way round (=(10)a vs. b). *-Can* clauses are closer to the main clauses, indicative of a lower attachment site.

(10) The ordering of central and peripheral converbal clauses

    a. [lai-**dak**   Hoijoenggungjyun aa3], zau jatding [waan-**can** soewaattai]
      come-DAK Ocean Park   TOP   then must   play-CAN slide

     zau/dou sapsan   gaa3 laa1
     then/all get.wet   SFP SFP

    'Now that you came to Ocean Park, for sure every time you play slide you will get wet.'

    b. *[lai-**can**   Hoijoenggungjyun aa3], zau/dou jatding [waan-**dak** soewaattai]
       come-CAN Ocean Park   TOP then/all must   play-DAK slide

      zau   sapsan   gaa3 laa1
      then get.wet   SFP SFP

     Int.: 'Every time you come to Ocean Park, you will definitely get wet because of playing slide.'

3.2. Embeddability

Second, only *-can* clauses but not *-dak* clauses may be embedded (with main clauses) in a relative clause, a subject clause or a complement clause of factive predicates, as in (11). Given that these subordinated clauses are CPs, the contrast shows that *-dak* clauses must attach to a position above CP, rendering the main clause too large to be embedded, whereas *-can* clauses may attach below CP and can be embedded.[10]

(11) Contrasts in embeddability regarding CP

    a. Relative clauses

    Ngo sik nigo [CP [lai{**-can/*-dak**}] zau bei jan   naau] ge   hoksaang
    1SG know this   come-CAN/-DAK then PASS person scold MOD student
    'I know this student who got scolded whenever he came.'

    b. Subject clauses

    [CP [zaa{**-can/*-dak**} ce] zau fanzoek] hai nigo hungwen sigei ge daksik
       drive-CAN/-DAK car then fall.asleep be this red.van   driver MOD feature
    'That (he) falls asleep whenever driving is one feature of this red minibus driver.'

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[10] *-Dak* clauses are embeddable under attitude verbs like *gokdak* 'think' (e.g. (iii)) or verbs of saying like *waa* 'say', whose complement clauses may have a larger size than CP. Hence, *-dak* clauses should not be simply regarded as attaching to a root clause.

    (iii)   Ngo gokdak [[keoi lai-**dak**]   zau wui bei jan   naau]
            1SG think   3SG   come-DAK then will PASS person scold
            'I think that if he comes he will be scolded.'

c. Complement clauses of factive predicates

Aaming geidak [CP camjat [keoi jam{**-can/*-dak**} naai]   zau   wui toutung]

Ming   remember ytd.   3SG drink-CAN/-DAK milk   then will stomachache

'Ming remembers that yesterday his tummy felt bad whenever he drank milk.'

Further embedding tests by Huang's (2022) Type II predicates (e.g. 'force') and resultative complement (Huang 1988) in (12) show that *-can* clauses may attach to an even smaller clause, namely TP. *-Dak* clauses, again, cannot be embedded in a TP.

(12) <u>Contrasts in embeddability regarding TP</u>

   a. Complement clauses of Type II predicates (e.g. 'force')

   Aamaa bik   Aaming [TP [ceot{**-can/*dak**} gaai] zau jiu   daanseng sin1]

   Mum   force Ming   go-CAN/-DAK   street then need tell   SFP

   'Mum forces Ming to tell her first whenever he goes out.'

   b. Resultative complement

   Aaming gui-dou   [TP [co{**-can/*dak**} ce] zau/dou   fanzoek]

   Ming   tired-RES   sit-CAN/-DAK   car then/all   fall.asleep

   'Ming is so tired that he will fall asleep whenever he is on a ride.'

3.3. Relative scope with sentence-final particles

Third, under a cartographic approach, SFPs in Cantonese host functional projections on the clausal spine (Sybesma & Li 2007, Tang 2015a, 2020), and form discontinuous constructions with a scope-marking adverbial (Tang 2006 *et seq.*). The relative scope with SFPs is exploited to diagnose the attachment sites of converbal clauses. One prominent case is the focus SFP *lo1*, which displays root phenomenon (Tang 2008). *Lo1* can only take wide scope over *-can* clauses (=(13)) and narrow scope under *-dak* clauses (=(14)), as indicated by the position of the focus adverb *mai*.

(13) <u>Central converbal clauses take scope under focus *lo1*</u>

   a. keoi <u>mai</u> [[tai-**can**   syu] dou fanzoek   ] <u>lo1</u>   (*lo1 > -can*)

      3SG   FOC   read-CAN book all   fall.asleep SFP

      'As for him, it's obvious that he falls asleep whenever he reads.'

   b. *keoi [[tai-**can**   syu] <u>mai</u> dou fanzoek   <u>lo1</u>]   (**-can > lo1*)

      3SG   read-CAN book FOC all fall.asleep SFP

(14) <u>Peripheral converbal clauses take scope over focus *lo1*</u>

   a. *keoi <u>mai</u> [[tai-**dak**   syu]   wui fanzoek   ] <u>lo1</u>   (**lo1 > -dak*)

      3SG   FOC   read-DAK book   will fall.asleep SFP

   b. keoi [[tai-**dak**   syu] <u>mai</u> wui fanzoek   <u>lo1</u>]   (*-dak > lo1*)

      3SG   read-DAK book FOC will fall.asleep SFP

      'Since he read, it's obvious that he will fall asleep.'

The scopal patterns are consistent with the embedding patterns in Section 3.2: the attachment site of *-can* clauses (below CP) is too low to take scope over *lo1*, and that of *-dak* clauses (somewhere above CP) is too high to take scope under *lo1*. Assuming that *lo1* projects a Foc(us)P above CP (*cf.* Rizzi 1997), the lower bound of attachment site of *-dak* clauses can be identified as above FocP.

To test how low *-can* clauses may attach to, the TP level SFP *gam3zai6* (Tang 2009) and the *v*P level SFP *faat3* (Tang 2019) are recruited. As shown in (15)-(16), *-can* clauses may take narrow scope under *gam3zai6* (scope indicated by *caa-m-do* 'almost') but not *faat3* (scope indicated by *gam* '(like) so'). The lower bound of the attachment site of *-can* clauses can be identified as above *v*P.

(15) keoi <u>caa-m-do</u> [[tai-**can** syu] dou fanzoek] <u>gam3zai6</u> (*gam3zai6 > -can*)
  3SG almost   read-CAN book all fall.asleep SFP
  'He almost falls asleep whenever he reads books.'

(16) a. *keoi <u>gam</u> [[tai-**can** syu] dou fanzoek] <u>faat3</u> (**faat3 > -can*)
   3SG so   read-CAN book all fall.asleep SFP

  b. keoi [[tai-**can** syu] dou <u>gam</u> fanzoek <u>faat3</u>] (*-can > faat3*)
   3SG read-CAN book all so fall.asleep SFP
   'Whenever he reads books, he falls asleep like so.'

