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Assertion, Addressee's Commitment and the Cantonese particle *gam2*

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Abstract. As many languages, Cantonese employs discourse particles as one of the strategies to achieve pragmatic functions. However, the sentence final gam2 (addressed as gam2 for simplicity) is surprisingly neglected. First, I will argue that syntactically, gam2 is a CP-type discourse particle which takes a wide scope over finite TP. Then, I will look at the semantic properties of gam2 for its dynamic interpretations in different types of clauses. I propose that gam2 carries the assertive force which updates the Common Ground of the discourse (Davis, 2009). At the same time, the use of gam2 indicates one's attitudes or presuppositions on the addressee (Gunlogson 2001). This proposal is to show and account for the constraints on the felicitous use of gam2, including its uses as an assertive particle to addressee-related declaratives, and its use in interrogatives as well.

1. Introduction

The Cantonese word *gam2* literally means 'in such a way'. Sio and Tang (2007) shows that the particle *gam* is an indexical element, it surfaces with two different intonational as *gam2* and *gam3*.[1][2] *Gam* is observed in different syntactic positions, as shown in (1)-(3).

(1) Keoi5 gam2 zou6-je3 m4 dak1 gaa3.[3] (pre-VP position)
He/she Gam do-thing NEG possible SFP
'He/she working in such a way that is not acceptable.'
(Sio and Tang 2007: (1))

[1] The digital number 2 refers to the high rising tone, and 3 refers to the mid-level tone.
[2] Sio and Tang (2007) call *gam* as an indexical element.

(2) Keoi5 coeng3-go1 coeng3-sing4 gam2 ge3. (post-VP position)
He/she sing-song sing-RES GAM SFP
'How come he/she sings like that!'
(Sio and Tang 2007: (30))

(3) Gam2 aa1, ngo5 bei2 sin1 laa1. (Propositional use)
GAM SFP, I give first SFP
'In this case, I will pay first.'
(Sio and Tang 2007: (53))

When *gam2* is combined with an adverbial, the expression denotes manner reading, as (4).

(4) Keoi5 hou2 [ming4hin2 gam2] m4 zung1ji3 laa1.
3SG very clearly GAM NEG like SFP
'He/she will show his/her dislike in a very clear manner'
(Sio and Tang 2007: (11))

Meanwhile, *gam3* is only compatible with gradable adjectives, indicating the degree of an entity, as (5).

(5) Tiu4 sing2 jau5 saam1 maai5 gam3 coeng4.
CL rope have three meter GAM long
'The rope is three meters long.'
(Sio and Tang 2007: (55))

Sio and Tang (2007) unifies *gam2* and *gam3* as the same indexical element which projects *GamP*. The realization of distinct function depends on whether *joeng2* 'appearance' or degree is taken as the internal argument of the head *gam*.

The above observation is true but not the whole story of *gam2*. *Gam2* appears in the sentence final position as well. Consider (6).

(6) Zoeng1saam1 soeng2 bong1 haa5 sau2 gam2 ze1.
Zoemg1saam1 want help CL hand GAM only
'It is just the case that Zoeng1saam1 wanted to help out.'
(Peng 2001; with modification)

This article attempts to present a more extensive study on the sentence final particle *gam2* in Cantonese. The Cantonese data presented in this article is primarily cited from The Hong

Kong Cantonese Corpus (Luke and Wong, 2015).[4] I propose that the sentence final *gam2* is a CP-type discourse particle encoding the assertive force. *Gam2* has two functions. The first function is to assert the truth of the expressed proposition. This updates the common ground of the discourse, constructed by the public beliefs of the interlocutors. Second, *gam2* indicates the relevance relationship between the speaker and the addressee. In addition, the occurrence of *gam2* in questions indicates the addressee's commitment to the expressed proposition proposition.

This paper is organized as follows: Section 2 shows the clause-type restrictions of *gam2* and the force bearing by *gam2*. Section 3 looks at Davis' (2009) analysis on the Japanese assertive particle *yo*. Following Davis' (2009) proposal, I will construct a preliminary framework for the semantics of *gam2* in declaratives. Section 4 reviews Gunlogson's (2001) proposal of declarative questions in English. I will propose that *gam2*-questions are allowed in the condition when the speaker knows about the addressee's commitment to the truth of the expressed proposition. In Section 5, I follows Erlewine's (2017) derivation of head finality, for ordering the sentence final position of *gam2*. Section 6 is the conclusion.

2. Properties of sentence final *gam2*

2.1 CP-type discourse particle gam2

According to Coniglio and Zegrean's (2010) proposal of split force, I propose that the sentence final *gam2* encodes the speaker's assertion on the expressed proposition. This section shows that *gam2* is a CP-type discourse and it appears in both declaratives and interrogatives. The Chinese SFPs are categorized into high and low SFPs, corresponding to their structural heights and scope domains.[5] The high SFPs occupy positions in the CP periphery, while the low ones are in the clause-medial positon between TP and *v*P. Erlewine (2017) shows that the clause-medial SFPs *eryi* 'only' and the perfect tense marker le_2 take a wide scope over elements within TP, such as the focus marker *zhi* 'only', negation *not* 'not' and ability modal *neng* 'able'; but *eryi* 'only' and le_2 are under the scope of structurally higher elements, *bushi* 'not' and the epistemic modal *keneng* 'may'. Compared to the clausal-medial SFPs, *gam2* behaves in the opposite manner. Consider (7)-(11).

Interaction with focus marker *zi* 'only'

[4] The corpus collected transcribed conversations which were recorded between March 1997 and May 1998. The use of sentence final *gam2* is commonly found in the corpus. The age of the participants is between 15 and 60 at the time of recording (1997-1998). The majority of them were in their 20s and 30s. It is no wonder why many young adults nowadays are no longer using the sentence final *gam2*; while it is more familiar to the the elder groups.

[5] This phenomenon should be found in Cantonese as well.

