

# Preverbal Negative Polarity Items in Cantonese

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This paper solves an apparent scope paradox while simultaneously clarifying the properties of preverbal indefinites in Cantonese. *Wh*-words in this language may function as negative polarity items (NPIs) when they occur within the scope of an appropriate licenser. Preverbal NPIs associated with *dōu* “even” are puzzling because they do not occur within the scope of negation and are subsequently predicted not to be licensed. In this study I address the question of how preverbal emphatic NPIs are to be analyzed. My solution is to link the behaviour of preverbal NPIs to preverbal indefinites containing *yāt* “one”. In negative sentences containing *dōu* “even”, *yāt* indefinites must be interpreted below negation. I argue LF lowering of the *yāt* indefinite is forced by the presuppositional requirements of *dōu*. Building on Lahiri (1998), I show the scalar presupposition of *dōu* is coherent when the indefinite is lowered, but is unsatisfiable if the indefinite is interpreted above negation. I conclude that lowering of the indefinite at LF is forced on semantic grounds. Since this mechanism of lowering is already available in the language for *yāt* indefinites, I argue that it is also available for the preverbal NPIs. This follows if these *wh*-words are regarded as focused low-scalar NPIs which denote very general properties and which are entailed by their more specific alternatives, as in Lahiri’s (1998) analysis of Hindi NPIs. I also show how extending this analysis to preverbal NPIs is empirically superior to an alternative proposal which extends the work of Cheng (1991) and treats *dōu* as a universal “all” in examples involving preverbal NPIs.

## 1. Introduction<sup>1</sup>

*Wh*-words in Cantonese (1) are used as negative polarity items (2).

(1) Léih gin-jó **bīngō** a?  
you see-pfv who prt  
‘Who did you see?’

(2) Ngóh móuh gin **bīngō**.  
I neg.pfv see who<sup>2</sup>  
‘I didn’t see anyone.’

Preverbally, *wh*-words associated with *dōu* “even” function as emphatic NPIs.

(3) a. Ngóh **bīngō dōu** móuh gin.  
I who even neg.pfv see  
‘I didn’t see ANYBODY at all.’

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<sup>2</sup> Abbreviations used are as follows: cl= classifier, pers = personal, neg = negative, pfv = perfective, prt = particle, rhet = rhetorical.

- b. **Bīngō<sub>F</sub>**     **dōu**     móuh     gin ngóh.  
who            even     neg.pfv     see me  
'NOBODY saw me.'

**PROBLEM:** How can these *wh*-words function as NPIs? They appear outside scope of negation.

Negation cannot normally scope over preverbal elements (Huang 1982).

- (4) Go-go dōu mh     jūngyi sihk     gāt.  
cl-cl     all     neg     like     eat tangerine  
(i)  $\forall_{\neg}$  'Everyone doesn't like to eat tangerines.'  
(ii)  $\neg_{\forall}$  \* 'Not everyone likes to eat tangerines.'

**SOLUTION:** Treating emphatic NPIs as low-scalar indefinites, I propose they are forced to lower below negation at LF to satisfy the presuppositions of *dōu* "even".

This is independently required to account for interpretation of preverbal *yāt* "one" indefinites.

## 2. Analysis

### 2.1. Preverbal *yāt* indefinites

In negative sentences, an indefinite containing *yāt* “one” takes wide scope above negation.

(5) *Yāt* go *yàhn* *móuh* *sihk*.

one cl person neg.pfv eat

(i)  $\exists \neg$  ‘One person did not eat.’

(ii)  $\neg \exists$  \*‘Not one person ate.’

When *yāt* is focused and associated with *dōu* “even”, the indefinite interpreted below negation.

(6) ***Yāt<sub>F</sub>*** go *yàhn* ***dōu*** *móuh* *sihk*.

one cl person even neg.pfv eat

(i)  $\exists \neg$  \*‘Even one person didn’t eat.’

(i)  $\neg \exists$  ‘Not even one person ate.’

