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Minimizers and EVEN

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Abstract: It is widely acknowledged that polarity sensitivity pertains to the lexical nature of NPI minimizers, phrases denoting a minimal quantity, extent or degree. This paper, however, proposes that so-called “negative polarity” of Mandarin Chinese minimizers (*yi*-CL-N ‘one.CL + N’ and *yidian*-N ‘one.point N’) is not lexically determined, but is facilitated by utilizing the existing *lian... dou* ‘including... all’ EVEN construction. Specifically, total negation is decomposed into a scalar operator *lian*, which evokes a set of order ranked alternatives determined in context, and the maximizing/universal operator *dou* ‘all’ that quantifies over the contextual alternatives plus the focused minimizer, which is placed at the end of the scale. The scalar minimizer syntactically scopes over the negation to represent the logic of $\forall\neg$. This paper further distinguishes minimizers from lexical NPI *renhe* ‘any’ with respect to (i) scoping out of the negation for the former, (ii) *being* irrelevant to the non-veridical licensing conditions that otherwise license *any* and NPI-*renhe*, (iii) a clausemate relation between *dou* and negation, and (iv) the lack of intervention effects of strong quantifiers between the minimizers and negation. The study lends further support to the claim that scalar EVEN is construed with minimizers. A comparison of Chinese minimizers with those in Hindi and Japanese has an implication for varieties of coding polarity ranging from purely lexical to syntactical means crosslinguistically.

Keywords: negative polarity, minimizer, EVEN, focus, scalar implicature

1 Introduction

The study of negative polarity items (NPI) has been centered on two major issues: the licensing problem and the sensitivity problem. Despite various approaches to the licensing contexts of NPIs,¹ the general consensus is that

¹ The semantic licensing contexts having been proposed include the Downward Entailing (DE) context (Ladusaw 1979), the Anti-Additive condition (Zwarts 1998), Strawson Entailment context (von Stechow 1999), to anti-/non-veridicality contexts in (Zwarts 1995; Giannakidou 1998), etc.

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in the minimizers (Schmerling 1971; Heim 1984; Bhatt and Schwarz 2004; cf. Lee and Horn 1994), e. g., *a thing, a damn, lift a finger, not so much as*, etc. Unlike English minimizers lacking overt marking of *even*, it has been cross linguistically attested that minimizer NPIs may be morphologically coded as a weak predicate (*one*) plus a particle meaning EVEN, such as those in Hindi (e. g., Lahiri 1998), Japanese (Nakanishi 2006), and Korean (Sells and Kim 2006; Sells 2011) as in (3).

- (3) a. Hindi: *ek-bhii* ‘one-even’
 b.Japanese: *hito-ri-mo* ‘one.person-also/all’, *iti-do-mo* ‘one.time-also/all’
 c.Korean: *hana-to* ‘one.thing-even/only’, *han salam-to* ‘one.person-even/only’

By contrast, unlike the above morphologically encoding *one* + EVEN, Mandarin Chinese (henceforth Chinese) utilizes a compositional means of expressing ‘zero’, evidenced by the *lian... dou* ‘including... all’ EVEN construction. As illustrated in (4) and (5), the (non-canonical pre-verbal) minimal quantity indefinite objects (*yi*-CL-N ‘one-N’ or *yidian*-N ‘little N’) co-occur with *lian* and *dou*. The indefinites and *dou* precede the predicate negation, rendering total negation isomorphic to the logical representation of *all not* ($\forall\rightarrow$).

- (4) Ta (*lian*) *yiju hua dou mei shuo*.
 he LIAN one.CL word DOU not.have say
 ‘He didn’t say a word.’
- (5) a. Ta (*lian*) *yi-dian cuowu dou mei fan*.
 he LIAN one.point mistake DOU not.have make
 ‘He didn’t make even a mistake.’
 b. ..Ta (*lian*) *yidian pingguo dou mei chi*.
 he.. LIAN one.point apple DOU not.have eat
 ‘He didn’t eat apple at all.’

Two questions immediately arise. Firstly, are the ‘indefinite DPs lexically determined NPI minimizers (cf. Hole 2004)? To what extent are they different from or similar to the lexical NPI-*renhe* ‘any’ in Chinese, cf. Wang and Hsieh (1996), Kuo (2003), and Yang (2008), etc.? Are the environments that license weak NPIs like English *any* (Giannakidou 2011) or Chinese NPI-*renhe* also applied to licensing these indefinite “minimizers”? It has been acknowledged (Krifka 1995; Giannakidou 2011, among others) that NPI *any* is lexically distinguished from minimizers in the sense that weak/broad NPIs like *any* appear in nonveridical

environments (negative or affective contexts, conditionals, questions, etc. in Zwarts (1995) Giannakidou (1998, 2011)), whereas strong (strict) NPIs including minimizers are narrowly licensed in antiverdical contexts (negation and *without*), such as Greek minimizers *dhino* ‘a damn,’ *leksi* ‘a word,’ NPI-EVEN *oute* ‘even.NPI’ in Giannakidou (2011). As the comparison between Chinese minimizers and NPI-*renhe* is relatively scarce in the literature, this paper first presents their asymmetrical syntactic properties. It then shows that the intended “negative polarity” involving minimizers is formed due to the existing *lian... dou* construction, syntactically deriving total negation involving EVEN + *one-N* + *all* + *not*. It is this syntactic construction that distinguishes these “minimizers” from lexical NPI-*renhe*, irrelevant to the polarity licensing contexts. Moreover, as *lian... dou* occurs in positive sentences as well, the intended “negative polarity” is not an idiomatic construction to minimizers.

The second issue concerns the composition of the scalar operator *lian* ‘including’ and universal quantifier/maximizer *dou* ‘all’ in the *lian... dou* EVEN structure. Particularly, this study echoes Schmerling’s (1971) and Heim’s (1984) claim of an implicit *even* expressed in English minimizers (*a thing, a damn*, etc.), (cf. Lee and Horn 1994) in the sense that EVEN is syntactically manifested in Chinese but implicit in English. Eventually, the result of this study has an implication that polarity sensitivity is not limited to a lexical notion (e. g., also attested in Dutch taboo phrases and English comparative small clause in Postma (2001), or *the hell* discussed in Hoeksema and Napoli (2008)). Rather, Chinese witnesses a purely syntactic means of expressing total negation. This suggests a continuum of having lexical/synthetic and analytical ends: Greek NPIs falling at the lexical end, but Chinese toward the analytical extreme.

This paper is organized as follows. Section 2 provides a background of minimizers and *lian... dou* construction. Section 3 presents the contrasts between Chinese lexical NPI *renhe* and the minimal quantity indefinites in discussion, with respect to their scope relation with negation (Section 3.1), licensing conditions (Section 3.2), clausemate condition (Section 3.3), and the intervention effects (Section 3.4), and the difference between minimizers and the Free Choice *renhe* (Section 3.5). Section 4 proposes a compositional approach and details the scalar implicature interpretation of *lian... dou* sentences. This current proposal resonates Heim’s (1984) distinction between English minimizers from *any* (cf. Lee and Horn 1994), the former of which contain an implicit *even* (also in Schmerling 1971), to be detailed in Section 5.1. Section 5.2 provides further crosslinguistic evidence from Hindi *ek bhii* ‘one + even, any’ and Japanese *hito-ri-mo* ‘one-CL-also/all’ minimizers. Section 6 summarizes the study.

2 Preliminary

The study of Chinese NPIs has been largely focused on NPI-*renhe* ‘any.’ Like English *any*, which is licensed by contexts of expressing downward-entailment (Ladusaw 1979) or non-veridicality (Zwarts 1995; Giannakidou 1998, 2011), and occurs in the scope of some licenser (Klima 1964; Linebarger 1980, 1987; Progovac 1988; among many others), Chinese *renhe*-N has been shown to be licensed by a c-commanding negative element as in (7); see Wang and Hsieh (1996), Kuo (2003), Yang (2008), among others.

- (6) a. *I didn't see anybody.*
 b. *I saw anybody.
 c. *Anybody did not eat watermelon.
- (7) a. *Ta mei-you chi renhe dongxi.*
 he not-have eat any thing
 ‘He didn’t eat anything.’
 b. **Ta chi-le renhe dongxi.*
 he eat-ASP any thing
 ‘*He ate anything.’
 c. .. **Renhe ren mei-you chi dongxi.*
 any people not-have eat thing
 ‘*Anybody didn’t eat.’

Despite much literature on *renhe*, little attention has been paid to its seemingly counterparts: the indefinites that denote a minimal quantity, extent or degree, including cardinal *yi*-CL-N ‘one-classifier-N,’ or mass *yidian*-N ‘one.point, a little’.² In addition to their occurrence in (*lian*)... *dou* sentences as in (4) and (5), they may appear in both positive and negative canonical (SVO) sentences, as shown in (8a), (9a) vs. (8b), (9b), respectively.

² Kuo (2003) considers *ban*-CL-Ns ‘half’ as a lexical NPI, as it only occurs in negative sentences, vs. *lian*-minimizers and FC-*renhe*. Presumably it differs from the minimizers in *lian*... *dou* in discussion and will be left aside.

- (i) *Ta *(mei) you ban.dian sixin.* (Shi 1992: 53)
 he not have half. CL partial.heart
 ‘He *(doesn’t) have/s any partial feeling.’
- (ii) **Bange-ren dou keyi lai.*
 half.CL-person DOU may come.

