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Information Structure of the clause-final position in Hong Kong Sign Language (HKSL)

NYU Syntax Brown Bag

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Introduction: The clause-final position

In many sign languages, focus-related elements often appear in the clause-final position. Hong Kong Sign Language (HKSL; an SVO language) displays the same pattern for these elements.

(1) LAURA LIKE MATH. 'Laura likes math.'[1]

- **Phrases with a focus-particle 'only'**
  (2) LIKE MATH [LAURA ONE-FINISH/ONLY-ONE]$_F$.
  'Only Laura likes math.'
- **Question Answer Pairs (QAPs)**
  (3) LIKE MATH WHO, LAURA$_F$.
  'Laura is the one who likes math.'
- **Wh-elements**
  (4) *t* LIKE MATH WHO$_t$?
  'Who likes math?'

(c.f. Zeshan 2006; Petronio 1993; Neidle et al. 1996; Cecchetto et al. 2009; Torre 2016; Wilbur 1996; Kimmelman and Vink 2017; Herrmann et al. 2019; Kimmelman 2017; Herrmann 2013, a.o.)

1. The carnonical word order of HKSL is SVO (Sze 2000).

Research questions

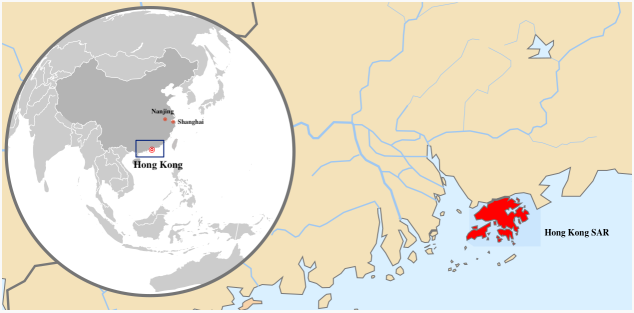
- **Is focus associated with the clause-final position in HKSL?**
- **If so, why?**

Outline of this talk

- Correlation between focus & the clause-final position in root declarative sentences
- Other constructions
  - Wh-phrases in wh-questions
  - Sentences with 'only'-phrases & Question Answer Pairs (QAPs)
- Motivations for the clause-final preference other than prosody

Hong Kong Sign Language (HKSL)

- A full-fledged gestural-visual language used in Deaf communities in Hong Kong.
- A mixture of the Nanjing/Shanghai variety of Chinese Sign Language (CSL) and indigenous signs that emerged locally (Sze et al. 2013).



UNESCO: The World Atlas of Languages (WAL) (2025) characterizes HKSL as a 'definitely endangered' language. HKSL is also rather marginalized in the local society.

Conducting linguistic research and documentation on HKSL is part of the effort to advocate for the recognition of HKSL as a natural language and its use in broader contexts in society.

- The analysis of this thesis is mainly based on fieldwork data and naturalistic monologue data.
- Participants involve 6 adult deaf signers of HKSL with native proficiency (Table 1).

Signer #	AoA	Deaf family	Where acquired HKSL	Home language	Another languages used frequently
A	0	Y	Home & School	HKSL only	HKSL, Cantonese (s&w), SWC
B	0	Y	Home	HKSL only	HKSL, SWC
C	0	Y	Home & School	HKSL only	HKSL, Cantonese (s)
D	0	Y	Home	HKSL only	HKSL, Cantones (s&w), English (w)
E	0	Y	Home	HKSL only	HKSL
F	0	Y	Home & School	HKSL only	HKSL, Cantonese (w), English (w), ASL

Table 1: Language background of the language consultants

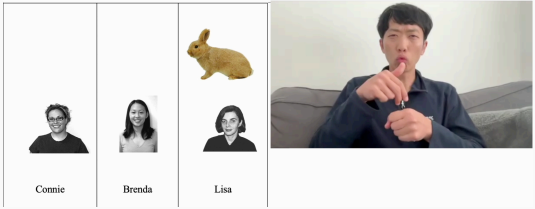
Correlation between focus and the clause-final position

Elicitation data

Elicitation procedure: Participants (N=5) were asked to answer questions with full sentences according to the pictures.

THE QUESTION/ANSWER TEST : (Adapted from the QUIS manual, Skopeteas et al. 2006)

(5) Q: RAISE RABBIT WHO?
'Who has a rabbit?'
P: LISA_{F} RAISE RABBIT.
'Lisa has a rabbit.'



Controlled factors:

- **Grammatical roles of focus:** subject/verb/object;
- **Focus types:** information focus; contrastive focus;
- All verbs are **plain verbs**[2].

2. Plain verbs are lexical verbs that do not have agreement inflections which may affect word order (Padden 1988; Chen Pichler 2001).