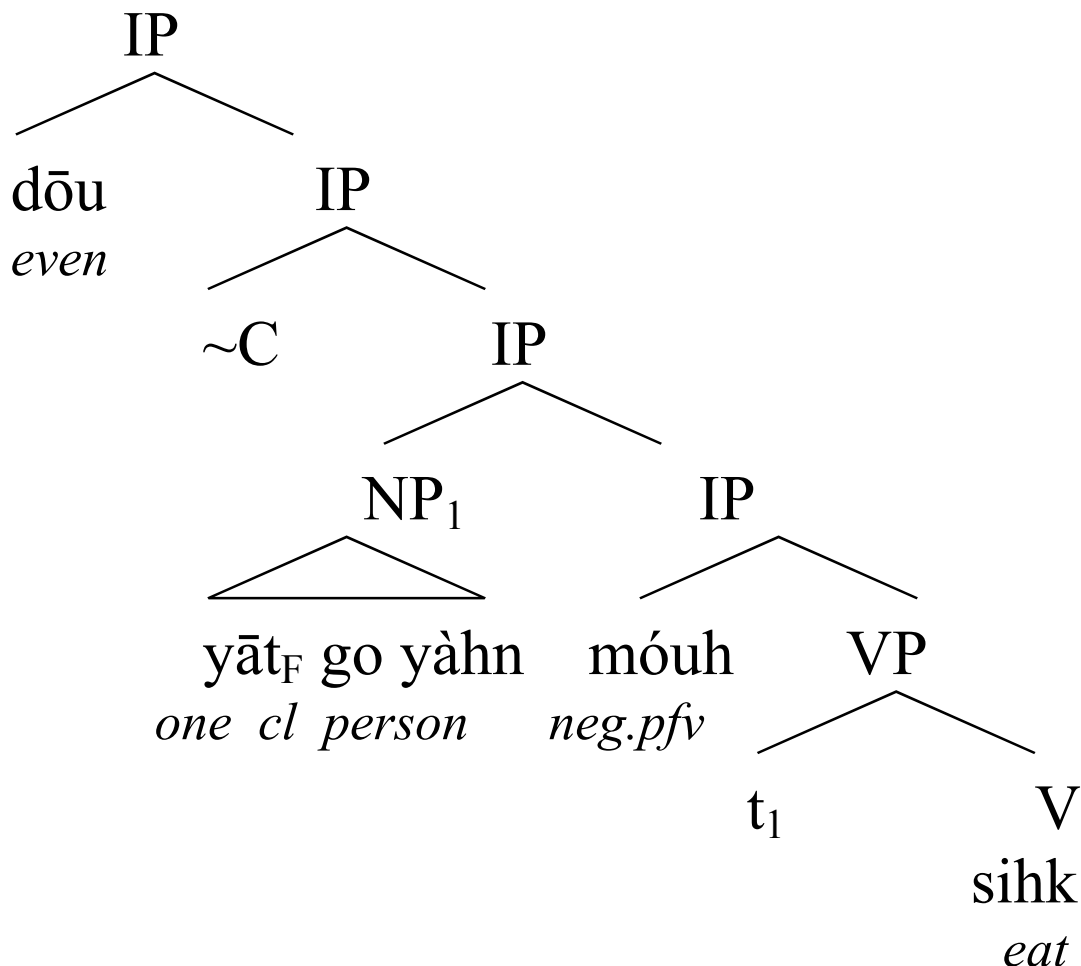
Preverbal low-scalar indefinites associated with *dōu* “even” must take scope below negation.

## 2.1.1. Semantic Analysis

Lahiri observes that in downward entailing contexts, low-scalar indefinites associated with *even* only have coherent presuppositions if they are interpreted with narrow scope.

(7) Yāt go yàhn dōu móuh sihk.

LF: [dōu [[yāt go yàhn][móuh sihk]]].



(8)  $|\lambda x[\text{person}(x)] \cap \lambda x[\neg \text{eat}(x)]| \geq 1_F$   
= There is one person who did not eat.