- (8) a. *Ta shuo le yi-ju hua.*³
 he say ASP one.CL word
 'He said a word.'
- b. *Ta mei shuo yi-ju hua.*
 he not.have say one.CL word
 (i) 'He didn't say one word(, but he said more than one words).'
 (ii) '..., (rather he said a lot).'
 (iii) 'He didn't say any word.'
- (9) a. *Ta fan le yi-dian cuowu/ chi le yi-dian pingguo.*
 He make ASP one.point mistake eat ASP one.point apple
 'He made a little mistake/ate a little apple.'
- b.*Ta mei fan yi-dian cuowu/ chi yi-dian pingguo.*
 he.. not.have make one.point mistake eat one.point apple
 (i) 'He didn't make a little mistake/eat a little apple (he made/ate some.)'
 (ii) '... (he made a lot mistakes/ate many apples.)'
 (iii) 'He didn't make any mistake/eat any apple.'

On one hand, the weak DPs are less informative in the positive (8a)/(9a) than being interpreted as the canonical cardinal reading or contextual superlatives. On the other hand, they are ambiguous in the negative sentences (8b)/(9b) among the readings of 'contrary of X' (*not one, more than one*) in (b-i), the litotes reading (*a lot*) in (b-ii) and total negation as in (b-iii). In order to be more informative, speakers may utilize *lian... dou* 'Lit: including... all' EVEN construction to express emphasis and scalar implicature. When the direct object is focused by *lian*, it is obligatorily preposed (SOV or OSV).⁴ Thus, the (preverbal)

³ The object *yiben shu* 'one.CL book' may also be rendered either specific or non-specific readings, irrelevant to the current concern.

⁴ Canonical post-verbal objects in Chinese may be preposed to the clause medial preverbal (SOV) or sentence initial (OSV) positions as in (ib) for serving focus function in both positions, or topic function in the latter; see Shyu's (2014) review.

- (i) a. Zhangsan (mei) kan-guo [zhexie shu].
 Zhangsan (not) read- Exp these-CL book
 'Zhangsan has (not) read these books.'
- b. (zhexie shu) Zhangsan (zhexie shu) (mei) kan-guo.
 (these-CL book) Zhangsan (these-CL book) (not) read- Exp
 '(these books) Zhangsan (these books) has (not) read.'

minimizers in positive *lian... dou* sentences as in (10) are presupposed as the least expected entity (scalar superlative) rather than simply denoting their cardinal meaning. As for the negative *lian... dou*, the focused DPs are presupposed as the most expected entity as in (11) and (12): since even the most expected entity is negated, the sentences convey an emphasis of ‘zero.’ Note that *dou* has to precede the negation.

- (10) a. Ta (lian) yi.kuai qian dou yao sheng.
 he LIAN one.CL dollar DOU want save
 ‘He will save even one dollar.’
 b.Ta (lian) yidian pingguo dou yao chi.
 he.. LIAN one.point apple DOU want eat
 ‘He ate even a bit of apple.’

- (11) a. Ta (lian) yiju hua dou mei shuo. = (4a)
he LIAN one.CL word DOU not.have say
 ‘He didn’t say even a word.’

By contrast, *lian*-objects are obligatorily displaced either in the medial position preceding *dou* (iia), or in sentence initial position as in (iib).

- (ii) a. Zhangsan [lian zhexie shu] dou (mei) kan-guo.
 Zhangsan LIAN these-CL book DOU (not) read- Exp
 b. [Lian zhexie shu] Zhangsan dou (mei) kan-guo.
 LIAN these-CL book Zhangsan DOU (not) read- Exp
 ‘Zhangsan has (not) read even these books.’

In addition, other elements can be focused by *lian* as well, such as the subject focus in (iii) and adjunct in (iv); see Paris (1979), Shyu (1995).

- (iii) [Lian Zhangsan] dou (mei) kan-guo zhexie shu.
 LIAN Zhangsan DOU (not) read-Exp these-CL book
 ‘Even Zhangsan has (not) read these books.’
 (iv) Zhangsan [lian zhouri] dou (mei) shangban.
 Zhangsan LIAN Sunday DOU (not) work
 ‘Zhangsan (doesn’t) work(s) even on Sundays.’

Unlike *lian... dou* requiring obligatory object preposing, other EVEN focus adverbs, e.g., *shenzhi*, *jingran*, and *juran*, do not; see Shyu’s (2004) discussion of their asymmetries with *lian... dou*.

- (v) Zhangsan shenzhi/jingran/juran kan-guo [zhexie shu].
 Zhangsan EVEN read- Exp these-CL book
 ‘Zhangsan even has read these books.’

b. Ta (lian) yiben shu dou mei du.
he LIAN one.CL book DOU not.have read
 ‘He didn’t read even a book.’

- (12) a. *Ta (lian) yi-dian cuowu dou mei fan.* = (5)
 he LIAN one.point mistake DOU not.have make
 ‘He didn’t even make a little mistake.’
 b. ...*Ta (lian) yidian pingguo dou mei chi.*
 he.. LIAN one.point apple DOU not.have eat
 ‘He didn’t even eat the apple a bit.’

For the ease of discussion, I will term these weak DPs as (syntactical) minimizers, which are designated to the minimal quantity/degree indefinites occurring in *lian... dou* sentences. However, I do not intend to make a lexical distinction between “minimizer” and “diminisher” made by Bolinger (1972), because Mandarin minimizers may stay in-situ in both positive and negative canonical (SVO) sentences.

Note that the total negation strengthening reading in (4) and (5) is actually contributed by the existing *lian... dou* construction, which allows a covert *lian* when preceding minimizers, on a par with (11) and (12). Two immediate questions arise as to whether the minimizers in (4), (5), (8b) and (9b) are parallel with lexical NPI *rehne*. Firstly, if they were, why can they occur in positive sentences that lack a negative licenser such as in (8a), (9a), and (10), in contrast with the obligatory requirement of negation as in (7)? Secondly, it is widely known that Chinese universal quantifier *dou* quantifies over plural phrases to its left (Lee 1986; Cheng 1995; Lin 1998, among many others), as shown in (13). Why can it be associated with a singular minimizer as in (4) when there are no other possible (or covert) plural nouns to be associated with it?⁵

⁵ It is true that *dou* can be associated with a covert plural phrase as in (i), as pointed out by an anonymous reviewer, or even a covert temporal adverbial as in (ii). However, when there are no such situations available, sentence (11) with *dou*-quantified singular subject is ungrammatical.

- (i) A: *Zhexie yifu, ni xihuan ma?*
 these clothes, you like Q
 ‘These clothes, do you like (them)?’
 B: *Wo dou xihuan.*
 I all like
 ‘I like (them) all.’

- (ii) *Ta dou bu xiwan.*
 he all not wash.dish
 ‘He (always) doesn’t wash dishes.’

- (13) *Tamen/*Ta dou hen xihuan wo.*
 they/he DOU very like I
 ‘They/*He all like(s) me.’

Another related issue concerns to what extent the *lian*-minimizer differs from free choice *rehne*, such as in (14).⁶

- (14) *Ta renhe dongxi dou mei-you chi.*
 he any thing DOU not-have eat
 ‘He didn’t eat anything.’

The fact that *lian*-minimizer occurs in either positive or negative sentences leads us to hypothesize that the rendered “negative polarity” in (11) and (12) is facilitated by the existing *lian... dou* construction, which requires the *lian*-focused DPs to scope over the negation and precede *dou*, isomorphic to the logical representation *all not* ($\forall\neg$) without recourse to lexical polarity sensitivity, to be detailed in Section 4.3. Moreover, total negation of *lian*-minimizers is derived no differently from that of deriving regular DPs and *lian*-focused regular plural DPs ((ii) in footnote 4) to precede *dou* and negation to be discussed in the next section. This indicates that the minimizers in discussion are *not* inherently lexical NPI’s, in contrast with the lexical NPI *renhe* and the widely held lexical view of NPI minimizers in the literature (e. g., Giannakidou 2011 among others).

⁶ Note that *renhe*-N associated with the obligatory *dou* is treated as a free-choice (FC) *renhe* as in the positive sentence in (i) and negative sentence in (8); see Cheng and Giannakidou (2013). The (a)symmetries between *lian*-minimizers and FC-*renhe* will be discussed in Section 3.5.

- (i) a. *Ta renhe dongxi *(dou) chi-le.*
 He any thing DOU eat-ASP
 ‘He ate everything.’
 b. *Wulun renhe ren, wo dou renshi.*
 No.matter any person I DOU know
 ‘I know every person (no matter who they are).’
- (ii) *Renhe-ren *(dou) keyi lai.*
 any-person DOU may come.
 ‘Anyone can come.’

3 Lexical NPI's versus Chinese minimizers

In Giannakidou's (2011) survey of NPI's, she explicitly treats minimizers in Greek, Japanese and Korean as “strong” or “strict” (lexical) NPIs, which are narrowly licensed in antiveridical contexts, such as with negation or the connective *without* (15), but not non-veridical contexts, such as in conditionals or questions as in (16), (also in Giannakidou 1998).

(15) a. Greek

Dhen dhino dhekara jia to ti th' apojinis.
 not give.1sg damn about the what will happen.2sg
 'I don't give a damn about what will happen to you!'

b.Japanese

Watasi-wa gakusei-o {dare-mo/hito-ri-mo} mi-nakat-ta.
 I-TOP student-ACC who-MO/ one-CL-MO(EVEN) see-NEG-PAST
 'He didn't see any students.'

c. ...Korean

Kunun pamasay hanmati-to ha-ci an-ess-ta.
 he-TOP all night a word-even say-COMP NEG-PAST-DECL
 'He didn't say a word all night.'

(16) a. Greek

**An dhinis dhekara, tha me akousis.*
 if Give damn you'll listen
 'If you give a damn, you'll listen.'

b. ...Japanese

*.....*Gakusei-o {dare-mo/hito-ri-mo} mita-ra siras-ero.*
 student-ACC who-MO/ one-CL-MO see-if inform-NEG
 'If you see any student, inform me.'

c. ..Korean

**Ne-ka hanmati-to ha-myen, nay-ka ne-lul cwukyepери-keyss-ta.*
you-NOM a word-even say-if I- NOM you-ACC kill-FUT-DECL
 'If you say a word, I'll kill you.'

