

Scalarity in exclusive doubling

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This is part of my ongoing dissertation work, comments are very welcome!

1 Introduction

- A wide range of languages allow multiple exclusive focus particles to co-occur with a single focus association, yet amounting to only a “single-only” reading.¹ I refer to these cases as **exclusive doubling**.
- The basic case of exclusive doubling in Cantonese involves:
 - Adverbial **zinghai** ‘only, (lit.) only+be’
 - Sentence-final particle (SFP) **zaa3** ‘only’
 - The most common exclusive particles and acquired by the children first (T. H.-t. Lee 2005; Lau 2024).

(1) Doubling of adverbial and sentence-final particles in Cantonese

(A. Law 2004; P. P.-I. Lee 2019; Yip 2023, 2024)

Aaming **zinghai** maai-zo joengjuk_F bei Aafan **zaa3**. (Adv-SFP doubling)

Ming only buy-PFV lamb to Fan SFP.only

‘Ming only bought Fan *lamb* (but not beef or pork).’

- More discussed cases in other languages usually involve adverbial particles and adfocal particles (adnominal/constituent ‘only’):

(2) Doubling of adverbial and adfocal particles in Vietnamese

(Hole 2013, 2015, 2017; Erlewine 2017; Quek and Hirsch 2017; Sun 2021; Yip 2023)

Nam **chỉ** tặng hoa cho **mỗi** [cô ấy]_F. (Adv-Adfoc doubling)

Nam only give flower to only her

‘Nam only gave flowers to *her*.’ (Lit.: ‘Nam only gave flowers only to *her*.’)

(3) Doubling of adverbial and adfocal particles in Yoruba

(Yip 2021; Yip and Adedeji 2024, Aremu this workshop)

Ayò **kàn** fún [Adé]_F **nìkan** ní iwé (Adv-Adfoc doubling)

Ayo only give Mary only SEC book

‘Ayo only gave *Ade* a book.’

1. Including: Akan (C. Ahenkorah p.c.), Bangla (U. Banerjee p.c.), Cantonese (A. Law 2004; P. P.-I. Lee 2019; Yip 2023), Dutch (Barbiers 2014), Ga (Renans 2017), German (Hole 2015; Bayer 2020), German sign language (Herrmann 2013), Hindi (Bajaj 2016), Japanese (Erlewine 2012), Kasem (Aremu 2024), Korean (Y. Lee 2005), Mandarin (Hole 2017; Sun 2021; Yip 2023), Vietnamese (Hole 2013, 2017; Erlewine 2017; Sun 2021; Yip 2023), and Yoruba (Yip and Adedeji 2024).

- At first glance, doubling seems “redundant” since using only one particle still gives rise to the same truth conditions. → **Form-meaning mismatch**: multiple particles do not give rise to multiple exclusive operators.

- (4) a. Aaming **zinghai** maai-zo joengjuk_F bei Aafan. (adverbial) [Cantonese]
 Ming only buy-PFV lamb to Fan
 ‘Ming only bought Fan *lamb* (but not beef or pork).’
- b. Aaming maai-zo joengjuk_F bei Aafan **zaa3**. (SFP) [Cantonese]
 Ming buy-PFV lamb to Fan SFP.only
 ‘Ming only bought Fan *lamb* (but not beef or pork).’

- Accounting for the mismatch: the Operator-Particle approach: (Bayer 1996, 2020; Y. Lee 2005; Barbiers 2014; Quek and Hirsch 2017; Bassi, Hirsch, and Trinh 2022; Hirsch 2022; Sun 2021; Branam and Erlewine 2023; Yip 2023; Aremu 2024; *i.a.*)

- One particle is a semantically vacuous “concord” marker and is syntactically dependent on the true exclusive operator, the latter often claimed to be the adverbial particle. (cf. Yip and Adedeji 2024 for a different view on Yoruba)

(5) [_{TP} Subj [OP_{EXCL} [_{VP} V [Adv_{EXCL} DP_F]]]]

- However, these studies often only focus on the quantificational reading of ‘only’, and pay less attention to the scalar reading. E.g., *Bill is only a JUNIOR* (Klinedinst 2004, 2005; Beaver and Clark 2008; Horn 2009; Coppock and Beaver 2014; Greenberg 2022; Alxatib 2020)

- As observed by Hole (2015, 2017) for German and Vietnamese and by Bajaj (2016) for Hindi, scalarity does play a role in exclusive doubling.

- Notably, Cantonese has a set of scalar exclusive particles, which also participate in doubling.^{2,3}

- (6) a. Adverb **zihai** ‘only, just, (lit.) only+be’ and **zibatgwo** ‘just, (lit.) only+but’
 Aaming **zihai/ zibatgwo** jam-zo bezauf **zaa3**.
 Ming only just drink-PFV beer SFP.only
 ‘Ming only/just drank *beer*.’ (not more than beer in terms of ABV, e.g. not wine or vodka)
- b. SFP **ze1** ‘just’
 Aaming **zinghai/ zihai/ zibatgwo** jam-zo bezauf **ze1**.
 Ming only only just drink-PFV beer SFP.just
 ‘Ming only/just drank *beer*.’ (not a big deal)

Two goals of the talk today

- ① To show that exclusive doubling is not “redundant” but instantiates **scalar focus structure** with a **variety** of scalarity (cf. Hole 2015 trichotomy): ① scalar salience, ② rank orders, ③ downplaying
- ② There is a **semantic dependency** between the doubled exclusive particles regarding focus and alternatives.