Overall distribution of focused constituents

Analysis: I labeled the **surface position** of the focused constituents (clause-final/non-clause-final).

Focus	Contrastive focus			Information focus			Total
	cl.final	non-cl.final	subotal	cl.final	non-cl.final	subtotal	
object	**9** (60%)	6	15	**26** (100%)	0	26	41
verb	**11** (65%)	6	17	**25** (76%)	8	33	50
subject	3	**11** (79%)	14	8	**36** (82%)	44	58

Table 2: Summary of the surface word order of different focused constituents

- **Focused objects** and **verbs** are more frequently clause-final, although they can be non-clause-final;
- **Focused subjects** are more often non-clause-final.
- The pattern for information focus is more robust than for contrastive focus.

The result: object focus

Information focus objects are all clause-final (SVO, N=26, 100%);[3]

(6) **Information focus; object**
(As the answer to: KENNY BUY WHAT 'What did Kenny buy?')
KENNY BUY **MILK$_F$** 'Kenny bought milk$_F$.' (SV**O**)

Contrastive focus objects are often clause-final (SVO, N=9, 60%), but left-dislocated objects are also attested (SOV, N=6, 40%).

(7) **Contrastive focus; object**
(As the answer to: LISA BUY HOUSE YES-NO-YES 'Lisa bought a house, right?')
(a) NO, LISA BUY **CAR$_F$** 'No. Lisa bought a car$_F$.' (SV**O**)
(b) NO, LISA **CAR$_F$** BUY (S**O**V)

3. Judgment test shows that SOV is also allowed for information focus object.

Focused verbs are prevalently clause-final (IF: 76%; CF: 65%); a few in-situ cases are attested.[4]

(8) **Information focus; verb**
(As the answer to: CHICKEN IX, AARON IX WHY-3 'What did Aaron do to the chicken?')

(a) AARON CHICKEN **SELL$_F$** 'Aaron sold$_F$ the chicken.' (SO**V**)
(b) CHICKEN, AARON **SELL$_F$** (O,S**V**)
(c) AARON **SELL$_F$** CHICKEN (S**V**O)

(9) **Contrastive focus; verb**
(As the answer to: AARON RENTCAR YES-NO-YES 'Aaron rent the car, right?')

(a) NO, AARON CAR **BUY$_F$** 'No. Aaron bought$_F$ the car.' (SO**V**)
(b) NO, AARON **BUY$_F$** CAR (S**V**O)

4. Judgment test shows that OSV is also allowed for contrastive focus verb.

The result: subject focus*

Focused subjects are more frequently non-clause-final. They appear in the **pre-verbal position**. VOS order is attested (infrequent).[5]

(10) **Information focus; subject**
(As the answer to: EAT MEAT WHO? 'Who eats meat?')

(a) **LISA$_F$** EAT MEAT 'Lisa eats meat.' (**S**VO)
(b) MEAT, **LISA$_F$** EAT (O,**S**V)
(c) EAT MEAT, **LISA$_F$** (VO,**S**)

(11) **Contrastive focus; subject**
(As the answer to: CONNIE BUY APPLE, YES-NO-YES 'Connie bought apples, right?')

(a) NO, **BRENDA$_F$** BUY APPLE 'No. Brenda bought apples.' (**S**VO)
(b) NO, APPLE, **BRENDA$_F$** BUY (O,**S**V)

5. Judgment test shows that VOS is also allowed for contrastive focus subject.

The VOS order for focused subject

The VOS order is not allowed in a **neutral context**:

(12) Q: HAPPEN WHAT 'What happened?'
A: 'Lisa bought a car.'

(a) * [BUY CAR LISA]$_F$ (*VO**S**)

(b) [LISA BUY CAR]$_F$ (**S**VO)

(c) [LISA CAR BUY]$_F$ (**S**OV)

Thus, VOS involves movement operation only used for (subject) focus.

Interim summary (1)

Word order	Contrastive focus				Information focus				Total
	subj.	obj.	verb	subtl.	subj.	obj.	verb	subtl.	
SVO	**8**	**9**	6	23	**34**	**26**	10	70	93
SV	0	0	**7**	7	0	0	0	0	7
SOV	2	5	4	11	1	(0)	7	8	19
O,SV	2	1	0	3	1	0	**16**	17	20
VO,S	(2)	0	0	2	(8)	0	0	8	10
Total	14	15	17	46	44	26	33	103	149

Table 3: Distribution of word order patterns for different focus constituents[6]

- It is preferred for **focused objects and verbs** to be clause-final, although other word orders are also allowed;
- **Focused subjects** are preferred to be preverbal.