In addition, Greek NPI-EVEN *oute* is considered by her as a strict NPI as it is only licensed by an antiveridical licenser as in (17a), but not non-veridical triggers as in (17b, c).

(17) Greek

- a. *Dhen theli na dhi oute to idhio tou to pedi.*
 not want.3sg subj see.3sg even.NPI the self his the child
 ‘He doesn’t want to see even his own child.’
- b. **Theli na theli oute to idhio tou to pedi.*
 ‘He wants to see even his own child.’
- c. **Idhe oute to idhio tou to pedi?*
 ‘Did he see even his own child?’
 (Giannakidou 2011: #65)

As for Chinese, little attention has been paid to the distinction between lexical NPI-*renhe* and minimizers (cf. Kuo 2003). In the following subsections I present their asymmetric properties and call for a syntactic means for expressing total negation.

3.1 Scope out of negation

In contrast with lexical NPI *renhe* in (7), which is required to occur in the scope of negation, Chinese minimizers may occur in either positive or negative sentences. As discussed in Section 2, when minimizers occur in positive sentences, they function as a cardinal numeral or canonical degree modifier as (8a) and (9a). When they occur in negative sentences, they are three-way ambiguous: simply negating the quantity/degree (*other than one, other than a little*) as in (8b-i), expressing the litotes reading (*not one, not little meaning a lot*) (8b-ii), or total negation (8b-iii). In order to avoid ambiguity and be more informative, the *lian... dou* construction is preferred to emphasize either the scalar superlative use of the minimizers in positive sentences, and total negation in negative ones. In either case, the object minimizer is obligatorily displaced to precede *dou* in the preverbal position required by the *lian... dou* construction. Negative sentences (11a) and (12a) are repeated below in (11’) and (12’) to show that *dou* is obligatory.⁷

⁷ Although Chinese allows object preposing (SOV) even without *dou*, the emphatic total negation requires *dou*. Even if speakers utter sentences like (i) without *dou* (from Shi 1992), I assume that *dou* is PF deleted and the intended emphatic total negation reading remains intact.

- (i) *Ta yiju hua bu shuo.*
 He one.cl word not speak
 ‘Intended: He does not speak a word.’

- (11') *Ta (lian) yiju hua *(dou) mei shuo.* = (11a)
 he LIAN one.CL word DOU not.have say
 'He didn't say even a word.'
- (12') *Ta (lian) yi-dian cuowu *(dou) mei fan.* = (12a)
 He LIAN one.point mistake DOU not.have make
 'He didn't make a little mistake.'

In general the syntactic order of *dou* and negation determines their relative scope. For example, the plural subject *they* and the object *these books* in (18) and (19) respectively are universally negated when *dou* precedes the negation as in (a) sentences; by contrast, they render existential meaning when negation precedes *dou*, as shown in (b) examples.

- (18) a. *Tamen dou meiyou lai.* (*dou* > neg, $\forall\sim$)
 they DOU not.have come
 'They all didn't come.'
- b.*Tamen meiyou dou lai.* (neg > *dou*, $\sim\forall$)
 they not.have DOU come
 'Not all of them came.'
- (19) a. *Zhangsan zhexieshu dou mei you duwan.* (*dou* > neg, $\forall\sim$)
 they these.book DOU not.have read.finish
 'Zhangsan hasn't finished reading all the books.'
- b. *Zhangsan zhexieshu meiyou dou duwan.* (neg > *dou*, $\sim\forall$)
 they these.book not.have DOU read
 'Not all of books Zhangsan has finished reading.'

As mentioned above, the ungrammaticality of (6c) and (7c) is because the subject lexical NPIs (*any*, *renhe*) are not in the scope of the predicate negation. It does follow that the subject *lian*-minimizer in (20) is not in the scope of the negation as well, syntactically representing the semantics of *lian* + one-N + *all* + NEG, '*even one not, all not, not even one*'. Its comparison with FC *renhe* will be further discussed in Section 3.5.

- (6) c. **Anybody did not eat watermelon.*
- (7) c. **[Renhe ren] mei-you chi dongxi.*
 any people not-have eat thing
 '*Anybody didn't eat.'

- (20) (*Lian*) *yige ren dou mei lai!*
 LIAN one.CL person DOU not.have come
 ‘Not even one man came. (Nobody came.)’

We thus see that it is the *lian... dou* structure that makes the *lian*-minimizer to scope over negation giving rise to the intended “negative polarity”.

3.2 Licensing conditions

Like English *any*, Chinese NPI *renhe* is licensed by negation as well as in non-veridical contexts, such as in a conditional protasis as in (21), or in a Yes/No question as in (22) (Wang and Hsieh 1996; Kuo 2003, etc.).

- (21) *Ruguo Zhangsan yao mai renhe dongxi, qing tongzhi wo.*
 if Zhangsan want buy any thing please inform me
 ‘If Zhangsan needs anything, please inform me.’
- (22) *Zhangsan chi-le renhe-dongxi ma?*
 Zhangsan eat-ASP any-thing Q-yes/no
 ‘Did Zhangsan eat anything?’

By contrast, the in-situ object minimizers in (23) and (24) do not express the strengthening effect as NPI *renhe* does in (21) and (22). Rather they are interpreted as their canonical existential reading.

- (23) *Ruguo Zhangsan chi-le yidian dongxi, ta jiu hui you jingshen.*
 if Zhangsan eat-ASP one.point thing he then have energy
 ‘If Zhangsan eats something, he will become energetic.’
- (24) *Zhangsan chi-le yidian dongxi ma?*
 Zhangsan eat-ASP one.point thing Q-yes/no
 ‘Did Zhangsan eat something?’

Total negation, however, is derived when they occur in negative *lian... dou* sentences as illustrated in (25) and (26) respectively, in which the object minimizer is preposed to precede *dou*.

- (25) *Ruguo Zhangsan (lian) yidian dongxi dou mei chi, ta*
 if Zhangsan LIAN one.point thing DOU not eat he
hui meiyou jingshen.
 will not-have energy
 ‘If Zhangsan doesn’t eat a bit, he will not have energy.’
- (26) *Zhangsan (lian) yidian dongxi dou mei chi ma?*
 Zhangsan LIAN one.point thing DOU not eat Q-yes/no
 ‘Didn’t Zhangsan eat a bit?’

This thus indicates that total negation is syntactically derived in *lian... dou* construction, independent of the non-veridical contexts that otherwise license regular NPI-*renhe*.

3.3 Clausemate relation between *dou* and negation

It has been noted that lexical NPI-*renhe* can be licensed by a negation in a higher clause as shown in (27) and (28) from Wang and Hsieh (1996) and Kuo (2003), on a par with the NPI’s occurring in the scope of the so-called NEG raising predicate (dated back to Klima 1964; Horn 1978; and see the review in Collins and Postal 2014).

- (27) *Zhangsan *(bu) xiwang [renhe ren lai zhao ta].*
 Zhangsan not hope any people come look.for he
 ‘Zhangsan *(doesn’t) hope(s) anyone will come to look for him.’
 (Kuo 2003: 224)
- (28) *Zhangsan *(bu) xiwang [haizi kan renhe manhua].*
 Zhangsan not hope kid read any comic.strip
 ‘Zhangsan *(doesn’t) hope(s) kids read any comic strips.’

However, the above condition says nothing about the intended total negation in the embedded clause shown in (29) and (30). In addition, when the negation occurs in the higher clause as in (31) and (32), the embedded minimizers (*yiju hua* ‘one.CL word’ and *yikou fan* ‘one-mouthful of rice’) express their cardinal existential reading: ‘that the kids utter even a word is not expected by Zhangsan’, and ‘that Lisi ate even a mouthful of rice surprised Zhangsan’, respectively, rather than the intended negative polarity as marked as a “#” sign.

- (29) *Zhangsan xiwang haizi (lian) yiju hua dou bu yao shuo*
 Zhangsan hope kid LIAN one.CL word DOU not want speak
 ‘Zhangsan hopes that kids don’t utter even a word.’
- (30) *Zhangsan xiwang Lisi (lian) yikou fan dou bu chi.*
 Zhangsan hope Lisi LIAN one.CL rice DOU not eat
 ‘Zhangsan hopes Lisi doesn’t eat even a bit.’
- (31) #*Zhangsan bu xiwang haizi (lian) yiju hua dou yao shuo.*
 Zhangsan not hope kid LIAN one.CL word DOU want say
 ‘#Intended: Zhangsan doesn’t hope the kids would say even a word.’
- (32) #*Zhangsan bu xiangxin Lisi (lian) yikou fan dou chi-xiqu le.*
 Zhangsan not believe Lisi LIAN one.CL rice DOU eat-down ASP
 ‘Zhangsan doesn’t believe Lisi ate even a bit of rice.’

This contrast indicates that a clausemate relation should be respected between *dou* and negation; thus when it is not, the intended total negation is not obtained. In other words, while NPI-*renhe* is licensed in-situ by a c-commanding Neg or licenser, *lian*-DP is required to have a Spec-head agreement relation within *DouP*. The total negation is possible when *dou* scopes higher than Neg in the same clause.⁸

This clausemate relation between *dou* and negation holds not only in *lian...* *dou* but also in sentences involving FC *renhe*. As shown in (33), *dou* and its associated FC *renhe* have to precede negation. When the negation appears in the matrix NEG raising predicate in (34), it doesn’t trigger NPI-*renhe*; rather the universal FC-*renhe* remains due to the occurrence of *dou*, cf. (27). However, the NPI-*renhe* reading becomes possible when *dou* is absent as shown in (35), on a par with (27) and (28).

⁸ The requirement of two NPI licensing conditions has been mentioned in Benmamoun (1997: 272), as repeated in (i), which I owe to one of the anonymous reviewers for directing my attention to.