(7) Exclusive doubling realizes scalar focus structures

[**SFP**_[Scalarity] ... [**Adv**_[Exclusivity] ... XP_F ...]]

2. Other exclusive particles not discussed here: adverb *zaai1*, *zing6* and *zi2* ‘only’ (all quantificational); leftward associating adverbs *sin1*, *zi3*, and *sin1zi3* ‘only’ (quantificational/conditional); adfocal particle *dak1* ‘only’ (quantificational); verbal suffix *dak1* ‘only’ (scalar); SFP *zek1* ‘just’ (scalar and downplaying).

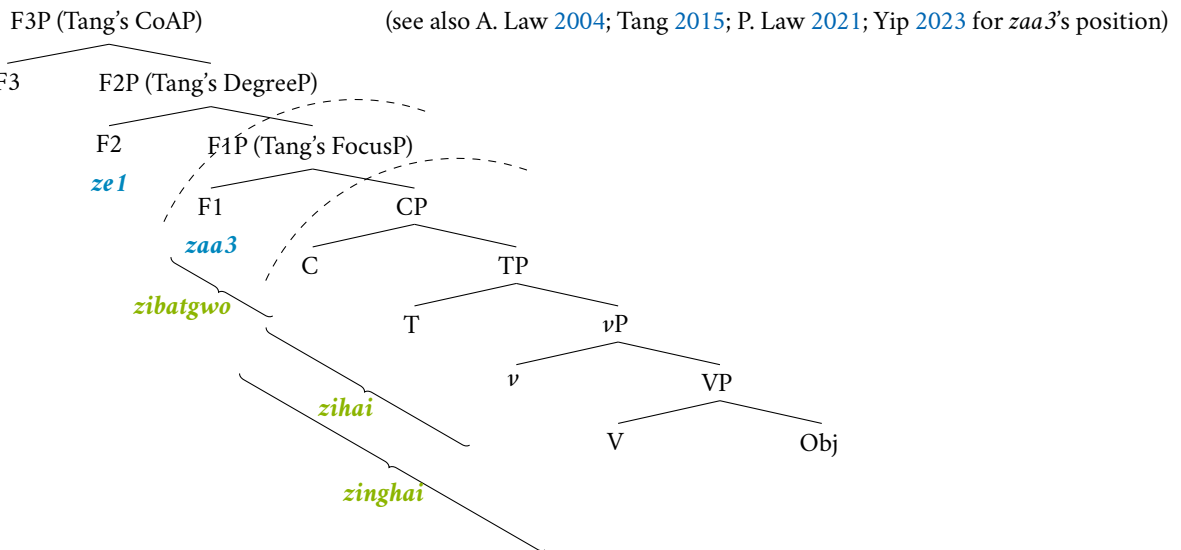
3. Mandarin counterparts: adverbs *zhi* (quantificational), *zhishi* (scalar), *zhibuguo* (scalar and downplaying); and SFPs *eryi* (scalar and downplaying) and *bale* (scalar?).

A syntactic primer

- (8) Syntactic tests recruited (data not shown today)
- $\leq \nu\text{P}$: may follow dynamic modals (cf. Tsai 2015) and manner adverbs
 - $\leq \text{CP}$: embeddable under relatives clauses, subject clauses, and central adverbial clauses (cf. Haegeman 2012)
 - $\leq \text{F1P}$: embeddable under V complement clauses (cf. Dayal 2023) and peripheral adverbial clauses
 - $\geq \text{F2P}$: cannot be embedded at all

(9) The syntax of Cantonese exclusive particles

cf. Tang 2020's cartography



2 Variety of scalarity in exclusive doubling

I argue that there are at least three types of scalarities in exclusive doubling, in addition to the common semantic core, exclusivity, of the particles.

- (10) a. Case I: **Scalar salience readings** (*without* truth-conditional effects) *less discussed before*
 → Entailment-based exclusion + scalar comparison
- b. Case II: **Rank order readings** (*with* truth-conditional effects)
 → Rank-based exclusion + scalar comparison
- c. Case III: **Downplaying readings** (*with* truth-conditional effects) *less discussed before*
 → Rank-based exclusion + evaluative comparison

2.1 Case I: Scalar salience

Focus on *zinghai-zaa3* doubling first.

- In sentences with exclusive doubling, *zaa3* requires that at least one excluded alternative is ranked higher than the prejacent on a scale of salience or a contextually salient scale.
- *Zinghai* is simply a quantificational 'only' without any scalar component.

- I present two tests below. For the full set of tests, see Appendix §5.1.

Test #1: Contextual salience

- First, *zaa3* cannot be licensed when there are no salient alternatives in the context.

