The Dual Identity of the Post-Verbal *canl* in Cantonese: A Non-Specific Resultative Particle and a Free Choice Item

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Abstract

This paper discusses the syntactic and semantic properties of the two functions of the post-verbal *canl* in Cantonese. The first function of the post-verbal *canl* is a non-specific resultative particle that denotes any degree on a “bodily harm” scale. The non-specific nature of *canl* ensures that the scale is always a simplex scale (containing only a beginning and an end) and thus [V-*canl*] predicates behave like achievement verbs. The second function of the post-verbal *canl* is a free choice item (FCI). It appears only in non-episodic sentences, specifically in *doul* (iota operator)-conditionals or *zau6* (necessity operator)-conditionals.

Keywords

Cantonese, resultative particle, scale, free choice item

1 Introduction

Cantonese has a rich inventory of post-verbal particles. They are placed right after the verb and before the object, when present:

(1) subject V-particle(s) (object)

These particles serve innumerable grammatical functions, such as aspect, direction, result, quantification, etc. (Matthews and Yip 2011). This paper focuses on the particle *canl*, which has two very distinct functions. Matthews and Yip (2011) call the two functions “adversative” and “habitual” (see also Cheung 2007; Tang 2015). We continue to use these terms to refer to the two functions of *canl* throughout the paper as descriptive terms. The adversative function of *canl* is shown in (2a) and (2b):¹

- (2) a. Pit1taa4 zong6-can1 zek3 maau1 aa3.
 Peter bump.into-CAN CL cat SFP²
 ‘Peter bumped into the cat and as a result the cat was hurt.’
 b. Pit1taa4 haak3-can1 go3 bi4bi1 aa3.
 Peter scare-CAN CL baby SFP
 ‘Peter scared the baby and as a result the baby was negatively affected (psychologically).’

The adversative *canl* encodes a negative result related to bodily harm. It could be physical or psychological. In (2a), *canl* provides the additional meaning that the cat was physically hurt as a result of the bumping event. In (2b), *haak3* ‘scare’ is a psychological verb and the negative result is interpreted as psychological (e.g., the baby cried or became more irritable). The nature and degree of the negative effect depend on the lexical meaning of the verb and the context.

The second function of *canl* is very different. Matthews and Yip (2011) describe it as “habitual”:

- (3) Pit1taa4 coeng3-can1 go1 dou1 hau4lung4-tung3 gaa3.
 Peter sing-CAN song all throat-sore SFP
 ‘Peter_i has sore throat whenever he_i sings.’

1 *Canl* is written as 親 orthographically, which has the general meaning of ‘kin’ or ‘intimacy’. The two functions of the Cantonese post-verbal particle *canl* do not seem to be related to this meaning. There are several possibilities. It can be that *canl* is highly grammaticalized (Gu and Yip 2004) and has lost its original meaning. It could also be that the character 親 and the post-verbal *canl* are unrelated. Cantonese is primarily a spoken Chinese variant and has never been subjected to rigorous and formal standardization (Li 2000). The character 親 could have been used solely based on phonological identity. There are a lot of colloquial vocabulary items in Cantonese which are not found in other dialectal groups (Yue-Hashimoto 1991). There is no equivalent of the post-verbal *canl* in Mandarin, for instance. The post-verbal *canl* could also be a borrowing from other languages which had been in contact with Cantonese historically, such as Miao or Tai. I leave this issue open.

2 SFP = Sentence-final-particle

The habitual *canl* generally occurs in subordinate clauses (e.g., protasis of conditionals) and expresses a universal quantification meaning of ‘whenever’ (Lee 2017).

This paper discusses the syntactic and semantic properties of the two functions of *canl*, though the focus of discussion would be mainly on the adversative *canl*. Agreeing with Gu and Yip (2004), I treat the adversative *canl* as a “special” resultative particle. It is special because it does not encode a specific result state, yet it has a bounded interpretation. Based on Sio (2015), I adopt the Affectedness Hierarchy (Beavers 2011) in explaining the semantic restrictions on V in [V-*canl*] predicates: only dynamic verbs that encode non-quantized and potential change in the Affectedness Hierarchy are compatible with the adversative *canl*. Furthermore, V in [V-*canl*] must relate to bodily harm, either physical or psychological. Hence, the affected argument must be [+animate] (including body-parts). I argue that adversative [V-*canl*] predicates contain a property scale similar to other change-of-state predicates (Hay et al. 1999). The property scale for *canl* is “bodily harm”, with the degrees ranging from “discomfort” to “severely injured”. The adversative *canl* does not specify a specific result, yet [V-*canl*] predicates behave like achievements. I argue that precisely because any degree of harm can be the endpoint/result state, the property scale associated with *canl* is always a simplex scale containing only the starting point and the end point (without any middle portion). This accounts for why adversative [V-*canl*] predicates are achievements aspectually. Syntactically, I adopt a structure where there are three aspectual projections between VP and vP in Chinese (Sybesma 2017; Lu et al. 2019): Asp1P (hosting resultative particles, associated with telicity), Asp2P (hosting phase complements), and Asp3P (hosting aspectual particles associated with realization). In view of the lack of lexical content and the obligatory achievement interpretation of [V-*canl*] predicates (which are similar to phase complements), I treat *canl* as Asp2⁰ and the affected argument is in SpecAsp2. The habitual *canl* generally does not pose any selectional restriction on the verb it combines with, but it cannot appear in episodic sentences. I treat the habitual *canl* as a free choice item (FCI). It must appear in environments containing a Q(uantificational)-operator and can either be definite or indefinite (Giannakidou and Cheng 2006; Cheng and Giannakidou 2013). The definite FCI *canl* has to appear in the presence of *doul*, which I treat as an iota/maximality operator, following Cheng (2008). The indefinite FCI *canl* appears in conditionals with a necessity operator.

