

Even-Focus and VP-Fronting in Mandarin Chinese

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Examining VP-fronting in Mandarin *even-focus* constructions, I propose an analysis for the variants of VP-focus in this construction based Copy Theory (Chomsky (1995), a.o.). In addition, I show that the optionality that arises in the case of VP-focus can be captured by the mechanism at the interface mapping proposed by Bobaljik and Wurmbrand (2008).

1. The Puzzles

The goal of this paper is to account for the semantics-syntax mismatch and the optionality on the LF-PF mapping in Mandarin *lian...dou* VP-focus constructions. Specifically, I propose that the observed puzzle in this paper can be explained with the Copy Theory (Chomsky (1995), Bobaljik (2002), and others) and the theory in Bobaljik and Wurmbrand (2008) on LF-PF mapping.

In Mandarin Chinese, the *even-focus* construction, in addition to the focus, contains two morphemes: *lian* and *dou*. The morpheme *lian* is attached to the focus, while the morpheme *dou* occurs in the preverbal position. Moreover, the sequence of the focalized element and *lian* must move to the position that precedes *dou*¹. In the vanilla case of this construction, the semantic focus corresponds to the fronted constituent at the surface representation: in (1b) the nominal object *sherou* ‘snake meat’ is focalized and moves to the pre-*dou* position with *lian*; in (2b), the sentential complement of the verb *zhidao* ‘know’ is focalized and fronted with *lian* ‘even’. As shown in (1) and (2), there is a unique correspondence between the semantic focus and the fronted constituent at surface.

- (1) a. Zhangsan gan chi sherou
Zhangsan dare eat snake-meat
‘Zhangsan dares to eat snake meat.’
b. Zhangsan [lian sherou] dou gan chi
Zhangsan EVEN snake-meat ALL dare eat
‘Zhangsan even dares to eat [snake meat]_F.’

¹ The morpheme *lian* literally means ‘even’, and the morpheme *dou* literally means ‘all’. In the examples, I will gloss *lian* as ‘even’ and *dou* as ‘all’ respectively. Moreover, the semantic focus is indicated with []_F in the paraphrase.

- (2) a. Zhangsan zhidao Lisi mei qu Taipei
 Zhangsan knows Lisi NEG go-to Taipei
 ‘Zhangsan knows Lisi went to Taipei.’
 b. Zhangsan [*lian* Lisi mei qu Taipei] dou zhidao
 Zhangsan EVEN Lisi neg go-to Taipei ALL know
 ‘Zhangsan even knows that [Lisi went to Taipei]_F.’

Exceptions arise in cases of VP-focus. (3b) is ambiguous: in addition to the expected NP-focus meaning (Reading A), this sentence carries the VP-focus meaning (Reading B) as well, though, at the surface, only the nominal object *jirou* ‘chicken’ is fronted with the morpheme *lian*, as we just saw in (1b). Under the VP-focus interpretation, there is a mismatch between syntax and semantics: the fronted constituent at the surface is an NP (or DP), while the semantic focus falls on VP². The VP-focus interpretation in (3b) is further evidenced in (4). As (4) shows, (3b) can be followed in a discourse sequence by another scalar focus-sensitive particle *genghekuang* ‘let alone’ associated with a VP. Note that, as we just saw above, (3b) is not the only way to express the VP-focus meaning; (3c) carries the VP-focus reading as well (and only carries the VP-focus reading). In (3c), the fronted constituent at the surface is a full-fledged VP, and an expletive verb *zuo* ‘do’ must be inserted in the canonical verb position.

- (3) a. Zhangsan mei peng jirou
 Zhangsan NEG touch chicken
 ‘Zhangsan did not touch the chicken.’
 b. Zhangsan [*lian* jirou] dou mei peng
 Zhangsan even chicken ALL NEG touch
 Reading A: ‘Zhangsan did not even touch [the chicken]_F.’
 Reading B: ‘Zhangsan did not even [touch the chicken]_F.’
 c. Zhangsan [*lian* peng jirou] dou mei zuo/*peng
 Zhangsan even touch chicken all NEG do/touch
 ‘Zhangsan did not even [touch the chicken]_F.’
 *’Zhangsan did not even touch [the chicken]_F.’
- (4) Zhe dun fan, Zhangsan [*lian* jirou] dou mei peng, genghekuang shi [he tang]_F
 This CL meal Zhansan EVEN chicken ALL NEG touch let-alone FOC drink soup
 ‘During this meal, Zhangsan did not even [touch the chicken]_F, let alone [eat the soup]_F.’