(7) Zoeng1saam1 zi2 zung1ji3 Ma5lei6 jat1 go3 gam2 lo1.
Zoeng1saam1 only like Ma5lei6 one CL GAM LO
'It is just the case that Zoeng1saam1 loves no one but Ma5lei6'
(*gam2* > *zi2* 'only')

Interaction with negation *m4* 'not'

(8) Zoeng1saam1 m4 zung1ji3 Ma5lei6 gam2 ze1.
Zoeng1saam1 not like Ma5lei4 GAM only
'It is just the case that Zoeng1saam1 does not like Ma5lei6.' (*gam2* > *m4* 'not')

Interaction with the higher negation element *m4-hai6* 'not'

(9) Zoeng1saam1 m4-hai6 dai4hok6sang1 gam2 ze1.
Zoeng1saam1 not-be university.student GAM only
'It is just the case that Zoeng1saam1 is not a university student.'
(*gam2* > *m4-hai6* 'not')

Interaction with the ability modal *dak1* 'able' and the epistemic modal *ho2neng2* 'may'

(10) Zoeng1saam1 heoi5-dak1 Toi4bak1 gam2 lo1. [6]
Zoeng1saam1 go-able Taipei GAM LO
'It is the case that Zoeng1saam1 can go to Taipei.'
(*gam2* > *dak1* 'able')

(11) Zoeng1saam1 ho2neng4 heoi5 Toi4bak1 gam2 lo1.
Zoeng1saam1 may go Taipei GAM LO
'It is the case that Zoeng1saam1 may go to Taipei.'
(*gam2* > *ho2neng4* 'may')

Moreover, the sentence final *gam2* takes a wide scope over the whole TP, as in (12).

[6] I replace *neng* 'able' with *dak* 'able' for the reason that the former is too literal to be natural colloquial. *Dak* 'able' is a modal of circumstantial ability commonly used by Cantonese speakers.

(12) Zoeng1saam1 soeng2 bong1 haa5 sau2 gam2 ze1.
Zoemgsam wanthelp CL hand GAM only
'It is just the case that Zoeng1saam1 wanted to help out.'
(*ze1* 'only' > *gam2* > TP)[7]
(Peng 2001; with modification)

The sentence final *gam2* takes a wide scope over the temporal adverb *cum4jat1* 'yesterday', as in (13). That means, the sentence final *gam2* can scopes over finite TP.

(13) Zoeng1saam1 cum4jat1 soeng2 bong1 haa5 sau2 gam2 ze1.
Zoemg1saam1 yesterday want help CL hand GAM only
'It is just the case that Zoeng1saam1 wanted to help out yesterday.'
(*ze1* 'only' > *gam2* > *cum4jat1* 'yesterday')

The sentence final *gam2* takes wide scope over the epistemic adverb *hoci* 'seemingly', which is a speaker-oriented adverb (Thomas, 2009), appearing in the CP domain.

(14) Zoeng1saam1 ho2ci5 maai5-zo2 go2 bun2 syu1 gam2 wo5.[8]
Zoeng1saam1 seemingly buy-Perf that CL book GAM WO
'(I heard that) It seemed that Zoeng1saam1 had bought that book.'
(*gam2* > *ho2ci3* 'seemingly')

Similar to those high SPFs, *gam2* exhibits the main clause phenomenon. Consider (15). (15) shows that *gam2* cannot be embedded by the matrix verb *wa3* 'say'.

(15) Lei3sei3 wa3 Zoeng1saam1 soeng2 bong1 haa5
Lei3sei3 say Zoeng1saam1 want help CL
sau2 gam2 ze1.
hand GAM only
'It is just the case that Lei3sei3 said that Zoeng1saam1 wanted to help out.'
(*gam2* > *wa3* 'say')

(16) shows that *gam2* cannot occur in the precedence of *if*-conditionals.

[7] The basic meaning of the particle *ze1* is *only*, but it also expresses speaker's attitude of 'downplaying' over the expressed proposition. Even though *ze1* 'only' takes wide scope over *gam2*, gam2 still scopes over the TP.

[8] The particle *wo5* suggests speaker's expression of hearsay (Law 2002).

(16) Ju3guo2 Zoeng1saam1 sik6-zo2 saam1 go3 ping4guo2 (*gam2),
if Zoeng1saam1 eat-PERF three CL apple GAM
koei3 jing1goi1 sik6-m4-lok6 faan6 laa1.
he should eat-NEG-down rice SFP
(Intended) 'If Zoeng1saam1 has eaten three apples, he would probably be too full to have meal.'

In short, the above observation shows that *gam2* takes a wide scope over a finite TP, which suggests that *gam2* is structurally located in the CP domain.

2.2 Clause-type restrictions of gam2

Cantonese SFP clusters are commonly but they are strictly ordered (Law, 2002). Consider (17). *Tim1* 'unexpectedness' and *zaa3* 'only' are low SFPs that encode focus sensitivity (Lam 2002). They cannot take wide scope over the question particle *me1* which occupies a higher structural position.

(17) Keoi5 zung6 heoi3 zo2 Baa1lai4 (tim1) (zaa3)
s/he also go ASP Paris SFP SFP
me1 (*tim1) (*zaa3)?
SFP SFP SFP
(Intended) 'Did she/he also only go to Paris only?'
(Law 2002: (10), with modification)

In addition, particles with contradicting semantics are predicted to be incompatible (Law, 2002). See (18). The particle *gwaa3* 'perhaps' encodes force of epistemic, which expresses speaker's inference and uncertainty; whereas the particle *aa1maa3* is a rhetorical questions particle, showing speaker's positive expectation. These two particle are semantically contradictory.

(18) *Zoeng1saam1 heoi3 zo2 Baa1lai4 gwaa3 aa1maa3
Zoeng1saam1 go ASP Paris SFP SFP
(Intended) 'Probably, Zoeng1saam1 has traveled to Paris, right?'

The above principles are applicable to *gam2* as well. If *gam2* encodes assertive force, *gam2*-sentences are predicted to be declaratives. The following shows empirical evidence to this argument. Consider (19). *Gam2* can appear alone in the sentence final position.

(19) Zik1hai6 nei5 gum6 go2 go3 jing4gong1mok6 ne1,
That.is you press that CL screen NE
koei5 zau6 wui5 ceot1 di1 je5 bei2 nei5
it then will come.out some thing give you
taai2 gam2(joeng2).
see GAM(JOENG)
'It is the case that when you keep pressing the screen, something will show up.'

Also, *gam2* can appear with other SFPs of which meanings are compatible with *gam2*. The particles *lo1* 'obviousness', *ze1* 'downplay' and *wo5* 'hearsay', *ne1* 'tentative' do not contradict with assertive force, hence they can appear with *gam2*. See (20)-(24).

Sentence with *gam2* and *lo1* 'obviousness'.

(20) Sik6 loeng5 zit3 ceot1 heoi3 tou3-faan1-jin2, hou2guo3
lose two discount out go change-back-cash better.than
nei5 zaa1-zyu6 loi4 guo34dou6 gau2cat1 zou4 gu2dung2
you hold-DUR come pass nine.seven do antique
gam2 lo1.
GAM LO
'It is obvious that selling (the stamp) at twenty percent off for cash is better than keeping it as an antique after 1997.'