2 Adversative *canl*

Gu and Yip (2004) analyze the adversative *canl* as a resultative particle that encodes a negative result. It is in complementary distribution with other resultative particles (e.g., *sei2* ‘die’). (4) is ungrammatical regardless of the ordering of the two resultative particles, *canl* and *sei1* ‘die’ as only one resultative particle can be present. They also note that *canl* cannot be further specified by another resultative element in the same sentence as shown in (5) (taken from Gu and Yip 2004, their

example [30b]). *Can1* can co-occur with aspectual particles. (6) shows the co-occurrence of *can1* with the experiential aspectual particle *gwo3*.

- (4) *N_{go5} zong6-can1-sei2 zek3 maa_{u1}.
 1SG bump.into-CAN-die CL cat
 (5) G_{o3} bi4bi1 haak3-can1 (*jat1 tiu3).
 CL baby scare-CAN one jump
 ‘The baby got scared.’
 (6) Pi1taa4 zong6-can1-gwo3 zek3 maa_{u1}.
 Peter bump.into-CAN-EXP³ CL cat
 ‘Peter have bumped into the cat and as a result hurt the cat before.’

Unlike other resultative particles (e.g., *sei2* ‘die’ or *laan6* ‘broken’, etc.), the adversative *can1* cannot be used as an adjective as it lacks lexical meaning and it does not denote a specific result state (Gu and Yip 2004).

2.1 Animacy

Adversative [V-*can1*] predicates require an affected argument. Since only sentient beings are able to experience adversity, adversative [V-*can1*] predicates require the affected argument to be [+animate] (Gu and Yip 2004). This means the subject has to be [+animate] in intransitive cases, (7). The only exception is body-part subjects as shown in (8b):

- (7) N_{go5} zong6-can1.
 1SG bump.into-CAN
 ‘I bumped into something and got hurt.’
 (8) a. #Bou6 ce1 zong6-can1.
 CL car bump.into-CAN
 ‘The car was hurt as a result of bumping into something.’
 b. N_{go5} zek3 goek3 zong6-can1.
 1SG CL foot bump.into-CAN
 ‘My foot was hurt as a result of some bumping event.’

Only animate entities can enter a possessive relation with a body-part. When a body-part is attached to an animate object, it can feel pain. I assume it is this animacy connection that allows body-parts to function as the affected argument for [V-*can1*] predicates.

There are more variations in transitive cases. When the object is [+animate], the affected argument is the object (Cheung 2007: 166). In such cases, the subject can be an agent, an instrument, or a causer. (2a) is repeated here as (9):

Agent subject:

- (9) Pit1taa4 zong6-can1 zek3 maau1 aa3.
 Peter bump.into-CAN CL cat SFP
 ‘Peter bumped into the cat and as a result the cat was hurt.’

Instrument subject:

- (10) Bou6 ce1 zong6-can1 zek3 maau1 aa3.
 CL car bump.into-CAN CL cat SFP
 ‘The car bumped into the cat and as a result the cat was hurt.’

Causative subject:

- (11) Sim2din6 siu1-can1 zek3 maau1 aa3.
 lightning burn-CAN CL cat SFP
 ‘The lightning burned the cat to a certain degree.’

Cases where the subject is [+animate] and the object is not are also reported in the literature. An example from Cheung (2007: 166) is shown below:

- (12) #Keoi5 tek3-can1 gau6 sek6.
 3SG kick-CAN CL stone
 ‘S/he kicked the stone and as a result s/he was hurt.’

Cheung (2007) argues that the affected argument is the subject in such cases as it is the only [+animate] argument. It should be noted that some informants find examples like (12), where the object is inanimate, marginal. They get the surreal interpretation that the stone is personified and hurt. Tang (2015) also indicates that such examples are marginal. He observes that if the object in (12) contains a demonstrative, e.g., *neil* ‘this’ (i.e., *neil gau6 sek6* ‘this stone’), the surreal personified reading of the stone becomes much stronger.

Transitive cases with inanimate objects only sound natural if the object is a body-part:

- (13) Ngo5_i zong6-can1 PRO_i zek3 goek3.
 1SG bump.into-CAN CL foot
 ‘I bumped into something and hurt my foot.’
- (14) Ngo5 zong6-can1 keoi5 zek3 goek3.
 1SG bump.into-CAN 3SG CL foot
 ‘I bumped into and hurt her/his foot.’

It can be seen in (13) that the possessor of the object possessive phrase is bound by the subject, but it does not have to be, as shown in (14). Again, body-parts (that are connected to a living thing) are considered [+animate] and can act as the affected argument.