(9)  $\forall q[[q \in C \wedge q \neq \wedge[|\lambda x[\text{person}(x)] \cap \lambda x[\neg \text{eat}(x)]| \geq 1] \wedge \neg \text{eat}(x)] \rightarrow \wedge[|\lambda x[\text{person}(x)] \cap \lambda x[\neg \text{eat}(x)]| \geq 1] <_{\text{likely}} q]$   
= All unasserted alternative propositions are more likely than the proposition “There is one person who didn’t eat”.

### **The scalar presupposition cannot be satisfied**

- By (9) the asserted proposition is less likely than its alternatives.
- The alternatives contain higher numerals and entail the asserted proposition.

“There are two people who didn’t eat”  
 $\Rightarrow$  “There is one person who didn’t eat”.

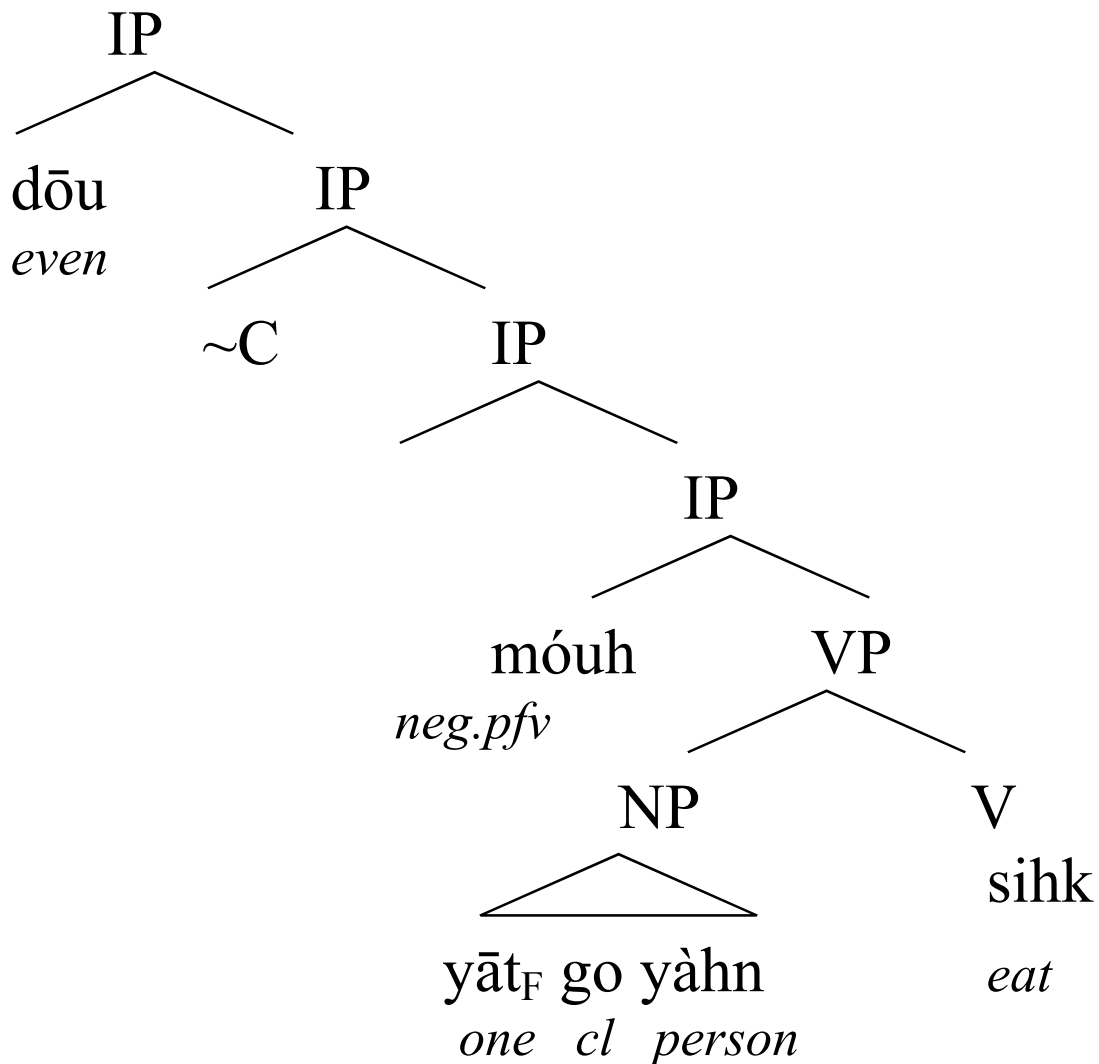
- Problem: entailment relations are the inverse of the likelihood relation.
- If p entails q then q is weaker and more likely than p.