Sentence with *gam2* and *ze1* 'downplay'.

(21) Zoeng1saam1 soeng2 lei4 bong1 haa5 sau2 gam2 ze1.
Zoeng1saam1 wantcome help CL hand GAM only
'It is just the case that Zoeng1saam1 wanted to help out.'

Sentence with *gam2* and *wo5* 'hearsay'.

(22) Zoeng1saam1 soeng2 lei4 bong1 haa5 sau2 gam2 wo5.
Zoeng1saam1 wantcome help CL hand GAM hearsay
'(It is heard that) it was the case that Zoeng1saam1 wanted to help out'

It is predicted that the assertive *gam2* contradicts with uncertainty. The particle *gwaa3* means 'perhaps', and *ding2laa1* means 'be likely' (Tang 2016), expressing one's inferences. *Gam2* semantically contradicts with *gwaa3* 'perhaps' and *ding2laa1* 'be likely', as one cannot make an assertion and an inference over a proposition at the same time. Thus, the appearance of

gam2 in (23) and (24) will cause the sentences ungrammatical.

(23) Zoeng1saam1 ji5ging1 heoi3-zo2 Toi4bak1
Zoeng1saam1 already go-Perf Taipei
(*gam2) gwaa3 (*gam2).
GAM GWAA GAM
'It is probably that Zoeng1saam1has already left for Taipei.'

(24) Zoeng1saam1 sik6-zo2 go2 saam1 go3 ping4guo2
Zoeng1saam1 eat-Perf that three CL apple
(*gam2) ding2laa3 (*gam2)!
GAM DINGLAA GAM
'It is likely that Zoeng1saam1 has eaten those three apples.'

The above observation suggests that *gam2*-sentences encode assertive force. This suggestion predicts that *gam2* can only occur with declaratives yet fail to occur with non-declarative clause types. In this sense, *gam2* should pattern with the Mandarin assertive particle *de* (Hsiao, 2015). Nevertheless, this prediction is incorrect. *Gam2* shows a number of differences from *de*. The comparisons between *de* and *gam2* are shown as the follows.

(25)-(27) show that both *de* and *gam2* can occur with state-denoting declaratives.

(25) a. Zhangsan hen congming de.
Zhangsan very clever DE
'Zhnagsan is actually very clever.'
(Hsiao 2015: (16))

b. Zoeng1saam1 hou2 cong1ming4 gam2 wo3.
Zoeng1saam1 very clever GAM WO
'It is the case that Zoeng1saam1 is very clever.'

(26) a. Zhangsan bu he baikaishui de.
Zhangsab NEG drink plin.boiled.water DE
'Actually Zhangsan doesn't drink plain boiled water.' (Hsiao 2015: (17))

b. Zoeng1saam1 m4 jam2 gwan2seoi2 gam2 lo1.
Zoeng1saam1 NEG drink boiled.water GAM LO
'It is the case that Zoeng1saam1 doesn't drink boiled water.'

(27) a. Zhangsan zhi he yinliao de
Zhangsan only drink beverages DE
'Actually Zhangsan drinks only beverages.'
(Hsiao 2015: (18))

b. Zoeng1saam1 zing6hai6 jam2 ho2lok6 gam2 lo1.
Zoeng1saam1 only drink Coke GAM LO
'It is the case that Zoeng1saam1 drinks only Coke.'

(28) shows that *gam2* occurs with event-denoting declaratives, while *de* cannot.

(28) a. *Zhnagsan chi-guo le de.
Zhangsan eat-ASP PERF DE
(Intended) 'Actually Zhangsan has eaten.'
(Hsiao 2015: (22))

b. Zoeng1saam1 sik6-zo2 ping4guo2 gam2 lo1.
Zoeng1saam1 eat-Perf apple GAM LO
'It is the case that Zoeng1saam1 ate some apples. (That is why he is skipping dinner now.)'

Not only so, *gam2* occurs interrogatives, which is not shared with *de*. As shown in (29), *gam2* appears in yes-no questions.

(29) a. *Zhangsan you-mei-you qu Taipei wan de ma?
Zhnagsan have-NEG-have go Taipei travel DE Q

b. Zoeng1saam1 jau5 mou5 heoi3 Toi4bak1 waan2 gam2 aa3?
Zoeng1saam1 have NEG go Taipei play GAM Q
'Did Zoeng1saam1 travel to Taipei?'

Gam2 appears in A-not-A questions, as in (30).

(30) a. *Zhangsan shi-bu-shi mai-le na ben shu de ma?
Zhangsan be-NEG-be buy-PERF that CL book DE Q

b. Zoeng1saam1 hai6-m4-hai6 maai5-zo2 go2 bun2 syu1
Zoeng1saam1 be-not-be buy-Perf that CL book
gam2 aa3?
GAM Q
'Did Zoeng1saam1 buy that book?'

Gam2 appears in rhetorical questions, as in (31)-(32).[9]

(31) Zoeng1saam1 sik6-zo2 ping4guo2 gam2 zaa3 me1?
Zoeng1saam1 eat-Perf apple GAM only Q
'Is it true that Zoeng1saam1 ate apples only?'

(32) Zoeng1saam1 sik6-zo2 ping4guo2 gam2 zaa3 ho2?
Zoeng1saam1 eat-Perf apple GAM only Q
'Zoeng1saam1 only ate three apples, right?'

Gam2 appears in *wh*-questions, as in (33)-(35).

(33) a. *Zhangsan chi-le xie shenme de (a)?
Zhangsan eat-PERF some what DE Q
b. Zoeng1saam1 sik6-zo2 di1 me1 gam2 aa3?
Zoeng1saam1 eat-Perf some what GAM Q
'What did Zoeng1saam1 eat then?'

(34) a. *Shei chi-le na san ge pingguo de (a)?
Who eat-PERF that three CL apple DE Q
b. Bin1guo3 sik6-zo2 go2 saam1 go3 ping4guo2 gam2 aa3?
Who eat-Perf that three CL apples GAM Q
'Who ate the three apples then?'

(35) a. Zhnagsan zenme/zainali/shenmeshihou chi-le pingguo de (a)?
Zhangsan how/where/when eat-PERF apple DE Q
b. Zoeng1saam1 dim2joeng2/hai2bin1/gei2si4 sik6-zo2 ping4guo2
Zoeng1saam1 how/where/when eat-Perf apple
gam2 aa3?
GAM Q
'How/where/when did Zoeng1saam1 eat the apples then?'