(11) Contextual information: no salient alternatives

You are a cashier in a meat market in the US. You just served a customer, and your colleague asks what they bought. You answer in a neutral tone:

- Go haak **zinghai** maai-zo joengjuk_F (#**zaa3**).
CL customer only buy-PFV lamb SFP.only
'The customer only bought lamb.' (#S/he also bought pork.)
- #Go haak maai-zo joengjuk_F **zaa3**.
CL customer buy-PFV lamb SFP.only
#‘The customer only bought lamb.’ (how poor s/he must be!)

- To make *zaa3* felicitous, at least one salient alternative must be present in the context.

→ At least one excluded alternative is more salient than the prejacent <{pork=lamb}, beef>_{salience}

(12) Contextual information: salient alternatives explicitly mentioned

*You are a cashier in a meat market in the US. You just served a customer, and your colleague asks **whether they bought beef**. You answer in a neutral tone:*

- M-hai. Go haak **zinghai** maai-zo joengjuk_F (**zaa3**).
no CL customer only buy-PFV lamb SFP.only
'No. The customer only bought lamb.' (#S/he also bought pork.)
- M-hai. Go haak maai-zo joengjuk_F **zaa3**.
no CL customer buy-PFV lamb SFP.only
'No. The customer only bought lamb.' (#S/he also bought pork.)

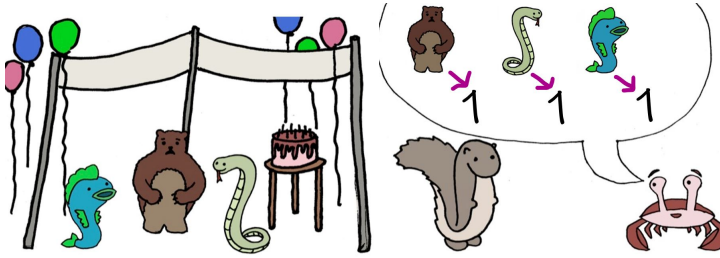
→ The use of *zaa3* strengthens the “contrastiveness”/“correctiveness” sense.

→ Notice that other non-salient alternatives are still excluded, suggesting that the **exclusion is entailment-based** (i.e., still a quantificational ‘only’).

Test #2: Equal expectation

- The second test involves a numeral, which is supposed to trigger a numerical scale <1,2,3,...> elsewhere.
- However, the context below *suppresses* the numerical scale by making the expectation “1” salient, which is the **same** number in the prejacent.

(13) *Bear, Snake, and Fish threw a party. Since very often people/animals overlap in bringing drinks but not food, they planned for each to bring one kind of thing. Squirrel asks Crab what they brought. Crab answers, **everyone was supposed to bring one thing, and they did only bring one thing**: Bear brought the food, Snake brought the drink, and Fish brought the music.*



(Pictures modified from *Animal Party* by Patrick Littell, [Totem Field Storyboards](#))

- a. Mui-zek dungmat dou **zinghai** daai-zo jat-joeng_F je lai (#**zaa3**).
 every animal all only bring-PFV one thing come SFP.only
 ‘Every animal (did) only bring one thing.’
- b. #Mui-zek dungmat dou daai-zo jat-joeng_F je lai **zaa3**.
 every animal all bring-PFV one thing come SFP.only
 Int.: ‘Every animal (did) only bring one thing.’

- To salvage this sentence, one must make a higher number on the numerical scale be salient, such as “2”

→ At least one excluded alternative is ranked higher than “1” on a contextually salient scale

- (14) *Bear, Snake, and Fish threw a party. They planned to each bring two kinds of things. However, all of them failed and only brought one.*

Mui-zek dungmat dou **zinghai** daai-zo jat-joeng_F je lai **zaa3**.
 every animal all only bring-PFV one thing come SFP.only
 ‘Every animal only brought one thing.’

- We may conclude from the above tests that (see also Appendix §5.1):

❶ Neither particle in Adv-SFP exclusive doubling is semantically vacuous;

❷ *Zinghai* encodes (at-issue) entailment-based-exclusion, and *zaa3* encodes (not-at-issue) scalar comparison.

- (15) Three inferences in a [[*zinghai p*] *zaa3*] sentence

- a. $\forall q \in ALT_p[q(w) \rightarrow p \subseteq q]$ (from *zinghai*)
 b. $p(w)$ (from *zinghai*)
 c. $\exists q \in ALT_p[p \not\subseteq q \wedge p <_s q]$ ($<_s$: contextual salient non-logical scale) (from *zaa3*)

- The above two tests readily extend to other languages, such as Vietnamese with adverbial *chi* and adfocal *mõĩ*, the latter of which is always scalar → See Appendix §5.2

2.2 Case II: Rank orders

We turn to *zihai...zaa3* doubling now.

- One hallmark of the rank order reading of scalar *only* is the **non**-entailment-based exclusion. (Klinedinst 2004, 2005; Beaver and Clark 2008; Horn 2009; Coppock and Beaver 2014; Alxatib 2020; Greenberg 2022)

→ Only those that are rhetorically stronger (cf. Horn 1989, 2009) are excluded.

→ Lower-ranked alternatives, though not entailed by the prejacent, are not necessarily excluded.

- *Zihai*, unlike *zinghai*, does not exclude non-prejacent members that are ranked lower.

→ *Zihai*’s exclusion is rank-based in this case.