6. Except for VOS, all other word orders are attested independently of focusing. Although not used in production data, SOV order is acceptable for information object focus in the judgment data.

Elicitation data: Double Object Construction (DOC)

Baseline: In HKSL, double object constructions (DOCs) allow two word order patterns.[7]

(13) 'Gladys gave a book to Brenda.'

(a) (***primary word order***)
br
[4/4] GLADYS BOOK GIVE BRENDA. [S-DO-V-IO]

(b) (***secondary word order***)
[3/4] ?GLADYS GIVE BRENDA BOOK. ?[S-V-IO-DO]

I made use of the word order alternation to see whether the word order with a clause-final focus is more acceptable.

(Gan 2022a)

7. IO: indirect object; DO: direct object.

Methodology: Acceptability judgment test

(14) **IO-focus:** Who did Gladys give the book to?

(a) GLADYS BOOK GIVE BRENDA$_F$. ☛ [S-DO-V-IO]
(b) GLADYS GIVE BRENDA$_F$ BOOK. [S-V-IO-DO]

(15) **DO-focus:** What did Gladys give Brenda?

(a) GLADYS BOOK$_F$ GIVE BRENDA. [S-DO-V-IO]
(b) GLADYS GIVE BRENDA BOOK$_F$. ☛ [S-V-IO-DO]

- Platform: Qualtrics;
- Four L1 Deaf consultants;
- Information focus & contrastive focus;
- 5-point Likert Scale (corresponding scores: 0-4).

Mean of score	< 1.5	1.5 ≤x<2.5	2.5≤x<3.5	≥3.5
Grammaticality symbols	*	??	?	✓

The result: focused indirect object (IO-focus)

(16) **IO-focus:**

(a) GLADYS BOOK GIVE BRENDA$_F$. ☛ [S-DO-V-IO]

(b) GLADYS GIVE BRENDA$_F$ BOOK. [S-V-IO-DO]

- The secondary word order gets worse for focused IO.

Word order	Baseline	IO-focus	
		info	contr
S-DO-V-IO	4	4	4
S-V-IO-DO	3	1.25	2

Figure 1: Judgments on the two word orders of DOC for focused IO

The word order with a clause-final focus IO is preferred.[8]

8. The gray columns indicate word orders in which the focus is clause-final.

The result: focused direct object (DO-focus)

(17) **DO-focus:**

(a) GLADYS BOOK$_F$ GIVE BRENDA. [S-DO-V-IO]

(b) GLADYS GIVE BRENDA BOOK$_F$. ☛ [S-V-IO-DO]

- The primary word order gets slightly degraded;
- The secondary word order improves and is the preferred order for information focus DO.

Word order	Baseline	DO-focus	
		info	contr
S-DO-V-IO	4	3.5	3.5
S-V-IO-DO	3	3.75	3.5

Figure 2: Judgments on the two word orders of DOC for focused DO

The word order with a clause-final focus DO is preferred.[9]

9. The gray columns indicate word orders in which the focus is clause-final.

Interim summary (2)

- When word order alternation is allowed, the word order with a clause-final focused object is preferred.
- Simple single-object sentences display a similar pattern.

Why clause-final?

Prosodic prominence in the clause-final position

The association between focus and the clause-final position has also been attested in ASL (Wilbur 1996, 1997, 2012).

(18) Question Answer Pairs (QAPs) in ASL (Wilbur 2012, ex. 41)

(a) ____br
CHRIS SEE TED PUT BOOK WHERE, DESK_{F}
Chris saw Ted put the book on the $desk_{\text{F}}$.

(b) ____br
CHRIS SEE TED PUT-ON DESK WHAT, BOOK_{F}
'Chris saw Ted put the $book_{\text{F}}$ on the desk.'

(c) ____br
CHRIS SEE BOOK DESK PUT-ON WHO, TED_{F}
'Chris saw Ted_{F} put the book on the desk.'

Wilbur's proposal: Stress in ASL is located in the clause-final position and cannot be shifted. Focus is located in the clause-final position to receive the primary stress of the sentence.

In HKSL, the clause-final focus is prosodically prominent: it typically has longer duration & more prosodic markings.

The Nuclear Stress Rule (NSR) & the Focus Prominence Rule (FPR) (1)

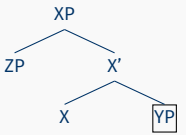
Theoretical assumptions:

- Focus prosody is mainly realized by sentence stress;
- Focus prosody is directly determined by syntax.

Proposal: The clause-final focus in HKSL receives **nuclear stress** by the Nuclear Stress Rule (NSR), which is realized through the Focus Prominence Rule (FPR).