² The semantics-syntax mismatch, as far as I know, is observed first in Constant and Gu (2008).

In the following, I propose that the two variants of VP-focus (namely (3b) and (3c)), in fact, have the same derivation. The difference between these two variants is due to the selection of the copies of the verb to pronounce at PF. In the next section, I will lay out the assumptions my proposal is based on.

2. Theoretical Assumptions

As mentioned in section 1, I assume the Copy Theory for the syntactic operation ‘movement’ (see Chomsky (1995), Bobaljik (2002), Nunes (2004) and others): ‘movement’ is the combination of copy and merge³: an element moves to the target and leaves a copy at its base-generated position. At the interfaces (especially at PF), a general constraint forces the deletion of all the copies of a single element at PF except for one^{4,5}.

The second assumption concerns the position of the verb in Mandarin Chinese. Following Huang, Li and Li (2009), Tang (1999) and others, I assume that, in Mandarin Chinese, the verb undergoes V^0 -to- v^0 movement. Evidence for this assumption is given in (5). According to Huang, Li and Li (2008), in (5), the frequency adverbial phrase *liangci* ‘twice’ modifies the event of beating and adjoins to VP. Since the verb moves from V^0 to v^0 , it precedes the frequency phrase at the surface. Based on this assumption, I further assume that the raising of the verb from V^0 to v^0 is due to the language-particular requirement in Mandarin Chinese that v^0 be lexicalized at PF.

- (5) Ta da-guo liangci na-xie huaidan
 He beat-ASP twice those-CL bad-guy
 ‘He beat those bad guys twice.’

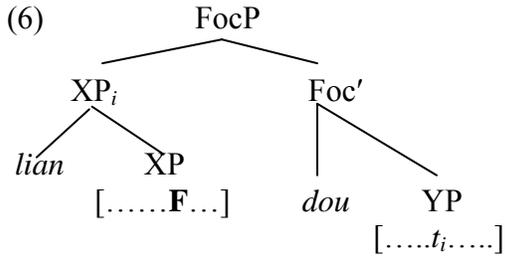
Thirdly, I assume the schema in (6) for the *lian...dou* construction, examples of which we have seen above. As (6) shows, in this construction, the morpheme *dou* heads the

³ Here I assume a more traditional version of Copy Theory (eg. Nunes (2004), and others), which takes the syntactic operation ‘copy’ as ‘xeroxing-copy’. There have been different varieties of the Copy Theory proposed. Among the other alternatives, Chomsky (2001), Gärtner (1998, 1999) and others have recast the syntactic operation ‘copy’ in terms of multi-dominance. Along with this line, a moved lexical element is actually dominated by two or more terminal nodes in the syntactic structure. Given that the choice between these two alternatives will not affect the following discussion, I will simply refer the readers to the mentioned literatures.

⁴ In the discussion of the case of VP-focus, the status of this general constraint does not play any role.

⁵ This is where my proposal differs from Nunes (2004). Nunes (2004) proposes that copy deletion is motivated by the need of linearization. On the other hand, in my proposal, copy deletion is motivated by the general constraint of deleting all the copies except for one. For the advantage of my proposal and the problems of Nunes (2004), see Hsieh (2009) for a detailed discussion.

projection Foc(us)P (see Shyu (1995)). The morpheme *lian* adjoins to the smallest maximal projection that contains the semantics focus and moves with the adjoined constituent to Spec-FocP.



The fourth assumption concerns the size of the fronted constituent in the case of VP-focus. I assume that, in the case of VP-fronting in the *lian...dou* construction, the fronted constituent is a VP and cannot be larger than or equal to *v*P. This assumption is motivated by the contrast between (7a) and (7b). (7a) is a case of VP-topicalization and (7b) a case of VP-fronting in the *lian...dou* construction. In both of these examples, the fronted constituent is located in the initial position of the embedded clause⁶. In (7a), the anaphor *taziji* ‘himself’ in the verbal fronted predicate phrase can co-refer with the embedded subject but not with the matrix subject, as Huang (1993) reports. However, unlike in (7a), in (19b), the anaphor in the fronted predicate can co-refer with the matrix subject.