2.3 Interim Summary

The above shows that *gam2* is a CP-type discourse particle, encoding assertive force. However, unlike the typical declarative marker *de* in Mandarin Chinese, *gam2* can appear in interrogatives as well. There are a number of questions raised: (1) what is the purpose of

[9] It is hard to find Chinese equivalences patterning with me1-rhetorical questions and ho2-rhetorical questions. Therefore, I did not make comparisons between *de* and *gam2* in terms of the compatibility with rhetorical questions.

using *gam2*? (2) What is the difference between bare declaratives and declaratives with *gam2*? (3) Why is the particle bearing the assertive force allowed in interrogatives? I will attempt to answer all these questions in my analysis.

3 Declarative discourse particles

In terms of clause-type restrictions, *gam2* behaves more similarly to the Japanese particle *yo*. Because *gam2* and *yo* can occur with declaratives and questions. Therefore, I will look at Davis' (2009) proposal of *yo* for the explanation of *gam2*.

3.1 Davis (2009): The Japanese discourse particle yo↑/↓

Davis (2009) studies the dynamic effects contributed by the intonations of the Japanese sentence final particle yo. Davis argues that the intonational morphemes contribute to the update semantics of the common ground, allowing the interpretation of a sentence in terms of its context-change potential(CCP) (Heim 1982). Following Gunlogson's (2001) model of discourse context, the common ground is reconstructed by the intersection of public beliefs of each discourse participant in a given discourse context C.

In addition, Davis suggests that the use of intonations of *yo* (henceforth yo↑/ ↓) indicates the speaker's intention to guide the addressee to opt for the optimal actions in decision making. The optimality of actions is based on the ordering sources of the speaker or the addressee, which is contextually supplied. This proposal captures all uses of *yo*↑/ ↓, including assertions, imperatives and questions. Here, I will show the examples of declaratives and interrogatives with *yo*↑/ ↓ only.

3.2 Assertions with yo↑/ ↓

Yo with either the rising tone ↑ or the falling tone ↓ is compatible with assertions.[10] Consider the declaratives with *yo*↑ in (36).

(36) a. aa, mayot-ta. dono susi-ni si-you ka na.
Oh at.a.loss-PAST which sushi-DAT do-HORT Q PRT
'I'm stuck—I wonder which sort of sushi I should get?'

b. koko-no maguro-wa oisi-i #(*yo*↑)
here-GEN tuna-TOP tasty-NONPAST #(*yo*↑)
'The tuna here is good yo↑.'

(Davis 2009: (18))

B's reply with *yo*↑ does not simply state the fact. Instead, it guides A to have tuna as the

[10] Felicity conditions for rising and falling tone are different. *Yo*↓ is used if the speaker presupposes the addressee has conflicting ideas against the asserted *p*. The use of *yo*↑ does not have such presupposition.

optimal choice to his decision problem. Based on A's concern on the taste of sushi, the partial ordering worlds as shown in (37).

(37) $\{T_{s(A)}, S_{t(A)}\} <_c \{T_{t(A)}, S_{s(A)}, B_{t(A)}, B_{s(A)}\}$ (Davis 2009: (24))

In B's reply, the intonational morpheme ↑ combines with the operator ASSERT, which combines with the proposition to return a function from contexts to contexts. That is, the Common Ground is updated. As shown in (38), worlds in which salmon is tasty, that is the subsets $S_{s(A)}$ and $S_{t(A)}$ are eliminated in this updated CG. Also, no worlds in which A chooses tuna that are ordered below worlds in which A chooses salmon.

(38) $\{T_{s(A)}\} <_{c'} \{T_{t(A)}, B_{t(A)}, B_{s(A)}\}$ (Davis 2009: (25))

Following this line, B's reply with *yo*↑ indicates the relationship between the speaker and the addressee. That is, the speaker guides the addressee to make decision for the optimal choice.

3.3 Questions and yo↓

Yo↓ is found in rhetorical questions and questions with the particle *nda*, as in (39) and (40). Similar to the analysis of declaratives containing *yo*↓, *yo*↓ indicates the answer to the question. That is, the speaker strongly believes that the complement of *yo*↓ is true. That means, instead of asking for an answer, the speaker persuades the addressee to believe that *p* is true. Davis suggests that, being different from declarative *yo*↓, the intonational morpheme does not update the common ground, as questions do not update public beliefs. This is why *yo*↓ appears in rhetorical questions in (39b).

(39) a. kimi-no kyuuryou de ie-ga
you-GEN salary with house-NOM
tate-rare-ru ka *(yo↓)*
build-an-NONPAST Q *(yo↓)*
'You think you can build a house with your salary?!'

b. konna hon, dare-ga ka-u ka *(yo↓)*
this.kind.of book who-NOM buy-NONPAST Q *(yo↓)*
'Who the hell would buy a book like this!?'

(Davis 2009: (31))

In addition, as the particle *nda* is composed by the nominalizer *no* and the copula *da*, and the sentences ending with *nda* are syntactically declaratives. Davis suggests that (40) should be

treated as a kind of imperative or assertion. The question can be translated as *Tell me who drank the beer* or *The question is who drank my beer*.

(40)	dare-ga	boku-no	biiru-o	non-da	*nda*	*(yo↓)*
	who-NOM	me-GEN	beer-ACC	drink-PAST	*nda*	*(yo↓)*

'Who drank my beer *nda (yo↓)*?'

(Davis 2009: (32))

3.4 Analysis of gam2 in declaratives

Following Davis' (2009) proposal of the Japanese particle *yo*↑/ ↓, I propose that *gam2* is a discourse particle which encodes complex forces. That is, *gam2* encodes the assertive force and indicates the respondent's agreement on the speaker's presupposition on the topic under discussions. This is obvious in the situation when the speaker shows his negative evaluations over the topic under discussion. The respondent encodes with the speaker's attitude and shows agreements with the speaker's presupposition. This shows that the use of *gam2* does not simply state a fact. Before I get into the details of the analysis, I will show the differences between the bare declaratives and the ones containing *gam2*.

3.4.1 Felicity condition for gam2-declaratives

Compare (41) and (42). In (41), native speakers prefer the reply of Respondent A to Respondent B. The fragment answer of Respondent A provides the information the Speaker wants: the cost of the shirt. On the contrary, the answer of Respondent B with *gam2* sounds strange and it is less preferred.

(41)	Speaker:	Jin6	saam1	gei2	cin2	aa3?
		CL	shirt	how	money	Q
		'How much is this shirt?'				
	Respondent A:	Jat1baak3		maan1	lo1!	
		one.hundred		dollar	LO	
		'One hundred dollars!'				
	Respondent B:	#Jat1baak3		maan1	gam2	lo1!
		one.hundred		dollar	GAM	LO
		'One hundred dollars!'				