Nuclear Stress Rule (NSR):
Sentence stress is assigned to the *most deeply embedded* constituent.
(Cinque 1993; Zubizarreta 1998)

(19)



(20) **Focus Prominence Rule (FPR)** (Zubizarreta 1998, p. 88)
Given two nodes C_i (marked [+F]) and C_j (marked [-F]), C_i is more prominent than C_j.

The preferred word orders observed so far:

In simple sentences:

- object focus: SVO
- verb focus: OSV
- subject is special: pre-VP

In DOCs:

- IO focus: S-DO-V-IO
- DO focus: S-V-IO-DO
- subject is special: pre-VP

My proposal: The preferred word orders discussed above, the focused constituent is the most deeply embedded and receives nuclear stress through the NSR, in line with the Focus Prominence Rule (FPR).

Nuclear Stress Rule (NSR): Sentence stress is assigned to the *most deeply embedded* constituent.

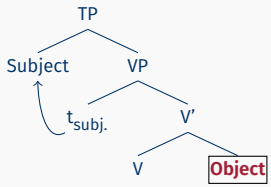
Focus Prominence Rule (FPR): Given two nodes C_i (marked [+F]) and C_j (marked [-F]), C_i is more prominent than C_j.

SVO for object focus & OSV for verb focus

The default word order of HKSL is SVO (Sze 2000).

(21) BRENDA BUY CORN$_F$
'Brenda bought the corns.'

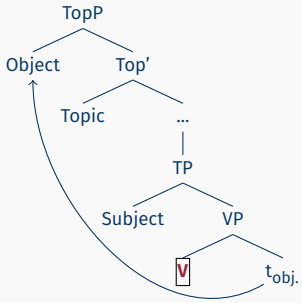
(22) [SVO]



The OSV order is derived from topicalization of the object.

(23) $\overset{\text{br}}{\text{CHICKEN}}$, AARON SELL$_F$
'Aaron sold the chicken.'

(24) [OSV]



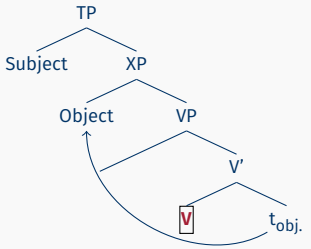
(c.f. Aarons 1996)

SOV for verb focus & VOS for subject focus

I propose that object can be optionally raised in HKSL.[10]

(25) AARON $\overline{\text{CHICKEN}}^{\text{br}}$, SELL_F
'Aaron sold$_F$ the chicken.'

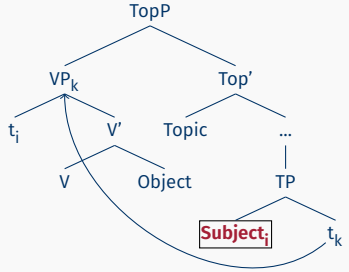
(26) [SOV]



The VOS_F order is derived from the topicalization of VP.

(27) $\overline{\text{REGISTER GAME}}^{\text{br}}$, KENNY_F
'Kenny$_F$ signed up for the game.'

(28) [VOS]



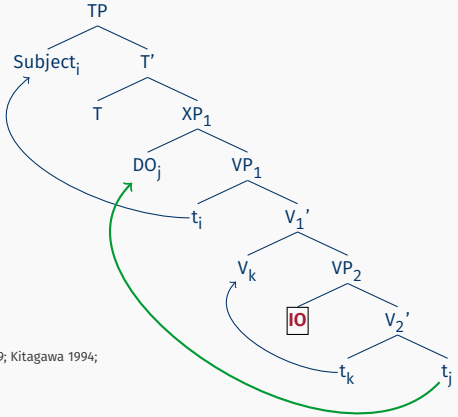
(c.f. Lam 2009; Sze 2000, 2008)

10. The object shift is less-likely to be information structure-related, as SVO and SOV are both allowed in a neutral context.

The derivation of the primary word order and the secondary word order of DOCs are assumed as follows: (They differ in whether DO moves up or not.)

(29) GLADYS $\overset{\text{br}}{\text{BOOK}}$ GIVE BRENDA$_F$.
'Gladys gave Brenda a book.'

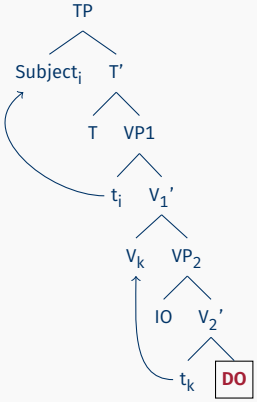
(30) [S-DO-V-IO]



(c.f. Aoun and Li 1989; Kitagawa 1994; Pylkkänen 2002)

(31) GLADYS GIVE BRENDA BOOK$_F$.
'Gladys gave Brenda a book.'

