# Keeping *Dou* as a Simple Distributor*

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**Abstract**

Against the *even* analysis of *dou*, this paper argues that a simple distributor semantics of *dou* can be maintained with two assumptions: (i) Mandarin sentences allow an optionally overt topic set [12]; (ii) scalar *dou*-sentences have an optionally overt preposition *lian* [1, 15].

## 1 Introduction

The multi-functional particle *dou* has drawn immense attention from Chinese linguists. The two main uses exemplified in (1) and (2), with *dou* as a distributor and a focus operator *even*, respectively, raise an imminent question — what is the semantic core of *dou* that conditions its distribution?

(1) Tamen dou mai le yi liang che[1]
they DOU buy Asp one CL car
They each bought a car.

(2) Zhangsan$_F$ dou xihuan Lisi
Zhangsan DOU like Lisi
Even Zhangsan likes Lisi.

Linguists take two different routes to answer this question. The first route is to treat the distributive use as the core function of *dou* that subsumes the *even* reading as a special case [12]. To the contrary of the first, the second route is to analyze *dou* as *even* while attributing the distributive reading to a covert *dist* operator [11]. In this paper, I argue that analyses along the second route are on the wrong track, evidenced by a set of incorrect predictions made by the *even* analysis of *dou*. I show that a simple distributor semantics for *dou* can be maintained with a satisfactory account of its distribution in (1) and (2), if we make two assumptions. First, as a topic prominent language, Mandarin allows an optionally overt topic set in a sentence. Second, the *even*-sentences with *dou* have an optionally present preposition *lian* [1, 15] that makes non-trivial contribution to the scalar reading.

## 2 Flaws in the *even* analyses of *dou*

Mandarin Chinese *wh*+*dou* resembles the *indefinite*+*even* sequences found cross-linguistically. With a clause-mate negation, it gives rise to an NPI reading; with a generic predicate, it has a universal reading. The parallel is illustrated here with a comparison between Mandarin and Hindi[2], as in (3) - (4).

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[1] As [10] points out, *dou* does not require to distribute down to atoms. I use *each* here for simplicity.

[2] All Hindi examples are from [7], glosses his. The same behavior of *indefinite*+*even* sequence is also found in Japanese, Korean, Bangla, Malayalam and many more languages. Due to space constraint, I only present Hindi examples in this paper for illustration.

(3) a. shei dou mei lai
who DOU NEG come
No one came.

b. shei dou keyi taiqi zhe zhang zhuozi
who DOU can lift this CL table
Anyone can lift this table. (Chinese)

(4) a. koii bhii nahiiN aayaa
someone even not come
No one came.

b. tum to kuch bhii kah dete ho
you PRT something even say
You say anything. (Hindi)

(5) a. yi ge ren dou mei lai
one CL person DOU NEG come
No one came.

b. yi ge ren dou keyi taiqi zhe zhang zhuozi
one CL p DOU can lift this CL table
Even one person can lift this table. (Chinese)

(6) a. ek bhii aadmii nahiiN aayaa
one even not come
No one came.

b. ek bhii cingaarii ghar-ko jalaa detii hai
one even spark house burns
Even one spark burns the house. (Hindi)

The same alternation between an NPI and a universal reading is also exhibited by minimizers *one NP+dou* and *one NP+even* in Mandarin and Hindi, respectively, in (5)-(6). Given the similarities between Hindi *indefinite+even* and *one NP+even*, Lahiri [7] proposes to reduce the former to the latter. Specifically, an indefinite like 'someone' introduces a variable satisfying the cardinality predicate **one** and the NP restriction, i.e. $one(x) \wedge person(x)$. In (4a), an existential closure closes off the the variable introduced by *koii*. The negation turns the existential statement into a negative one, serving as the prejacent of the focus operator *bhii*. *Bhii* activates the alternatives of its associate *koii*, each with **one** replaced with a different cardinality predicate *two, three, etc.* Moreover, *bhii* imposes two implicatures. The additive implicature says there is at least one true alternative distinct from the prejacent. The least likelihood implicature says the prejacent is the least likely one among its alternatives. The formal representation of the prejacent, the alternative set and the two implicatures are given in (7). Since the prejacent logically entails all other alternatives, the two implicatures are satisfied as long as the prejacent is true.