The upper bound of *-dak* clauses can also be examined. Recall that the main clauses denote an assertion given the premise/rationale of *-dak* clauses. The main clause can also have a different illocutionary force such as the rhetorical question in (17) and the imperative in (18). This suggests that *-dak* clauses attach to ForceP, which is higher than CP (i.e. Tang's 2015a, 2020 DegreeP, *cf.* Rizzi 1997).

(17) [jap-**dak** lai maansiuk], jau bingo m-zisi aa3? (rhetorical question)
  enter-DAK in yorozuya have who not-selfish SFP
  'If one entered Yorozuya, isn't that one is selfish?'
             (Drama *Regret Yorozuya* by 57 Studio, 2018/3/10)

(18) mantai hai [nei co-**dak** "lingzau" nigo wai],   (imperative)
  problem be 2SG sit-DAK leader this seat
  zau mgoi singdaam ci-faan go lingzau ge joeng
  then please bear   like CL leader MOD look
  'The problem is – since you took up the role of a leader, please bear the responsibility and act like one.'   (Internet, 2018/10/17)

-*Dak* clauses, however, cannot take wide scope over an evidential SFP *wo5* that marks hearsay evidence (Tang 2015b), as indicated by the position of *tenggong* '(lit.) hear-say' in (19). This indicates that the attachment site of -*dak* clauses is lower than Evid(ential)P projected by *wo5* (labelled as SAP in Tang 2015b).

(19) a. *[[Keoi lai-**dak**]   <u>tenggong</u> zau wui bong nei   <u>wo5</u>]   (*-*dak* > *wo5*)
          3SG   come-DAK hearsay   then will help 2SG SFP

   b. <u>Tenggong</u> [[keoi lai-**dak**]   zau   wui bong nei] <u>wo5</u>   (*wo5* > -*dak*)
      hearsay   3SG come-DAK then will help 2SG SFP
      'I heard that since he has come, he will help you.'

3.4. Interim summary

Taking stock, central -*can* clauses attach lower to TP, whereas peripheral -*dak* clauses attach higher to ForceP (=(20)). The syntactic position correlates with their clausal relations: the conditional reading of -*can* clauses is at the event/proposition level, and the conditional/inferential reading of -*dak* clauses is at the illocutionary force level.

(20) [EvidP … [ForceP **-*dak* clauses**] [FocP … [CP … [TP **-*can* clauses**] [vP …

   The central-peripheral distinction carries over to other converbs. To illustrate, central quantificational -*gik* clauses can only follow peripheral degree -*gik* clauses in (21), despite that they share the same morpheme -*gik* 'lit.: extreme'. The difference in external syntax correlates neatly with the distinct clausal relations they express: event unconditional for central -*gik* and concessive for peripheral -*gik*.

(21) a. Aaming [lek-**gik**degree], mai jau   hai [zou-**gik**quantif.] dou m-sik!
       Ming   smart-GIK   FOC again be   do-GIK   also not-know
       'Even though Ming is smart, he still doesn't understand (the question) no matter how many times he does it. '
   b. *Aaming [zou-**gik**quantif.], mai jau   hai [lek-**gik**degree] dou jauhaan!
        Ming   do-GIK   FOC again be   smart-GIK   also limited
       Int.: 'No matter how many times Ming does it, he still doesn't become a genius however smart he becomes.'

   To give one more pair, both central -*haa* and peripheral -*dak…lai* clauses express temporal relation. Yet, -*dak…lai* additionally marks conditional assertion. Only -*haa* clauses, but not -*dak…lai* clauses, may be embedded in relative clauses:[11]

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[11] Note that -*haa* clauses allow a lower attachment site to *v*P, as evidenced by its narrow scope under *faat3* in (iv). The classes of converbal clauses might be more nuanced than the central-peripheral

(22) a. ngo sik   gogo [[nei zyuzyu-**haa**   faan] daa bei nei] ge   jan
       1SG know that   2SG RED.cook-HAA rice   call to 2SG MOD person
       'I know that person who called you while you were cooking.'
    b. *ngo sik   gogo [[nei zyu-**dak** faan **lai**] dou   sikjyun] ge   jan
       1SG know that   2SG cook-DAK rice LAI already eat.finish MOD person
       Int.: 'I know that person who will have already finished eating if we wait until
       the time when you cooked the rice.'

      I take CP to be a hallmark for the differences in external syntax between central
and peripheral converbal clauses (i.e. attach below vs. above CP). The difference in
attachment sites crosscuts converbs into two classes, summarized in (23).

(23) <u>External syntax: differential attachment sites of converbal clauses</u>
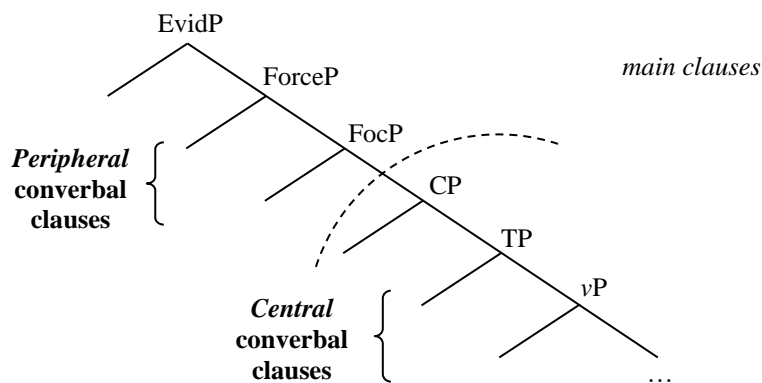
4.   The internal syntax of converbal clauses

This section further examines the differences of converbal clauses in the internal
syntax. Three types of diagnostic tests are employed: temporal specification, *lin* 'even'
focus, and SFPs.

4.1. Temporal specification

First, *-can* clauses cannot have a distinct temporal specification from the main clause,
as indicated by the incompatibility of deictic temporal adverbials in different tenses in
(24)a. This contrasts with *-dak* clauses in (25). In other words, *-can* clauses are
temporally deficient ("tenseless" in descriptive sense), whereas *-dak* clauses are
"tensed". Note that without *-can*, an event conditional formed by *zijiu* 'as long as' can

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dichotomy (as already suggested in Endo & Haegeman 2019 for adverbial clauses headed by
subordinators), which is beyond the scope of this paper and awaits a separate occasion for exploration.
   (iv)   Keoi (<u>gam2</u>) [coengcoeng-**haa** go1] (<u>gam2</u>) zaujam   <u>faat3</u>
           3SG   so   RED.sing-HAA song   so   off-pitch SFP
           'While singing, s/he went off-pitch like so.'

have a different tense from the main clause in (24)b, suggesting that the ungrammaticality of (24)a is not due to semantic reasons.