(32) [S-V-IO-DO]



Optionality: Focus Prominence Rule (FPR) is a preference rule in HKSL (1)

Recall that focus constituents in HKSL *can* be non-clause-final.

Proposal: The FPR is a **preference rule** in HKSL, not an obligatory rule.

When NSR conflicts with FPR:

- The output can still be sent to Spell-Out, the focus is interpreted solely by F-marking of the constituents in syntax (so no specific prosodic markings on non-clause-final focus);

head nod
blink
(33) KENNY (528) EAT$_F$ (279) CORN (577)
'Kenny ate$_F$ the corn.'

Optionality: Focus Prominence Rule (FPR) is a preference rule in HKSL (2)

Alternatively, the focus can be marked by a stress rule independent of the NSR.

- E.g.: Emphatic Stress Rule (35), and the sentence stress applies to a non-focused constituent by NSR.

(34) [HKSL]

brow raise	mouthing	blink
blink	**gaze**	rep move

AARON (303) BUY_F (342) CAR (463)
'(No.) Aaron $bought_F$ the car.'

(35) [English] (Gussenhoven 2014)
(Why didn't you take the garbage out?)
I **TOOK** the garbage out.

This explains why for sentences with a non-clause-final focus, the clause-final constituent has the longest duration (CAR, 463 ms), and the non-clause-final focus can have certain focus-related prosodic markings (eye gaze on BUY).

What about other constructions?

Wh-questions in HKSL

Wh-phrases appear in the clause-final position

- All argument wh-phrases in HKSL appear in the clause-final position.[11]
- Subject **WHO** can appear clause-initially (37 b), but NOT other subject wh-phrases (38 b).

(36) (a) AARON LIKE **WHO/WHAT**?
'Who/what does Aaron like?' (object wh-question)

(b) ***WHO/WHAT** AARON LIKE?

(37) (a) EAT BANANA **WHO**?
'Who eats bananas?' (subject wh-question)

(b) **WHO** EAT BANANA?

(38) (a) MAKE N-9-5 MASK **COMPANY WHAT**?
'What company makes N95 masks?' (subject wh-question)

(b) ***COMPANY WHAT** MAKE N-9-5 MASKS?

11. Wh-phrases appearing at the clause-final position are rare in spoken languages but not for sign languages (Zeshan 2006, 2004).

Wh-phrases undergoes a rightward movement

In wh-questions in HKSL, the wh-phrase undergoes a rightward movement to the clause-final position. (The wh-phrase occurs after a postverbal adverbial.)

(39) LAURA WRITE LETTER LONG-TIME/SHORT-TIME.
'Laura wrote a letter for a long time/for a short time.'

(40) (single wh-question)

(a) LAURA WRITE t LONG-TIME WHAT$_t$?
'What did Laura write for a long time?'
(b) *LAURA WRITE WHAT LONG-TIME?
(c) *WHAT LAURA WRITE LONG-TIME?

(41) (multiple wh-question)

(a) ? STUDENT WHO BUY SHORT-TIME COMPUTER WHICH?
'Which student bought which computer in a short time?'
(b) * STUDENT WHO BUY COMPUTER WHICH SHORT-TIME?

The rightward movement is not focus driven (contra. ASL) (1)

For ASL multiple (non-D-linked) wh-questions, Wood (2009) adopts the leftward wh-movement account (Petronio and Lillo-Martin 1997; Petronio 1993) for the first wh-phrase and argues that the right-moved wh-phrase undergoes focus movement.[12]

(42) [ASL] (Wood, 2009, ex. 44b)
WHO$_{DAT}$ JOHN GIVE WHAT$_{ACC}$?
'What did John give to whom?'

(43) [ASL] (Wood 2009, ex. 45)

(a) *WHO HOPE **IX-WHO** BUY CAR?
'Who hopes that who bought a car?'

(b) WHO HOPE *t* BUY CAR **IX-WHO**?

12. She argues that the in-situ WHO undergoes covert wh-movement.

The rightward movement is not focus driven (contra. ASL) (2)

Wood's (2009) account parallels ASL with multiple wh-fronting (MWF) languages like Serbo-Croatian, in which a **contrastive non-wh focus** and a **wh-phrase** appear at the ***same*** position (44).

(44) [Serbo-Croatian] (Stjepanovic 1999, ex. 6a & 7c)

(a) ***Miša*** *je* *mačka* *uhvatila*
mouse is cat caught

'The cat (but not anything else) caught a mouse'

(b) ***Šta*** *je* *mačka* *uhvatila?*
what is cat caught

'What did the cat catch?'

(Stjepanović 1999; Bošković 2002)

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what is cat caught

'What did the cat catch?'