(7) a. Assertion: $a = \neg\exists x[\mathbf{one}(x) \wedge came(x)]$
b. ALT $= \{\neg\exists x[\mathbf{P}(x) \wedge came(x)] \mid \mathbf{P} \in \{two, three, four...\}\}$
c. Additive implicature: $\exists q \in ALT[q \neq a \wedge q]$
d. Least likelihood implicature: $\forall q \in ALT[q \neq a \rightarrow a <_{likelihood} q]$

In a generic sentence (4b), Lahiri gives the same kind of semantics to *kuch bhii*. The generic operator binds the variable introduced by *kuch*, which locates in the restrictor of the universal generic quantifier, a downward-entailing environment. The prejacent, again, logically entails all the other alternatives. The two implicatures are thus satisfied as long as the prejacent is true.

Lee and Horn [8] have very similar ideas as Lahiri, who argue that English NPI *any NP* is underlyingly *one NP+even* in negative sentences. In generic sentences, however, they argue that *any* is a superlative plus *even*, motivated by an observation made by Fauconnier [3] that (8) and (9) mean the same.

(8) Alfred will eat any food.

(9) Alfred will eat the most awful food.

Given the resemblance between Chinese *wh+dou* and Hindi *indefinite+even*, it is tempting to carry over the aforementioned two theories to the Chinese data. Despite the temptation, however, I will show that their theories make incorrect predictions on the Chinese data.

Another recent *even* theory of *dou* is proposed by Liu [11], who assumes the same semantics for *dou* as that given by Karttunen and Peters [5] to English *even*, (10). The *even*-sentences with *dou* are thus captured without ado.

(10) $[\![dou]\!] = \lambda p : \forall q[q \in \text{ALT}(p) \rightarrow q <_{likely} p].p$

As for a distributive sentence like (1), Liu assumes a covert *dist* operator [14] is present. The alternatives are formed by replacing the plurality associated with *dou* with its subparts. The prejacent logically entails all other alternatives, as shown in Figure 1, making the least likelihood automatically satisfied, wherefore the *even* flavor of *dou* is not sensed. I will show that this theory also makes incorrect predictions.

## 2.1 Problems with Lahiri's theory

Reducing *wh+dou* to *one NP+dou* in Chinese cannot explain their different grammatical status in (11) or (12) as an NPI. When Lisi forgot to count the cardinality of the students, (11b) is a grammatical complaint but (11a) is not. When Lisi held his debut in his hometown instead of any big city, (12a) is a grammatical description but (12b) is not.

(11) a. *Lisi shei dou mei shu
Lisi who DOU NEG count
Lisi didn't count anyone.

b. Lisi yi ge ren dou mei shu
Lisi one CL person DOU NEG count
Lisi didn't count even one person.

(12) a. Lisi shouyan na ge dachengshi dou mei ban. Ta laojia ban de
Lisi debut which CL big city DOU NEG hold. He hometown hold SFP
Lisi didn't hold his debut in any big city. He held it in his hometown.

b. *Lisi shouyan yi ge dachengshi dou mei ban...
Lisi debut one CL big city DOU NEG hold
Lisi didn't hold his debut in even one big city...

Moreover, *wh+dou* and *one NP+dou* behave differently in their universal uses. When discussing who can be the President, (13a) is a grammatical statement but (13b) is not. When evaluating the weight of a table, (14b) is a grammatical report but (14a) is not.

(13) a. shei dou keyi dang zongtong
who DOU can be president
Anyone can be the President.

b. *Yi ge ren dou keyi dang zongtong
one CL person DOU can be president
Even one person can be the President.