(16) Scenario: [Taiwan (“Chinese Taipei”): 1 gold | Hong Kong: 1 silver 1 bronze]

a. Ming and you are discussing which team performed the best in the last Olympic game. You said: Taiwan was definitely better, because ...

Gongdeoi {??z^{ing}hai/ z^{ihai}} ling-zo jat-go aagwan_F (z^{aa3}).

HK.team only only get-PFV one-CL 1st-runner-up SFP.only.

‘Hong Kong Team only/just got a silver. (What a loser.)’

b. Ming and you are discussing which team performed the best in the last Olympic game. You said: Taiwan was definitely better, because ...

?Gongdeoi ling-zo jat-go aagwan_F z^{aa3}.

HK.team only get-PFV one-CL 1st-runner-up

‘Hong Kong Team only/just got a silver. (What a loser.)’

c. <bronze, **silver**, gold>_{medal/performance} (foc, salient alt)

• Notice that mere contextual salience also licenses *zihai*. Below, *z^{aa3}* is preferred (though not obligatory).

• If (17) is uttered in an out-of-the-blue context without a salient alternative or scale, *zihai* will be infelicitous.⁴

(17) You are a cashier in a meat market in the US. You just served a customer, and your colleague asks **whether they bought beef**. You answer in a neutral tone:

M-hai. Go haak z^{ihai} maai-zo joengjuk_F ?(z^{aa3}).

no CL customer only buy-PFV lamb SFP.only

‘No. The customer only bought lamb.’ (#S/he also bought pork.)

• It seems that what *z^{aa3}* is sensitive to is not just a scalar ordering, but also a **contextual standard** (in Greenberg 2022’s sense). Consider (18), adapted from Greenberg (2022)’s English example to Cantonese:

(18) The average height for men in Hong Kong is **1.75m**. John is tall. He is 16 years old and already **1.85m** tall.

a. His 14 years old brother Bill is a bit shorter – he is only **1.83m** tall.

AaBill z^{ihai} jat-mai-baatsaam (#z^{aa3}).

Bill only 1-meter-83 SFP.only

‘Bill is only 1.83m tall.’ (But he is of course still very tall!)

b. <1.5m, 1.6m, ..., 1.75m, ... **1.83m**, 1.85m, ... >_{height} (norm, foc, salient alt)

c. His 14 years old brother Bill is way shorter – he is only **1.6m** tall.

AaBill z^{ihai} jatmai-luk (z^{aa3}).

Bill only 1-meter-6 SFP.only

‘Bill is only 1.6m tall.’ (He is quite short!)

d. <1.5m, **1.6m**, ..., 1.75m, ... 1.83m, 1.85m, ... >_{height}

4. Another curious difference concerns the so-called sufficiency modal constructions (von Stechow and Iatridou 2007; Alonso-Ovalle and Hirsch 2022). Only *zihai* may be used, but not *z^{aa3}*.

(i) a. Soeng jau hou zisi, nei z^{ihai} seojiu heoi NE_F (zau dak).
want have good cheese, 2sg only need go NE then okay
‘To get good cheese, you only have to go to the North End.’ $\rightsquigarrow \Diamond \phi_{NE}$

b. #Soeng jau hou zisi, nei seojiu heoi NE_F (*zau dak) z^{aa3}.
want have good cheese, 2sg need go NE then okay SFP.only
Int.: ‘To get good cheese, you only have to go to the North End.’

- We may conclude from the above tests that:
 - ❶ Again, neither particle in Adv-SFP exclusive doubling is semantically vacuous;
 - ❷ *Zihai* encodes (at-issue) rank-based-exclusion (and thereby a scalar comparison as well), and *zaa3* encodes (not-at-issue) scalar comparison with a contextual standard.
- (19) Three inferences in a $[[zihai\ p]\ zaa3]$ sentence with a rank order
- a. $\forall q \in ALT_p[q(w) \rightarrow p \geq_r q]$ (cf. Beaver and Clark 2008's MAX) (from *zihai*)
 - b. $\exists q \in ALT_p[q(w) \wedge p \leq_r q]$ (cf. Coppock and Beaver 2014's MIN) (from *zihai*)
 - c. $MOST\ q \in ALT_p[p \not\leq q \wedge p <_s q]$ ⁵ (cf. Grosz 2012's LOWNESS) (from *zaa3*)

2.3 Case III: Downplaying

Let us consider adverb *zibatgwo* and SFP *ze1* now.