(Stjepanović 1999; Bošković 2002)

However, in HKSL, a **non-wh focus** (45 b) appears in a ***different*** position from clause-final **wh-phrases** (46 a).

(45) (a) A: AARON BOOK CL_{read} LONG-TIME.
'Aaron read the book for a long time.'

(b) (contrastive focus)
B: NO, AARON **NEWSPAPER$_F$** CL_{read} LONG-TIME.
'No, Aaron read the NEWSPAPER$_F$ for a long time.'

(46) (a) (object wh-phrase)
A: AARON t CL_{read} LONG-TIME **WHAT**?
'What did Aaron read for a long time?'

(b) A: *AARON **WHAT** CL_{read} LONG-TIME?

The rightward movement is not focus driven (contra. ASL) (2)

Also, in ASL, D-linked wh-phrase ***cannot*** undergo focus movement (*WHICH COMPUTER* in (47 b)), but D-linked wh-phrase in HKSL ***can*** (48 b).

(47) [ASL] (Wood 2009, ex. 59)
Context: John, Mary, and Sue each plan to buy a computer. They all looked at Sony, Mac, and HP computers.

(a) WHO BUY **WHICH COMPUTER** LAST-NIGHT? (in-situ)
'Who bought which computer last night?'

(b) *WHO BUY t LAST-NIGHT **WHICH COMPUTER**? (* rightward focus movement)

(48) [HKSL]
Context: Three students, Kenny, Laura, and Brenda each plan to buy a computer. They all considered Mac, HP, Sony, and ended up buying one, the brands they bought were all different.

(a) * WHO BUY **WHAT** SHORT-TIME? (* in-situ)
'Who bought what quickly?'

(b) ? WHO BUY t SHORT-TIME **WHAT**? (right-moved)

Thus, the rightward movement in HKSL cannot be focus movement.

Weak Crossover (WCO)

Weak Crossover (WCO) effect has been used as a diagnostic for A' movement. WCO effect arises when a quantifier or a wh-phrase crosses a pronoun that is co-indexed with it.

(49) [English]
Who$_i$ does her$_{??i/j}$ mother like t_i?

In HKSL, the pointing sign IX can be used as a pronoun. With Eva being present in the signing space, the wh-question in (50) is grammatical. But WHO and IX cannot refer to the same person.

(50) [HKSL]
Context: the signer pointed to Eva (who was present at the signing space) and asked:

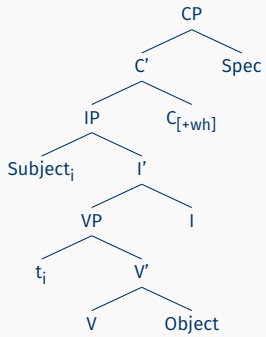
IX$_k$ HUSBAND LIKE WHO$_{i/*k}$?
'Who$_{i/*k}$ does her$_k$ husband like?'

(Higginbotham 1980; Safir 1984; Reinhart 1983; Chomsky 1976)

Wh-movement to the right

I resort to wh-movement to explain the right-moved wh-phrases (51). I assume that Spec-CP is to the right instead of to the left in HKSL (Neidle et al. 1998; Neidle et al. 1996; Neidle et al. 2000; Cecchetto and Zucchi 2004; Cecchetto et al. 2009, 2006).

(51)



(Gan 2022b)

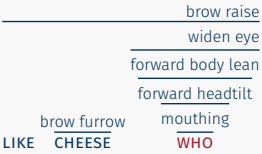
The clause-final wh-phrase is prosodically prominent

The clause-final wh-phrase is subject to the NSR: it receives prosodic prominence.

(52) (a) (subject WHO)

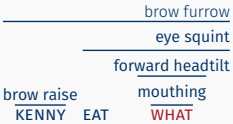
'Who cooked the tofu?'

(b) (subject WHO)



'Who likes cheese?'

(c) (object WHAT)



'What did Kenny eat?'

(d) (object WHAT)

'What did Kenny buy?'

NSR: The most deeply embedded vs. the rightmost (1)

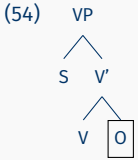
NSR: Halle and Vergnaud (1987): the rightmost gets the nuclear stress;
Cinque (1993) and Zubizarreta (1998): the most deeply embedded gets the nuclear stress.

In Spanish, the **the rightmost IS** also **most deeply embedded**.

(53)

María	*me*	*regaló*	*la*	*botella*	*de*	***vino*** $_{F}$
María	to-me	gave	the	bottle	of	wine

(54)

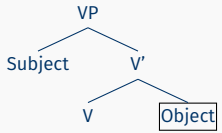


HKSL seems to give us the opportunity to **separate these two**.