(24) a. *[nei zingwaa zou-**can** nijoeng je], jigaa zau wui bei lousi naau
  2SG just.now do-CAN this thing now then will PASS teacher scold

  b. [**zijiu** nei zingwaa zou nijoeng je], jigaa zau wui bei lousi naau
  only.if 2SG just.now do this thing now then will PASS teacher scold
  'If you've done that a moment ago, you will be scolded by the teacher now.'

(25) [nei zingwaa zou-**dak** nijoeng je], jigaa zau wui bei lousi naau
  2SG just.now do-DAK this thing now then will PASS teacher scold
  'Since you've done that a moment ago, you will be scolded by the teacher now.'

4.2. Lin 'even' focus

Second, it is observed that only -*dak* clauses may accommodate *lin* 'even' focus, but not -*can* clauses, as shown by the contrast between (26) and (27). The contrast suggests that -*can* clauses, unlike *dak* clauses, lack the FocP projection to host *lin*. Coupled with the findings in Huang (2022) that 'even'-focus is one of the signature tests for finiteness in Chinese, -*can* clauses can be considered a non-finite TP.[12]

(26) [Geijin lin gaa dou ceng-**dak**], (Internet, 2018/4/10)
  since even leave also request-DAK
  nidi siusi ngo dongjin hai m-wui keoizyut
  these cinch 1SG of.course be not-will reject
  'Now that I've even requested leaves, of course I won't turn down these cinches.'

(27) *[lin gaa dou ceng-**can**], …
  even leave also request-CAN

4.3. Sentence-final particles

Third, -*can* clauses and -*dak* clauses differ in their ability to host SFPs. The SFP *lok3*, which displays root phenomenon and hence is located above CP (ForceP; *cf.* Tang 2015b's EmotionP for SFPs with the coda -*k*), may occur in the -*dak* clause in (28):

(28) [Geijin dou gaan-**dak** lau hai Hoenggong lok3], jau me hou haufui?
  since already choose-DAK stay at Hong Kong SFP have what should regret
  'Now that (we) already chose to stay in Hong Kong, there is nothing to regret.'

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[12] *Lin* 'even' verb doubling in -*dak* clauses is more marked, but still possible with the addition of an SFP as in (v). For discussions on verb doubling and focus movement, see T. Lee (2021, 2022).

  (v) [geijin lin ceoi keoi dou ceoi-**dak** nei lok3], zau jatding wui ziugu nei
    since even marry 3SG also marry-DAK 2SG SFP then must will take.care 2SG
    'Now that he has even married you, he definitely will take care of you.'

In contrast, *-can* clauses cannot host ForceP level SFPs like *lok3*, as well as SFPs that encode temporal information (and presumably at TP) like *lai4* (recent past) and *laa3* (change in state) in (29). This is consistent with the results of the above tests: *-can* clauses are non-finite TP that is temporally deficient, and cannot host TP level SFPs with tense information.

(29) *camjat   [keoi jam-**can**   naai {lai4/ laa3/ lok3}], go tou   zau   tung
      yesterday 3SG drink-CAN milk SFP SFP SFP   CL stomach then ache
     Int.: 'Yesterday, whenever s/he (just) drank milk, his/her tummy felt bad.'

4.4. Interim summary
In short, central *-can* clauses are smaller in size and have a "defective" TP, whereas peripheral *-dak* clauses are larger and have a ForceP (=(30)). The former is in line with Tang's (2022) analysis for converbal clauses.

(30) a. [(Sub)   [$_{TP}$ (Subj) [T$_{defective}$ … ***-can*** …]]],   [main clause]
     b. [(Sub)[$_{ForceP}$ [$_{CP}$ [$_{TP}$ (Subj) [T   … ***-dak*** …]]]]], [main clause]

Two notes are in order. First, the TP "defectiveness" is intended to capture the "tenseless" interpretation. Unlike control clauses, *-can* clauses can host their own (overt) subjects, such as (1) in Section 1. Second, *-can* clauses can also accommodate subordinators such as *zijiu* 'as long as', which are often treated as C heads (e.g. Pan & Paul 2018). However, following the truncation analysis in Haegeman (2003a,b), I suggest that subordinators may not necessarily mark a CP. A subordinator simply takes a clause, but the projections below the subordinator may be "truncated". In English, subordinators like *while* can take a "reduced" clause, such as the adverbial participle in (31). I take *-can* clauses containing *zijiu* to be a similar case with a truncated structure in (30)a.[13]

(31) While staying in New York, they often visit their parents. (Greenbaum 1973:3)

Again, the arguments may extend to other converbs, as illustrated by the contrast in temporal specification between central quantificational *-gik* clauses and peripheral degree *-gik* clauses in (32)-(33).[14]

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[13] See also Yip and Chen (2022) for an operator analysis of subordinators in Asian languages.
[14] One exception is V-*dak…lai*, which expresses conditional assertion with a temporal relation (see Appendix II), and thus always has the same temporal specification with the main clause. However, -*dak…lai* clauses always carry an irrealis mood, suggesting some mood projection above CP.

(32) *[Keoi <u>jicin</u> duk-**gik**   syu]   <u>jigaa</u> dou hai jatsimousing   (quantificational)
      3SG   past read-GIK book   now all be achieve.nothing
     Int.: 'No matter how many degrees he obtained in the past, he is a loser now.'

(33) [(Ziksi)   keoi <u>jicin</u> lek-**gik**   ], <u>jigaa</u> mai dou hai jatsimousing (deg.)
      even.though 3SG past talented-GIK   now FOC also be achieve.nothing
     'Even though he was very talented in the past, he is a loser now.'

The differential sizes of converbal clauses are schematized below:

(34) <u>Internal syntax: differential sizes of converbal clauses</u>
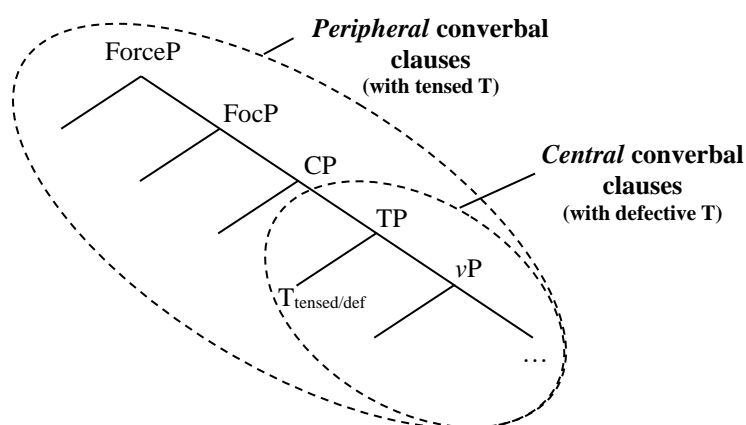
5.   The typology of adverbial clauses