On the other hand, the situation is different in (42). The Speaker asks how cheap the shirt is. The reply of Respondent B with *gam2* sounds perfect, but the Respondent A without *gam2* is strange and it is less preferred.

(42)	Speaker:	Jin6 saam1	jau5	gei2	peng4	aa3?
		CL shirt	have	how	cheap	Q
		'How low the price is this shirt?'				
	Respondent A:	#Jat1baak3	maan1	lo1!		
		one.hundred	dollar	LO		
		'One hundred dollars!'				
	Respondent B:	Jat1baak3	maan1	gam2	lo1!	
		one.hundred	dollar	GAM	LO	
		'One hundred dollars!'				

When an individual responds with *gam2*-declaratives, it always shows his attitude of negative evaluation towards the expressed proposition. Compared (43) and (44). In (43), the question asked carries the Speaker's presupposition towards Zoeng1saam1's height, which is negative: Zoeng1saam1 is short. The answer of Respondent A with *gam2* sounds natural, which carries his agreement with the Speaker's negative evaluation over Zoeng1saam1's height. However, the answer of Respondent B, which is without *gam2*, sounds strange and it is less preferred. It appears to be not answering the question at all.

(43)	Speaker:	Zoeng1saam1	jau5	gei2	ai2	aa1?
		Zoeng1saam1	have	how.many	short	SFP
		'How short Zoeng1saam1 is?'				
	Respondent A:	150	gung1fan1	gam2	lo!	
		150	centimeter	GAM	SFP	
		'150 centimeters!'				
	Respondent B:	#150	gung1fan1	lo!		
		150	centimeter	SFP		
		'150	centimeters!'			

On the other hand, in (44), the question is formed with a neutral attitude, which simply asks for how tall Zoeng1saam1 is. The answer of Respondent A with *gam2* is less preferred; while the answer of Respondent B, which is without *gam2*, sounds natural.

(44) Speaker: Zoeng1saam1 jau5 gei2 gou1 aa1?
Zoeng1saam1 have how.many tall SFP
'How tall Zoeng1saam1 is?'
Respondent A: #/??150 gung1fan1 gam2 lo!
150 centimeter GAM SFP
'150 centimeters!'
Respondent B: 150 gung1fan1 lo!
150 centimeter SFP
'150 centimeters!'

Based on the above data, I propose that *gam2* is a discourse particle which encodes the assertive force and it has two functions. First, the assertive force *gam2* updates the common ground of the discourse. That is, the public beliefs of the interlocutors. Second, *gam2* encodes the respondent's attitude towards the expressed proposition/ the topic under discussion. This indicates the relevance relationship between the speaker and the respondent. The respondent uses *gam2* to echoes with the speaker's negative evaluation towards the topic under discussion. For example, the height of Zoeng1saam1 in (43). *Gam2* does contributes to the interpretation of a declarative and it is not optional. Compared to bare declaratives, they do not express the respondent's attitude.

How should we analyze questions asked in the neutral context which carry neither positive nor negative evaluation of the speaker? I suggest that the use of *gam2* in responses does not carry the respondent's agreement towards the speaker's view point. Indeed, *gam2* denotes a sense of persuasion that the respondent tries to explain and convince the speaker to take his answer to be true. Following this sense, the pragmatic function of *gam2* appears to be different in different contexts. Nevertheless, in both contexts, *gam2* indicates the respondent's bias towards the expressed proposition.

4. Declarative discourse particles in questions

It is intriguing that *gam2*, which encodes assertive force, can appear in questions. *Gam2* patterns with *yo* ↓in terms of distribution, as both of them can appear in rhetorical questions and *wh*-questions. However, *gam2* contributes different functions in questions. Regarding yes-no questions with *gam2*, I follow Gunlogson's (2001) proposal of declarative questions in English and propose that *gam2* turns yes-no questions into declarative question, because both share the same felicity condition, the Contextual Bias Condition. *Gam2* are used when the addressee's commitment to the truth of the expressed proposition are publicly known by the speaker. Meanwhile, *gam2* in *wh*-questions indicates that the speaker has some reason to believe that the addressee is more knowledgeable about the truth of the expressed proposition. This fits in the weaker version of the Contextual Bias Condition.

4.1 Gunlogson's (2001) Proposal of Declarative Questions

Gunlogson (2001) attempts to distinguish the rising declaratives, called as declarative questions, from the polar interrogatives. The author shows the differences between the two as the follows.[11]

(45) [as an exam question]
a. Is the empty set a member of itself?
b. #The empty set a member of itself?
c. #The empty set a member of itself.

(Gunlogson 2001:(15))

(46) [Request of action]
a. Can you (please) pass the salt?
b. #You can (please) pass the salt?
c. #You can (please) pass the salt.

(Gunlogson 2001: (16))

(45) and (46) show that declarative questions are infelicitous in neutral contexts, contrary to polar questions. This suggests that declarative questions encode a sense of bias to the descriptive content proposition. Gunlogson (2001) provides contextual restrictions on the felicity condition of declarative questions in English, as in (47).

(47) Contextual Bias Condition
An utterance of $\updownarrow S_{decl}$ with descriptive content *p* is interpretable as a polar question in C only if $cs_{Addr}(C) \subseteq p$.[12]

(Gunlogson 2001: (105))

According to the Contextual Bias Condition, the addressee's commitment to the truth of the expressed proposition is publicly known to the speaker in the discourse context. This motivates the speaker to verify the truth of the proposition with a declarative question.

The motivation is supported by the public evidence. The public evidence plays a different role respectively to the addressee and the speaker. To the addressee, he does not need the public evidence to decide it; but when declarative questions are asked, the public evidence allows the addressee to recognize that the speaker assumes that he knows the truth of the proposition. Meanwhile, the public evidence allows the speaker to take the

[11] In this paper, I ignore the comparisons with the falling declaratives, for this is not the concern of our presentation.
[12] The arrow symbol ↕ ranges over rising and falling tones. In this paper, I will only discuss declaratives with rising tone.

addressee's commitment to the truth of the expressed proposition as the fact. Still, the speaker has no commitment to the proposition expressed, so rising declaratives remains as questions.

In this sense, a clear line can be drawn between the two: polar questions in the neutral context function are skeptical questions; whereas declarative questions in the biased context function are verification questions.

Consider (48). The declarative question (48b) is infelicitous as the addressee' commitment to the expressed proposition (it is raining outside) is unknown to the speaker. There is no public evidence in this context.

(48) Robin is sitting in a windowless computer room with no information about current weather conditions when another person enters.
Robin says to that newcomer:
a. Is it raining?
b. #It is raining?
c. #It is raining.