- (i) An NPI is licensed if:
 (a) it is c-commanded by Neg or
 (b) it is in Spec-head agreement with Neg or an element containing Neg.

Like in Moroccan Arabic, Mandarin has two licensing conditions. However, in Mandarin it is the Spec-head agreement between *lian*-DP and *dou* in *DouP*, plus the scope relation between *dou* and Neg that results in total negation. Note that *dou* and Neg are not likely to be incorporated in the same head, because they may scope over each other, as shown in (18) and (19).

- (33) *Zhangsan renheren_i dou bu (*dou) guanxin e_i.* (✓~/*~✓)
 Zhangsan anyone DOU not (*DOU) care.
 ‘(Lit.) Zhangsan, anyone doesn’t care./ Zhangsan doesn’t care anyone.’
- (34) *Wo bu xiwang [Zhangsan renheren_i dou guanxin e_i].*
 I not hope Zhangsan anyone DOU care.
 ‘They don’t hope that Zhangsan cares all the people. (He may care some).’
- (35) *Wo bu xiangxin Zhangsan guanxin renheren.*
 I not believe Zhangsan care anyone
 ‘They don’t believe that Zhangsan cares anyone. (He doesn’t care anyone).’

One question raised by one of the anonymous reviewers concerns a complication of the possible long-distance displacement of *lian*-DPs. Following Shyu’s (1995, 2014) long-distance movement of the *lian*-DP (evidenced by the embedded *dou* and Binding reconstruction effects in her discussion), I suggest that the *lian*-minimizer in (36a) is construed with the embedded *dou* and negation, rendering total negation. By contrast, the intended polarity reading is hard to receive in (36b) when *dou* is not interpreted with the negation in the same clause, on a par with the contrast between (29) and (31).⁹

- (36) a. [*Lian yiju hua*] *Zhangsan xiwang [haizi **dou bu** yao shuo].*
 LIAN one.CL word Zhangsan hope kid DOU not want speak
 ‘(Lit.) Even a word, Zhangsan hopes that kids don’t utter.’
 ‘Zhangsan hopes that the kids don’t utter even a word.’ ≈(29)
- b.? [*Lian yiju hua*] *Zhangsan **bu** xiwang*
 LIAN one.CL word Zhangsan not hope
 [*haizi **dou** shuo-chulai*].
 kid DOU speak.out
 ‘(Lit.) Even a word, Zhangsan doesn’t hope that kids would say.’
 ‘#Intended: Zhangsan doesn’t hope the kids would say even a word.’ ≈(31)

⁹ In addition to the movement structure as schematized in (i-a), Shyu (1995, 2014: 117) further observes a base-generation structure as in (i-b), in which *dou* appears in the matrix clause.

- (i) a. *Lian*-DP_i Subj... [CP Subj *t*_i **dou** (neg) V *t*_i]
 b. *Lian*-DP_i Subj **dou**-V... [CP Subj (neg) V *e*_i]

It amounts to saying that *dou* determines the interpretation scope of *lian*-NP. I will not go into details here.

To recapitulate, the position of *dou* that is construed with FC-*renhe* and *lian*-DP syntactically determines its relative scope with negation within a minimal clause domain regardless of the position of the *lian*-DP (S-initial or S-medial), thus irrelevant to the NEG raising context that otherwise licenses NPI-*renhe*.

The contrast between NPI-*renhe* and *lian*-minimizers is further attested when they occur in islands. While the matrix negation can license NPI-*renhe* in complex DP and adjunct clause islands as in (37a) and (37b) respectively (as noted by Yang (2008: Ch. 5)), the matrix negation cannot do so to *lian*-minimizer in islands to render the intended readings of (38a-ii), (38b-ii); rather, the negative polarity reading (38a-i), (38b-i) obtains when the negation stays in a clause-mate relationship with *dou*.

- (37) a. *Zhangsan bu du* [_{DP}[_{CP} [*piping renhe-ren*] *de wenzhang*].
 Zhangsan not read criticize any-person COMP article
 ‘Zhangsan never reads article(s) that criticize anyone.’
- b. *Mei-you ren hui* [*yinwei ni shuo-le renhe hua*] *jiu xiangxin ni*.
 Not-have one will because you say-ASP any word] then believe you
 ‘No one will believe you because you said anything.’
- (38) a. *Zhangsan (#bu) renshi* [_{DP}[_{CP} [*e lian yiju hua dou (bu) shuo*] *de ren*].
 Zhangsan not know LIAN one.CL word DOU (not) say Comp person
 i. ‘Zhangsan knows the person who didn’t say even a word.’
 ii. ‘#Zhangsan doesn’t know the person who said any word.’
- b.*Laoshi (#bu) hui* [*yinwei ni lian yiju hua dou (bu) shuo*] *jiu*
teacher (#not) will because you LIAN one.CL word DOU (not) say] then
*chufa ni*.
discipline you
 i. ‘Teacher will discipline you because you don’t say even a word.’
 ii. ‘#Teacher won’t discipline you because you say any word.’

3.4 Lack of intervention effects

In English strong quantifiers (*every, most, all*) block NPI-*any* licensing as in (39); for example, Linebarger’s (1987) Immediate Scope Constraint requires NPIs and negation be in the immediate scope, not be separated by “logical” elements. Similarly, NPI-*renhe* licensing is blocked by strong quantifiers (*meige-N* ‘every’ and *dabufen-N* ‘most’) at syntax as noted by Kuo (2003), and Yang (2008), repeated in (40).

- (39) a. *He didn't give her any credits.*
 b. **He didn't give everyone any credits.*
- (40) a. **Zhangsan mei-you song [mei yi-ge/dabufende xuesheng]*
 Zhangsan not- havegive every one-CL/most.DE student
 renhe liwu.
 any gift
 *Zhangsan didn't give every student/most students any gift.'
- b.*Zhangsan mei-you song [xuesheng/ yi-ge/ na-ge xuesheng]*
Zhangsan not-have give student/ one-CL/that.CL student
 renhe liwu.
 any gift
*'Zhangsan didn't give students/a student/that student any gift.'*
(Kuo 2003: 225)

By contrast, the strong quantifiers *meige-/dabufende-N* do not affect the interpretation of the in-situ object minimizer. On a par with the readings of the in-situ object in (8b) and (9b), the direct object minimizer in (41) is ambiguous among existential, litotes, and total negation readings.¹⁰

- (41) *Zhangsan mei-you gei mei-yi-ge/dabufende xuesheng*
 Zhangsan not-have give every one-CL/most.DE student
 [yi.dian zanmei].
 one.point praise
 'Intended: Zhangsan didn't give every student/most students a little complement.'

10 Further evidence of the lack of intervention effects is given in (i), in which the *lian*-minimizer object, though intervened by a universal QP subject, is construed with the negation rendering total negation.

- (i) [*Lian yiju hua*] *meige ren dou bu shuo.*
 LIAN one.CL word everyone DOU not want
 'Everyone didn't say even a word.'

The current discussion is in line with the point made by Guerzoni (2006), who states that while the intervention effect is relevant to *any* and *ever* type NPIs, it has nothing to do with the minimizers like *budge an inch* and *in years*. The unacceptability of Linebarger's (1987) (iib) is not due to an intervention effect, but due to a failure of the presupposition of (covert) *even* involving in the minimizing expressions, following Heim (1984). See Section 5.1 for further discussion.

- (ii) a. I didn't budge.
 b. **I didn't say [that I budgeted]/[that John has seen Mary in years]/[that John likes Mary one bit].*

Likewise, the embedded (in-situ) object minimizer in (42a) is interpreted existentially or with litotes reading, (42a-i). Note that the negative polarity reading of (42a-ii) as well as (42b-ii) is hard to obtain due to the violation of clausemate relation (between *dou* and negation) as mentioned above, rather than the intervention of the embedded strong quantifier subject in discussion here.

- (42) a. #Zhangsan **bu** renwei [mei yi-ge xuesheng]
 Zhangsan not think every one-CL student
dou you [yidian haixiu]
 DOU have one.point embarrassment
 (i) ‘Zhangsan doesn’t think everyone is embarrassed a little.’
 (ii) ‘Intended: #Zhangsan doesn’t think that every student is embarrassed at all.’
- b. #Zhangsan **bu** renwei [zhexie xuesheng] **dou** you
Zhangsan not think these student DOU
 [yidian haixiu].
 have one.point embarrassment
 (i) ‘Zhangsan doesn’t think these students are embarrassed a little.’
 (ii) ‘Intended: #Zhangsan doesn’t think that these students are embarrassed at all.’

The lack of intervention effect is further attested when the *lian*-minimizer co-occurs with a wh-phrase. In Chinese wh-phrase can be interpreted as free choice indefinite when quantified by *dou*. Cheng (1995: 220) has observed an adjacency requirement of *dou*’s binding the wh-indefinite. As repeated in (43), the object *shenme* ‘what’ being adjacent to *dou* is interpreted as *everything*, whereas the non-adjacent *shei* ‘who’ as the interrogative *who* as in (43i).¹¹ Other interpretations, as in (43ii, iii), are not possible.

- (43) *Shei shenme dou chi*
 who what DOU eat
 (i) ‘Who eats everything?’
 (ii) ‘*What does everyone eat?’
 (iii) ‘*Everyone eats everything.’

¹¹ Cheng (1995) proposes that wh-indefinite, as a variable, is adjacent to *dou* because it has to be bound (m-commanded) by the polarity licenser at S-structure.

By contrast, *dou*'s quantifying over the *lian*-minimizer preempts its associating with the wh-indefinite. No matter whether the *lian*-minimizer is adjacent to *dou* as in (44a), or topicalized to the sentence-initial position as in (44b), it is construed with *dou* rendering (44b-i). Thus, unlike (43), the subject wh-phrase in (44b), though adjacent to *dou*, is not interpreted as an wh-indefinite reading in (44b-ii).