(14) a. *shei dou zugou taiqi zhe zhang zhuozi
who DOU sufficient lift this CL table
Anyone is sufficient to lift this table.

b. yi ge ren dou zugou taiqi zhe zhang zhuozi
one CL person DOU sufficient lift this CL table
Even one person is sufficient to lift this table.

Lahiri's theory that treats *wh+dou* and *one NP+dou* as semantically equivalent fails to explain their different distribution in the above examples.

## 2.2 Problems with Lee and Horn's theory

Lee and Horn [8] account for the NPI use of English *any* in the same spirit as Lahiri [7], analyzing *any* as underlyingly *indefinite+even* argued to be semantically equivalent to the minimizer *one NP+even*. The same problem plaguing Lahiri's theory on the NPI use thus carries over. As for the generic use, Lee and Horn take *any* as a superlative plus *even*, a theory that has its own problem.

(15) a. Any set is a subset of itself. b. *Even the biggest set is a subset of itself.

(16) a. shei dou you shengmu
who DOU have biological mom
Anyone has a biological mother.

b. *zuilaode ren dou you shengmu
oldest pers. DOU have biological mom
Even the oldest one has a biological mother.

(15a) states an axiom in Mathematics. The satisfaction of the predicate only has to do with the property of being a set, without activating any kind of scalar relationship between the sets. Actually, an attempt to impose such a scale will fail, (15b). Likewise, the predicate 'has a biological mother' only concerns the NP restriction *person* of *who* in (16) without reference to any scale. Hence the contrast between (16a) and (16b).

## 2.3 Problem with Liu's theory

Liu [11] ascribes the absence of the *even* flavor in distributive *dou*-sentences to the automatic satisfaction of the least likelihood presupposition imposed by *dou*. This analysis predicts the *even* flavor of *dou* to be subdued whenever the prejacent logically entails all other alternatives. While it seems to be true in the distributive (1), the prediction is not borne out in a collective sentence (17), even if the latter exhibits the same logical entailment relations between the prejacent and the alternatives as the former, see Figure 2[3].

(17) Yuehan, Mali he Bi'er yiqi dou keyi ji jin zhe ge hezi, geng bu yong
John Mary and Bill together DOU can squeeze into this CL box, more NEG need
shuo Yuehan he Mali liang ge ren le
say John and Mary two CL people SFP
EVEN J, M and B together can squeeze into the box. Let alone the two of J and M.

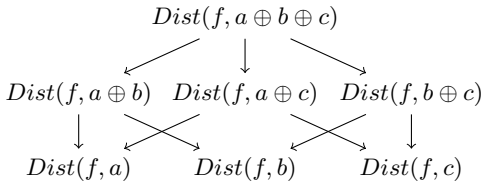


Figure 1: Distributive (1)

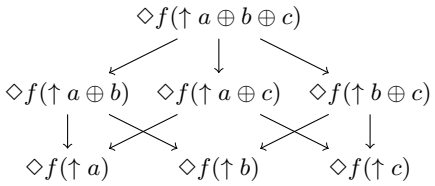


Figure 2: Collective (17)

## 2.4 Interim conclusion

Analyzing *dou* as *even* obligates a scalar relationship between the alternatives triggered by the focus associate of *dou*. This requirement, however, clashes with the unordered set denoted by a singular *wh*-indefinite in *wh*+*dou* constructions. In the NPI use, this clash is obscured when the predicate is distributive (3a), but is foregrounded when the predicate is collective relative to the indefinite (11a). In the universal use, this clash is also veiled by a distributive predicate (3b), but is spotlighted when the predicate comes with an obligatory scalar requirement on the argument indefinite (14b). Reducing *wh-indefinite*+*dou* to a scalar phrase+*dou*, be it a minimizer or a superlative, therefore, cannot explain the drastic differences in their compatibility/incompatibility with the same predicate.

[3] $f$ in Figure 1 and Figure 2 refers to the predicate in the respective sentences.