- (7) a. Zhangsan_i renwei zema taziji_{*i/j}-de xiahai Lisi_j juehui bu hui
 Zhangsan think scold himself-POSS children Lisi absolutely NEG will
 ‘Zhangsan_i thought that, punish his_{*i/j} own children, Lisi_j absolutely dare not.’
 a’. Zhangsan_i [[_vP t_j [_v’chufa taziji_{*i/j}-de xiahai]] Lisi_j juehui bu hui

⁶ In (7b) the predicate fronted with *lian* first moves to the position between *dou* and the embedded subject and then further undergoes topicalization.

- b. Zhangsan_i renwei, *lian* zema taziji_{i/j}-de xiaohai, Lisi_j dou juehui bu hui
 Zhangsan think EVEN scold himself-POSS children Lisi ALL absolutely NEG will
 *(zuo), genghekuang shi [chufa bieren-de xuesheng]_F⁷
 do let-alone FOC punish others-poss students
 ‘Zhangsan_i thought that, even for [punishing his_{i/j} own children]_F, Lisi_j absolutely
 will not, let alone to punish other people’s students’.

According to Huang (1993), the fronted predicate in (7a) is a *vP*. The anaphor *taziji* ‘himself’ is bound by the trace of the embedded subject at Spec-*vP* (see (7a’)). Hence, the co-reference between the anaphor and the matrix subject is blocked. Following this reasoning, the co-reference between the anaphor and the matrix subject in (7b) can be accounted for by assuming that the predicate fronted with *lian* is a VP instead of a *vP*: since there is no intervention by a potential binder (e.g., the trace of the embedded subject at Spec-*vP*), the co-reference between the anaphor and the matrix subject is possible.

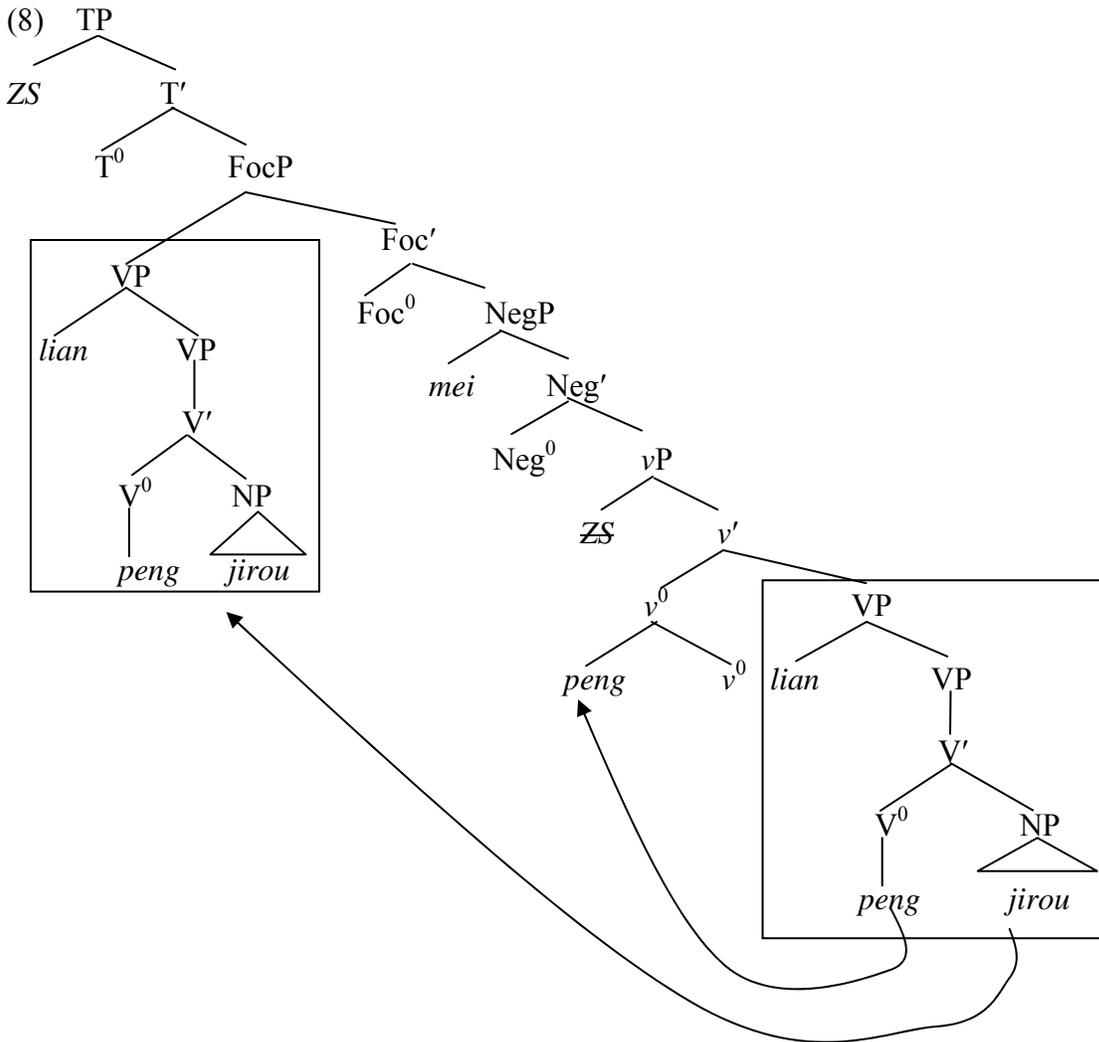
In the next section, the theoretical description of (3b) and (3c) based on the assumptions made above will be provided.