- (44) a. *Shei [lian-yikuai qian] dou bu yao?*
 who LIAN-one.CL dollar DOU not want
 b. *[Lian-yikuai qian] shei dou bu yao?*
 LIAN-one.CL dollar who DOU not want
 (i) 'Who doesn't want even a dollar?'
 (ii) '*Whoever doesn't want even a dollar.'

This indicates that the wh-indefinite does not intervene *dou*'s quantificational construal with the *lian*-minimizer.

3.5 Free choice?

Having seen the above asymmetric properties between lexical NPI-*renhe* and *lian*-minimizer, one may wonder if the minimizers may pattern with free choice (FC-) *renhe* in (45), since both of them require *dou*, and scope out of negation. In addition, FC-*renhe* subject is well-formed.¹²

- (45) *Ta [renhe shu] *(dou) meiyou kan.*
 he any book DOU not.have read
 'He didn't read any book.'
 (46) *[Renhe ren] *(dou) mei lai.*
 any person DOU not.have come
 'Nobody came.'

¹² Wang and Hsieh (1996) and Yang (2008) treat *renhe* in (7) as a typical NPI, whereas *renhe* in (45, 46) as a Free Choice (FC-) *any*. Kuo (2003), however, considers both types as NPIs, but terms the former as existential (\exists) NPI and the latter as universal (\forall) NPI, in line with Krifka's (1995) weak and strong NPI distinction, respectively.

FC-*renhe* further differs from NPI-*renhe* with respect to the clausemate relationship with *dou*, and the lack of an intervention effect. Firstly, unlike NPI-*renhe*, *dou*-related FC-*renhe* cannot be interpreted existentially even in the scope of a higher negation, as illustrated in (47) from Kuo (2003). Thus, (47a) is interpreted as negating the proposition that everyone can talk, rather than *no one can talk*. Total negation becomes possible when the FC-*renhe* is construed with an embedded negation in (47b): rendering *it is not the case that all the (any) people cannot talk*.

- (47) a. *Bu shi renhe ren dou neng fayan.*¹³
 not be any people DOU can talk
 ‘It is not the case that everyone can talk.’
 (Kuo 2003: 229)
- b. *Bu shi renhe ren dou bu neng fayan.*
 not be any people DOU not can talk
 ‘It is not the case that anyone cannot talk.’

Secondly, FC-*renhe* does not display intervention effects as shown in (48), in contrast with that attested in NPI-*renhe* (40a)/(49) (Kuo 2003).

- (48) *Zhangsan bu xiwang [mei-ge xuesheng] dou*
 Zhangsan not hope every-CL student DOU any
renhe wenti dou da-dui.
 question DOU answer-right
 ‘Zhangsan does not hope that every student answers every question correctly.’
- (49) **Zhangsan bu xiwang [mei-ge xuesheng] dou da-dui*
 Zhangsan not hope every-CL student DOU answer-right
da-dui renhe wenti.
 any question
 ‘Zhangsan does not hope that every student answers any question correctly.’

Despite the above symmetries between FC-*renhe* and *lian*-minimizers, grouping the latter as the former type runs into problems (vs. Lahiri 1998). It has been

¹³ Any in English (i) is also rendered FC reading.

(i) *It is not that anyone may come.*

known that FC-*renhe* occurs in modals and generic sentences, as shown in (50). By contrast, *lian*-minimizers in these sentences do not yield to the intended readings of the FC *renhe*, as illustrated in (51).

- (50) a. *Renhe ren dou hui kaiche.*
 any person DOU can drive
 ‘Any people can drive.’
- b. *Women renhe dongxi dou keyi paishe.*
 we any thing DOU can film
 ‘We can film anything.’
- (51) a. #*(Lian) yi-ge ren dou hui kaiche.*
 LIAN one.CL person DOU can drive
 ‘Even a man can drive.’
 ‘Intended: #Anyone can drive.’
- b. #*Women lian yi-ge gushi dou keyi xie.*
 we LIAN one.CL story DOU can write
 ‘We can write even one story.’
 ‘Intended: #We can write any story.’

Sentences in (51) are not acceptable without considering the conventional implicature contributed by *lian*. In other words, *renhe* (NPI or FC) introduces alternatives that are contextually specified set of properties, e. g., people in the world relevant in the context of (50). By contrast, the alternatives evoked by the minimizers in (51) include not only the asserted individual or entity but also contextually determined propositions that are ranked against some domains; see Section 4.3 for details. In short, minimizers as *yi*-CL-N and *yidian*-N do not parallel canonical FC-*renhe* with respect to the scalar implicature contributed by *lian*. In the following section, it is shown that previous analyses that maneuver means of fulfilling c-command licensing condition fails to account for Chinese minimizers. Consequently, I propose a syntactic composition approach.

4 A compositional approach

It is generally acknowledged that lexical NPI's are in the scope of their licensors. The syntactic analyses of licensing conditions are dated back to Klima's

(1964) “in-construction-with”, Jackendoff’s (1972) “precedence and command”, Lasnik’s (1972) “command” relations, and the “c-command” relation adopted in Progovac (1988), Laka (1990) among many others. Nevertheless, it has been documented that syntactic “c-command” condition fails to account for a variety of polarity formations; see reviews in Horn and Kato (2000) and Hoeksema (2000). This section shows that this condition has nothing to do the rendition of total negation of *lian*-minimizers, which however is derived no differently from deriving that of regular DPs in sentences involving *dou* and negation (e. g., (18a), (19a), (52) and (65)) and *lian*-focused regular plural DPs ((ii) in footnote 4 and (64b)). Namely, the *dou*-associated DPs have to scope out of the negation, syntactically and semantically isomorphic to the logical representation of $\forall\bar{\cdot}$. Consequently, it is suggested that the traditional hierarchical (e. g., c-command) condition for licensing lexical NPI’s are irrelevant here. Before turning to the derivation in Section 4.3, I will first examine two logically possible approaches that adhere to the c-command licensing condition: (i) the LF movement of the negation (in Section 4.1) and (ii) the reconstruction of the minimizer (in Section 4.2). Then, it is concluded that neither of the mechanisms can account for the Chinese data in discussion. Consequently an approach of syntactic composition isomorphic to the logical representation is proposed.

4.1 LF movement of negation for negative polarity licensing?

One might postulate the LF movement of negation in order to maintain the general consensus of the c-command licensing requirement, such as Mahajan’s (1990) analysis for Hindi NPI *koi bhii* ‘lit. someone + emphatic marker, *anyone*’; but see Kumar’s (2006: 132–133) objection to Mahajan’s claim, and Benmamoun’s (1997) objection to NPI licensing at LF in Moroccan Arabic. If the negation *mei* were able to raise to c-command the *lian*-minimizer at LF, it would have predicted that (8b) and (11a) would have been interpreted the same, namely *neg* > *one*-N rendering negative polarity. Contrary to the fact, (8b) is three-way ambiguous, as mentioned in Section 1, whereas (11a) is unambiguously total negation.

- (8) b. *Ta mei shuo yi-ju hua.*
 he not.have say one.CL word
 i. ‘He didn’t say one word(, but he said more than one words).’
 ii. ‘..., (rather he said a lot).’
 iii. ‘He didn’t say any word.’

- (11) a. *Ta (lian) yiju hua dou mei shuo.*
 he LIAN one.CL word DOU not.have say
 ‘He didn’t say even a word.’

Another more serious problem concerns the generality of the LF movement of the negation. As mentioned in Section 3.1, when plural (quantifying) objects are preposed and quantified by *dou*, they are syntactically outside the scope of negation, isomorphic to their semantic interpretation, e. g., *many/every* > Neg in (52), not vice versa.

- (52) *Ta henduo/suoyoude shu dou mei du.*
 he many all book DOU not.have read
 ‘There are many books that he hasn’t read yet.’
 many/every > Neg/*Neg > many/every

If LF movement of the negation were equally possible in both (11a) and (52), it would have wrongly allowed the scope of Neg > *many/every*. In short, postulating the LF movement of negation solely for licensing minimizers would be ad hoc and results in over-generalization.

4.2 Reconstruction of the S-medial minimizers?

It has been suggested by Barss (1986) and Chomsky (1995) that scrambled NPIs are to be LF reconstructed to a position where they can be c-commanded by their licensors. This approach, however, is threatened by the lack of reconstruction effects in Hindi’s scrambled DPs as discussed in Kumar (2006). Similarly, it has also been shown by Shyu (1995; 2001: 96) that medial *lian*-phrases are in the surface construal with their antecedents in terms of Binding Principle; e. g., the reflexive *taziji* in (53b) and the proper noun *Zhangsan* in (54b) are interpreted as in their surface medial preverbal position as in (53a) and (53a), respectively.¹⁴ It is thus evident that the medial *lian*-DP is interpreted in their surface position.

¹⁴ This observation has led Shyu (1995; 2001: 96) to argue for a syntactic A-movement of the *lian*-DP to the medial preverbal position on account of the lack of reconstruction effects. As one of the anonymous reviewers points out, the link between A-movement of the lack of reconstruction requires further scrutiny, since there is evidence that A-movement also reconstructs (e. g., Lebeaux 2009). Moreover, the reviewer suggests another possibility of base-generating the *lian*-DP, binding an empty object *pro*. I will leave these analyses open here.