The distinction between Chinese *wh+dou* and *one NP/superlative+dou* is also corroborated by an old observation in English by Heim [4], who classified NPIs into ones with an inherent *even* and ones without. The former type includes *any/ever* and the latter includes minimizers *one NP+even*. Heim shows that minimizers are only grammatical in sentences that facilitate the satisfaction of their scalar implicatures, but *any* does not have such requirement. Hence the contrast between (18a) and (18b).

(18) a. ??Every restaurant that charges so much as a dime for iceberg lettuce happens to have four stars in the handbook.

b. Every restaurant that advertises in any of these papers happens to have four stars in the handbook.

Since *wh+dou* behaves in line with English *any* in its NPI and universal use, the conclusion drawn by Heim [4] casts further doubt on the *even* analyses of *dou*. In light of all the incorrect predictions made by the current *even* theories of *dou* and the corroboration from English data, I argue that the *even* analyses of *dou* are on the wrong track.

## 3 *Dou* as a simple distributor

I propose that *dou* can be treated as a simple distributor once we make two assumptions, both having been argued for elsewhere by other linguists. First, Mandarin Chinese allows a covert topic set present in sentences [12]. Second, the *even*-sentences with *dou* always have a semantically active preposition *lian*, overt or covert [15]. The semantic entry for *dou* in this proposal is as in (19).

(19) $[\![dou]\!]^g = \lambda P_{\tau t} \lambda Q_{\tau t}. \forall x[Q(x) \rightarrow P(x)]$[4]

### 3.1 The distributive sentences with *dou*

Chinese subjects are moved to the topic position by default [9], shown by the felicitous insertion of topic markers between the subject and the predicate (20). Moreover, with contextual support, it's free to drop the topic (21), wherefore the semantic equivalence of the following two sentences in the given context.

*Context: You ask John whether the students have come for class. John answers:*

(20) Xueshengmen a/na dou lai le
student TOP DOU come SFP
Students have all come.

(21) dou lai le
DOU come SFP
Students have all come.

In a simple distributive sentence like (1), *dou* distributes over the subject topic *they*. Suppose *they* denotes the set of John and Mary. We get the truth condition in (22) accordingly. When the topic set is covert whose value is determined by the context like (21), *dou* does the same job. Suppose the covert topic has an index $j$, we get the truth condition in (23) accordingly.

(22) $[\![(1)]\!]^g = 1$ iff $\forall x[x \in \{j, m\} \rightarrow \exists y[car(y) \wedge bgt(y)(x)]]$

(23) $[\![(21)]\!]^g = 1$ iff $\forall x[x \in g(j) \rightarrow come(x)]$

[4]As pointed out before, *dou* does not require to distribute down to atoms [10]. Here, I give this entry to simplify the illustration. A more rigorous entry is as in (i), where $C$ is a cover on the plurality associates with *dou* in the sense of Schwarzschild [14].

i $[\![dou]\!]^g = \lambda P_{\tau t} \lambda Q_{\tau t}. \forall x[Q(x) \wedge C(x) \rightarrow P(x)]$

The composition of distributive sentences with *dou* is quite straightforward. We now turn to the scalar *even* sentences with *dou*.

## 3.2 The *even* sentences with *dou*

In an *even* sentence with *dou*, the topic set is again optionally overt. Moreover, a preposition *lian* literally meaning 'including' that precedes the focus associate is optionally present as well. As a result, the following four sentences all mean the same in the given context.

*Context: John thinks Mary is the most popular student in their class because Bill, the aloofest student, likes her.*

(24) tamenban lian Bi'er$_F$ dou xihuan Mali
they class LIAN Bill DOU like Mary
(In their class), even Bill likes Mary.

(25) tamenban Bi'er$_F$ dou xihuan Mali
they class Bill DOU like Mary
(In their class), even Bill likes Mary.

(26) lian Bi'er$_F$ dou xihuan Mali
LIAN Bill DOU like Mary
(In their class), even Bill likes Mary.