3. The Theoretical Description

In both (3b) and (3c), syntactically the derivation proceeds by moving the verb from V^0 to v^0 , and then the VP, along with the focus particle *lian*, to Spec-FocP. In this fashion, both (3b) and (3c) have the syntactic structure in (8)⁸. The difference at the surface between these two variants arises only after Spell-out at PF.

⁷ In (7b), the occurrence of the expletive verb *zuo* is obligatory. This again confirms the observation shown in (3c).

⁸ In (8) (and (9b) and (10b) as well), the intermediate copy of VP at the edge of *vP* is omitted for simplicity, given that the intermediate copy of VP at the edge of *vP* does not affect the discussion here.

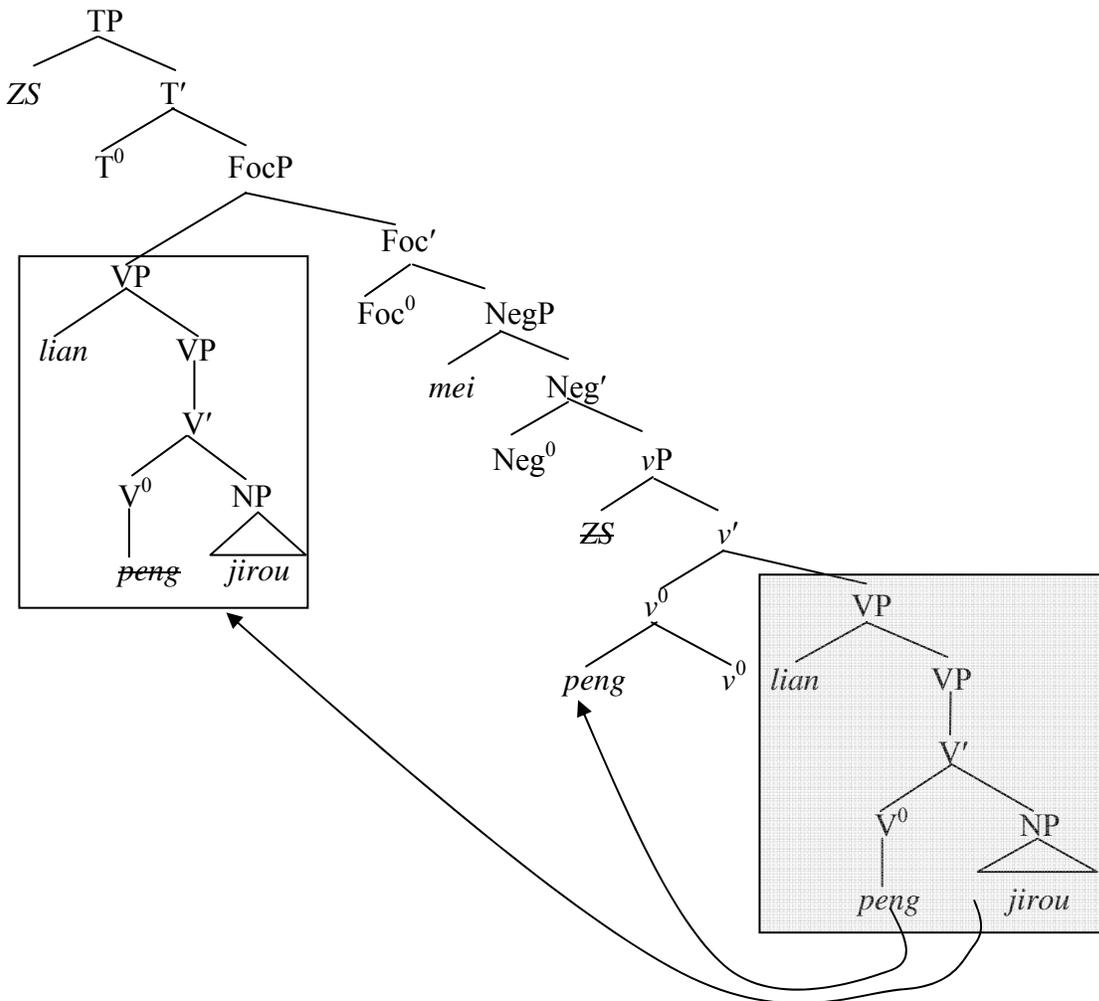


After Spell-out, there are two ways to transfer the structure in (8) to PF, and each one yields a different surface representation. Let's now go over each one. Consider (3b) with the VP-focus interpretation (reading B) (repeated as (9a)). As mentioned above (see also (9b)), the verb *peng* 'touch' first undergoes V^0 -to- v^0 movement, and then the focalized VP further undergoes movement with *lian* to Spec-FocP. At this point we have two copies of VP (one in Spec-FocP, and one in the base-generated position) and three copies of the verb (one embedded in the fronted VP, one in v^0 , and one at the base-generated position). At PF, after deleting the low copy of the VP (due to the general constraint on copy deletion), we are left with two copies of the verb. Again, due to the general constraint on copy deletion, one of the copies of the verb must be deleted. When choosing which copy to delete, the PF-constraint in Mandarin Chinese, which states that

v^0 must be phonetically supported, must be taken into consideration. In (9b), in order to fulfill the PF-requirement on v^0 , the copy embedded in the fronted VP is chosen to be deleted and the one at v^0 gets interpreted at PF. Note that the choice of pronouncing the copy at v^0 at PF does not come without any trade-off. When choosing to pronounce the copy at v^0 and delete the one embedded in the fronted constituent, we sacrifice the intactness of the fronted VP, and this renders the situation in which it looks as if the verb is stranded behind at surface. Hence, the mismatch between the surface syntax and semantics arises⁹.

- (9) a. Zhangsan [*lian jirou*] dou mei peng
 Zhangsan even chicken ALL NEG touch
 ‘Zhangsan did not even [touch the chicken]_F.’