- (53) a. *Wo bei Zhangsan qian-zou le [yiben guanyu tazji_i de shu]*
 I_{by} Zhangsan rob-away ASP one-CL about himself's book
 '(lit.) I was robbed by Zhangsan of a book about himself.'
- b.??*Wo lian [yiben guanyu tazji_i de*
 LIAN one-CL about himself's book DOU by Zhangsan rob-away
shu]_j dou bei Zhangsan_i qian-zou le t_j
 'I was robbed of [even a book about himself_i book] by Zhangsan_i.'
- (54) a. **Wo bei ta_i qian-zou le [yiben guanyu Zhangsan_i de shu].*
 I by him rob-away ASP one-CL about Zhangsan's book
 '(lit.) I was robbed by him_i of a book about Zhangsan_i.'
- b. ?*Wolian [Zhangsan_i de shu]_j dou bei ta_i qian-zou le t_j*
 I... LIAN Zhangsan's book DOU by he rob-away ASP
 'I was robbed of [even Zhangsan_i's book] by him_i.'

4.3 Syntactic decomposability

Regardless of various approaches of the licensing conditions (syntactic, semantic and pragmatic), the general consensus is that polarity sensitivity pertains to the inherently lexical properties of NPIs (Giannakidou 2011; Israel 2011, among many others). However, some polarity items are lexically indeterminants, e. g., the taboo expressions *the hell/devil* discussed in Hoeksema and Napoli (2008), who have noted that (their G-type) *the hell/devil...* "sometimes produces negative polarity items [55] and sometimes positive polarity item [56], which is 'not uncommon'" (p. 556) in languages. Moreover, another use of *the hell* (their B-type) occurs either in positive (57a) or regular negative (57b) sentences.

(55) *I don't know where the hell he lives.*

(56) **Don't get the hell off my property.*

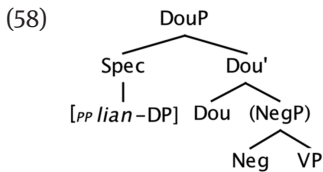
(57) a. *She scares the hell out of me.* (B-type)

b. *..We did not beat the hell out of him.*

It has also been documented that NPI formation does not solely pertain to lexical property. Specifically Postma (2001) has proposed a syntactic construal for Dutch taboo words like *e:ne + zak/flikker/duvel...* 'any.DRAGTONE' + scrotum/

faggot/devil... ’ and English comparative individual-level small clause like *I have never seen a man more proud/smart*.¹⁵

Our previous discussion of the asymmetric properties between *lian*-minimizers and lexical NPI-*renhe* in Section 3 strongly argues for the syntactic formation of negative “polarity”. While the NPI-*renhe* is licensed in the scope of negation (i. e., $\neg\exists$), total negation involving the minimizer is compositionally derived via *lian... dou* construction, which requires the *lian*-minimizer to scope out of the negation, thus syntactically and semantically isomorphic to the logical representation of $\forall\neg$. Assuming *dou* heads a functional projection DouP, and internally merges with the *lian*-DP, as shown in (58), cf. Shyu (1995). It is suggested that *lian* is syntactically represented as a preposition (e. g., Lü 1984), assuming that it has been grammaticalized from a lexical verb meaning *connect*, *include* into a functional category; see references cited in Pai (2013).



An immediate question arises as to why *dou* can quantify over the singular weak QP, seeing that *dou* has been widely known as quantifying over strong QPs (or Liu’s 1990 G-specific QPs) and plural DPs (e. g., Cheng 1995; Lin 1998). How does the “universal” reading obtain? I claim that it is actually facilitated by *lian*, which plays two major functions. Like regular focus particles or adverbs, it functions as a focus particle (Paris 1998; Shyu 1995, 2004) that evokes a set of propositional alternatives (Rooth 1985, 1996, etc.) that are salient in the context. In addition, it is a scalar operator that places the asserted proposition containing the focus at an (near) endpoint of a scale of likelihood/expectedness in the set (cf. Xiang 2008). This facilitates *dou* to quantify over the focus and the members in the alternative set (Shyu 2004) without violating the general constraint of *dou* quantification.

Following the widely acknowledged *conventional implicature* of EVEN introduced by Karttunen and Peters (1979) and adapting Rooth’s (1985) formulation, I

¹⁵ Postma (2001) proposes a defective IP analysis for these NPI constructions; namely, negative polarity is formed when they are licensed by an anti-additive context, which requires an underlying small clause structure with defective I⁰ licensed under construal with a dominating I⁰. The syntactic construal of NPI formation adds a dimension to the complexity and varieties of polarity items (e. g., Hoeksema 2000; Israel 2011, etc.). I thank one of the anonymous reviewers for directing my attention to this issue.

show that *lian... dou* syntactically manifests the decomposability of quantificational and scalar properties. Consider the semantics of *lian... dou* stated in (59). (59i) is the asserted proposition Q containing the focus DP (**a**) attributed with the property P , e. g., *Lisi ate a* in (60). *Lian*, as a focus operator, introduces a set of alternatives C with the property P other than the asserted proposition $P(\mathbf{a})$ in a pragmatically relevant context under consideration (Rooth 1985), as shown in (59ii). Moreover, the scalar function of *lian* is stated in (59iii): the asserted proposition containing the focus is placed at the (near) endpoint of the likelihood/expectedness scale (Fauconnier 1975a, 1975b; Karttunen and Peters 1979; Rooth 1985; or Kay's 1990 the most informative in normal situations) that includes the alternative set C and Q . Then (59iv) adds the function of *dou* in the nucleus part: it universally quantifies over the variables (z) in a union set containing the variable x in the alternative set C and the focused DP $\tilde{\mathbf{a}}$ having the characteristic function of P .¹⁶ It then follows that in (60) and (61iv) among all the contextually relevant things that Lisi may possibly eat, his eating a mouthful of rice is considered as the (near) least expected.

- (59) i. Assertion: $Q = \tilde{P}(\mathbf{a})$
 ii. $\exists P [C(P) \ \& \ \hat{P} \neq Q]$ –Existential implicature
 iii. $\forall P [[C(P) \ \& \ \hat{P} \neq Q]]$
 \rightarrow exceed' (likelihood' (\hat{P}), likelihood' (Q)) –Scalar implicature of *lian*
 iv. $\dots \lambda P. \lambda a. \forall x [x \in C \ \& \ x \neq a \ \& \ \text{exceed}'(\text{likelihood}'(\hat{P}(x)), \text{likelihood}'(\tilde{P}(a)))]$
 $\rightarrow \forall z [z \in C \cup \{a\} \rightarrow \hat{P}(z)]$ –Implicature of *lian... dou*

- (60) *Lisi lian yikou fan dou chi-le.*
 Lisi LIAN one-CL rice DOU eat-ASP
 'Lisi ate even a mouthful of rice.'

- (61) i. $Q = [(\mathbf{a}) (\tilde{\text{eat}}'(l))] = \tilde{\text{eat}}'(l, \text{a-mouthful-of-rice})'$
 ii. $\exists P [\exists x [P = \hat{\text{eat}}'(l, x) \ \& \ \hat{P} \neq \text{eat}'(l, \text{a-mouthful-of-rice})']]$
 iii. $\forall P [[\exists x [P = \hat{\text{eat}}'(l, x) \ \& \ \hat{P} \neq \text{eat}'(l, \text{a-mouthful-of-rice})']]]$
 \rightarrow ..exceed' (likelihood' ($\hat{\text{eat}}'(l, x)$), likelihood' ($\tilde{\text{eat}}'(l, \text{a-mouthful-of-rice})'$))]
 iv. $\dots \lambda P. \forall x [x \in C \ \& \ x \neq \text{a-mouthful-of-rice}' \ \&$

¹⁶ As pointed out by Chin-Man Kuo (p.c. 2015), *dou* quantifies over “pragmatic” plurals in *lian... dou*, while it quantifies over ‘semantic’ plurals in canonical *dou* sentences. The distinction is beyond the scope of this study and will be put aside here. I also owe a great deal to C.-M. Kuo for his valuable input to my formulation of the *lian... dou* semantics.

exceed' (likelihood'(\sim eat'(l,x)), likelihood'(\sim eat'(l,a-mouthful-of-rice'))))
 $\rightarrow \forall z[z \in \text{CU}\{\text{a-mouthful-of-rice}'\} \rightarrow \hat{P}(z)]$

As for the negative *lian... dou* clause as in (62), the negation reverses the scale of the scalar implicature of EVEN (e. g., Fauconnier 1975a, 1975b; Karttunen and Peters 1979, Kay 1990; Lahiri 1998; Lee 2004, etc.). The implicature in (63iii) is interpreted as *not eating a is the least likely thing*, inferring that eating *a* as the most likely proposition compared with other “*x*’s” that Lisi may eat in C.

(62) *Lisi lian yi-kou fan dou mei chi.*
 Lisi LIAN one-CL rice DOU not.have eat
 ‘Lisi didn’t eat even one mouthful of rice. \approx Lisi didn’t eat anything.’

(63) i. $Q = [(a) (\sim \sim \text{eat}'(l))] = \sim \text{eat}'(l, \text{a-mouthful-of-rice}')$
 ii. $\exists P [\exists x [\hat{P} = \sim \text{eat}'(l, x) \ \& \ \hat{P} \neq \sim \text{eat}'(l, \text{a-mouthful-of-rice}')]]$
 iii. $\forall P [\exists x [P = \sim \text{eat}'(l, x) \ \& \ \hat{P} \neq \sim \text{eat}'(l, \text{a-mouthful-of-rice}')]]$
 \rightarrow exceed' (likelihood' (\sim eat'(l, x)), likelihood' (\sim eat'(l, a-mouthful-of-rice'))))
 iv. $\lambda P. \forall x [x \in C \ \& \ x \neq \text{a-mouthful-of-rice}' \ \& \ \text{exceed}' (\text{likelihood}'(\sim \text{eat}'(l,x)), \text{likelihood}'(\sim \text{eat}'(l,\text{a-mouthful-of-rice}')))]$
 $\rightarrow \forall z[z \in \text{CU}\{\text{a-mouthful-of-rice}'\} \rightarrow \hat{P}(z)]$

This naturally accounts for why minimizers are preferred in negative contexts, e. g., (60) vs. (62).¹⁷ Entities with a minimal quantity/quality are usually the lowest bound at a contextually relevant scale. Totally negating the minimal value via *lian... dou* thus achieves an emphatic informative function as in (62). On the contrary, the plain affirmative counterpart as in (60) is not informative unless the focus expresses the superlative or at the extreme of a contextual scale, in the sense of Fauconnier’s (1975a, b) scalar principle. This point is further illustrated by the contrast between (51’) and (51b): in the former the superlative use of the minimizer in the affirmative sentence is perfect. By

¹⁷ This line of thinking is reminiscent of the semantics and pragmatics of minimizers discussed by Krifka (1995), who treats minimizers as parallel to strong NPIs (e. g., emphatic *ANY*). They bear heavy stress, and they are interpreted as having *even*. In addition to the Assert and Scal. Assert operators that operate on the regular (weak) NPIs (such as unstressed *any*), minimizers convey pragmatic information of excluding minor entities in context. Here EVEN comes into play. Hence, in the sentences *Mary didn’t drink a drop*, Mary’s drinking a drop is stronger (less likely) than any alternative assertions due to his “principle of extremity” (p. 239).

contrast, when the minimizer *a story* is employed without a scalar context in the affirmative (51b), it becomes infelicitous.