To recap, [V-*canl*] predicates exhibit the following patterns, with the affected argument underlined:

- (15) a. subject [+animate (including body-parts)] V-*canl*
 b. #subject [-animate] V-*canl*
 c. subject [+/-animate] V-*canl* object [+animate (including body-parts)]
 d. #subject [+animate] V-*canl* object [-animate]

2.2 Restrictions on V in [V-*canl*] predicates

Canl poses semantic restrictions on the verb it combines with.⁴ Beavers (2011) identifies 4 classes of dynamic verbs that encode different degrees of affectedness on the event participant x in descending order. This is illustrated below:

- (16) The Affectedness Hierarchy (Beavers 2011)
- x undergoes a quantized change (e.g. *peel*, *kill*, *shatter* x).
 - x undergoes a non-quantized change (e.g. *flatten*, *cut*, *widen* x).
 - x has potential for change (e.g. *hit*, *wipe*, *rub* x).
 - x is unspecified for change (e.g. *see*, *smell*, *ponder* x)

For type (a) verbs, the participant reaches a precise result state. The result is encoded as part of the semantics of the verb (e.g., *kill*, being killed means the victim results in death). In type (b) verbs, the result on the participant is entailed, but it is not uniquely specified (e.g., *flatten*, a piece of dough can be flattened to different degrees). In type (c) verbs, a change on the participant is possible, but there might not be one (e.g., *hit*, being hit by a baby may not result in any observable change). In type (d) verbs, there is no change (e.g., *see*, being seen would not cause any change).

Sio (2015) observes that the Affectedness Hierarchy captures the semantic restrictions on V in adversative [V-*canl*] predicates. The adversative *canl* is compatible only with dynamic verbs indicating a non-quantized change, (b) and potential for change, (c). Some Cantonese examples illustrating the 4 classes are given below:

- (17) a. quantized change, e.g., *saat3* ‘kill’: **saat3-canl*
 b. non-quantized change, e.g., *gat1* ‘prick’: *gat1-canl*
 c. potential for change, e.g., *daa2* ‘hit’: *daa2-canl*
 d. unspecified for change, e.g., *paau2* ‘run’: **paau2-canl*

4 Phonologically, Gu and Yip (2004) observe that the adversity *canl* only combines with monosyllabic verbs. One reviewer, however, provided us with this disyllabic example:

(i) joeng2seoil-canl nei5
 ugly-CAN1 2SG

Joeng2seoil is a colloquial derogatory term and the sentence has the meaning of someone/something being too ugly and the ugliness affects you negatively. Our informants, however, find this example marginal. Note that *joeng2seoil* is not a dynamic verb.

Can1 is incompatible with verbs that encode quantized change because a result state is already incorporated into the lexical semantics of such verbs. There cannot be another result. This can be ruled out by the “further specification constraint”, proposed by Tortora (1998). It states that a verb that is inherently delimited may occur with a resultative only if the resultative acts as an additional specification of the result already inherent in the verb’s meaning. In cases like *saat3* ‘kill’, the lexically encoded end-state cannot be further specified as *can1* does not provide any further specification and moreover its non-specific value is in contradiction with the precise end-state (“dead”) encoded by *saat3* ‘kill’. *Can1* is also not compatible with verbs that are not specified for change. This suggests that *can1* cannot induce a change-of-state interpretation if the lexical semantics of the verb does not already specify a non-quantized change or a potential change. This makes *can1* different from other resultative particles, e.g., *soeng1* ‘injured’, which have clear lexical meanings and can combine with verbs that are unspecified for change. The contrast is illustrated with the verb *paau2* ‘run’:

- (18) a. **paau2* ‘run’-*can1*
 b. *paau2* ‘run’-*soeng1* ‘injured’

Soeng1 ‘injured’ can induce a change-of-state interpretation when added to *paau2* ‘run’ (unspecified for change) while *can1* cannot.

The difference between verbs encoding non-quantized change (e.g., *caap3* ‘stab’) and verbs encoding potential change (e.g., *zong6* ‘bump into’) are shown in the following examples:

Caap3 ‘stab’ (non-quantized change):

- (19) a. X *caap3-dou2* Y
 b. X *caap3-can1* Y

Zong6 ‘bump into’ (potential change):

- (20) a. X *zong6-dou2* Y
 b. X *zong6-can1* Y

Dou2 is a post-verbal particle. It belongs to the category of “phase complements” (Chao 1968: 446). Literally, it has the meaning of ‘arrived’, but its meaning is more abstract here.⁵ When combined with V, it means the action denoted by the preceding V has been successfully accomplished. In (19), *caap3* ‘stab’ encodes a non-quantized change and it presupposes a puncture on the skin though the wound can be of different degrees of severity. In this case, (19a) entails (19b). In (20), *zong6* ‘bump into’ encodes a potential change, the bumping might not cause any impingement on Y, thus, (20a) does not entail (20b).

5 When used as a main verb meaning ‘arrived’ in Cantonese, it is *dou3* (mid-flat tone). As a phase complement, it is *dou2* (high-rising tone).

Not all verbs encoding non-quantized change and potential change are compatible with *can1* either since degree of affectedness is not the only semantic restriction. For example, *jau4* ‘paint’ encodes a non-quantized change but is incompatible with *can1*:

- (21) *Ngo5 jau4-can1 keoi5 aa3
 1SG paint-CAN 3SG SFP

(21) is ungrammatical because the action *jau4* ‘paint’ does not involve physical or psychological harm. Even though *jau4* ‘paint’ entails a non-quantized change in the object (e.g., to different degrees of coloration), the change/effect is not of the right kind.