(Gunlogson 2001: (126))

However, (49) shows that the declarative question (49b) is felicitous. When the addressee' commitment to the expressed proposition (it is raining outside) appears to be the public evidence to the speaker (the wet raincoat). The publicly known evidence motivates the speaker to verify the truth of the expressed proposition against the addressee.

(49) Robin is sitting in the same room and being ignorant to the outside weather. The newcomer is wearing a wet raincoat and boots. Robin says:
a. Is it raining?
b. It is raining?
c. (I see that/ So) It is raining.

(Gunlogson 2001: (128))

In addition, Gunlogson's (2001) proposal allows accommodation of declarative questions in certain situations. That is, when the addressee is publicly presented as knowledgeable about certain body of facts. Therefore, the speaker has some reason to believe that the addressee knows the truth of the proposition expressed. Consider (50).

Suppose that A is an informant from the Amsterdam airport, B is an information-seeker.

(50) A: Schiphol Information
B: Hello, this is G.M. I have to go to Helsinki, from Amsterdam. Can you tell me which flights leave next Sunday?
A: Just a moment.
A: Yes, there are several flights. One leaves at 9:10, one at 11:00, and one at 17:30.
B: The flight takes about three hours?
(Gunlogson 2001: (123))

Although the situation in (50) lacks the public evidence, just like the wet raincoat and boots in (49), the speaker B knows that the addressee A is the airport informant and he is supposed to know the duration of each flight. Therefore, the speaker B uses the declarative question 'The flight takes about three hours?' for verification. The declarative is accommodated as a question and the situation is adjusted to meet the Contextual Bias Condition. Gunlogson (2001) suggests that this fulfills a 'weaker version' of the Contextual Bias Condition, as the speaker's belief is not a logical entailment, but an inference only. Provided that the context is rich enough to convince the speaker to believe that the addressee is relatively more knowledgeable in certain body of fact, the speaker would employ a declarative question for verification.

In short, Gunlogson (2001) suggests a felicity condition for declarative questions. That is, the Contextual Bias Condition. As the commitment of the addressee is publicly known by the speaker with public evidence, the speaker is motivated to verify the truth of the expressed proposition. This is the biased context allows declarative questions.

4.2 Similarities between gam2-questions and declarative questions

Similar to declarative questions, *gam2*-questions cannot appear in the 'out-of-the-blue' context. The parallel comparisons are shown in (51)-(54). In (51) and (52), questions are asked in a neutral context. The speaker does not know whether the addressee knows the answer. In this case, *gam2*-questions are infelicitous, as the b-sentences.

(51) [as an exam question]

a.	Lam4zak1tsui4	hai6-m4-hai6	hai2	Fu2mun4	siu1	jin1
	Lamzaktsui	be-not-be	be	Fumon	destroy	opium
	aa3?					
	SFP					

'Did Lamzaktsui destroy the opium at Fumon?'

b. #Lam4zak1tsui4 hai6-m4-hai6 hai2 Fu2mun4 siu1 jin1
#Lamzaktsui be-not-be be Fumon destroy opium
gam2 aa3?
GAM SFP

(52) [Request of action]

a. Nei3 ho2-m4-ho2ji5 ling1 zeon1 jim4 bei2 ngo5
you can-not-can take CL salt give me
aa3?
SFP
'Could you (please) pass the salt?'

b. #Nei3 ho2-m4-ho2ji5 ling1 zeon1 jim4 bei2 ngo5
you can-not-can take CL salt give me
gam2 aa3?
GAM SFP

Now, apply the same situations in (48) and (49) to *gam2*-questions, as in (53) and (54). Similar to the declarative questions, when there is no public evidence that supports the addressee's commitment to the truth of the expressed proposition 'it is raining', the *gam2*-question (53b) is infelicitous.

(53) Robin is sitting in a windowless computer room with no information about current weather conditions when another person enters.
Robin says to that newcomer:

a. Ceot1min6 jau5 mou5 lok6 ju5 aa3?
Outside have not.have fall rain SFP
'Is it raining outside?'

b. #Ceot1min6 jau5 mou5 lok6 ju5 gam2 aa3?
Outside have not.have fall rain GAM SFP
(Intended) 'Is it raining outside?'

On the contrary, the *gam2*-question (54b) is felicitous when the addressee's knowledge about the weather condition is publicly known, evidenced by the wet raincoat and boots.

(54) Robin is sitting in the same room and being ignorant to the outside weather. The newcomer is wearing a wet raincoat and boots. Robin says:

a. #Ceot1min6 jau5 mou5 lok6 ju5 aa3?
Outside have not.have fall rain SFP
'Is it raining outside?'

b. Ceot1min6 jau5 mou5 lok6 ju5 gam2 aa3?
Outside have not.have fall rain GAM SFP
(Intended) 'Is it raining outside?'

Base on the above comparisons, it seems that declarative questions and *gam2*-questions share the same felicity condition.

4.3 Analysis of gam2-questions

Follow Gunlogson's (2001) proposal of declarative questions, I propose that the felicity condition for *gam2*-questions is in which the addressee's commitment to the truth of the expressed proposition is publicly known to the speaker. This can be viewed as the public belief(s), or public evidence, among the interlocutors. The particle *gam2* indicates that the bias comes from the addressee's commitment to the truth of the expressed proposition. The proposal does not violate the property of declaratives that assertive particles encode bias to the expressed proposition. This explains why *gam2*-questions occur in rhetorical questions, which obtains the speaker's negative or positive expectations toward answers.

However, *gam2*-questions do not follow the Contextual Bias Context strictly. In many cases, the speaker's belief of the addressee's commitment to the expressed proposition is based on a strong sense of inference, but not public evidence. This is obviously shown in the use of *wh*-questions with *gam2*. In Gunlogson's (2001) proposal, in some situation, rising declaratives can be accommodated as questions. If this is on the right track, the phenomenon that *gam2* appears in *wh*-questions can also be explained under the same framework.

4.3.1 Gam2 in yes-no questions

Gam2 can occur in rhetorical questions with the question particles *me1* and *ho2*. According to Lam (2015), *me1* forms biased questions that the speaker expects a negative answer, whereas *ho2* is used to expect a positive one. The speaker's expectations are based on concrete reasons and evidence, such as in the situation that the descriptive proposition in the questions is mentioned in previous conversations. This becomes the public beliefs among the interlocutors prior to the asking. The public belief can be treated as the public evidence motivating the speakers to believe that the addressee knows the truth of the expressed proposition. It appears to be consistent with the felicity condition of declarative

questions.