(51') *Women lian yi-ge zui fu-zade gushi dou hui xie.*
 we LIAN one.CL most complicated story DOU can write
 'We can write even the most complicated story.'

(51) b. #*Women lian yi-ge gushi dou keyi xie.*
 we LIAN one.CL story DOU can write
 'We can write even one story.'

Although the weak DPs (*yi-CL-N/yidian-N*) pertain to semantic endpoints, polarity strengthening is facilitated by the scalar operator *lian* and universal operator *dou*. Without such a syntactic mechanism, they do not necessarily give rise to the intended scalar strengthening effect. This amounts to saying that *lian* and *dou* compositionally manifest the strengthening effect; *lian* widens the quantification domain including not only the asserted proposition containing the focused DP, but also its contextually relevant propositions that contain members alternative to the focused DP. In addition, the asserted proposition containing the focused minimizer in a negative sentence is ranked as the highest of the scale of likelihood in context. When the quantification domain being evoked, *dou* universally quantifies over the members in the domain. We thus exemplify a syntactic representation of decomposing the existential and scalar implicatures. Traditionally it is this strengthening effect that correlates the minimizers in discussion with regular NPI's. Nevertheless, this paper stresses that the strengthening effect is lexically encoded in the latter, but syntactically derived in the former on account of the availability of *lian... dou* construction in Chinese.

5 Related issues

5.1 Implicit EVEN

Having seen that minimizers in *dou* sentences are actually construed with overt *lian*, in this section I further show that this point is syntactically, semantically, and pragmatically motivated. As mentioned in Section 2, a *lian*-focused object has to precede the obligatory *dou* in the preverbal position, as shown in (64); see Shyu (1995) and Shyu's (2014) review.

- (64) a. **Ta dou mei-mai [lian zhexie shu].*
 he DOU not-buy LIAN these book
 b. *Ta [lian zhexie shu] dou mei mai.*
 he LIAN these book DOU not.have buy
 ‘He didn’t buy even these books.’

Due to the overt *lian* in (64b), the plural DP *zhexie shu* ‘these books’ is scalar implicated, whereas the bare plural object in (65) lacks this interpretation.

- (65) *Ta [zhexie shu] dou mei mai.*
 he this.some book DOU not.have buy
 ‘He didn’t buy these books.’

However, the informative scalar implicature obtains when the focused phrase is a minimizer no matter whether *lian* is overt or phonetically null, as shown in (66), which is rendered as reading a book being considered as the mostly expected thing for him to do but he failed to do so.¹⁸

- (66) *Ta (lian) yi.ben shu dou meiyou kan.*
 he LIAN one.CL book DOU not.have read
 ‘He didn’t read even a book.’

The scalar reading expressed in (4), (5) and (66) even without the overt *lian* echoes the implicit *even* construed with English NPI-minimizers like *say a word*, *do a thing*, *give a dime*, etc. Schmerling (1971) considers (67a) as semantically equivalent to (68), and *even* is interpreted in (69) even though it is optional.

- (67) a. *I didn’t do a thing.*
 b. **I did a thing.*
- (68) *I didn’t do even one thing.*
- (69) a. *This problem is so simple (even) a two-year-old could solve it.*
 b.*In a decent society (even) the poorest child should be able to get adequate medicalcare.*
 (Schmerling 1971: 204)

18 This explains why *lian* can be optional when its focused phrase is singular and denotes a minimum quantity, as noted in Shyu (1995).

She further notes that *do a thing* or *a thing* are distinguished from NPIs, because they can occur in positive sentences as in (70). Another reason is that they are productive as they can be selected by verbs freely as show in (71) despite that only few VPs are idiomatic, like *lift a finger* or *move a muscle*.

(70) I did a terrible thing.

(71) *I didn't see/hear/say/find/remember/need/explain a thing.*

Following Schmerling's view, Heim (1984) notes that quantificational superlatives (e. g., *so much as x*) and these indefinite minimizers (e. g., *say a word*, *bat an eyelash*) are NPI's with inherent *even*, "semantically equivalent to expressions containing the word *even*" (p. 105). A piece of Heim's evidence comes from the contrast between the lexical NPIs (*any*, *ever*) in (72) and the minimizers in (73) in the similar contexts. The downward entailing (Ladusaw 1979) condition *every* can successfully license the typical NPIs in the former, but not necessarily for the latter type in (73b). Heim assumes that there is an invisible *even* in *so much as a dime* that contributes the conventional implicature, although *even* does not affect the truth condition of the sentences.¹⁹

(72) a. *Every restaurant that I have ever gone to 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.*

(Heim 1984: 105)

(73) a. *Every restaurant that charges so much as a dime for iceberg lettuce ought to be closed down.*

b. *....??Every restaurant that charges so much as a dime for iceberg lettuce actually has*

.....four stars in the handbook.

.....(Heim 1984: 104)

Thus, (73a) is acceptable because its implicature is not controversial. Among the values other than a dime that "every restaurant that charges for x for iceberg

¹⁹ Heim (1984) further notes that while the minimizers and the superlatives contain *even*, e. g., *even so much as a dime* and *even the least bit of taste*, lexical NPI's (*any*, *ever*) does not contain *even*, contrary to Lee and Horn (1994), who treat *any* uniformly as *a* + EVEN. The current study conforms Heim's claim with respect to the distinctions between *lian*-minimizers and NPI-*renhe* discussed in Section 3.

lettuce ought to be closed down”, *one dime* is less expected than those other values. It is natural that restaurants charging such low prices tend to be closed down. However, the implicature expressed in (73b) is unnatural. The presupposition that every restaurant charging some $x \neq 10\text{¢}$ for lettuce and being four stars is not conventionally held. Despite that 10¢ is ranked at the bottom of the scale of the price, this implicature is quite undesirable in natural contexts. The above discussion indicates that the NPI rendition of English minimizers is contributed by an implicit *even*, lending further support to Chinese *lian*’s interplaying with minimizers. However, unlike English implicit *even*, Chinese utilizes this *lian...dou* construction to syntactically represent total negation and EVEN implicature.

5.2 A comparison with Hindi and Japanese

The above discussion indicates that *even* is implicitly interpreted with English minimizers like *a thing*. By contrast, some languages explicitly encode scalar EVEN morphemes suffixed to minimizers, such as Hindi *ekbhii* and Japanese one-CL-*mo*. In Hindi, some NPI minimizers are made up of an indefinite or a weak predicate indicating small amounts and the emphatic particle *bhii* ‘even, also’ such as *ek bhii* ‘one + even, any’ and *zaraa bhii* ‘a little + even, even a little,’ as studied by Lahiri (1998) and Kumar (2006).²⁰ In Japanese, Nakanishi (2006) has proposed a compositional analysis of Japanese NPI’s containing *-mo/-demo/-dake demo* in contrast to the traditional lexical approach, and argues that Japanese *hito-ri-mo* ‘one-CL-also/all’ is decomposed to *one + even* (cf. *-mo* as the universal particle in Hagstrom (1998)).

This section presents some parallels of these minimizers in comparison with those in Chinese, thus lending further support for the presence of the scalar EVEN with minimizers. Firstly, these minimizers scope out of the negation, as they may occur in the subject position in (74) and (75).²¹

²⁰ Unlike Chinese *lian*-miniziers discussed above and Japanese one-CL-N-*mo* (Nakanish 2006), Lahiri (1998) shows that *ekbhii* is licensed not only in negation but also in non-veridical contexts, such as conditionals, adversative predicates, and interrogatives. However, Kumar (2006) notes that some non-veridical contexts are not felicitous for *ekbhii*. A detailed study is beyond the scope of this paper and will be left for future research.

²¹ Hasegawa (1991, 1994) has pointed out that *-mo* phrase is interpreted outside the scope of negation when occurring with sentential negation, also noted by Miyagawa (2010: 137).

- (i) *John-ga hon-mo kaw-anakat-ta.*
 John-NOM book-MO buy-NEG-PAST
 ‘A book is one of things that John did not buy.’

- (74) Hindi
 [ek bhii] aadmii *(nahiiN) aayaa.
 one even man not came
 ‘No man came.’
 (Lahiri 1998: 61)

- (75) Japanese
 [Hito-ri]-mo ko-na-katta.
 one-CL-MO come-NEG-PAST
 ‘(lit.) Even one person didn’t come.’ = Nobody came.
 (Nakanishi 2006)

Secondly, there is a clause mate relation between the negation and the minimizers in Hindi and Japanese: a negative element in the matrix clause is not able to license the minimizers in the lower clause, as noted by Kumar (2006) in Hindi and Aoyagi (p.c.) in Japanese.²²

- (76) Hindi
 */?maiN-ne nahiiN kah-aa ki sariitaa ek bhii qIaRke se mil-ii
 I-ERG NEG say-PERF that sarita one even boy with meet-PERF
 ‘I did not say that Sarita met any boy.’
 (Kumar 2006: 152)

Although this paper does not compare minimizers with Korean counterparts like *hana-to* ‘one thing-even’ and *han salam-to* ‘one person-even,’ studies (Sells (2011), and references cited therein) have suggested that Korean minimizers, suffixed with the EVEN particle *-to*, scope out of the negation as in (ii).