→ This conflicts with presupposition in (9).

If the indefinite lowers at LF, problem is gone.

(10) Yāt go yàhn dōu móuh sihk.

LF: [dōu [móuh [ [ yāt go yàhn] sihk]]].



(11)  $\neg[|\lambda x[\text{person}(x)] \cap \lambda x[\text{eat}(x)]| \geq 1]$   
= There is not one person who ate.

(12)  $\forall q[[q \in C \wedge q \neq \wedge \neg[|\lambda x[\text{person}(x)] \cap \lambda x[\text{eat}(x)]| \geq 1] \rightarrow \wedge \neg[|\lambda x[\text{person}(x)] \cap \lambda x[\text{eat}(x)]| \geq 1] <_{\text{likely}} q]$   
= All unasserted alternatives propositions are more likely than the proposition “There is not one person who ate”.

### **The scalar presupposition can be satisfied.**

- Negation takes scope over the entire proposition so the entailment relations are reversed (Fauconnier 1978).

“There isn’t one person who ate”

$\Rightarrow$  “There aren’t two people who ate”.

- Since the asserted proposition entails its alternatives, it is less likely than them.

$\rightarrow$  This matches the presupposition in (12).

## 2.2.2. Preverbal emphatic NPIs

Following Lahiri (1998), NPIs can be regarded as focussed low-scalar indefinites.

- (13) Bīngo dōu móuh sihk.  
who even neg.pfv eat  
'NOBODY ate.'

Like *yāt*, these indefinites only satisfy presuppositions of *dōu* if scope below negation.

- The *wh*-word denotes a very general property; *bīngo* “who/person”
- Focal alternatives are more specific properties, like woman, child, etc..
- These alternatives properties are subsets of the property denoted by the *wh*-word; they stand in the same entailment relation to NPI as higher numerals do to *yāt* “one”.

If the indefinite has wide scope, then there is problem with the presuppositions of *dōu*.

- (14) LF: [dōu[[bīngō<sub>F</sub>] [móuh [sihk]]]].  
[ $\lambda x[\text{person}(x)] \cap \lambda x[\neg \text{eat}(x)] \neq \emptyset$ ]  
=There is a person who did not eat.

The alternatives to *bīngō* are other subset properties.

- (15) C = {There is a person who didn't eat, There is a woman who didn't eat, There is a child who didn't eat}

The presupposition of *dōu* “even”.

- (16)  $\forall q[[q \in C \wedge q \neq [\lambda x[\text{person}(x)] \cap \lambda x[\neg \text{eat}(x)] \neq \emptyset]] \rightarrow [\lambda x[\text{person}(x)] \cap \lambda x[\neg \text{eat}(x)] \neq \emptyset] <_{\text{likely}} q]$   
= All unasserted alternative propositions are more likely than the proposition “There is a person who didn't eat”.

**The scalar presupposition cannot be satisfied.**

- The alternatives contain subset properties and entail the asserted proposition.

“There is a woman who didn’t eat”  
 $\Rightarrow$  “There is a person who didn’t eat”.

- Since the asserted proposition is entailed by its alternatives, it is more likely than them.