Gu and Yip (2004) list the following verb categories as compatible with the adversative *can1*:

- (22) a. Physical actions involving specific body parts (e.g., *bok1* ‘to get hit in the head’, *caai2* ‘to be tread on’, etc.)
 b. Psychological predicates (e.g., *gik1* ‘to irritate’)
 c. Weather predicates (e.g., *laang5* ‘to catch a cold’)

It should be noted that *can1* is compatible also with verbs denoting physical actions that do not involve specific body parts being affected, but the body in general. For instance, *zong6* ‘bump into’, *gwaat3* ‘abrade’, *gip6* ‘nip’ and *laat6* ‘scald’ are all compatible with *can1* and they can affect any body-part.⁶

Combining the observations in Sio (2015) and Gu and Yip (2004), the semantic restrictions on V in [V-*can1*] predicates can be stated as follows:

- (23) A dynamic verb is compatible with the adversative *can1* if and only if (i) it encodes a non-quantized change or a potential change and (ii) the result of the action can lead to bodily harm, either physical or psychological.

2.3 Scale

There are three types of incremental themes (Tenny 1994):

- (24) a. Creation/Consumption predicates: *John ate the fish.*
 b. Motion predicates: *John walked to the store.*
 c. Change of state predicates: *John scrubbed the sink clean.*

Each of the examples above encodes a three-way relation between an event, a theme, and a scale. The type of scales differs depending on the verb type (Hay et al. 1999). For creation and consumption predicates, the scale is the spatial content of the theme argument (ascending for creation or descending for consumption). For motion predicates, the scale is the path of motion of the theme argument (a path from the original location of the theme to the final location of

6 The examples *gwaat3* ‘abrade’, *gip6* ‘nip’, *laat6* ‘scald’ were taken from Gu and Yip (2004) though they classify them as physical actions involving specific body-parts.

the theme). The gradable property (of the resulted state) of the theme argument is the scale for change-of-state predicates. An example of the three-way relation with the change-of-state predicate *scrub* is shown in (25a) and its corresponding semantic representation in (25b):

- (25) a. John scrubbed the bathtub clean.
 b. $\exists e \exists s$ [scrubbing' (j, b, s, e) $\wedge$ result' (s, clean, e)] (s is a cleanliness scale of the bathtub)

Resultative particles provide an endpoint along a property scale. For example, the resultative particle *sei2* 'dead' has "dead" as the endpoint:

- (26) a. Kristoff caap3-sei2-zo2 Olaf aa3.
 Kristoff stab-dead-PERF Olaf SFP
 'Kristoff stabbed Olaf to death.'
 b. $\exists e \exists s$ [stab' (k, o, s, e) $\wedge$ result' (s, dead, e)]

Can1, being also a resultative particle, can also be modelled with a property scale. (27a) can be represented by (27b):

- (27) a. Kristoff caap3-can1 Olaf aa3.
 Kristoff stab-CAN Olaf SFP
 'Kristoff stabbed Olaf and as a result Olaf was hurt.'
 b. $\exists e \exists s$ [stab' (k, o, s, e) $\wedge$ result' (s, can1, e)]

I propose that the property of the scale associated with all [V-*can1*] predicates is "bodily harm".

A scale constitutes an ordered set of degrees on a particular attribute (e.g., length, height, temperature). The degrees indicate the possible values of this attribute (Kennedy 2001). In [V-*can1*] predicates, *can1* does not encode a specific degree of bodily harm. The nature of harm and the severity of the harm are co-determined by the verb and the context. Consider the following:

- (28) a. *caap3* 'stab'-*can1*
 b. *gat1* 'prick'-*can1*

The degree of severity is perceived as higher in (28a) due to the nature of the verb. Both verbs involve puncturing the skin, but *caap3* 'stab' is understood as the action is done with a knife or some similarly sharp weapon whereas *gat1* 'prick' is understood as the action is done with less dangerous items like a needle.

The minimal degree of "bodily harm" can be one that is causing little discomfort:

- (29) Go3 dang1daam2 caang4-can1 ngo5 deoi3 ngaan5.⁷
 CL light bulb shine-CAN 1SG CL_{pair} eye
 'The light bulb shone on my eyes and as a result they now feel uncomfortable.'

7 I would like to thank one reviewer for pointing me to this kind of examples.

Sio (2015) suggests that *canl* carries the meaning of “a small degree”. She states that when *canl* is used, the injury is often interpreted not severe. I agree that *canl* is used in expressing non-serious injury in a lot of cases. One reviewer also mentioned that *canl* goes with *siu2siu2* ‘a little bit’ and *dit1dit1* ‘a tiny bit’ quite naturally as shown in the following example:

- (30) Pit1taa4 zong6-can1 siu2siu2/dit1dit1 ze1.⁸
 Peter bump.into-CAN a little bit/ a tiny bit SFP
 ‘Peter hit himself and hurt himself a little bit.’

I do not agree, however, that the small degree reading is built into the semantics of *canl*, as it is also compatible with a “severely injured” reading:

- (31) A: Pit1taa4 bei2-ce1 zong6-can1 aa3.
 Peter PASS-car hit-CAN SFP
 ‘Peter was hit by a car and was hurt.’
 B: Zong6 seng4 dim2 aa3?
 hit to.the.extent how SFP
 ‘To what extent was he hurt?’
 A: Zong6-dak1 hou2 soeng1 aa3.
 bump.into-to.the.extent very injured SFP
 ‘[He] was hit to the extent that he was badly injured.’