- Unlike *zihai* and *zaa3*, they have a strong evaluative flavor (Hole 2015's LITTLE) in a concessive context.
 - The traditional characterization on *ze1*'s downplaying function is “not too much”, “not too excessive” (Kwok 1984, Fung 2000, Wakefield 2012). I follow Li (2014) and P. P.-I. Lee (2019) and suggest that *ze1* involves a **three-point comparison** on a scale.
- There needs to be a speaker-oriented value invoked in the context that is ranked higher than the norm and the focused value.
- (20) *Ming wants to buy a watch that is \$100. He complains about it all day to you that it is too expensive. You calm him down and say:*
- a. Gwai hai gwai, daan dou m-dou 200, {#*zinghai*/ *zihai*/ *zibatgwo*} 100 *ze1*.
expensive be expensive but still not-reach 200 only only just 100 SFP.just
'Yeah it is expensive, but it is still not as expensive as 200, just 100 bucks.' (not a big number)
 - b. Gwai hai gwai, daan dou m-dou 200, {*zihai*/ *zibatgwo*} 100 (#*zaa3*).
expensive be expensive but still not-reach 200 only just 100 SFP.just
'Yeah it is expensive, but it is still not as expensive as 200, just 100 bucks.' (not a big number)
 - c. <average (e.g., \$50), **\$100**, \$200>_{price of a watch}
- This downplaying use is systematically blocked by *zaa3*. *Zaa3* must be used in a context where \$100 is cheap generally (cf. the contextual standard discussed above).
- *Zihai* is compatible with the context but loses the strong downplaying flavor.
- *Ze1* is notable in that it seems to be able to “reverse” the numerical ordering by imposing an inverted scale.⁶
- This kind of downplaying reading cannot be expressed by *zihai* or *zibatgwo*⁷
- nor is it paraphrase-able by English *just*. It can only be **remotely** expressed by concessive *at least*.⁸

5. This is a highly simplified way to capture the contextual standard. Another option is to adopt Greenberg (2022)'s gradability-based presuppositions of *only* modified as below. I leave the exact formulation of *zaa3*'s contribution with contextual standard to future work.

(i) *Only* is defined iff: $\forall w1, w2[w1Rw \wedge w2Rw \wedge w2 \in p \wedge w1 \in [q \wedge \neg p]] \rightarrow [the.max(\lambda d2.G(d2)(x)(w2)) < the.max(\lambda d1.G(d1)(x)(w1)) \wedge the.max(\lambda d2.G(d2)(x)(w2)) <_{standard_G}]$

6. I am grateful to a reviewer for pointing this out.

7. One needs to add “the worst” in this case, as in “even the worst for you is just like that (not a big deal/not too bad)”.

8. I thank the audience at Yale SRG for this point.

(21) *Ming is a graduate student getting only \$20K/yr for stipend in the US. Ming thinks it is already very low as compared to an average of \$30K/yr, but I tell Ming that I'm getting just \$10K/yr.*⁹

a. Ming: Ngo dak 20K **zaa3**.

I only.have 20K SFP.only

Ming: 'I only got 20K'. → <10K, 20K, ..., 30K, ...>stipend amount (norm, foc, salient alt)

b. I: Nei {#zihai/ ??zibatgwo} 20K **ze1**.

you only just 20K SFP.just

I: 'Yours is at least (lit.: just) 20K. (not too bad)'. → <..., 30K, ..., 20K, 10K>miserableness/poverty

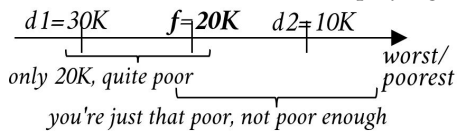
c. I: Ngo 10K **zaa3**!

I 10K SFP.only

'Mine is only 10K!'. → <10K, 20K, ..., 30K, ...>stipend amount

- Although the focused value is worse than the average, the speaker-oriented value is even more worse than the focused one, leading to the reading that “you’re only/just that poor, not too bad”.

(22) *Ze1*'s “not too excessive” downplaying function



- Note that *zibatgwo* further differs from *zaa3* in whether a concessive context is always needed.
 - *Zibatgwo* can be used with a rank order with a strong evaluative flavor (LITTLE/BAD), but not *ze1*

(23) a. Scenario: [Taiwan (“Chinese Taipei”): 1 gold | Hong Kong: 1 silver 1 bronze]

Ming and you are discussing which team performed the best in the last Olympic game. You said: Taiwan was definitely better, because ...

Gongdeoi **zibatgwo** ling-zo jat-go aagwan_F {**zaa3**/ **#ze1**}.

HK.team just get-PFV one-CL 1st-runner-up SFP.only SFP.just

'Hong Kong Team only/just got a silver. (What a loser.)'

b. <bronze, **silver**, gold>medal/performance

- To use *ze1*, one needs a context where someone is blaming the Hong Kong team. The use of *ze1* “downplays” their bad performance as “not too bad”.

(24) *Ming is a Hong Konger who is dissatisfied with the Hong Kong team’s performance. He utters (23a) “Hong Kong team only got a silver, loser!”. You think it’s too much. They already tried their best and already got a silver, better than only having a bronze.*

a. Aagwan_F **ze1**, m-sai gam naau faat3 wo3.