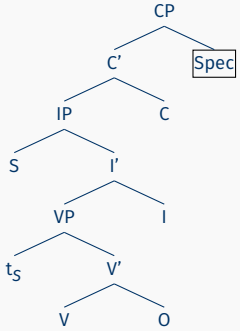
NSR: The most deeply embedded vs. the rightmost (2)

HKSL data shows that the rightmost element receives nuclear stress, whether or not it is the most deeply embedded.

(55) (declarative sentences, e.g. SVO)



(56) (Wh-question)



Theoretical research must take into account sign language data .

Prosodic salience can also be marked by an obvious prosodic change

Obvious prosodic change: 'Only'-phrases in declarative sentences

'Only'-phrases are preferred to be clause-final (57). Some ONLY-ONE-phrases can be in-situ (58 a & 58 b).

	ONLY-ONE-phrase	**ONE-FINISH-phrase**
clause-final	✓	✓
non-clause-final	✓	✗

(57) (a) LAURA LIKE LINGUISTICS$_F$ ONE-FINISH
'Laura likes linguistics only.'

(b) br
LIKE LINGUISTICS LAURA$_F$ ONLY-ONE
'Only Laura$_F$ likes linguistics.'

(58) 'Only Laura$_F$ likes linguistics.'

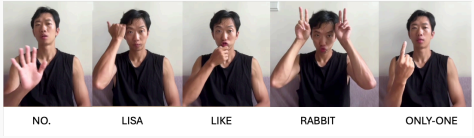
(a) ?LAURA$_F$ ONLY-ONE LIKE LINGUISTICS

(b) LAURA$_F$ IX ONLY-ONE LIKE LINGUISTICS

(c) *LAURA$_F$ ONE-FINISH LIKE LINGUISTICS

The 'only'-phrases are also prosodically prominent in the sentence. They are marked by an obvious prosodic change (59)[13]

(59) hs — brow raise — brow lowering
NO, LISA LIKE — forward headtilt RABBIT$_F$ — backward headtilt ONLY-ONE
'No, Lisa likes rabbits$_F$ only.'



13. Other prosodic markings attested in 'only'-phrases include: lengthening of the clause-final ONLY-ONE and increase in non-manual marking of the in-situ 'only'-phrases.

Obvious prosodic change: The A(nswer)-clause in Question Answer Pairs (QAPs)

(60) (a) A: PATHETIC MARY 'Poor Mary.'
(b) B: NO. [$_{\text{Q-clause}}$ PATHETIC WHO], [$_{\text{A-clause}}$ AJ]

Lit.: 'No. Who's pathetic? AJ.'
'No. AJ_F is the pathetic one.'

The A(nswer)-clause must appear in the clause-final position following the Q(uestion)-clause (61).

	A-clause
clause-final	✓
non-clause-final	✗

(61) 'What I dislike is his tie.'

(a) br
IX-1 DISLIKE WHAT, POSS-3 TIE.

(b) *POSS-3 TIE , br
IX-1 DISLIKE WHAT.

(c) br
*POSS-3 TIE, IX-1 DISLIKE WHAT.

The prosodic prominence of the A-clause is also marked by an obvious prosodic change.

(62) GLADYS BUY (brow raise, forward headtilt) WHAT , (brow lowering, backward headtilt) BOOK .
'What did Gladys bought was a book.'

(The gap between signs in the picture demonstration represents short pause.)

The prosodic change signals prosodic boundary

I propose that in HKSL, the change in prosodic marking signals **the prosodic boundary** of a phonological unit (marked by ‘)’), a strategy found in the ‘*boundary language*’. The focus is marked by inserting a prosodic phrase boundary to the left or right to the focus. E.g. Chicheŵa (63) and Bangali (Büring 2010) .

(63) [Chicheŵa] (ibid., ex 11)

(a) What did he do? (**VP$_F$**)

([Anaményá *nyumbá* *ndímwáála]$_F$)*
hit house with-rock

‘He hit the house with a rock’

(b) What did he hit the house with? (V OBJ **OBL$_F$**)

(Anaményá *nyumbá* *ndímwáála$_F$)*
hit house with-rock

(c) What did he hit with a rock? (V **OBJ$_F$**) (OBL)

(Anaményá *nyumbá$_F$)* *(ndímwáála)*
hit house with-rock

(d) What did he do to the house with the rock? (**V$_F$**) (OBJ)(OBL)

(Anaményá$_F$) *(nyumbá)* *(ndímwáála)*
hit house with-rock

(‘penult lengthening’; Downing and Mtenje 2017)

