THE FOCAL STRUCTURE IN MANDARIN VP-ELLIPSIS:
A CROSS-LINGUISTIC PERSPECTIVE[*]

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ABSTRACT

This paper argues that Soh's (2007) ΣP analysis only partially explains polarity operation in Mandarin VP-ellipsis. With new examples of the use of the particle *que* 'however', a polarity contrast of *ye* 'also', we propose that there are two focus projections in VP-ellipsis. One is the contrastive FocP headed by *ye* or *que* higher than TP and the other is the polarity PolP headed by an affirmative polarity focus *shi* 'be' or a covert negative polarity focus lower than TP. Foc interacts with Pol by a way of polarity concord, which is responsible for the polarity symmetry or asymmetry across two conjuncts. We suggest that the polarity concord is achieved via the Agree operation (Chomsky 2000, 2001) in line with Watanabe's (2004) feature copying analysis of the negative concord. A cross-linguistic investigation of languages of various word orders, including English (SVO), Japanese (SOV), Atayal (VOS), and Bunun (VSO) lends support to this focus account.

Keywords: VP-ellipsis, polarity focus, contrastive focus, polarity concord, negative concord, feature copying

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1. INTRODUCTION

In this paper, we provide certain criticisms of Soh's (2007) analysis of ΣP, which is headed either by a negative marker or a zero affirmative marker. We will show that this analysis only partially explains polarity operation in Mandarin VP-ellipsis. With evidence from another particle *que* 'however', a polarity contrast of *ye* 'also', we find that *ye* and *que*, each of which heads a contrastive focus projection (FocP) higher than TP, have to agree with another two polarity focus projections (PolP), headed by an affirmative polarity focus *shi* 'be' or a covert negative polarity focus lower than TP by a way of the polarity concord. In other words, *ye* matches the affirmative polarity focus, while the optional *que* matches the negative polarity focus. We propose that polarity concord is achieved via the Agree operation (Chomsky 2000, 2001) in line with Watanabe's (2004) feature copying analysis of negative concord. In addition, departing from Soh's T head analysis of *shi*, *shi* here is defined as an affirmative polarity focus, being in conflict with the *que*-set with respect to feature copying and PF-realization. On the basis of its distribution, *shi*-support is also utilized as a last resort in Mandarin VP-ellipsis. With independent empirical evidence from a non-elliptical sentence with both *ye*-set and *que*-set, the unique syntactic projections and operations of FocP and PolP are sustained under the Agree operation. This dual-focus account is further verified by being successfully applied to four languages with various word orders, including English (SVO), Japanese (SOV), Atayal (VOS), and Bunun (VSO).

The organization of this paper is as follows. Section 2 discusses the problems with Soh's account. Section 3 provides a two-focus account. Section 4 focuses on a cross-linguistic survey. Section 5 concludes this paper.

2. SOH'S (2007) ANALYSIS AND PROBLEMS

Mandarin auxiliary elements in T, such as *shi* 'be', *neng* 'can', *hui* 'can/be possible', *keyi* 'can/may', *ken* 'be willing to', etc., can license ellipsis. However, as Soh has observed, when the negative morpheme *bu-* 'not' precedes *shi* 'be', such licensing will be hindered, in contrast to the case with the other auxiliaries, as shown in (1) and (2) (Soh 2003, 2007; Xu 2003).

(1) a. *Ta xihuan Zhangsan. Wo bu-shi.
       he like   Zhangsan I not be
   b. *Ta bu-xihuan Zhangsan. Wo ye bu-shi.
       he not-like   Zhangsan   I also not-be

(2) a. Ta neng qu. Wo bu-neng.
       he can   go I   not-can
       'He can go. I can't.'
   b. Ta bu-neng qu. Wo ye bu-neng.
       he not-can go   I   also not-can
       'He cannot go. I can't either.'

Soh also finds that even if English *do* and the dummy *shi* share two common properties with respect to their dual functions of being an auxiliary verb and main verb and of allowing for the licensing of ellipsis, they differ in three aspects: (i) the presence of negation (compare (1) with (3)), (ii) the scope of deletion involving negation in the correlate as in (4), and the validity of question-answer pair as in (5) and (6).

(3) a. John likes Mary. Bill doesn't.
   b. John does not like Mary. Bill also doesn't.