(31) not only shows that *canl* does not specify the extent of harm, thus questions for further specification can be asked; it also shows that the “small degree” reading, if present, is only a preference and can be overridden. The reason for this “small degree” preference can be due to the existence of the resultative particle *seongl* “injured”. It covers the range of injuries that would require medical attention and thus, there can be a lexical blocking effect. The more severe kind of injuries is covered by *soengl* even though *canl* is also semantically compatible with that.

To recapitulate, the “bodily harm” scale ranges from the minimal degree of discomfort to the maximal degree of severe injury.⁹ *Canl* can be any value on the “bodily harm” scale, and I believe that this “any value” property is related to why [V-*canl*] predicates are obligatorily achievements, as will be discussed in the next subsection.

2.4 Aspectual properties of [V-*canl*]

Gu and Yip (2004) observe that [V-*canl*] predicates behave like achievements. The resultative particle *canl* marks the event as telic and [V-*canl*] predicates are

8 Gu and Yip (2004) observe that *canl* cannot be further specified by another resultative element in the same sentence (their example is illustrated in the ungrammatical example [5]) and yet (30) is grammatical. I think (5) and (30) differ in that in (5), the further specified result *jat1 tiu3* ‘one jump’ is predicated of the affected argument (i.e., the baby), while in (30) the further specification is on the degree of the bodily harm.

9 The maximal degree cannot be “dead”.

not compatible with the progressive aspect. The following example is taken from Gu and Yip (2004: 46, their example [24]):

- (32) *Keoi5 hai2dou6 haak3-can1 go3 bi4bi1 wo3.¹⁰
 3SG right.now scare-CAN CL baby SFP
 Intended reading: ‘S/He is making the baby scared.’

Hai2dou6 is a progressive aspectual adverb in Cantonese. It expresses that some process/activity is in progress (Matthews and Yip 2011). [V-*can1*] predicates are also incompatible with the progressive aspectual post-verbal particle *gan2*, as illustrated below:

- (33) *Keoi5 daa2-can1-gan2 zek3 gwaai3sau3 aa3.
 3SG hit-CAN-PROG CL monster SFP
 Intended reading: ‘S/He is hitting the monster to achieve the result of hurting it.’

(33) will be grammatical without the progressive aspectual particle. If *can1* is replaced by another resultative particle, e.g., *sei2* ‘dead’, the progressive will be possible again:

- (34) Keoi5 (hai2dou6) daa2-sei2-gan2 zek3 gwaai3sau3 aa3.
 3SG right.now hit-dead-PROG CL monster SFP
 ‘S/He is hitting the monster to death.’

The above shows that [V- (regular) resultative particle] predicates behave like accomplishments whereas [V-*can1*] predicates behave like achievements. This is further illustrated by the following contrast:

- (35) Hoi1-zo2 gam3 do1 coeng1, zung1jyul dou1 se6-can1 keoi5 laa3.
 shoot-PERF so many gun, finally all shoot-CAN 3SG SFP
 ‘After firing so many shots, finally a shot hit the target and hurt her/him to an unspecified extent.’
- (36) Hoi1-zo2 gam3 do1 coeng1, zung1jyul dou1 se6-sei2 keoi5 laa3.
 shoot-PERF so many gun, finally all shoot-dead 3SG SFP
 Reading 1: ‘After firing so many shots, finally a shot hit the target and killed her/him.’
 Reading 2: ‘After firing so many shots that hit the target, s/he was finally killed.’

In (36) with *se6-sei2* ‘shoot-dead’, the sentence is compatible with a durative reading, which allows a time span for the progression of injury (accumulating after every shot) till the end point of “death” (reading 2). (35) is incompatible with such reading. There cannot be any time span between getting shot and reaching the harm level of *can1*.

10 *Hai2dou6* literally means ‘at here’, but it is also used to mean ‘right now’.

According to Gu and Yip (2004), even though V and *canI* encode the aspectual meaning of process/activity and outcome/result, respectively, these aspectual components cannot be viewed by the speaker independently of each other because [V-*canI*] predicates are conflated forms. The process/activity component is thus inaccessible to the speaker, which explains why [V-*canI*] predicates behave like achievements.¹¹

I believe the obligatory achievement reading is related to the non-specific value of *canI*. Beaver (2013) proposes that there are two types of scales: simplex and complex. Simplex scales have only two sub-parts, the starting point and the end point; complex scales have more than two sub-parts, minimally the starting point, the middle, and the end point. The two kinds of scales combine with different affectedness types to give rise to different kinds of aspectual classes as presented in the table below:

(37)

Verbs	Simplex scale	Complex scale
Quantized	<u>Achievements</u> (<i>break a vase, kill Bill</i>)	<u>Accomplishments</u> (<i>load the wagon, eat the apple</i>)
Non-quantized	N/A	<u>Degree Achievements</u> (<i>cool the soup</i>)
Potential	<u>Semelfactives</u> (<i>hit, slap</i>)	<u>Activities</u> (<i>beat, pummel</i>)
Unspecified	<u>Semelfactives</u> (<i>blink</i>)	<u>Activities</u> (<i>rub the lamp</i>)

A quantized change indicates a transition from one state to another. When *canI* is added to a non-quantized and potential predicate, the predicate becomes quantized:

(38) Non-quantized V/potential V + *canI*: $\exists e \exists s \exists g$ [result' (x, s, g_{canI} , e)]

X is a theme along a scale s in event e. In [V-*canI*] predicates, *canI* supplies a certain goal state on s, g_{canI} . *CanI* can be any point along the “bodily harm” property scale. Since *canI* can be any value at all (even the smallest degree can be considered *canI*), it cannot have any middle portion. So, it will always be a simple binary transition, a simplex scale. The resultant aspectual type is thus always achievements.