- (ii) *Han salam-to o-ci anh-ass-ta.* (Sells 2011: 335)
 one person-even come-Comp NEG-PAST-DECL
 ‘Not a single person came.’

22 The distinction between the minimizers in discussion and canonical NPI *any* is reminiscent of that between *ni*-NPIs (*ni-ko* ‘no one’, *ni-Sta* ‘nothing’) and *I*-NPIs (*i-ko* ‘anyone’, *i-Sta* ‘anything’) in Serbo-Croatian discussed in Progovac (1994) in terms of the strict negation and clausemate licensing condition for the former. I will leave this comparison for future study.

- (i) a. *milan *(ne) vidi nista.*
 Milan NEG sees that
 ‘Milan cannot see anything.’
 b. **milan ne tvrdi [da Marija poznaje nikio-ga]*
 Milan NEG sees that Mary knows none
 ‘Milan does not claim that Mary knows no one.’ (Progovac 1994)

- (77) Japanese
 ?**watasi-wa sensei-ga hito-ri-mo (gakusei-o) home-ta to*
 I-TOP teacher-NOM one.person-MO (student-acc) praise-past
iw-ana-katta.
 C say-NEG-PAST
 ‘I didn’t say that the teacher had praised even a single student.’
 (Aoyagi 2014, p.c.)

Thirdly, these minimizers are not freely licensed by adversative predicates in Hindi (Kumar 2006) and Japanese (Nakanish 2006).

- (78) ?/**mujhe aaScarya hai ki kal ek bhii sTuDeNT aa-yaa*
 I-DAT surprise is that yesterday one even student come-PERF
 ‘(lit.) #I am surprised that even one student came yesterday.’ = anybody
 (Hindi: Kumar 2006: 162)

- (79) *[*Hito-ri*]-mo *kita-to-wa odoroi-ta.*
 one-CL MO come-that-TOP was surprised
 ‘(lit.) I was surprised that even one person came.’ = anybody
 (Nakanish 2006 #28)

In addition, as noted by Aoyagi (p.c.), *hito-ri-mo* may not be licensed in a conditional clause.

- (80) **John-ga (kongo) hito-ri-mo (tomodati-o) but-tara,*
 John- NOM (from now on) (friend-ACC) hit-if
*batu-o uke-ru (daroo).*²³
 punishment- ACC receive-PRES (it is likely)
 ‘(It is likely that) if John hits even a single friend, he will be punished.’

²³ Aoyagi (p.c.) notes that when *hito-ri-mo* in (80) and (82) is replaced with *hito-ri-de-mo* the sentences become acceptable as in (i) and (ii) respectively; also see Nakanishi’s discussion of the difference between *-mo* and *-demo/-dake demo*. This paper just focuses on *-mo*.

- (i) John-ga (kongo) hito-ri-de-mo (tomodati-o) but-tara, batu-o
 John-NOM (from now on) one-CL-DE-MO (friend-ACC) hit-if punishment-ACC
 uke-ru
 receive-pres (*daroo*).
- (ii) Kodomo hito-ri-de-mo kono teeburu-o moti-age-rare-ru
 child one-CL-copular-MO this table-ACC lift-pot-PRES
 ‘Any person/child can lift this table.’

Fourthly, minimizers do not render generic free choice reading in the context of modals in Japanese (Aoyagi, p.c.) and Hindi (Kumar (2006), vs. Lahiri (1998)). Hence sentences below denote regular *even one*, rather than the intended free choice reading; see Section 3.5.

(81) Hindi

?/**us kamre meN ek bhii sTuDeNT baiTh sak-taa hai*
 that room in one even student sit HOD-HAB is
 ‘(lit.) Even one student can sit in that room.’
 (Kumar 2006: 162)

(82) Japanese

**Kodomo hito-ri-mo kono teeburu-o motiage-rare-ru*
 child one-CL-MO this table-ACC lift-pot-PRES
 ‘Even one person/child can lift this table.’
 (Aoyagi, p.c., 2014)

In addition, like English minimizer *even* and Chinese *lian... dou* (Section 4.3), these EVEN morphemes (Hindi *-bhii* and Japanese *-mo*) induce a set of alternatives and the conventional implicature as studied in Lahiri (1998) and Nakanishi (2006) respectively. Specifically Nakanishi states that Japanese *-mo* attached to the cardinal predicate *one* evokes a ScalarP. When *-mo* is in the scope of a DE operator, just like in positive contexts, no total negation is rendered. When it is out of the scope of negation, it gives rise to total negation.

To recapitulate, it has been shown that the minimizers containing a cardinal weak predicate and EVEN morpheme are distinguished from lexical NPI's with respect to their scoping over negation, the clausemate relation between minimizers (or Chinese *dou*) with the negation, and the inert long-distance and (some) non-veridical licensing conditions. Moreover, this type of minimizers cannot be felicitously interpreted without taking the scalar implicature into consideration.

One more thing that should be noted is that polarity sensitivity of the scalar minimizers is not solely lexically encoded across languages. Rather they can be morphologically encoded or syntactically derived. One implication of this study is to call for a continuum of these minimizers in reference to the synthetic versus analytical ends. At the (implicit) lexical (synthetic) extreme include Greek strong NPI-minimizers (e. g., *dhino*, *oute* from Giannakidou 2007, 2011), or English ones (e. g., *a bit*, Bolinger 1972). Minimizers like *a thing* and *so much as* discussed in (Schmerling 1971; Heim 1984) can be considered as lexical NPI minimizers in the sense that they have inherently incorporated the implicit *even*. Then it comes to

the explicit lexical NPI-minimizer with an EVEN morpheme, such as Hindi *ek-bhii*. It is lexical because *ek* and *-bhii* have become a chunk that cannot be separated as shown in (74). As noted by Lahiri (1998), the particle *-bhii* in (83) cannot be attached to other numerals like *do* ‘two’ to form an idiom chunk.²⁴

(83) Hindi

*do bhii rasoīye khaanaa bigaaR dete haiN
 two even cooks food spoil AUX
 (Lahiri 1998: 58)

Japanese *hito-ri-mo* is morpho-syntactically formed by attaching *-mo* to the weak cardinal numeral, as *-mo* can be freely attached to focused NPs. Chinese minimizers in *lian + yi-CL-N + dou* construction fall at the analytic end. As mentioned above, polarity sensitivity is not lexically encoded in *yi-CL-N* and *yidian-N*; rather it is compositionally derived. Consequently a continuum can be represented as in (84).

(84) A continuum of synthesis vs. analyticity of minimizers in expressing polarity

lexical <-----> analytical
 Greek Hindi Japanese Chinese
 English

Presumably, the above discussion suggests a new direction of examining polarity sensitivity in terms of the lexical (synthetic) - analytic (syntactic) continuum cross linguistically.²⁵

²⁴ Note that unlike the lexical chunk *ek-bhii*, *-bhii* is used with numerals to express EVEN as well as repeated in (i) from Lahiri (1998: 58).

(i) *do rasoīye bhii khaanaa bigaaR dete haiN.*
 two cooks even food spoil AUX
 ‘Even two cooks will spoil the broth.’

²⁵ The lexical-analytical continuum of encoding polarity sensitivity in minimizers is reminiscent of the lexical vs. analytical *wh*-phrases discussed by Tsai (1994). Unlike English *wh*-phrases that are lexically encoded with different operators as in (i), the interpretation of Chinese *wh*-phrases is syntactically determined. They are ‘indeterminate’ lexically (also see the indeterminate nature of *wh*-forms in Japanese in Kuroda (1965)) and associated with different operators in

6 Summary

This paper has demonstrated that the so-called “negative polarity” of minimizers (*yi-CL-N* ‘one.CL + N’ and *yidian-N* ‘one.point N’) is not lexically determined (vs. lexical *NPI-renhe*), but is contributed by the available *lian... dou* ‘including... all’ EVEN construction. Thus, total negation is compositionally derived via (i) the scalar operator *lian* evoking a set of order ranked alternatives determined in context, and (ii) the maximizing/universal operator *dou* quantifying over the alternatives plus the focused minimizer, which is the lowest bound at the contextual scale. The quantified scalar minimizer scopes over the negation to syntactically represent the logic of $\forall\neg$. This paper further distinguishes minimizers from lexical *NPI renhe* ‘any’ with respect to (i) scoping out of the negation for the former, (ii) being irrelevant to the non-veridical licensing conditions that otherwise license *any* and *NPI-renhe*, (iii) a clausemate relation between *dou* and negation, and (iv) the lack of intervention effects of strong quantifiers between the minimizers and negation. In addition, the above comparison of Chinese *lian*-minimizers with weak predicates + EVEN in Hindi and Japanese has an implication for various means of expressing “negative polarity” ranging from purely lexical (Greek) to compositional (Chinese) means crosslinguistically.

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syntax to trigger various meanings: interrogative, universal, or existential (*wh*-indefinite) readings; also see Huang et al. (2009).

- (i) a. Universal: whoever, whatever, wherever, whenever, however
- b. Existential: somewhat, somewhere, somehow, anywhere, however, nowhere
- c. Interrogative: who, what, where, when, how, why

Presumably, the Chinese microparametric analytic property in discussion sheds further light on the microvariations and macrovariations in parameter theory discussed by Huang (2012).

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