We have seen that central converbal clauses such as *-can* clauses have a lower attachment site externally, and an impoverished clausal structure internally; on the other hand, peripheral converbal clauses such as *-dak* clauses have a higher attachment site externally, and an articulated clausal structure internally. The dichotomy parallels with adverbial clauses formed by subordinators (Haegeman 2003a, b, 2010; Wei & Li 2018), namely central adverbial clauses (CACs) and peripheral adverbial clauses (PACs). To exemplify, the first *while* clause in (35), conveying a concessive relation, is a PAC that attaches high and takes wide scope over the main clause including another *while* clause. The second *while* clause expresses a temporal relation and is a CAC. It attaches lower and takes narrow scope under the main clause future modal *will*. Moreover, the PAC *while* clause can host an epistemic modal *probably*, which is otherwise not possible in the CAC *while* clause. Adopting the truncation approach in Haegeman (2003a,b), CACs lack certain functional projections and have a smaller clause size (i.e. a "truncated" structure).[15]

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[15] Haegeman (2010) proposes an operator movement approach to explain the internal syntax of CACs. However, as convincedly shown in Wei & Li (2018), adverbial clauses in Chinese do differ in clause sizes. It should be also noted that movement and truncation approach are not incompatible (Elordieta & Haddican 2018, Endo & Haegeman 2019).

(35) [While_conc this ongoing lawsuit <u>probably</u> won't stop the use of lethal injection],
it will certainly delay its use [while_temp the Supreme Court (*<u>probably</u>) decides
what to do].   (adapted from Haegeman 2009:399)

Remarkably, the clausal relations expressed by converbal clauses also largely
resemble adverbial clauses. A summary is provided in (36).[16]

(36) <u>Parallelism of converbal clauses and adverbial clauses headed by subordinators</u>
(*cf.* [(Sub) Top* Fin Focus Force Fin IP *v*P] in Haegeman 2003a, b, 2010)

Converbal clauses	Clausal relations	Size	Attach. site	Adverbial clauses (Sub)	Clausal relations	Size	Attach. site
-haa, -loeng, -hei, -hei…soenglai	temporal	$\leq TP_{def}$	$\leq TP$	CAC	event time	Fin	*v*P/IP
-hei, -hei…soenglai, -can, -gik_{quant.}, -lai…-heoi	(un)conditional				event conditional		
-dak, -hoi	inferential	ForceP	ForceP	PAC	rationale	Top	Full-fledged CP
-dak, -hoi, -dak…lai	premise conditional/ cond. assertion				premise conditional		
-gik_{degree}	concessive				concession		

The striking similarities lead to a conclusion that adverbial clauses, despite
having different markings (special verb forms vs. subordinators) that are claimed to
represent language types (Haspelmath 1995b), share the same syntax. As a result, the
central-peripheral typology is empirically enriched by converbal clauses. Nevertheless,
an analytical challenge also arises: how do converbs, as verb forms, encode adverbial
relations and interact with the clausal structure as subordinators do?

I suggest that an agreement analysis may shed light on a unified approach. If we
understand converbs as an agreement marker that establish a syntactic dependency
with the subordinators (e.g. *when*), or, alternatively with the operator associated with
subordinators (e.g. a null temporal operator associated with *while*), one can explain
why converbal clauses resemble canonical adverbial clauses in such a parallel way.
Converbs do not directly trigger the adverbial subordination by themselves – instead,
they are markers for a subordinator (or operator) that truly performs the subordinating
function. One prediction is that subordinators should be able to occur in converbal

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[16] Unconditionals are not discussed in the comprehensive study in Haegeman (2003b). See Chen (2021) for the syntax of unconditionals in Mandarin.

clauses, which is exactly the case in Cantonese (see Appendix II). [17] Another prediction is that the syntactic dependency should be subject to locality constraints and minimality effects, which is however beyond the scope of this paper. For an exploration of this idea, see Yip (2022) for *-can* and Yip (to appear) for *-haa*. In this way, "converb languages" and "conjunction languages" (using subordinators) have more properties in common than previously thought (*cf.* Nedjalkov1995). [18]

Additionally, the internal and external syntax of converbal clauses show an interesting correlation: *-can* clauses, as defective TPs, attach to a TP in the main clause; *-dak* clauses, as ForcePs, also attach to a ForceP:

(37) The "structural matching" effects in Cantonese converbal clauses
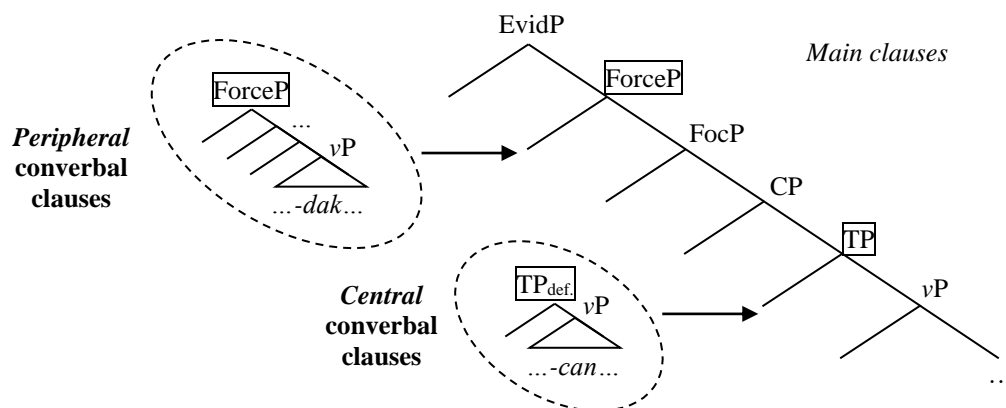
The clause size seems to determine the attachment site. While the "structural matching" effects are not immediately obvious from Haegeman's central-periphery dichotomy (*cf.* the last two columns in (36)), Endo and Haegeman's (2019) reveal a set of robust "matching" effects in six types of Japanese adverbial clauses (derived by head movement), where the moving head in the adverbial clauses determines the adjoining projection in the main clauses. The same effects in Cantonese converbal

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[17] An anonymous reviewer asks when different converbs couple with the same subordinator (e.g. *jyugwo* 'if' for central *-hei* and peripheral *-dak*), what determines the differential internal and external syntax. This question can be related to the fact that *jyugwo* (also English *if*) may form both CACs (event conditional) and PACs (premise conditional). While they have distinct syntax (*cf.* Haegeman 2003a for English, Wei & Li 2018 for Mandarin), it is unclear where it is sourced from given the same subordinator. One possible analysis is to resort to covert conditional operators, one forms CACs another forms PACs. I suggest that the central-peripheral distinction of converbs may provide evidence for the covert operators. *-Hei*, even when occurring with *jyugwo*, is always bound to the former reading, and *-dak* the latter reading. Similarly, another conditional subordinator *zijiu* 'as long as', is only compatible with the event conditional reading and cannot form a PAC. They may be taken as agreeing with only one operator, and *jyugwo* and *if`* are compatible with both operators.