2.5 Syntactic analysis

Let’s recapitulate what has been discussed so far before moving on to the syntactic treatment of *canI*. *CanI* is a post-verbal resultative particle and is in

11 One reviewer pointed out that it is possible to add *gwai2* ‘ghost’, an intensifier, between the verb and *canI*, as in [V-*gwai2-canI*]. It is generally possible to put *gwai2* between the verb and post-verbal particles (e.g., aspectual particles and resultative particles, see Lee and Chin 2007 for discussion). This suggests that [V-*canI*] predicates do not behave differently in terms of insertion possibility from other [V-post-verbal particle] predicates and [V-*canI*] predicates might not be conflated forms.

complementary distribution with other resultative particles. However, it is different from regular resultative particles (e.g., *sei2* ‘dead’, *soengl* ‘injured’) in two ways: (a) *can1* does not have lexical content and so cannot be used as a regular predicate; (b) [V-*can1*] predicates behave like achievements while [V-(regular) resultative particle] predicates behave like accomplishments. Regarding (b), I argued that the achievement nature of [V-*can1*] predicates is related to the “any value” property of *can1*. Since any degree of “bodily harm” can be interpreted as the end point, there can never be any middle portion. So, [V-*can1*] predicates function like a simplex scale (a two-point scale).

The semantic opacity and the obligatory achievement reading liken *can1* to another kind of post-verbal particles: phase complements (Chao 1968: 446), which I have briefly mentioned earlier on. Phase complements are elements that are semantically bleached. They indicate that the action denoted by the verb has a definitive end point. Consider the Cantonese example below:

- (39) Pit1taa4 gin3-dou2 keoi5.
 Peter see-arrived/_{SUCC} 3SG
 ‘Peter saw her/him.’

In (39), *dou2* is a phase complement. Literally it means ‘arrived’, but this meaning is not available in (39). *Dou2* in *gin3-dou2* in (39) has a bleached, non-lexical meaning. It means the “seeing” action has been achieved or as Lu et al. (2019) call it “brought to a successful end” (represented as _{SUCC} in the gloss in (39) [Lu et al. 2019]). Interestingly, Lu et al. (2019) observe that [V-phase complement] predicates behave like achievements, unlike [V- (regular) resultative particle] predicates. Their data are from (two Chinese dialects) Mandarin and Xiang, but the same pattern can also be observed in Cantonese. [V-phase complement (e.g., *dou2*)] predicates are not compatible with the progressive aspectual particle *gan2*, while [V-resultative particle (e.g., *sei2* (dead))] predicates are:

- (40) *Pit1taa4 se6-dou2-gan2 zek3 gwaai3sau3.
 Peter shoot-arrived/_{SUCC}-PROG CL monster
 (41) Pit1taa4 se6-sei2 -gan2 zek3 gwaai3sau3.
 Peter shoot-dead/_{SUCC}-PROG CL monster
 ‘Peter is in the process of shooting the monster to death.’

Lu et al. (2019) call phase complements scale-reducers: they reduce a multi-point scale to a two-point scale. Lu et al. (2019) provide an analysis in which achievements and accomplishments are accounted for in structural terms. According to them (see also Sybesma 2017), there are 3 aspectual projections between *v*(Voice)P and VP, which are relevant for the encoding of inner aspect/situation aspect:

- (42) [_vP [_{Asp3}P [_{Asp2}P [_{Asp1}P [_{VP} ...]]]]]

*Asp1*P is related to telicity. It provides an endpoint to the event encoded by V. Result-denoting elements, which are fully lexical predicative elements (e.g., *qióng*

‘poor’), are located in Asp1⁰. Asp3P is related to realization. It encodes whether the endpoint is realized or not. For example, the perfective aspectual particle *le* in Mandarin is in Asp3⁰. Phase complements are in Asp2⁰.

Can1 is similar to phase complements and differs from regular resultative particles in two ways: (a) *can1* lacks lexical meaning; (b) [V-*can1*] predicates are achievements rather than accomplishments. However, different from phase complements, which do not seem to be predicative of any argument, *can1* does (at least with our analysis that *can1* is related to bodily harm). Based on this, I will place *can1* in Asp2⁰ and the affected argument in SpecAsp2P. (43) (transitive) and (44) (intransitive) would have the structures of (45) and (46) respectively (the structure on top of vP is not given):

- (43) Pit1taa1 zong6-can1 zek3 maau1 aa3.
 Peter bump.into-CAN CL cat SFP
 ‘Peter bumped into the cat and as a result the cat was hurt.’
- (44) Zek3 maau1 zong6-can1 aa3.
 CL cat bump.into-CAN SFP
 ‘There was a bumping event and as a result the cat was hurt.’
- (45)

In the transitive cases, the affected object is generated in SpecAsp2P and *can1* is in Asp2⁰. The verb *zong6* moves up Asp2⁰ to pick up *can1* and then together move to v⁰. The affected argument *zek3 maau1* moves to SpecAsp3P for case licensing and the external argument *Pit1taa4* will move to SpecTP for case licensing (which is not presented here).