(4) a. Ta bu-xihuan Zhangsan. Wo ye shi.
       he not-like   Zhangsan   I also be
       'He does not like Zhangsan, and I don't, either.'
   b. John does not like Bill. Mary also does*(n't).

(5) A: Shei xihuan Zhangsan?
       Who like   Zhangsan
       'Who likes Zhangsan?'
    B: *Wo shi.
         I   be

(6) A: Who likes Bill?
    B: I do.

Based on these discrepancies in the use of *shi* 'be', auxiliaries like *neng* 'can', and the English auxiliary *do*, Soh proposes that the dummy auxiliary *shi* occupies a position higher than negation, while auxiliaries

like *neng* and the English *do* appear below it within ModP, as shown in (7).

(7) [$_{TP}$ T   [$_{\Sigma P}$ Σ   [$_{ModP}$ Mod   [$_{vP}$ *v* [$_{VP}$ V]]]]]
     Dummy Aux *shi*   bu-   Aux *neng*   Verb *shi*

In line with Laka (1990), Soh further assumes that the polarity projection ΣP can be headed by either a negative marker like *bu-* 'not' or a zero affirmative marker. Given the head licensing requirement on ellipsis (Zagona 1988, López 1994, Lobeck 1995), the dummy *shi* licenses the elided ΣP, while auxiliaries like *neng* and English *do* license the elided *v*P. The advantage of this analysis is that it can naturally explain the illegitimacy of (1) (**bu-shi* 'not be') by claiming that the emphatic *shi*, not the copular *shi*, is inherently higher than negation, as shown in (7).

Convincing as this analysis is, several problems still arise. First, under the projection of ΣP, Soh assumes that the head Σ may be a negative marker or a zero affirmative marker. When it is negative, it is predicted that the same negative Σ head is used in the context of negative correlates like (8) or positive correlates like (9), regardless of their difference in polarity between two conjuncts. In fact, except for demonstrating the presence of negation in the second conjunct, the negative marker here cannot distinguish the polarity symmetry between the two conjuncts in (8) from the polarity asymmetry in (9).[1] This discrepancy especially relates to the fact that the former requires the presence of *ye* 'also', whereas the latter rejects its existence and even can optionally allow another adverb, *que* 'however' or a conjunction *dan(shi)* 'but'.

(8) a. Ta bu-xihuan Zhangsan. Lisi ye   shi   [$_{\Sigma P}$ Neg].
       he not-like   Zhangsan   Lisi also be
       'He doesn't like Zhangsan, and Lisi doesn't, either.'
    b. Ta bu-neng qu. Lisi ye [$_{\Sigma P}$ bu [$_{ModP}$ neng [[$_{vP}$ v [$_{VP}$]]]]].
       he not-can go   Lisi also   not   can
       'He can't go, and Lisi can't, either.'

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[1] Polarity symmetry between conjuncts can be shown as [… + …], […+ …] or [… - …], [… - …], in contrast to polarity asymmetry, [… + …], [… - …] or [… - …], [… + …].

c. Ta bu-xihuan Zhangsan. Lisi ye   [$_{\Sigma P}$ bu [$_{ModP}$ [[$_{vP}$ v-xihuan
   he not-like Zhangsan Lisi also   not   like
   [$_{VP}$]]]]].[2]
   'He doesn't like Zhangsan, and Lisi doesn't, either.'

(9) a. Ta neng qu, dan(shi) Lisi   (que)   [$_{\Sigma P}$ bu [$_{ModP}$ neng [[$_{vP}$ v [$_{VP}$]]]]].
       he can   go but   Lisi however not   can
       'He can go, but Lisi can't.'
    b. Ta xihuan Zhangsan, dan(shi) Lisi   (que)   [$_{\Sigma P}$ bu [$_{ModP}$ [[$_{vP}$
       he like   Zhangsan but   Lisi   however not
       v-xihuan [$_{VP}$]]]]].
          Like
       'He likes Zhangsan, but Lisi doesn't.

The same deficiency also occurs in the case of the zero affirmative Σ head as in (10) and (11). Just like the negative head in (8) and (9), the zero affirmative head cannot tell affirmative correlates from negative correlates, pertinent to the distribution of the obligatory *ye* 'also' and the optional *que* 'however', respectively.