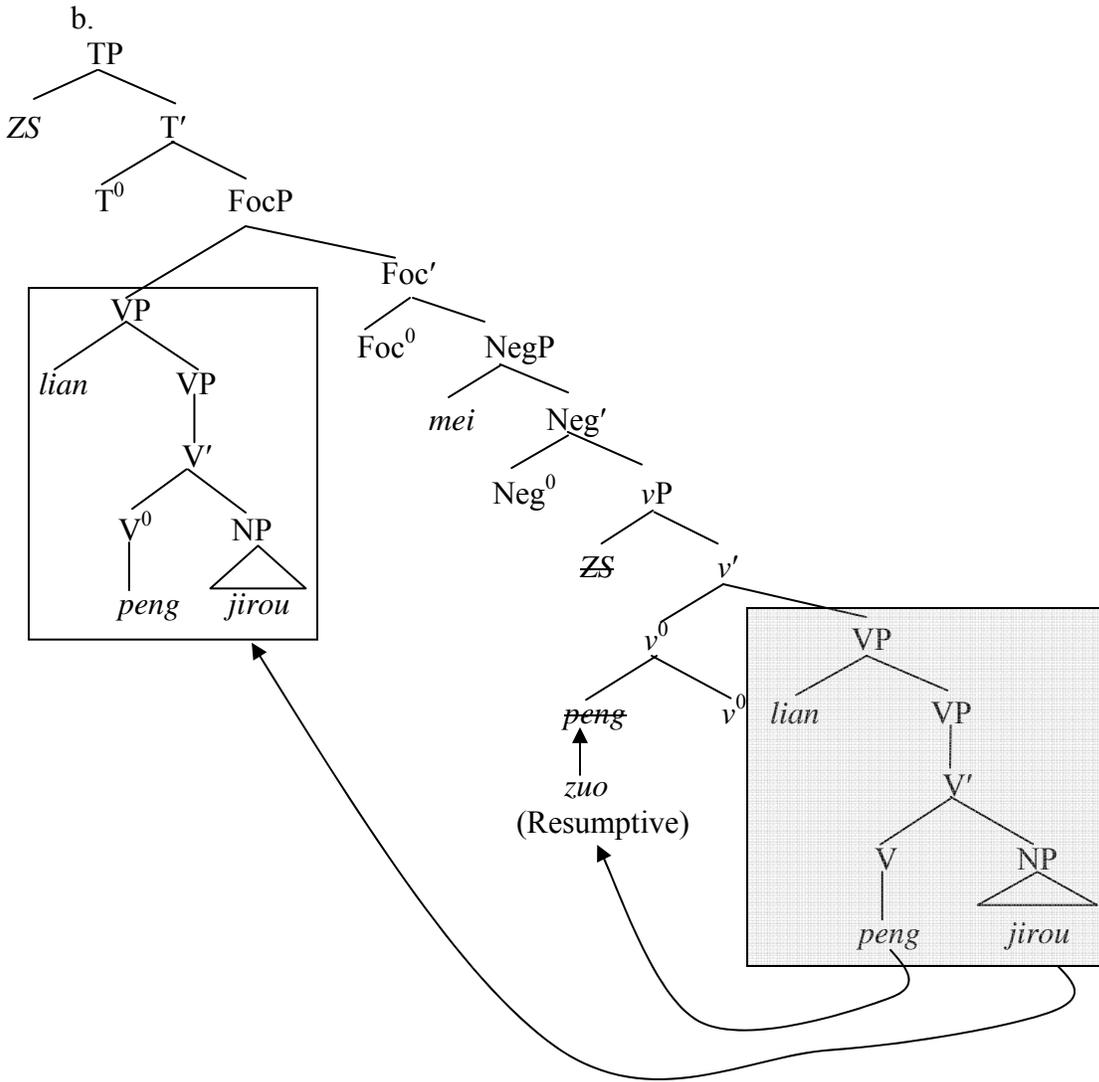
b.



⁹ Note that, as indicated in (4), (3a) indeed carries the VP-focus interpretation.

Is there a way to avoid this trade-off (namely, keep the intactness of the fronted VP) but, meanwhile, lexicalize v^0 ? The answer is positive; however, the success comes with another trade-off, and this is what happens in (3c) (repeated as (10a)), the other variant of VP-focus. In (10a), the fronted VP stays intact, while the expletive verb *zuo* ‘do’ occurs in the canonical verb position. The structure of (10a) is shown in (10b). In (10b), just like in (9b), the verb first undergoes V^0 -to- v^0 movement and then the focalized VP moves to Spec-FocP with *lian*. Unlike in (9b), where the verb is interpreted at v^0 , the verb in (9b) is interpreted at V^0 in the fronted VP. Note that there is a PF-requirement in Mandarin Chinese, which states that v^0 must be lexicalized at PF. To fulfill this requirement, the copy of the verb at v^0 can only undergo partial deletion and be interpreted as a resumptive pro-verb *zuo* at PF so that v^0 can be lexicalized at PF. (see Pesetsky (1998) and the references therein for a similar idea regarding resumptive pronouns).