[18] English absolute constructions and "contextual converbs", having variable interpretations, should receive a different analysis. One possibility is they only have a *v*P and contain no operators. The clausal relations are resulted from variable adjunction site. See also Peters (2021) for "low converbs" in Mongolian and Zobel (2018) for English *as*-phrases, which also display semantic variability.

clauses thus constitute potential support for their idea that the external syntax of adverbial clauses is reducible to the internal syntax and await further exploration.

6. Conclusion

This paper has showcased the empirical landscape of converbs in Cantonese, an understudied phenomenon in both Chinese linguistics and generative grammar. It is shown that Cantonese converbs do not form a uniform syntactic class in terms of internal and external syntax: central converbs like V-*can* occur in a smaller clause with defective TP that attaches low to TP of the main clause; whereas peripheral converbs like V-*dak* form a larger clause with ForceP that attaches high to ForceP of the main clause. The syntactic difference also aligns neatly with their clausal relations: central converbal clauses are interpreted at the event/proposition level with temporal or (un)conditional readings, and peripheral converbal clauses are interpreted at the discourse level with inferential, concessive or premise conditional readings. The three-way correlation (internal syntax, external syntax, clausal relations) is strikingly parallel with the proposed central-peripheral dichotomy of adverbial clauses Haegeman's (2003a, b, 2010). The findings suggest that adverbial clauses formed by converbs and by subordinators should receive a unified syntax, which may be achieved under an agreement analysis of converbs.

7. Appendices

*7.1. Appendix I: The converbal -*dak *vs. modal -*dak

The converbal *-dak* differs from modal *-dak* in grammatical properties. First, converbal *-dak* may occur in realis contexts, while modal *-dak* renders irrealis interpretation of the event. They have distinct truth conditions and negated modal *-dak* in (38) can be followed by converbal *-dak* in (39) without contradiction:

(38) Keoi   m-hoi-**dak_mod** dou mun, …
     3SG   not-open-may CL   door
     'S/he may not open the door.'

(39) … [Tausin   keoi hoi-**dak_cvb** dou mun], zau wui bei jan   fat
         just.now 3SG open-may CL door   then will PASS person punish
     'Since s/he just opened the door, (of course) s/he will be punished.'

Note that converbal *-dak* does not result from actuality entailment of the modal *-dak* either, since converbal *-dak* may occur in irrealis contexts yet with distinct truth conditions from modal *-dak*, as in the conditional antecedent in (40). This also suggests that converbal *-dak* does not always involve the realization of events in the actual world (*pace* Luke 1999, Peng 2010, Shan 2012).

(40) [Context: Anyone opened the door without permission will be punished.]
     [Jyugwo keoi hoi-**dak_cvb** dou mun], zau (#m-)wui bei jan   fat
      if   3SG open-DAK CL door   then (not-)will PASS person punish
     'If s/he opens the door, s/he will (#not) be punished.' (negation can otherwise be felicitous with modal *-dak*)

Second, the converbal *-dak* requires a volitional predicate, and is incompatible with predicates with non-human subjects like unaccusative 'open', non-controllable predicates like 'die', non-volitional predicates like 'fall' (=(41)). The modal *-dak* does not have this requirement. A contrast is illustrated in (42) and (43).

(41) a. Verbs taken by *-dak_cvb*: *fan* 'lie down', *tai* 'look', *(daa)hoi* 'open' (trans.), …
     b. Verbs cannot be taken by *-dak_cvb.*: *hoi* 'open' (unaccusative), *sukseoi* 'shrink';
        sei 'die', *saklyun* 'being dumped'; *dit* 'fall', *lau* 'forget', *gin* 'see', …

(42) ni   dou mun hoi-**dak_mod**, go dou mun m-hoi-**dak_modal**
     this CL door open-may   that CL door not-open-may
     'This door is allowed to be open. That one is not.'

(43) *[ni dou mun hoi-**dak_cvb**], zau wui jau jan   bei jan   fat
       this CL door open-DAK   then will have person PASS person punish
      Int.: 'Now that this door is open, someone for sure will be punished.'

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Third, converbal *-dak* requires an agentive subject with volitional involvement in the event. Hence, a non-human subject like "the cat" is degraded in (44), though the judgment can be improved with the predicate *zeoi lousyu* 'chase mice'. Modal *-dak* does not have such requirement, as already shown by the inanimate subject in (42).

(44) [{Aaming/ ??Zek maau} hoi-**dak**_{cvb} dou mun], zau wui bei   jan   fat
        Ming   CL   cat   open-dak   CL   door   then will PASS person punish
     'Since {Ming/??the cat} opened the door, {he/??it} will for sure be punished.'

Fourth, converbal *-dak* is selective on the intentionality of adverbs in (45). Modal *-dak* is not compatible with either adverb used in (45).

(45) [keoi geijin { zyundang/   *msiusam}   hoi-**dak**_{cvb} dou mun], …
        3SG since   intentionally   unintentionally   open-DAK   CL   door
     'Since s/he (*un)intentionally opened the door, ...'

Summarizing, converbal *-dak* encodes a volitional requirement that is not found in modal *-dak*.[19] While they should be distinguished synchronically, converbal *-dak* is nevertheless possible to be derived from modal *-dak* diachronically. Converbal *-dak* is not found in early Cantonese (zero token in *Early Cantonese Colloquial Texts: A Database* and *Early Cantonese Tagged Database*; around 1820-1930), until mid-20th century Cantonese (6 tokens in *The Corpus of Mid-20th Century Hong Kong Cantonese (phase 1),* around 1940-1970), suggesting a later emergence than modal *-dak*. Interestingly, some of the attested tokens qualify as a bridge context, such as (46). *-Dak* has mixed flavor: the promise event has occurred, and the ability to make a promise leads to the conclusion that "I'll not be late again".

(46) Soji [jing-**dak**-sing gwo nei] ne1, zau m-wui zoi   ci   gaa3 laak3 aa3?
     so   promise-DAK to   2SG TOP then not-will again late SFP   SFP   SFP
     'Since I can make the promise to you, I'll not be late again.'
                                    (*The Corpus of Mid-20th Century Hong Kong Cantonese*)

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[19] Another suffix *-zoek* (classified as converbal in Tang 2018) has a mirror image in requiring the lack of intentionality as illustrated below. Cantonese thus has two markers for intentionality: *-dak*_{cvb} encodes [+intention] and *-zoek* encodes [-intention]. See Lai and Chin (2018) for discussions on *-zoek*.
  (i)   [keoi { *zyundang/   msiusam}   hoi-**zoek** dou mun], zaihai m-houcoi.
            3SG   intentionally unintentionally open-DAK CL   door   really unfortunate
           'He accidentally opened the door. How unfortunate!'