(46) is similar to (45) except that there is no external argument. The affected argument moves to SpecTP for case licensing.

Since *can1* is in complementary distribution with other resultative particles, *Asp2⁰* and *Asp1⁰* are never filled at the same time. However, *can1* is compatible with aspectual particles, e.g., *gwo3* (experiential), *zo2* (perfective), which occupies *Asp3⁰*. In such cases, *can1* moves to *v⁰* along *Asp3⁰*, picking up the aspectual particle on the way.¹²

3 Habitual *can1*

In this section, I provide a brief discussion on the syntactic and semantic properties of the habitual *can1*. The habitual *can1* does not seem to pose any selectional restrictions on the verb it combines with, except that it is not compatible with verbs that denote a permanent property (e.g., *hai6*, the verb *to be* as in “whenever he is a student...”) or events that could only happen once (e.g., *sei2* ‘die’, as in “whenever he dies...”) (Tang 2015).¹³ Unlike the adversative *can1*, it is not restricted to verbs

12 There might be a problem with putting *can2* in *Asp2⁰*. Different from *can1*, phase complements scope over the whole predicate/event. However, since *can1* also cannot be in *Asp3⁰* (*can1* can co-occur with aspectual particles indicating realization such as *zo2*) or *Asp1⁰* (unlike other resultative particles, *can1* has no lexical content, and cannot function as a predicate in other contexts), we have tentatively put *can1* in *Asp2⁰*. It might be the case that more projections are needed between *vP* and *VP*.

13 Phonologically, unlike the adversative *can1*, the habitual *can1* can more naturally combine with disyllabic verbs to its left, e.g., *faan1jik6-can1* ‘whenever translating...’, *gaai2sik1-can1* ‘whenever explaining...’.

associated with bodily harm (with non-quantized or potential affectedness). It does not require an affected sentient argument. Moreover, it is compatible with both stative (e.g., *tai2* ‘see’) and dynamic verbs (e.g., *paau2bou6* ‘run’).

- (47) Ngo5 tai2-can1 hei3 dou1 fan3-zoek6 gaa3.
 1SG see-CAN movie all sleep-fallen SFP
 ‘I fall asleep whenever I see a movie.’

- (48) Ngo5 paau2-can1-bou6 dou1 au2 gaa3.
 1SG run-CAN-step all vomit SFP
 ‘I vomit whenever I run.’

Even though the habitual *can1* does not seem to pose any selectional restrictions on the verb, it is subject to other distributive restrictions. The habitual *can1* cannot appear in episodic sentences and is not compatible with aspectual particles (unlike the adversative *can1*).¹⁴ The distribution of the habitual *can1* is further restricted in non-episodic environments. It can only appear in the protasis of what Cheng and Huang (1996) call “*dou*-conditionals” (which looks like a free relative [FR]), or in conditional sentences with *zau6* ‘then’, which is considered a conditional marker (Cheng and Huang 1996).

- (49) Ngo5 sik6-can1 mong1gwo2 **dou1** tou5-tung3 gaa3.
 1SG eat-CAN mango all stomach-hurt SFP
 ‘Whenever I eat mango, my stomach hurts.’

- (50) Ngo5 sik6-can1 mong1gwo2 **zau6** tou5-tung3 gaa3 laa3.
 1SG eat-CAN mango then stomach-hurt SFP SFP
 ‘In any event that I eat mango, my stomach hurts.’

- (51) Juk1-can1 **dou1** daa2.
 move-CAN all beat
 ‘If you move in any way, I will beat you.’

- (52) Juk1-can1 **zau6** daa2.
 move-CAN then beat
 ‘If you move, I will beat you.’

Based on the non-episodic restriction and universal-like reading, I propose an analysis which treats the habitual *can1* as a Free Choice Item (FCI). Following Giannakidou and Cheng (2006) and Cheng and Giannakidou (2013), I assume that the habitual *can1* cannot appear in episodic sentences as it contains a dependent world variable (*w*) that cannot be free but must be bound by some Q(uantificational)-operator, thus restricting its appearance in the presence of *dou1* (iota operator) or conditionals with *zau6* ‘then’ (necessity operator).

14 A sentence is episodic when it is about exactly one event that happens at a particular time (Giannakidou 2001).

Giannakidou and Cheng (2006) distinguish two kinds of nominal FCIs in Mandarin Chinese, namely, definite and indefinite. The following examples are taken from Cheng and Giannakidou (2013):

- (53) *rúguǒ (yǒu) nǎ-ge rén dǎ-diànhuà lái jiù shuō wǒ bú zài*
 if have which-CL person telephone come, then say I not be
 ‘If anyone calls, say that I’m not here.’
- (54) *(wúlùn) nǎ-ge rén dǎ-diànhuà lái, wǒ dōu bú zài*
 no-matter which-CL person telephone come I all not be
 ‘Whoever calls, I’m not here.’