(27) Bi'er$_F$ dou xihuan Mali
Bill DOU like Mary
(In their class), even Bill likes Mary.

Since *dou* is not *even*, as we have concluded, the semantic contribution of *even* is naturally shifted to *lian*[5]. I propose a semantic entry for *lian* as in (28). Specifically, its semantics is broken down to three ingredients. I name them likelihood presupposition, membership condition and property condition respectively.

(28) $[\![lian]\!]^w = \lambda x \lambda Y \lambda P :$
$\underbrace{\forall z[(z \in (\text{F-ALT}(x) \cap Y) \wedge z \neq x) \rightarrow \lambda w'.P_{w'}(Y \backslash \{x\}) >_{likely} \lambda w'.P_{w'}(Y \backslash \{z\})]}_{\text{likelihood presupposition}}.$
$\underbrace{x \in Y}_{\text{membership condition}} \wedge \underbrace{P_w(Y)}_{\text{property condition}}$

Take (24), whose logical form is given in Figure 3 for example. Suppose 'their class', the topic set, denotes the set of students $\{john, mary, bill, sue\}$. The focus alternatives F-ALT(John) is the set of all elements of the same type as John, i.e. $D_e$ [13]. The topic set confines the quantificational domain of *lian* to the members in it only.

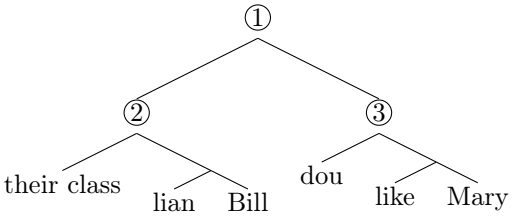


Figure 3: LF of (24)

The composition of (24) is shown in (29).

(29) a. $[\![③]\!]^{w,g} = \lambda Q.\forall x[x \in Q \rightarrow like(w)(m)(x)]$
b. $[\![②]\!]^{w,g} = \lambda P :$
$\underbrace{\forall z[(z \in \{j,m,s\}) \rightarrow \lambda w'.P_{w'}(\{j,m,s\}) >_{likely} \lambda w'.P_{w'}(\{j,m,b,s\} \backslash \{z\})]}_{\text{likelihood presupposition}}.$
$\underbrace{b \in \{j,m,b,s\}}_{\text{membership condition}} \wedge \underbrace{P_w(\{j,m,b,s\})}_{\text{property condition}}$

[5] A reviewer has brought to my attention a recent thesis by Zhao [16], who also argues to shift the *even* contribution to *lian*. A comparison between the current theory and his analysis will have to be left for another occasion.

c. $[\![①]\!]^{w,g} = 1$ iff
$\underbrace{\forall z[(z \in \{j,m,s\}) \rightarrow [\forall y \in \{j,m,s\}[\,\widehat{}\,like(y)]] >_{likely} [\forall y \in \{j,m,b,s\}\backslash\{z\}[\,\widehat{}\,like(m)(y)]]]}_{\text{likelihood presupposition}}$.
$\underbrace{b \in \{j,m,b,s\}}_{\text{membership condition}} \wedge \underbrace{\forall y \in \{j,m,b,s\}[like_w(m)(y)]}_{\text{property condition}}$

The membership condition says Bill is a member of the topic set of students. The property condition says *dou*-VP holds of the topic set, i.e. every student in the topic set likes Mary. We deduce from the two conditions that Bill likes Mary. The likelihood presupposition says for every other student $z$ distinct from Bill in the topic set, the likelihood that *dou*-VP holds of the topic set with Bill subtracted from the set is higher than the likelihood that *dou*-VP holds of the topic set with $z$ subtracted from it. If $z$ is Sue, the likelihood presupposition is reduced to (30), i.e. the likelihood that Sue likes Mary is greater than the likelihood that Bill likes Mary. Iterating through all the other students will lead to the conclusion that Bill is the least likely one among the students to like Mary.