7.2. Appendix II: Clausal relations expressed by converbal clauses
This appendix collects data on clausal relations expressed by the 11 converbs and the subordinators that they are compatible with. Most of the examples are naturally occurring data from news media, movies, daily conversations and the Internet, with the rest cited from the literature. All the Chinese characters are preserved.

1. VV-*haa2* (VV 吓). It may express a simultaneous temporal relation 'when' (=(47)-(48)) or an posterior temporal relation 'after' (=(49)). It may occur with the subordinators *hai/dong…gozan/gesihau* 'at the time when' and *zihau* 'after'.

(47) 行行下街突然比個女仔拖住   (*StyleVjmedia*, 2017/2/14)
　　　[Hanghang-**haa**gaai]　datjin　　bei　go　neoizai　to-zyu.
　　　 RED.walk-HAA street　suddenly PASS CL　girl　　hold.hand-IPFV
　　　'(My) hand suddenly got held by a girl while I was walking on the street.'

(48) 當你喺街食食吓嘢嘅時候，[……]   (Internet, 2017/5/13)
　　　[Dong nei hai gaai siksik-**haa**　je　　ge　　sihau], …
　　　 when 2SG at　street RED.eat-HAA thing MOD　time
　　　'When you're eating on the street, …'

(49) 你個細佬哥，乖乖吓又唔乖喇。   (Cheung 2007:173)
　　　Nei go sailougo, [gwaaigwaai-**haa**] jau　　m-gwaai　laa3.
　　　2SG CL kid　　　　　RED.good-HAA　　again not-good　SFP
　　　'You kid becomes naughty again after behaving well for a while.'

2. V-*loeng5*-V (V 兩 V). It expresses a posterior temporal relation 'after' as in (50), compatible with *zihau* 'after'.

(50) 睇兩睇就撕咗封信。   (Zheng 1996:18)
　　　[tai-**loeng**-tai]　　zau　si-zo　　fung　seon.
　　　 look-LOENG-look then　rip-PFV　CL　　letter
　　　'(S/he) ripped the letter after a look/looking it for a short time.'

3. V-*hei2…soeng5lai4* (V 起…上嚟). It may express a simultaneous temporal relation 'when' (=(51)) or an event conditional reading 'if/once' (=(52)). It is compatible with *hai/dong…gozan* 'at the time when', *jyugwo* 'if' and *zijiu* 'as long as'.

(51) 點知原來寂寞起上嚟嗰陣，個個都係一樣。   (Movie *Happy Together*, 1997)
　　　Dimzi　　　　jyunloi [zikmok-**heisoenglai**　gozan],　go-go　dou hai jatjoeng.
　　　how.know turn.out　lonely-HEISOENGLAI　that.time　CL-CL　all　be　same
　　　'Who knows people are all the same when they feel lonely.'

(52) 有起事上嚟點算好呢？ (Daily conversation, 2017/9/22)

[jau-**hei** si **soenglai**] dimsyunhou ne1?

have-HEI issue SOENGLAI what.to.do SFP

'What to do if something happens?'

4. V-*hei2* (V 起). Similar to V-*hei2*…*soeng5lai4*, V-*hei2* may express a simultaneous temporal relation (=(53)) and event conditional relation (=(54)), and is compatible with similar subordinators. Note that the two converbs have different grammatical properties synchronically (Tang 2015a) and distinct historical origins (Yiu 2008).

(53) 但見起工嗰陣都唔知可以搵乜野講 (Internet, 2020/7/2)

Daan [gin-**hei** gung gozan] dou m-zi hoji wan matje gong.

but interview-HEI job that.time also not-know may find what say

'But (I) don't know what to say when having a job interview.'

(54) 如果講起行簡單或者文青風嘅手錶，[……] (Internet, 2017/5/14)

[jyugwo gong-**hei** haang gaandaan waakze mancing fung ge saubiu] , …

if say-HEI walk simple or hipster style MOD watch

'If we talk about watches with a simple or hipster style, …'

5. V-*can1* (V 親). It expresses an event conditional relation 'if/once' (=(55)) or a universal free relative 'whenever' (=(56)). It may occur with the subordinators *zijiu* 'as long as, (lit.) only if' (but not *jyugwo* 'if') and *muidong* 'whenever', or adverbials requiring subordination like *muici* 'every time' and *faanhai* 'all'.

(55) 嗰個銀碼講親就嚇死你㗎 (*MyRadio*, 2017/6/1)

go go nganmaa [gong-**can** zau haaksei] nei gaa3.

that CL price say-CAN then scare.die you SFP

'That price, once (I) tell (you), you will be freaked out.'

(56) 每次見親佢都好似小粉絲咁 (*Oriental Daily*, 2021/4/6)

[muici gin-**can** keoi] dou houci siufansi gam.

every.time see-CAN 3SG all like little.fan that

'Every time (I) met him, (I) was like a little fan.'

6. V-*gik6* (quantificational) (V 極). It expresses an unconditional reading 'no matter' (=(57)), and may occur with the unconditional subordinator *mouleon* 'no matter' when *dim* 'how' is present. -*gik6* quantifies over events in the coverbal clauses, to be distinguished with another use that quantifies over degrees (Tang 2015a) (see no. 10).

(57) 琴日我幾肚餓，食極都唔飽。　　　　　　　　　　　　　(Gao 1980:145)

    kamjat　　ngo　gei　toungo,　[sik-**gik**]　dou m-baau.

    yesterday 1SG　how　hungry　　eat-GIK　　all　not-full

    'I was starving yesterday – my tummy wouldn't full no matter how much I ate.'

7. V-*lai4*-V-*heoi3* (V 嚟 V 去). Like V-*gik6*, V-*lai4*-V-*heoi3* expresses an unconditional reading 'no matter' (=(58)). It cannot occur with *mouleon* 'no matter'.

(58) 佢食嚟食去都係麵包。　　　　　　　　　　　　　　　(Tang 2015a:93)

    [keoi　sik-**lai**-sik-**heoi**] dou hai　minbaau.

    　3SG　eat-LAI-eat-HEOI　all　be　bread

    'He only eats bread. (lit.: no matter how much he eats, they are all bread.)'

8. V-*dak1* (V 得). It may express an inferential/rationale relation 'since/now that' (=(59)) or a premise conditional relation 'if/in case' (=(60)). It is compatible with the subordinators *geijin* 'since' and *jyugwo* 'if' (but not *zijiu* 'as long as').

(59) 佢既然買得九個，即係佢想請大家食　　　　　　(Daily conversation, 2018/4/3)

    [keoi geijin　maai-**dak**　gau　go], zikhai keoi soeng ceng　daaigaa　sik.

    　3SG since　buy-DAK　nine　CL　be　　3SG　want　invite　everyone　eat

    'Since s/he bought nine, meaning that s/he wanted to share with us.'