1st-runner-up SFP.just not-need that scold SFP SFP

'It's at least silver, you don't need to blame the HK team like that.' (not too bad, already better than only getting bronze)

b. <gold, **silver**, bronze>awfulness

9. This is *only* a hypothetical context and does not reflect the author’s stipend at Yale.

2.4 Interim summary

- Upshot: An **enriched taxonomy** of scalarity lexicalized as different exclusive particles in Cantonese
- Hole (2015)'s trichotomy of German exclusive particles: ❶ informational scalarity (i.e., entailment-based), ❷ secondary scalarity/rank order, ❸ evaluative scalarity (LITTLE and BAD)
 - One more type: **scalar salience** (e.g., mere contextual salience is enough)
 - **Downplaying**: evaluative with three-point comparison

Particles	Category	Scalar contribution			
		None (entailment-based)	scalar salience	rank-order	downplaying
<i>Zinghai</i>	Adv	✓	✗	✗	✗
<i>Zaa3</i>	SFP	✗	✓	✓ _{norm}	✗
<i>Zihai</i>	Adv	✗	✓(?)	✓	✗
<i>Zibatgwo</i>	Adv	✗	✗	✓	✓
<i>Ze1</i>	SFP	✗	✗	✗	✓ _{OK, inverted}

Table 1: Summary of the types of scalarity in Cantonese exclusive doubling

3 Dependency between exclusive particles

- So far, we have seen that **both** exclusive Adv's and SFP's make a semantic contribution, and this contribution is **alternative/focus-sensitive**.
- I argue that exclusive doubling is not a simple assembly of different morphemes, but a scalar focus structure with **dependencies** between the two particles
- There are two major asymmetries between exclusive Adv's and SFP's:
 - ❶ Semantic dimension
Adv's contribution is at-issue (& truth-conditional), i.e., exclusivity
SFP's contribution is not-at-issue (& non-truth-conditional), i.e., scalarity
 - ❷ Semantic dependency
SFP's target the same alternatives operated on by the Adv's
→ The focus association is dependent on the Adv's, so as the accompanied scalar comparison

The source of exclusivity

- Back to the form-meaning mismatch problem:
- I follow the Operator-Particle approach that the adverbial particles are the exclusive operators.
 - There is a null EXCL operator when SFP's occur alone (recall that entailment-based-exclusion is still found with singleton *zaa3* cases). (see, e.g., Quek and Hirsch 2017)
 - I also assume that there are two variants of EXCL: EXCL_{quant} corresponding to *zinghai*, EXCL_{scalar} corresponding to *zihai*, with different truth conditional effects (i.e., whether the exclusion is entailment-based or rank-based).¹⁰

10. I remain open to whether there could be a covert *zibatgwo* in singleton *ze1* cases. It is clear that *zaa3* is not compatible with covert *zibatgwo* given the systematic ban of *zaa3* on the downplaying readings. Note also that the difference between *zibatgwo* and *zihai* is not truth conditional (i.e., they both have rank-based exclusion).

- (25) a. [*zaa3/ze1* ... [**OP**(=*zinghai/zihai/zibatgwo*) ... [XP_F ...]] (doubling cases)
- b. [*zaa3/ze1* ... [**OP**(=**EXCL_{quant}**-∅/**EXCL_{scalar}**-∅) ... [XP_F ...]] (singleton *zaa3/ze1* cases)

Dependent association

- In singleton cases, SFPs may associate with subjects; whereas Adv_s, when not c-commanding the subjects, cannot associate with it.¹¹
- However, in a multiple-focus configuration where both the subject and object are focused, the SFP fails to associate with the subject for a multiple/“stacked” ‘only’ reading.
 - *zaa3*’s focus association is **dependent**/“**parasitic**” on *zinghai*!

(26) Zaa3 fails to associate with subject focus in a multiple-focus case

AAMING_{*F1} *zinghai* taai zungmansyu_{F2} *zaa3*.

Ming only read Chinese.book SFP.only

Single-‘only’: ‘MING only reads Chinese books. (Though Fan also only reads Chinese books.)’ (Obj foc)

Not multi-‘only’: ‘Only MING only reads Chinese books. (And Fan reads both Chinese books and English books.)’ (Subj & Obj exclusive focus)

- This is the same for other types of scalar readings.
- *Ze1*’s downplaying reading always targets the same focus Adv_s associate with.

(27) Ze1 fails to associate with a different focus for downplaying

a. [Jau saam-go hoksaang]_{*F1} *zibatgwo* lo-zo [seisap fan]_{F2} *ze1*.
 have three student just get-PFV 40 score SFP.just
 ‘There are three students just got 40 scores, not a big deal.’

b. *Zibatgwo* [jau saam-go hoksaang]_{F1} lo-zo [seisap fan]_{*F2} *ze1*.
 just have three student get-PFV 40 score SFP.just
 ‘Just three students got 40 scores, not a big deal.’

(28) Dependent focus association in exclusive doubling

a. *[SFP ... F1 [Adv ... F2]

b. [SFP ... F1 [Adv ... F2]

Multiple focus association with the same alternatives

- There is a non-trivial issue on multiple focus-sensitive operators associating with the same focus
- Under the standard Roothian system (Rooth 1992), this is not allowed due to ~’s resetting nature

→ See Yip (2024) for a proposal with co-indexation of alternative sets (Roothian C)

11. Examples:

(i) a. AAMING_{*F1} *zinghai* taai zungmansyu_{F2} (, Aafan dou hai.)
 Ming only read Chinese.book Fan also be
 ‘Ming only reads Chinese books. (Fan as well.)’

b. AAMING_F taai zungmansyu *zaa3* (, #Aafan dou hai.)
 Ming read Chinese.book SFP.only Fan also be
 ‘Only Ming reads Chinese books. (# Fan as well.)’