In the scenario in which the phone is ringing, only (54) is acceptable. Giannakidou and Cheng (2006) argue that *dou* contributes to the tendency observed in definite plurals and FR, which is to exclude the empty set. In the presence of *dou* in (54), the FCI is definite (similar to *wh-ever*) and in the absence of *dou* in (53), the FCI is indefinite (similar to *any*). Only the *dou*-conditional is compatible with the existence of phone calls and can be used when the phone is ringing.

A similar contrast can be observed with the habitual *can1*, but in the cases below, the FCI *can1* applies to events. There are no individual variables but instead, there are event variables. Consider the following scenario. There is a phone which has number recognition feature. The phone rings and you see that John is calling. But Peter just does not pick up the phone. And in fact, you notice that every time John calls, Peter does not pick up the phone. Peter explains the situation to you. In such a scenario, only the *dou*-conditional is appropriate:

- (55) Aa3-John daa2-can1 din6waa2 lei4 ngo5 zau6 m4 zip3.¹⁵
 AA-John call-CAN phone come 1SG then NEG pick.up
- (56) Aa3-John daa2-can1 din6waa2 lei4 ngo5 dou1 m4 zip3.
 AA-John call-CAN phone come 1SG all NEG pick.up

In the above scenario, it is more natural to utter (56), where *dou1* is present. I suggest that the contrast between (55) and (56) is the contrast between indefinite FCI and definite FCI. In the presence of *dou1*, the FCI is interpreted as definite and thus excludes an empty set (of events of John calling). (56) contains an expectation that John will call, and thus when John is calling, (56) feels more appropriate.

Dou1 is a maximality/iota operator. It applies maximality to a contextually determined plural set. In (56), the event variable is intensionalized by the application of the *w* variable and the intension of the event will be the input to *dou1*, which will then give you the exhaustive list of events of John calling. In the case of (55), the

15 *Aa3* is a prefix that attaches to [+human] familiar terms, see Sio and Tang (2020) for a detailed discussion.

event variable is also intensionalized by the application of the *w* variable, but there is no maximality effect as *doul* is absent.

The maximality effect of *doul* can be shown with the use of *caalm4dol* ‘almost’:

(57) Ngo5 caalm4dol sik6-can1 mong1gwo2 doul tou5-tung3 gaa3.
1SG almost eat-CAN mango all stomach-hurt SFP
‘It is almost the case that whenever I eat mangoes, my stomach hurts.’

(58) *Ngo5 caalm4dol sik6-can1 mong1gwo2 zau6 tou5-tung3 gaa3.
1SG almost eat-CAN mango then stomach-hurt SFP
Intended reading: ‘It is almost the case that every time I eat mangoes, my stomach hurts.’

For *caalm4dol* ‘almost’ to work, one needs to know the totality of mango-eating events. Only in the presence of *doul*, the reading is exhaustive and compatible *caalm4dol* ‘almost’.

I would also like to point out that *can1* as an FCI does not only appear in the post-verbal position, but also appears in the preverbal position, where temporal adverbials are placed:

(59) Ngo5 fung4-can1 sik6 mong1gwo2 doul tou5-tung3 gaa3.
1SG when-CAN eat mango all stomach-hurt SFP
‘Whenever I engage in a mango-eating event, my stomach hurts.’

(60) Ngo5 fung4-can1 sik6 mong1gwo2 zau6 tou5-tung3 gaa3 laa3.
1SG when-CAN eat mango then stomach-hurt SFP SFP
‘Whenever I engage in a mango-eating event, my stomach hurts.’

(61) Ngo5 cam4jat6 sik6-zo2 mong1gwo2.
1SG yesterday eat-PERF mango
‘I ate mangoes yesterday.’

(61) shows the position of temporal adverbials in episodic sentences. In (59) and (60), *can1* appears with *fung4*, which means ‘when’ (non-interrogative). Similarly, (59) is compatible with *caalm4dol* ‘almost’ whereas (60) is not. There seems to be no difference in the meaning between having the *can1* in the adverbial position after *fung4* and in a post-verbal position.

4 Conclusion

This paper discusses and analyzes the grammatical properties of the two functions of the post-verbal *can1*. The first function of the post-verbal *can1* is a non-specific resultative particle that denotes any degree on a “bodily harm” scale. This explains its verbal selection restriction as well as why [V-*can1*] predicates behave like achievement verbs. The second function of the post-verbal *can1* is a free choice item (FCI). This explains its restrictive appearance: it only appears in

non-episodic sentences, specifically in *doul* (iota operator)-conditionals or *zau6* (necessity operator)-conditionals.

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粵語中動詞後綴“親”的雙重身分：不確指結果補語和自由選項單元

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提要

本文探討粵語中動詞後綴“親”兩種不同的語法身分及其語法和語義屬性。動詞後綴“親”的其一身分是不確指結果補語 (non-specific resultative particle)。“動詞－親”含身體損傷比例尺。由於結果補語“親”可指任何程度的損傷，“動詞－親”內含的比例尺只能是單純形 (只包含開端和結束兩個點)，因此“動詞－親”有成就性動詞的屬性。動詞後綴“親”的另一身分是自由選項單元 (free-choice-item)。自由選項單元“親”只能出現在非情節性 (non-episodic) 句子，含“都” (iota operator) 或含“就” (necessity operator) 的條件句。

關鍵詞

粵語，結果補語，比例尺，自由選項單元