(60) 不過如果出得 time travel，即係所有人都有機會復活。　　(Internet, 2019/6/1)

    Batgwo [jyugwo　ceot-**dak**　time　travel],

    but　　　　if　　　use-DAK　time　travel

    zikhai　sojau jan　　dou jau　　geiwui　fukwut.

    then　　all　person all　have　chance　resurrect

    'If there's time travel (in the new episode), then (I guess) everybody gets a chance to be back to life.'

9. V-*hoi1* (V 開). Like V-*dak1,* V-*hoi1* may express an inferential/rationale relation 'since/now that' (=(61)) or a premise conditional relation 'if/in case' (=(62)), compatible with *geijin* 'since' and *jyugwo* 'if' (but not *zijiu* 'as long as') respectively.

(61) 你睇開份明報就睇埋語文版。　　　　　　　　　　　(Auyeung 2012:102)

    [nei　tai-**hoi**　fan Mingbou] zau tai-maai　　jyumanbaan.

    　2SG　read-HOI　CL　Mingpao　then read-ADD　language.section

    'Since you have been reading *Mingpao*, you should also read the language section.'

(62) 你翻開嚟校園就順便搵我。 (Tang 2015a:89)

[nei faan-**hoi** lai haaujyun] zau seonbin wan ngo.
 2SG back-HOI come campus then in.passing find 1SG
'If you will come back to the campus, find me then.'

10. V-*gik6* (degree) (V 極). It expresses an unconditional relation 'no matter how' (=(63)) or a concessive relation 'even though' (=(64)). It may occur with the irrealis concessive subordinators *ziksi* 'even though' and *zauseon* 'even though', but not the realis *seoijin* 'although', nor the unconditional *mouleon* 'no matter'.

(63) 海南島凍極都冇呢度咁凍 (Li et al. 1995:562)

[Hoinaamdou dung-**gik**] dou mou nidou gam dung.
 Hainan cold-GIK also not.have here so cold
'No matter how cold Hainan is, it is still not as cold as here.'

(64) 其實曾蔭權就算衰極佢係貪曾任內都算有派過錢與民同樂

Keisat [Zangjamkyun <u>zausyun</u> seoi-**gik** - keoi hai "Taamzang"],
honestly Donald.Tsang even.though bad-GIK 3SG be corrupt.Tsang
jamnoi dousyun jau paai-gwo cin jyumantunglok.
during.job also have give-EXP money share.joy.with.people
'To be honest, even though Donald Tsang was awful – he is corrupted, he at least gave cash handouts to the people.' (Internet, 2017/12/25)

11. V-*dak1* … *lai4* (V 得…嚟). It expresses a mixed temporal and conditional assertion relation, roughly as 'if (you wait) until the time when' (=(65)). The converbal clause carries an irrealis mood, and the main clause is an assertion evaluating what will happen at the time of the hypothetical situation in the converbal clause. It is compatible with *hai/dong…gozan/gesihau* 'at the time when' and *jyugwo* 'if' (but not *zijiu* 'as long as').

(65) 做得嚟就遲喇！ (Cheung 2007:129)

[zou-**daklai**] zau ci laa3!
 do-DAKLAI then late SFP
'It will be too late when you do it.'

References

Au Yeung, Benjamin. 2012. *Cheng Guangdonghua* [Support Cantonese]. Hong Kong: Ming Chuang Press.

Chen, Zhuo. 2021. The syntax of two types of Mandarin unconditionals. Paper presented at The 23rd Seoul International Conference on Generative Grammar (SICOGG-23), the Korea Generative Grammar Circle and Sogang University.

Cheung, Samuel Hung-nin. 2007. *Xianggang Yueyu Yufa de Yanjiu* [Cantonese as spoken in Hong Kong] (revised edition). Hong Kong: The Chinese University Press.

Elordieta, Arantzazu, and Bill Haddican. 2018. Truncation feeds intervention. *Natural Language & Linguistic Theory* 36(2): 403-443.

Endo, Yoshido, and Liliane Haegeman. 2019. Adverbial clauses and adverbial concord. *Glossa* 4(1): 48.1-32.

Gao, Huanian. 1980. *Guangzhou Fangyan Yanjiu* [A study on Guangzhou dialects]. Hong Kong: Commercial Press.

Greenbaum, Sidney. 1973. Adverbial *-ing* participle constructions in English. *Anglia Zeitschrift für englische Philologie* 91: 1–10.

Gu, Yang, and Virginia Yip. 2004. On the Cantonese resultative predicate V-*can*. *Concentric: Studies in Linguistics* 30(2): 35–67.

Haegeman, Liliane. 2003a. Conditional clauses: External and internal syntax. *Mind and Language* 18: 317–339.

Haegeman, Liliane. 2003b. The syntax of adverbial clauses and its consequences for topicalisation. In Martine Coene, et al., eds, *Current Studies in Comparative Romance Linguistics*, 61–90. Antwerpen University.

Haegeman, Liliane. 2009. The movement analysis of temporal adverbial clauses. *English Language and Linguistics* 13(3): 385–408.

Haegeman, Liliane. 2010. The internal syntax of adverbial clauses. *Lingua* 120. 628-648.

Haspelmath, Martin. 1995a. Contextual and specialized converbs in Lezgian. In Martin Haspelmath & Ekkehard König, eds., *Converbs in Cross-Linguistic Perspective*, 415-440. Berlin & New York: Mouton de Gruyter.

Haspelmath, Martin. 1995b. The converb as a cross-linguistically valid category. In Martin Haspelmath & Ekkehard König, eds., *Converbs in Cross-Linguistic Perspective*, 1-55. Berlin & New York: Mouton de Gruyter.

Huang, C.-T. James. 1988. *Wǒ pǎo de kuài* and Chinese phrase structure. *Language* 64(2). 274-311.

Huang, C.-T. James. 2022. Finiteness opacity and Chinese clausal architecture. In Andrew Simpson, ed., *New Explorations in Chinese Theoretical Syntax: Studies in Honor of Yen-Hui Audrey Li*, 17–77. Amsterdam and Philadelphia: John Benjamins.

Lai, Yik-Po and Andy Chi-on Chin. 2018. Yueyu de dongci houzhui "zoek" [Cantonese verbal suffix *zoek*]. In Dah-An Ho, et al., eds, *Frontiers in Sinitic and Sino-Tibetan Linguistics: Studies in the Languages of China Festschrift in Honor of Professor Ting Pang-Hsin on His 80th Birthday*. 697–707. Beijing: Social Sciences Academic Press.

Lee, Peppina Po-lun. 2017. Quantification in Cantonese. In Denis Paperno & Edward L. Keenan, eds., *Handbook of Quantifiers in Natural Language, volume II*, 61–112. Cham: Springer.

Lee, Tommy Tsz-Ming. 2021. Asymmetries in doubling and Cyclic Linearization. *Journal of East Asian Linguistics* 30(2): 109–139.