4 Conclusion

Two take-home messages

- ① Exclusive doubling is not “redundant” but instantiates **scalar focus structure** with a **variety** of scalarity (cf. Hole 2015 trichotomy) → lexicalized as five different particles in Cantonese
- (No scalarity): *zinghai*
 - ① Scalar salience readings: *zaa3* & *zihai*
 - ② Rank order readings: *zaa3*, *zihai* & *zibatgwo*
 - ③ Downplaying readings: *zibatgwo* & *ze1*
- All different in the scalar reading they encode! → enriching the taxonomy of scalarity
- ② There is a **semantic dependency** between the doubled exclusive particles regarding focus and alternatives.
- (29) Exclusive doubling realizes scalar focus structures
- [*SFP*_[Scalarity] ... [*Adv*_[Exclusivity] ... XP_F ...]]
- └──────────────────────────────────┘
- This approach is cross-linguistically promising and may extend to other types of doubling like Adv-Adv doubling in Vietnamese and Yoruba
- Further implications on how multiple focus operators access the same alternatives (see Yip 2024)

5 Appendices

5.1 Appendix 1: Quantificational vs. scalar salience

Tests	Reading	$p < \text{non-logical strength}?$	Singleton <i>zinghai</i>	Doubling	Singleton <i>zaa3</i>
#1a Lack of salience	quant.	No	OK	#	#
#1b With salience	quant.	Yes (salience)	OK	OK	OK
#2 Equal-to-expectation	quant.	No	OK	#	#
#3 Listing	quant.	No	OK	#	#
#4a Upper bound	quant.	No	OK	#	#
#4b Lower bound	quant.	Yes (difficulty)	OK	OK	OK
#5 Rank order (compatible alt.)	scalar	Yes (medal)	#	#	OK?
#6 Rank order (incompatible alt.)	scalar	Yes (test ranking)	#	#	OK
#7 Prejacent negated	scalar	Yes (academic ranks)	#	#	N/A

Table 2: Summary of the tests of scalarity in Cantonese exclusive doubling

Test #3: Listing

- (30)
- A listing scenario that lacks a salient scale

At a liquor store, you're reporting the types of alcohol each customer bought to the boss.

A **zinghai** maai-zo bezau_F (#**zaa3**), B **zinghai** maai-zo hongzau (#**zaa3**), C **zinghai** maai-zo

A only buy-PFV beer SFP.only B only buy-PFV red.wine SFP.only C only buy-PFV

fukdakгаа (#**zaa3**), ...

vodka SFP.only

'A only bought beer, B only bought (red) wine, C only bought vodka, ...'

→ Equal ranking in salience: <beer=_{salient}wine=_{salient}vodka> (also no other scale is invoked)

Test #4: Superlatives targeting the upper bound of a scale

- (31)
- Superlatives targeting the upper/lower bound of the scale

There are different problem sets and students are only required to do one. You ask a teacher who is the best/worst student. The teacher answered: Ming is the best/worst student, because ...

a. Keoi **zinghai** zou [zeoi naan]_F ge taimuk (#**zaa3**). (Upper)

3SG only do most hard GE question SFP.only

'He only does *the hardest* problem set.'

b. Keoi **zinghai** zou [zeoi jungji]_F ge taimuk (**zaa3**). (Lower)

3SG only do most easy GE question SFP.only

'He only does *the easiest* problem set.'

→ <easiest PS, ..., hardest PS>_{difficulty} associated with <worst student, ..., best student>_{student performance}

Test #5: Rank order with compatible alternatives

Rank orders refer to scales where the higher-ranked members are rhetorically but not logically stronger than the lower-ranked members (unlike Horn's scales, e.g., <some, all>), such as <sophomore | junior> and <second lieutenant | first lieutenant | captain> (e.g., Horn 1989, 2009).

When English scalar *only* combines with a rank order such that the alternative propositions are compatible with each other according to the world knowledge, only the higher ranked members are excluded. The lower ranked members, despite not being entailed by the prejacent, are not excluded.

(32) a. Jess only managed to interview Alex_F (, # also Mary). (quantificational)

b. Jess only managed to interview a [first lieutenant]_F. (She also interviewed second lieutenants.) (scalar)
(adapted from Alxatib 2020:30)

Zinghai must exclude all the non-prejacent members, whether or not they are ranked lower than the prejacent.

- (33) Scenario: [Taiwan (“Chinese Taipei”): 1 gold | Hong Kong: 1 silver 1 bronze]
- a. Ming and you are discussing which team performed the best in the last Olympic game. You said: Taiwan was definitely better, because ...
 ??Gongdeoi **zinghai** ling-zo jat-go aagwan_F (**zaa3**).
 HK.team only get-PFV one-CL 1st-runner-up SFP.only.
 Int.: ‘Hong Kong Team only got a silver. (What a loser.)’
- b. ?Gongdeoi ling-zo jat-go aagwan_F **zaa3**.
 HK.team get-PFV one-CL 1st-runner-up SFP.only.
 ‘Hong Kong Team only got a silver. (What a loser.)’

Test #6: Rank order with incompatible alternatives (vacuity)

Quantificational *only* cannot be used when the alternatives are mutually exclusive (i.e., if p is true, all the alternatives are automatically false according to world knowledge). This has been subsumed under the “no vacuity condition” of *only* (e.g., Alxatib 2020). Scalar *only*, on the other hand, is free from this constraint.