$\rightarrow$  This conflicts with the presupposition (16).

If the indefinite has narrow scope, no problem.

(17) LF: [[ dōu[móuh [[bīng<sub>F</sub>] sihk]] ]]  
 $\neg[\lambda x[\text{person}(x)] \cap \lambda x[\text{eat}(x)] \neq \emptyset]$   
 = There is no person who ate.

(18)  $C = \{\text{There is no person who ate, There is no woman who ate, There is no child who ate}\}$

(19)  $\forall q[[q \in C \wedge q \neq \neg[\lambda x[\text{person}(x)] \cap \lambda x[\text{eat}(x)] \neq \emptyset]] \rightarrow \neg[\lambda x[\text{person}(x)] \cap \lambda x[\text{eat}(x)] \neq \emptyset] <_{\text{likely}} q]$   
 = All unasserted alternative propositions are more likely than the proposition “There is no person who ate”.

## The scalar presupposition can be satisfied.

- The alternatives with narrower subset properties all entail the asserted proposition.

“There is no person who ate”

⇒ “There is no woman who ate”.

- Since the asserted proposition entails its alternatives, it is less likely than them.

→ This matches the presupposition in (19)

### 3. An alternative analysis

There is another *dōu* meaning “all”, that quantifies over a preverbal NPs to its left (see Lee 1986, Cheng 1991, 1995).

(20) Ngóh mātých dōu yiu jihgéi máaih.

I what all need self buy

‘I have to buy everything myself. Matthews & Yip 1994: 262

Maybe preverbal “NPIs” not indefinites but

wide scope universals. Maybe *dōu* is “all”?

- (21) Bīngō dōu móuh sihk.  
who all neg.pfv eat  
‘NOBODY ate.’  
LITERALLY: $\forall \neg$  ‘Everybody didn’t eat.’

### 3.1. Comparing the two analyses

Three reasons in favour of *dōu* “even” analysis.

I: Preverbal NPIs are *emphatic*.

- (22) Ngóh bīngō dōu móuh gin.  
I who dōu neg.pfv see  
‘I didn’t see ANYBODY at all.’

II: Preverbal NPIs only used in biased questions.

Minimizer NPIs containing *even* cannot appear in unbiased questions (Heim 1984).

- (23) Didn’t you even lift a finger to help?

A-not-A questions are unbiased (Law 2001).  
Universal *dōu* is acceptable in A-not-A.

(24) Haih-mhaih go-go dōu séung yāusīk a?  
be-neg.be cl-cl all want break prt

‘Does everyone want a break?’

Matthews & Yip 1994: 263

Preverbal “NPIs” with *dōu* are unacceptable.

(25) ? Léih haih-mhaih mātyéh dōu góng?  
you be-neg.be what even say

‘Do you say just anything?’

(26) \* Léih mātyéh dōu yáuh-móuh góng?  
you what even pfv-neg.pfv say

‘You didn’t say anything?’

Preverbal NPIs are used in biased questions.

(27) Léih mātyéh dōu móuh góng mē?  
you what even neg.pfv say rhet

‘Didn’t you say ANYTHING at all?’

III: Preverbal NPIs lack the presuppositions of a strong quantifier.

Strong quantifiers presuppose members of their restriction exist (de Jong and Verkuyl 1985).

(28) Gāmyaht go-go dōu móuh wán dóu léih.  
today cl-cl all neg.pfv find v-prt you  
‘Everybody didn’t find you today.’  
(i.e. ‘None of them found you today’)

(28) conveys expectation that members from some known group would call. It presupposes members of restriction actually exist.

Preverbal NPIs do not presuppose that members of the set denoted by the wh-word actually exist.

(29) Gāmyaht bīngō dōu móuh wán dóu léih.  
today who even neg.pfv find v-prt you  
‘Nobody found you today.’  
(≠ ‘None of them found you today.’)

(29) conveys expectation that somebody would call, but there is no specific people in mind. It lacks presupposition that members of restriction exist.

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