Lee, Tommy Tsz-Ming. 2022. Towards the unity of movement: implication from verb movement in Cantonese. Ph.D. dissertation, University of Southern California.

Li, Xinkui, et al. 1995. *Guangzhou Fangyan Yanjiu* [A Study of Guangzhou Cantonese]. Guangzhou: Guangdong People's Publishing House.

Luke, Kang-kwong. 1999. Yueyu "*dak*" zi de yongfa [Usage of *dak* in Cantonese]. *Fangyan* [Dialect] 3: 15–20.

Matthews, Stephen, and Virginia Yip. 1994. *Cantonese: A Comprehensive Grammar*. London & New York: Routledge.

Nedjalkov, Vladimir P. 1995. Some typological parameters of converbs. In Martin Haspelmath & Ekkehard König, eds., *Converbs in Cross-Linguistic Perspective*, 97–136. Berlin & New York: Mouton de Gruyter.

Pan, Victor Junnan, and Waltraud Paul. 2018. The syntax of complex sentences in Mandarin Chinese: a comprehensive overview with analyses. *Linguistic Analysis* 42(1-2): 63–162.

Peng, Xiaochuan. 2010. *Guangzhouhua Zhuci Yanjiu* [Studies on Cantonese Particle]. Guangzhou: Jinan University Press.

Peters, Andrew. 2021. How to adjoin adverbial clauses, and make verb clusters: lessons from Mongolian converbs. Paper presented at CLA 2021 Annual Meeting. The Canadian Linguistic Association.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman, ed. *Elements of Grammar: Handbook of Generative Syntax*, 281–337. Kluwer: Dordrecht.

Shan, Yunming. 2012. Guangzhouhua yongzuo lianjie chengfen de 'de lai' [The post verbal particle *[tɐk⁵ lei¹]* in Cantonese]. *Zhongguo Yuwen* [Chinese Language] 3: 256-263.

Sio, Joanna Ut-Seong. 2020. The dual identity of the post-verbal *can1* in Cantonese: A non-specific resultative particle and a free choice item. *Studies in Chinese Linguistics* 41(2): 139–159.

Stump, Gregory Thomas. 1985. *The Semantic Variability of Absolute Constructions*. Dordrecht: Reidel.

Sun, Yenan. 2022. Incompleteness Under Discussion. Ph.D. dissertation, The University of Chicago.

Sybesma, Rint, and Boya Li. 2007. The dissection and structural mapping of Cantonese sentence final particles. *Lingua* 117: 1739–1783.

Tang, Sze-Wing. 2002. Focus and *dak* in Cantonese. *Journal of Chinese Linguistics* 30(2): 266–309.

Tang, Sze-Wing. 2006. Yueyu kuangshi xuci jiegou de jufa fenxi [A syntactic analysis of the discontinuous construction of function words in Cantonese]. *Hanyu Xuebao* [Chinese Linguistics] 14(2): 16–23.

Tang, Sze-Wing. 2008. Yueyu kuangshi xuci "*mai...lo*" de jufa tedian [Syntactic properties of the discontinuous construction *mai ... lo* in Cantonese]. *Bulletin of Chinese Linguistics* 3(1): 145–159.

Tang, Sze-Wing. 2009. The syntax of two approximatives in Cantonese: discontinuous constructions formed with *zai6*. *Journal of Chinese Linguistics* 37(2): 227–256.

Tang, Sze-Wing. 2015a. *Yueyu Yufa Jiangyi* [Lectures on Cantonese grammar]. Hong Kong: Commercial Press.

Tang, Sze-Wing. 2015b. Cartographic syntax of pragmatic projections. In Audrey Li, Andrew Simpson & Wei-tien Dylan Tsai, eds., *Chinese Syntax in a Cross Linguistic Perspective*, 429–441. Oxford & New York: Oxford University Press.

Tang, Sze-Wing. 2018. Yueyu dongci houzhui yu wanju wenti [Verbal suffixes and completeness in Cantonese]. In Dah-An Ho et al., eds., *Frontiers in the Study of Sinitic and Sino-Tibetan Languages: Festschrift in Honor of Professor Ting Pang-hsin on His 80th Birthday*, 686-696. Beijing: Social Sciences Academic Press (China).

Tang, Sze-Wing. 2019. Cihui cengci de jumo zhuci [Sentence-final particles in the lexical layer]. *Language Teaching and Linguistic Studies* 3: 38–45.

Tang, Sze-Wing. 2020. Cartographic syntax of performative projections: evidence from Cantonese. *Journal of East Asian Linguistics* 29(1): 1–30.

Tang, Sze-Wing. 2022. On the syntax of incompleteness: evidence from the converbal construction in Cantonese. In Andrew Simpson, ed., *New Explorations in Chinese Theoretical Syntax: Studies in Honor of Yen-Hui Audrey Li*, 395–427. Amsterdam and Philadelphia: John Benjamins.

Tsai, Wei-Tien Dylan. 2008. Tense anchoring in Chinese. *Lingua* 118(5): 675–686.

Wei, Wei Haley, and Yen-Hui Audrey Li. 2018. Adverbial clauses in Mandarin Chinese, part 1-3. *Linguistic Analysis* 42(1-2). 163–330.

Yip, Ka-Fai, and Zhuo Chen. 2022. Rethinking the internal syntax of adverbial clauses and operator movement. Paper presented at GLOW in Asia XIII, The Chinese University of Hong Kong.

Yip, Ka-Fai. 2019. Yueyu dongci houzhui de wanju wenti [The incompleteness effects of Cantonese verbal suffixes]. MPhil thesis, The Chinese University of Hong Kong.

Yip, Ka-Fai. 2020. Yueyu dongci houzhui "can" de san ge kuangshi jiegou [Three discontinuous constructions of Cantonese verbal suffix *can*]. *Current Research in Chinese Linguistics* 99(1): 153–169.

Yip, Ka-Fai. 2022. Universal concord as syntactic agreement. In *University of Pennsylvania Working Papers in Linguistics* 28(1): 221–232.

Yip, Ka-Fai. To appear. Two types of temporal adverbial clauses in Cantonese. In *Proceedings of the 39th West Coast Conference on Formal Linguistics (WCCFL-39)*, Somerville: Cascadilla Proceedings Project.

Yiu, Yuk-man Carine. 2008. *Yueyu kaishiti heisoenglai de chansheng* [The formation of the inchoative aspect marker *heisoenglai* in Cantonese]. *Bulletin of Chinese Linguistics* 2(2): 127–147.

Zhan, Bohui. 1958. Yuefangyanzhong de xuci "can, zyu, faan, maai, tim" [Particles *-can, -zyu, -faan, -maai, -tim* in Yue dialects]. *Zhongguo Yuwen* [Chinese Language] 3: 119–122.