(30) $[\forall y \in \{j,m,b,s\}\backslash\{b\}[like(m)(y)]] >_{likely} [\forall y \in \{j,m,b,s\}\backslash\{s\}[like(m)(y)]]$
$= [like_{w'}(m)(j) \wedge like_{w'}(m)(m) \wedge like_{w'}(m)(s)] >_{likely}$
$[like_{w'}(m)(j) \wedge like_{w'}(m)(m) \wedge like_{w'}(m)(b)]$
$= p_j \times p_m \times p_s > p_j \times p_m \times p_b$
$= p_s > p_b$ ($p_x$ stands for the likelihood that $x$ likes Mary)

The proposed semantics for *lian* can easily explain the *even* sentences with *dou* when the focus associate is a scalar term. In (31), the topic set is the set of time instants that have arrived, a set with the utterance time $u$ as the ending element $\{...u-\epsilon, ...u\}$. A covert *lian* is assumed to be present, giving the logical form as in (32). The truth condition derived for this sentence is in (33).

(31) wudian$_F$ dou dao le, zenme hai mei hao
5 o'clock DOU arrive Asp, how come still NEG good
Even 5 o'clock has arrived. How come you are still not done?

(32) LF: [$_{IP}$[$_{DP}${...$u-\epsilon$, ...$u$} [$_{PP}$lian 5]][dou [$_{VP}$ has arrived]]]

(33) $[\![31]\!]^{w,g} = 1$ iff
$\underbrace{\forall z[(z \in \{...,u\}\backslash\{5\}) \rightarrow [\forall y \in \{...,u\}\backslash\{5\}[\,\widehat{}\,arr(y)]] >_{likely} [\forall y \in \{...,u\}\backslash\{z\}[\,\widehat{}\,arr(y)]]]}_{\text{likelihood presupposition}}$.
$\underbrace{5 \in \{...,u\}}_{\text{membership condition}} \wedge \underbrace{\forall y \in \{...,u\}[arr_w(y)]}_{\text{property condition}}$

The membership condition says 5 o'clock is at least as early as the utterance time. The property condition says the utterance time and all the instants preceding it have arrived. From these two conditions, we know that 5 o'clock has arrived. The likelihood presupposition requires the likelihood of the instants in the topic set with 5 o'clock subtracted having all arrived be higher than the likelihood of the instants in the topic set with any non-5 o'clock instant subtracted having all arrived. This presupposition can only be satisfied when 5 o'clock is itself the utterance time. If 5 is not the utterance time, the likelihood that the instants in the topic set with 5 subtracted have all arrived is the same as the likelihood that the utterance time has arrived (due to the fact that for an instant to have arrived means for this instant and every instant preceding it to have arrived). As a result, for any instant $t$ in the topic set that is distinct from 5, the likelihood presupposition is reduced to (34). If $t$ is not the utterance time,

the likelihood on either side will be the same, both being the likelihood of the utterance time having arrived. If $t$ is the utterance time, the likelihood on the left will be smaller, not greater than the likelihood on the right, as the utterance time is later than any instant in the topic set with itself subtracted. In other words, when 5 is not the utterance time, the likelihood presupposition cannot be satisfied for any instant $t$ distinct from 5, be it the utterance time or not.

(34) $\lambda w'.arr_{w'}(u) >_{likely} [\forall y \in \{..., u\}\backslash\{t\}[\lambda w'.arr_{w'}(y)]]$

If 5 is the utterance time, however, $t$ has to be an instant preceding 5. The likelihood presupposition for any $t$ is accordingly reduced to (35). A later instant having arrived entails any earlier instant having arrived, thus is less likely. Since the utterance time 5 o'clock is later than any instant in the topic set with 5 subtracted, the presupposition is satisfied in this case.

(35) $[\forall y \in \{..., 5\}\backslash\{5\}[\lambda w'.arr_{w'}(y)]] >_{likely} [\lambda w'.arr_{w'}(5)]$

I have shown that we can keep *dou* as a simple distributor with the semantics in (19), as long as two assumptions are adopted. First, Mandarin Chinese allows a covert topic set. Second, in *even* sentences with *dou*, a focus operator *lian* is always present, covertly or overtly. These two assumptions have been argued for in previous literature and are not concocted specifically for the current proposal on *dou*.