- (10) a. Zhangsan [*lian peng jirou*] dou mei zuo/**peng*
 Zhangsan even touch chicken all NEG do/touch
 ‘Zhangsan did not even [touch the chicken]_F’.



Summarizing the discussion above, to fulfill the requirements at PF, either V-stranding or the resumptive strategy (but not both) must apply: If we decide to avoid the usage of the resumptive strategy, then the intactness of the fronted VP must be sacrificed; on the other hand, if we decide to have the fronted VP stay intact, then the resumptive strategy becomes necessary to fulfill the PF requirement that v^0 must be lexicalized. Most important of all, there is no way to avoid the resumptive strategy while having the fronted VP stay intact at PF at the same time.

What would happen if we interpreted both of the copies at PF? This possibility has been excluded: the PF representation with both of the copies of the verb interpreted violates the general constraint of copy deletion. Hence, the PF representation with the realization of both of the copy of the verbs can never be a legitimate output.

In the analysis presented so far, the optionality arises out of a tension: on the one hand, the need to lexicalize v^0 , and, on the other hand, the pressure to keep the VP in focus transparent. Hence, it predicts that neither V-standing nor the resumptive strategy is tolerated once there is independent means for lexicalizing v^0 . This is evidenced in (11). As shown in (11), a deontic modal *gan* ‘dare’ is involved. When the VP is in focus and undergoes focus movement to the pre-*dou* position, neither V-stranding nor the resumptive is tolerated.

- (11) a. Zhangsan [lian peng jirou] dou bu gan
 Zhangsan EVEN touch chicken ALL NEG dare
 ‘Zhangsan dare not even [touch the chicken]_F.’
- b. Zhangsan [lian jirou] dou bu gan peng
 Zhangsan EVEN chicken ALL NEG dare touch
 ‘Zhangsan dare not even touch [the chicken]_F.’
 *‘Zhangsan dare not even [touch the chicken]_F.’
- c. *Zhangsan [lian peng jirou] dou bu gan zuo
 Zhangsan EVEN touch chicken ALL NEG dare touch

In the literature, deontic modals in Mandarin Chinese are treated as verbs taking VP complements and selecting the subject (see Lin and Tang (1996)). Given that the deontic modal *gan* ‘dare’ and v^0 are overlapped with each other on the function of selecting subjects, following the proposal in Wurmbrand (2003), I assume that there is no v^0 projection between the deontic modal and its complement. Since there is no v^0 between the deontic modal and the fronted v^0 , the lexicalization of v^0 at PF is not an issue anymore and neither V-stranding nor the occurrence of the expletive verb is allowed. Hence, though (11) seemingly poses challenges to the analysis above, it in fact cannot be a counterexample¹⁰.

4. Optionality

Based on the theoretical description above, I now proceed to the discussion about optionality: why does the optionality arise in the case of VP-focus? Before we start, I

¹⁰ Note that, in (7b), the modal *hui* is epistemic rather than deontic and does not have the function of selecting the subject. Hence, when the VP is in focus and undergoes movement, the repair strategies (V-stranding or resumptive elements) are needed.

(13) Constraint 1-Scope Transparency (Scot): If the order of two elements at LF is A»B, the order at PF is A»B.

Constraint 2- DEP (Economy Condition): Don't insert Expletive Pronoun.

Constraint 3-EPP: the EPP requirement must be satisfied at PF.

(14)

LF	PF	Scot	DEP
<i>seem</i> >∃	(22a): ∃> <i>seem</i>	*	✓
<i>seem</i> >∃	(22b): <i>seem</i> >∃	✓	*

On the other hand, as shown in (15), when it comes to the LF of ∃>*seem*, (15b), the case of *there*-insertion violates both of the soft constraints, while (12a), the case of raising, has both of them satisfied. Hence, only (12a) can be the legitimate PF for the LF of ∃>*seem*. (12b), unlike (12a), is thus unambiguous.