Following this sense, it is reasonable to allow *gam2* to appear in rhetorical questions with particles of *me1* and *ho2*, as in (31) and (32), repeated as (55) and (56).

Suppose that B heard that Zoeng1saam1 substituted the supper with apples last night. However, B did not believe it as Zoeng1saam1 often told lies. He knew that A had been with Zoeng1saam1 last night, so B asked A:

(55)

B: Zoen1gsam1	sik6-zo2	ping4guo2	gam2	zaa3	me1?
Zoeng1saam1	eat-Perf	apple	GAM	only	Q

'Is it true that Zoeng1saam1 ate apples only?'

B's knowledge about A being with Zoeng1saam1 last night ensures him to believe that A knew whether Zoeng1saam1 ate apples only. So, B uses *gam2*-questions with the *me1*-rhetorical question, expecting a negative answer.

Consider another the *ho2*-rhetorical question with *gam2* in rhetorical questions in (56).

Suppose that B remembered that A had said that Zoeng1saam1 had consumed three apples only. B wanted to verify if he remembered it correctly, so he asked:

(56)

Zoeng1sam1	sik6-zo2	saam1	go3	ping4guo2	gam2	zaa3 ho2?
Zoeng1saam1	eat-Perf	three	CL	apple	GAM	only Q

'Zoeng1saam1 only ate three apples, right?'

From the perspective of B, the memory *A had said that Zoeng1saam1 only ate three apples* is taken as the public belief shared with A. B, then, uses the *gam2*-question to verify the truth of the expressed proposition. The question particle *ho2* indicates B's bias to the question.

4.3.2 Wh-questions with gam2

Regarding the *wh*-questions with *gam2*, the felicity contexts becomes less strict. See (33) and (34), repeated as (57) and (58). Intuitively, (57) and (58) cannot be uttered in the 'out-of-the-blue' contexts, which is similar to declarative questions (Gunlogson, 2001).

However, *wh*-questions are different from yes-no questions. Unlike polar-questions, *wh*-questions are information-seeking, in which overt *wh*-words appear. So, what is the role of *gam2* in *wh*-questions? I propose that *gam2* in *wh*-questions indicates the speaker's intention to believe that the addressee knows the answer. This is based on certain reason, which does not necessarily come from public evidence or linguistic evidence. Usually, it is based on the speaker's knowledge about the addressee: the addressee is known in a position

in which he should be relatively more knowledgeable about certain fact than the speaker. This is similar to the case in (50). Such situation allows *wh*-questions with gam2, as (57).

Suppose that A saw Zoeng1saam1 eating something and B sitting right next to Zoeng1saam1 in a restaurant last Friday. On the other day, A asked B:

(57) Zoeng1sam1 sik6-zo2 di1 me1 gam2 aa3?
Zoeng1saam1 eat-Perf some what GAM Q
'I saw you guys in the restaurant yesterday. What did Zoeng1saam1 eat then?'

The fact that B was staying with Zoeng1saam1 in the restaurant last night becomes a strong reason for the speaker to believe that B knew about what Zoeng1saam1 ate. *Gam2* indicates the speaker's intention to get the answer from B. Look at another example shown in (58).

Suppose that there were only Zoeng1saam1 and Lei3sei3 in a room and three apples in the basket went missing. There was no other person inside the room. The speaker did not know who stole the apples, but Zoeng1saam1 and Lei3sei3 must know the answer:

(58) Bin1guo3 sik6-zo2 go2 saam1 go4 ping4guo2 gam2 aa3?
Who eat-Perf that three CL apples GAM Q
'Who ate the three apples then?

As there were only Zoeng1saam1 and Lei2sei3 in the room, they were in the position that being more knowledgeable than the speaker, regarding to the stealing event. *Gam2* indicates that the speaker has a strong reason to believe that Zoeng1saam1 and Lei2sei3 knew the answer.

Also, (35), as repeated in (59), can be explained in the same way: the speaker has some reason to believe that the addressee is more knowledgeable about how/ where/ when Zoeng1saam1 ate the apple. So, the speaker employs *wh*-questions with *gam2*.

(59) Zoeng1saam1 dim2joeng2/hai2bin1/gei2si4 sik6-zo2 ping4guo2
Zoeng1saam1 how/where/when eat-Perf apples
gam2 aa3?
GAM Q
'How/where/when did Zoeng1saam1 eat the apple?'

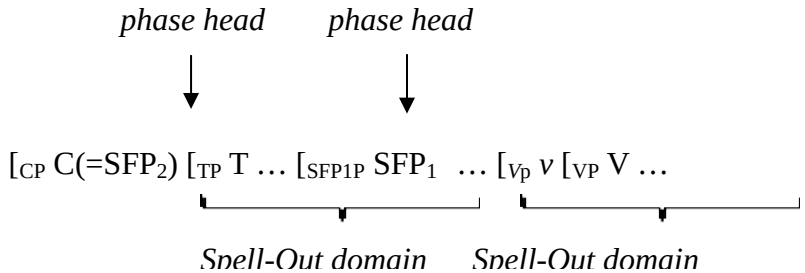
5. Derivation of head-finality

Mandarin Chinese is considered a head-initial language yet troubled by the phenomenon

that SFPs appear sentence finally. The head-finality of SFPs apparently violates Final-over-Final Constraint (henceforth FOFC), a proposed universal principle for structure-building and linearization. Many works attempt to give an explanation of such a bizarre situation (Simpson and Wu 2002, Lin 2006, Hsieh and Sybesma 2011, Tang 2015, Erlewine 2017). Cantonese, a language with prosperous development of sentence final elements, needs a solution as well. I will follow Erlewine's (2017) proposal on the Chinese low SFPs, which is developed from Hsieh and Sybesma's (2011).

Erlewine (2017) assumes that SFPs are phase heads. The complements of phase heads are Spell-Out domains. The Spell-Out takes place at every phase edge. For Mandarin Chinese, the phase edges are TP and *v*P in which high and low SPFs exist respectively. The scheme in (60) shows the Spell-Out domains and their corresponding heads.

(60) Spell-Out domains of the Mandarin clausal spine (hierarchical):



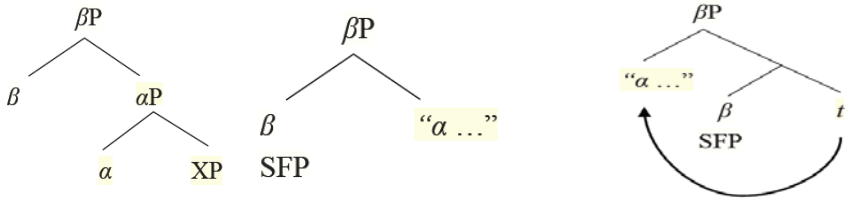
(Erlewine 2017: (59))

Further more, Erlewine defines the FOFC domain as the Spell-Out domain. That is, 'FOFC only holds within individual Spell-Out domains' (Erlewine 2017: 67).