# 4 Discussion

Taking *dou* as a distributor in (19) necessarily implements a universal quantification over the topic set. Recall that in (24), the property condition imposed by *lian* requires that every student in the class like Mary. Two reviewers wonder whether the universal quantification is overly strong, considering especially the fact that linguists [2, 5, 6] have encoded the quantification in the presupposition rather than the assertion of English *even*. Moreover, a sentence like (36) seems to be felicitous in a context where the speaker expresses her surprise that other people who are more punctual than John are late.

(36) Even John has arrived. How come the other people are still not here?

I do not have a satisfactory answer to this question yet and leave it for future research[6].

Another reviewer raises the question of how to account for a free choice sentence with *dou* (37) using the current proposal. While a complete discussion of the free choice *wh+dou* construction in Chinese is beyond this paper, I give the main idea of how the proposed theory will explain (37) here.

(37) Yuehan huozhe Mali dou keyi dang zongtong
John or Mary DOU can be president
John can be the president and Mary can be the president.

The disjunctive marker *or* forms a set out of its flanking arguments. The subject topic in (37), therefore, is a set of John and Mary $\{j, m\}$. The VP that *dou* takes as its first input is a modal one — 'can be the president', which is interpreted as a set of individuals, with each individual being the president in an epistemically accessible world, formally represented in (38). *Dou* then claims that each member in the subject topic set is in the set denoted by the VP, giving a truth condition as in (39).

[6]Rooth [13] treats the quantification of the alternatives as part of the conventional implicature of *even*, similar to my stance in this paper. However, he argues for an existential quantification rather than a universal one.

(38) $\lambda x.\exists w'[w'$ is epistemically accessible to $w_@ \wedge President(x)$ *in* $w']$

(39) $[\![(37)]\!] = 1$ iff
$\forall x[x \in \{j, m\} \rightarrow \exists w'[w'$ is epistemically accessible to $w_@ \wedge President(x)$ *in* $w']]$

Still another question from the reviewers is why a negation can be inserted before *dou* in a simple distributive sentence (40), but not in an *even* sentence (41). The answer has two parts. First of all, the negation is a focal negation locating syntactically higher in the structure with an optional focal marker *shi* after it. Second, the negation follows the topic set. In (40), the topic set is overt but in (41) it is covert. An analogous *even* sentence to be compared to (40) should be the grammatical (42) rather than the ungrammatical (41).

(40) Tamenban bu (shi) dou xihuan Mali
they class NEG FOC DOU like Mary
Their class don't all like Mary.

(41) *Lian Yuehan bu dou xihuan Mali
LIAN John NEG DOU like Mary
It's not that even John likes Mary.

(42) (tamenban) bu (shi) lian Yuehan dou xihuan Mali
their class NEG FOC LIAN John DOU like Mary
Among their class, it is not the case that even John likes Mary.

## 5 Conclusion

This paper discusses the multi-functional particle *dou* in Mandarin Chinese. Specifically, I argue to keep *dou* as a simple distributor. The recent *even* theories of *dou* have been shown to make incorrect predictions on the (un)grammaticality of the NPI and universal use of *wh+dou* constructions with certain predicates as well as on the presence/absence of the *even* flavor of a *dou*-sentence. Adopting two assumptions that have been argued for in Mandarin — Mandarin Chinese allows a covert topic set and *even*-sentences in Mandarin allow an optionally overt focus operator *lian* — I propose a simple distributor semantics of *dou* and shift the labor of *even* to the focus operator *lian*. The proposal is able to capture the distributive and *even* sentences with *dou*. The question of whether it is too strong to make a universal assertion in the *even* sentences with *dou* that the predicate holds of all the members in the topic set is left for future research.

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