- (34) a. #Jackie was only born in [Boston]_F (quantificational) (Alxatib 2020:45)
 b. Did Jamie only get a [B]_F on the test? (scalar) (Alxatib 2020:45)

Zinghai cannot be used with rank orders and mutually incompatible alternatives, with or without *zaa3*. *Zaa3* alone, on the other hand, can be used in these cases.

- (35) a. ??Nei-ci caakjim Aaming **zinghai** paai dai-ji ming (**zaa3**).
 this-CL test Ming only rank second place SFP.only.
 Int.: ‘Ming only/just ranked the second (highest score) on this test.’
- b. Nei-ci caakjim Aaming paai dai-ji ming **zaa3**.
 this-CL test Ming rank second place SFP.only.
 ‘Ming only/just ranked the second (highest score) on this test.’

Test #7: Negating the preajcent

Beaver and Clark (2008) and Coppock and Beaver (2014) claim that scalar *only*’s preajcent does not survive negation (but see Horn 2009 for the contrast between *only* and *just*).

- (36) Mary didn’t invite **only/just** John and Mike. (quantificational)
 → Mary invited John and Mike (Coppock and Beaver 2014:379)
- (37) a. This isn’t **only** a pointless ‘shoot-em-up’ movie. (scalar)
 → This is a pointless ‘shoot-em-up’ movie. (Beaver and Clark 2008:235)
- b. John isn’t **just/%only** a graduate student. (scalar)
 → John is a graduate student. (Coppock and Beaver 2014:379)

Cantonese *zinghai*'s prejacent always projects up through negation.¹²

(38) #Aaming m-hai **zinghai** jat-go Grad Student lai (**zaa3**) (, keoi hai Professor aa3).

Ming not only one graduate student SFP SFP.only 3SG be professor SFP

Int.: 'Ming is not just a graduate—he is (actually) a professor!'

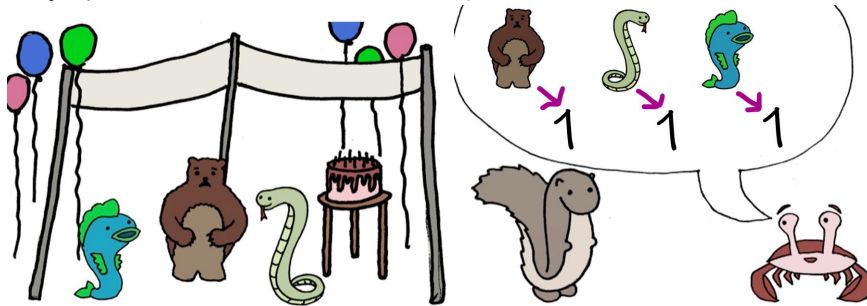
Only: 'Ming does not only have the role of a graduate student, but he also has the role of a professor.' (e.g., a professor of physics joins the linguistic graduate program).

5.2 Appendix 2: Scalarity in Vietnamese exclusive doubling

Data collected during my fieldwork in Vietnam (Hanoi, Ho Chi Minh City, Dalat) during 2024-2025 with 33 native speakers.

Applying the tests developed above, the results confirm Hole (2017)'s claim that the adfocal particle *mỗi* is associated with scalarity (though not the same with scalar *mới* 'just', as Sun 2020, 2021 observes).

(39) [Context: Bear, Snake, and Fish threw a party. Since very often people/animals overlap in bringing drinks but not food, they planned to each bring one kind of thing. Squirrel asked Crab what they brought. Crab answers, everyone was supposed to bring one thing, and they did only bring one thing: Bear brought the food, Snake brought the drink, and Fish brought the music.] (Modified from *Animal Party* by Patrick Littell, [Totem Field Storyboards](#))



- Mỗi người **chỉ** mang [một thứ]_F.
each person only bring one kind
'Each person only brought one kind of thing.'
- #Mỗi người (**chỉ**) mang **mỗi** [một thứ]_F.
each person only bring only one kind
#'Each person just brought one kind of thing.' (not enough, should be more)

(40) Contextual information: no salient alternatives

You are a cashier in a meat market in the US. You just served a customer, and your colleague asks what they bought. You answer in a neutral tone:

Người đó **chỉ** mua (??**mỗi**) thịt bò.

person that only buy only beef

'That person only bought beef.' vs. *mỗi*: judging that that person did not buy enough

12. For reasons unknown to me, without an adverb, it is difficult to negate a *zaa3* sentence. To utter (38) naturally, a scalar *zihai* 'only' can be used to replace *zinghai*, with or without *zaa3*.

(41) Contextual information: salient alternatives explicitly mentioned

*You are a cashier in a meat market in the US. You just served a customer, and your colleague asks **whether they bought beef**. You answer in a neutral tone.*¹³

a. Q: Người đó có mua thịt heo, phải không?.

person that have buy pork right

‘That person bought pork, right?’

b. A: Không phải. Người đó **chỉ** mua (**mỗi**) thịt bò.

not person that only buy only beef

‘No. That person only bought beef.’

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