Hsieh and Sybesma (2011) share a similar proposal, except for the size of Spell-out domains. With these assumptions, the Spell-Out domain becomes a syntactic atom which has no internal structure, as in (61b). They suggest that the Spell-Out domain cannot be linearized by Kayne's (1994) Linear Correspondence Axiom (LCA), for linearization takes place in an anti-symmetry c-command relationship. (61b) demonstrates that the SFP and the atomized complement "α …" are not in asymmetrically c-commanding relationship. To solve this problem, Hsieh and Sybesma (2011) adopts Moro's (2000:28) view that 'movement is driven by the search for anti-symmetry'. The symmetry-breaking operation is that the phase heads, SFPs, front their complement to their specifier positions, resulting in an asymmetrically c-commanding relationship. Such movement re-activates the process of linearization, resulting in head-final order on the surface, as in (61c).

(61) SFP complement are Spell-Out domains and move to break symmetry

a. Merge SPF: → b. Spell-Out αP: → c. Move to break symmetry



(unlinearizable) "α …" < SFP

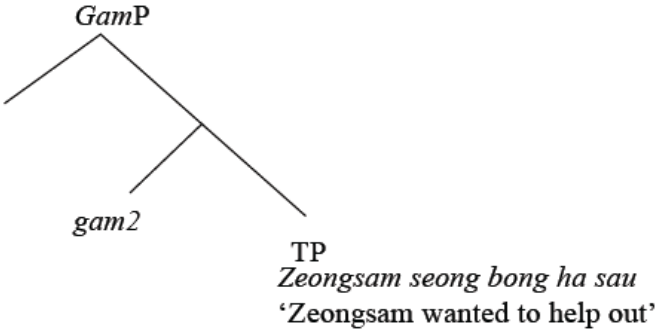
(Erlewine 2017: (63))

Following the above proposal, I suggest that in Cantonese, TP is a Spell-Out domain and *gam2* is a phase head of the TP. The TP complement is fronted by its head, *gam2* through the symmetry-breaking operation. The derivation of (62) is illustrated in (63) and (64).

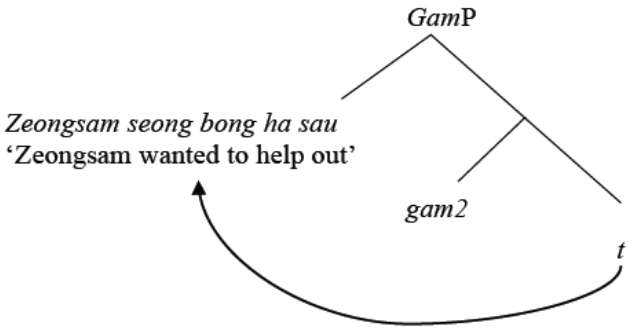
(62) Zoeng1saam1 soeng2 bong1 haa5 sau2 gam2 ze1.
Zoeng1saam1 want help CL hand GAM only
'It is just the case that Zoeng1saam1 wanted to help out.'

In (63a), the underlying word order is head-initial that the phase head *gam2* precedes the TP. As the TP is spelled out and atomized, it becomes invisible to the internal structure. FOFC is inapplicable to it. In order to derive the head-final order, the atomized domain TP is fronted to the specifier position of *Gam*P to create an anti-symmetrical c-commanding relationship with the phase head *gam2*. Then, the CP phase *Gam*P is Spell-Out and the linearization with the right-headed word order surfaces.

(63) a. The underlying word order

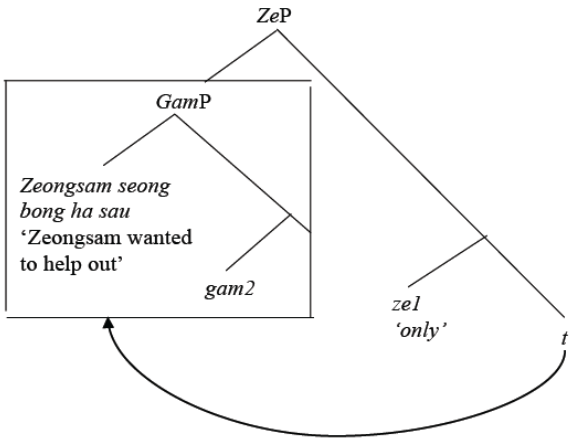


b. Move to break symmetry: complement-to-specifier movement



In (64), when the force head *ze1* 'only' is newly merged to the existing structure, the symmetrical c-commanding relationship between the head *ze1* 'only' and its CP complement *Gam*P activates the complement-to-specifier movement again. The resulting head-final order is then derived. I believe that this is on the right track of deriving the surface order of head-finality in both Mandarin and Cantonese.

(64) Complement-to-specifier movement



6 Conclusion

This paper studies the syntax and the semantics of the sentence final particle *gam2* in Cantonese. I propose that the sentence final *gam2* is a discourse particle, which encodes assertive force and indicates the relevance between the speaker and the addressee. First, I argue that the wide-scope taking property of *gam2* exhibits its CP-type discourse function. Next, I attempt to pinpoint the semantic properties of *gam2* in various types of clauses. Regarding *gam2* in declaratives, I follow Davis' (2009) and propose that *gam2* has two functions: one is updating the common grounds of the discourse; the other is indicating the respondent's attitude to the expressed proposition, which largely depends on the speaker's presupposition or evaluation towards the expressed proposition. Then, I deal with

gam2-questions. Following Gunlogson's (2001) proposal of declarative questions in English, I suggest that yes-no questions with *gam2* are restricted to Contextual Bias Condition, in which the addressee's commitment to the truth of the expressed proposition is a publicly known to the speaker. That is why the speaker uses a declarative question for verification. However, *wh*-questions with *gam2* should be analyzed with a 'weaker version' of the Contextual Bias Condition. That is, the addressee's commitment needs not to be publicly known. The speaker's intention to believe that the addressee is more knowledgeable to certain body of fact is the motive to use *gam2*. Last but not least, the surface order of *gam2* accounted by the operation of symmetry-breaking, mentioned in Erlewine's (2017) proposal of the sentence final particles in Mandarin Chinese. This is just a preliminary account for the syntax and the semantics of *gam2*. Further investigation is needed.

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