(15)

LF	PF	Scot	DEP
∃> <i>seem</i>	(22a): ∃> <i>seem</i>	✓	✓
∃> <i>seem</i>	(22b): <i>seem</i> >∃	*	*

In the following, I show how the mechanism in Bobaljik and Wurmbrand (2008) helps account for the optionality in the case of VP-focus in *lian...dou* constructions.

4.2. Optionality in VP-Focus

The relevant constraints to capture the optionality in expressing VP-focus in the Mandarin *lian...dou* construction is shown in (16)¹¹. Constraint A and B are hard constraints, which are not violable in any circumstances. Constraint A is language-particular and based on the assumption in section 2 that *v*⁰ must be lexicalized in Mandarin Chinese. Constraint B is a general hard constraint across languages. It regards the visibility of the focalized elements at PF. These two hard constraints are satisfied in both the PF representations of (9a) and (10a): in both (9a) and (10a), *v*⁰ is lexicalized as the full verb and the resumptive verb respectively; moreover, both representations have the semantic focus phonetically visible.

Constraint C and D are soft constraints, which play an important role in determining the legitimate PF representations for VP-focus. Both of the constraints can be overridden to satisfy other PF-requirements and play a crucial role determining the optimal PF representation for a particular LF. Constraint C states that resumptive

¹¹ As mentioned in footnote 4, the general constraint on copy deletion does not play any role in the discussion regarding the optionality in VP-focus. Hence, I put off the discussion of this constraint until I discuss the case of V-focus.

elements are dispreferred and can only be the last resort (see Pesetsky (1998)) ; constraint D states that, in the optimal circumstance, the fronted constituent contains all and only the phonetic content of the semantically focalized elements.

- (16) a. Constraint A: v^0 must be interpreted at PF. (Hard Constraint)
- b. Constraint B: Focus must have phonetic content. (Hard Constraint)
- c. Constraint C: Avoid resumptive elements. (Soft Constraint)
- d. Constraint D-Focus Transparency: The fronted constituent, in addition to the focus particle *lian*, reflects all and only the phonetic content of the F-marked elements. (Soft Constraint)

Now consider (9a) (repeated as (17a)) again, the case where the V-stranding occurs. In (17a), the copy of the verb in the fronted VP is deleted, and the one at v^0 is interpreted at PF to satisfy the requirement that v^0 be lexicalized. Given that the intactness of the fronted VP is sacrificed, constraint D, F-Transparency, is violated in (17a). On the other hand, in (17b), the other variant of VP-focus, the copy of the verb in the fronted VP is chosen to be interpreted, while the copy of the verb at v^0 is deleted. Note that, while deleting the copy at v^0 , the hard constraint that v^0 be lexicalized must be satisfied. To meet this PF requirement, the copy of the verb at v^0 undergoes deletion, but only partially. This way, though we spare (17b) from violating Constraint D, we pay the price by sacrificing Constraint C.

- (17) a. Zhangsan [*lian jirou*] dou mei peng
 Zhangsan even chicken ALL NEG touch
 ‘Zhangsan did not even [touch the chicken]_F.’
- b. Zhangsan [*lian peng jirou*] dou mei zuo/*peng
 Zhangsan EVEN touch chicken ALL NEG do/touch
 ‘Zhangsan did not even [touch the chicken]_F.’
- c.

LF	PF	Constraint C Avoid Resumptive	Constraint D F-Transparency
VP-focus	(17a)	✓	*
	(17b)	*	✓

As shown in (17c), each of the PFs for the VP-focus interpretation violates one of the soft constraints. Given that neither of them fares better than the other and there is no other alternative that satisfies both constraints, both of the examples are the legitimate PF representations for the VP-focus interpretation. Hence, optionality arises.

5. Conclusion

In this paper, I examine the case of VP-focus in Mandarin *lian...dou* construction. I propose that the two variants of VP-focus in the *lian...dou* constructions have the same derivation, and the difference between these two variants at surface are attributed to the choice of the copies of the verb to pronounce. Moreover, I have shown that the optionality on these two variants can be captured by the constraint-based approach in Bobaljik and Wurmbrand (2008): given that neither of these two variants fares better than the other in the constraint evaluation at the interfaces, both of them are legitimate PF representations for VP-focus.

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