Interim summary

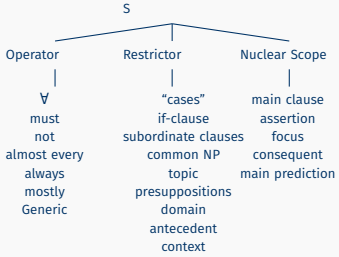
- The preference for focused element to appear clause-finally is (at least) driven by prosody.
- The prosodic prominence can be achieved by different ways.
  - NSR
  - Emphatic Stress Rule
  - Marking prosodic boundary

Motivations for the clause-final preference other than prosody

Partee's (1995) Tripartite Structures

- Partee (1995) suggests that the Tripartite Structure in quantification represents a universal semantic structure in human languages, extended as (64).
- This structure is realized in different syntactic structures in different languages.
- Quer (2012) argues that it applies to sign languages (ASL & LSC data).

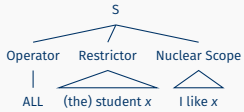
(64) The Tripartite Structures (Partee 1995)



(65) [ASL] (ex. 14)

(a) top
STUDENT CL(GROUP), A-L-L, IX-1 LIKE.
'I like all (of the) students.'

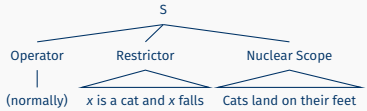
(b)



(66) [English] (ex. 32)

(a) Cats land on their feet.

(b)



Application of the Tripartite Structures to HKSL (1)

Proposal: The word order in HKSL reflects the Restrictor – Nuclear Scope – Operator sequence of the Tripartite Structure.

This is related to the transparent mapping between constituents and meaning in HKSL:

- From left to right, the constituents follow the order of forming a compositional semantics structure from lower levels to higher levels.

Constructions	Restrictor	Nuclear Scope	Operator
Negation	-	sentence	negative
Modal	-	sentence	modal
Generic	-	sentence	ALWAYS
Embedding w/ attitude verbs	-	subordinate clause	main clause
Sent. w/ 'only'-arguments	predicate	NP	'only'-signs
Topic-comment	Topic	Comment	-
Presupposition-focus	Presupposition	Focus	-
Conditionals	if-clause	consequence-clause	-

Table 4: The assignment of the Tripartite Structures in HKSL

Application of the Tripartite Structures to HKSL (2)

(67) (Negation)
IX-3 STUDENT NOTmhei .
'S/he is not a student.'

(68) (Modal)
IX-1 GO-HOME WATCH-TELEVISION WILL .
'I will go home and watch television.'

(69) (Embedding w/ attitude verbs)
br
GLADYS GO WHERE, IX-1 KNOW.
Lit. : 'Where did Gladys go? I know.'
'I know where Gladys went.'

(70) (Sent. w/ 'only'-arguments)
br
LIKE LINGUISTICS LAURA$_F$ ONLY-ONE.
'Only Laura (and no one else) likes linguistics.'

(71) (Presupposition - Focus)

(a) br
BUY CAR, [LISA IX]$_F$
'Lisa bought the car.'

(b) br
AARON WAGE IX, SAVE$_F$

(c) br
EVA LIKE EAT WHAT, FISH .
Lit. : 'Eva likes to eat what? Fish'
'What Eva likes to eat is fish.'

(72) (Conditional)
br
(IF) YOUNGER-BROTHER TEST ONE-HUNDRED, IX MOM COOK SHRIMP.
'If brother gets 100 in the exam, Mom will cook shrimps.'

Ease for processing?

The following tendencies in the linear order of language have been attested:

- ‘Old-before-new’;
- ‘Simple before complex’;
  - If the speaker can retrieve highly accessible, already active referents from the given information before receiving new and less accessible referents, their cognitive burden will not be as high as in the other direction.

The question arises:

- **Why is such a clause-final tendency more prominent in sign languages than in spoken languages?**
  - Is it related to the two different modalities of information (oral-audio signals versus visual-gestural signals)?

(Arnold et al. 2000; Luchkina and Cole 2021; Clifton and Frazier 2004).

Conclusion

- In HKSL, it is preferred for focused constituents to appear in the clause-final position;
  - In declarative sentences, the clause-final focus receives the primary prosodic salience through the Nuclear Stress Rule (NSR), in line the Focus Prominence Rule (FPR);
  - I argued that wh-phrases are also subject to NSR.

- The Focus Prominence Rule (FPR) is a preference rule in HKSL;
  - In addition to NSR, focused elements can be unmarked, or marked by rules independent from the NSR (Emphatic Stress Rule & prosodic boundary marking).

- There may be other motivations for the clause-final preference.
  - The clause-final preference may reflect a transparent mapping between constituents & meaning;
  - It may be motivated to reduce the processing burden due to the visual-gestural modality.

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