(10) a. Ta xihuan Zhangsan. Lisi ye   shi   [$_{\Sigma P}$ ø].
        he like   Zhangsan Lisi also   be
        'He likes Zhangsan, and Lisi does, too.'
     b. Ta neng qu. Lisi ye [$_{\Sigma P}$ ø [$_{ModP}$ neng [[$_{vP}$ v [$_{VP}$]]]]].
        he can   go Lisi also   can
        'He can go, and Lisi can, too.'
     c. Ta xihuan Zhangsan. Lisi ye   [$_{\Sigma P}$ ø [$_{ModP}$ [[$_{vP}$ v-xihuan [$_{VP}$]]]]].
        he like   Zhangsan Lisi also   like
        'He likes Zhangsan, and Lisi does, too.'

(11) a. Ta bu-neng qu, dan(shi) Lisi   (que)   [$_{\Sigma P}$ ø [$_{ModP}$ neng
        he not-can go but   Lisi   however   can
        [[$_{vP}$ v [$_{VP}$]]]]].
        'He can't go, but Lisi can.'

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[2] Even if we do not agree with the V-raising analysis (Li 2002), it is temporarily assumed that the verb *xihuan* 'like' is raised from VP to merge with *v* for presentational convenience. It will not affect the result of this work.

    b. Ta bu-xihuan Zhangsan, dan(shi) Lisi   (que)   [$_{ΣP}$ ∅ [$_{ModP}$
    he not-like   Zhangsan but   Lisi   however
    [[$_{vP}$ v-xihuan [$_{VP}$]]]]].
        Like
    'He doesn't like Zhangsan, but Lisi does.'

Furthermore, the structure in (7) also poses an empirical problem to Soh's analysis. In (7), the emphatic *shi* always precedes ΣP; that is, *shi* can potentially precede any forms of VP-ellipsis. This analysis has shown that when polarity is symmetric between two conjuncts, *ye* and *shi* are both obligatory before ΣP in the case of the *ye-shi* type as in (12a, b) (Soh 2007:184). In addition, the presence of *shi* becomes optional when *ye* takes scope over the predicate within non-elliptical sentences as in (12c) (Soh 2007:186).[3] However, the structure (7) fails to explain why *shi* is not allowed when VP-ellipsis happens in the context of polarity symmetry/asymmetry as illustrated in (13) and (14), respectively.[4]

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[3] Most of my Mandarin-speaking informants in Taiwan do not accept the presence of *shi* preceding Aux and V either in elliptical or non-elliptical sentences. However, Taiwanese, another dialect spoken in Taiwan, allows the corresponding auxiliary *si* 'be' occurring in the same context. Thus, (12c) and (13) will be considered "Taiwanese Mandarin", meaning that the degree of the acceptability of such Mandarin sentences will be higher in the case of certain respondents due to the influence from Taiwanese. In this present work, such examples will be considered as being ungrammatical.

However, one may search the Academic Sinica Balanced Corpus of Modern Chinese [http://www.sinica.edu.tw/SinicaCorpus/], developed by the Institute of Information Science, Academia Sinica, Taipei, Taiwan, and find some examples as in (i) involving the dummy verb *shi* following *ye* in front of a verbal phrase. We suggest that the judgment of such kind of sentences is also affected by Taiwanese. This issue will be further discussed later.

(i) a. Wo ye   shi hui hen dasheng de shuo qing   ni   xiaosheng yi dian.
     I   also be will very loudly DE say   please you   softly   a little
     'I will also very loudly say: please could you speak a bit softer.'
  b. wo ye shi   gen   wo ba   shuo   duibuqi.
     I also be   with   my father   say   sorry
     'I also said sorry to my father.'

[4] According to Soh's analysis, *shi* is obligatory when a ΣP is elided as in (12a), and is optionally allowed only in specific cases, namely those where *ye* 'also' takes scope over the predicate with a contrast in the subject as in (i) (Soh 2007:186). Note that Soh's examples are complete sentences; she does not make any relevant prediction on the grammaticality of the elided sentences as (13) and (14).

(12) a. John bu-xihuan Mary. Bill *(ye) shi.
　　　John not-like　Mary　Bill also be
　　　'John does not like Mary, and Bill does not, either.'
　　b. John xihuan Mary. Bill *(ye) shi.
　　　John like　　Mary Bill　also be
　　　'John likes Mary, and Bill does too.'
　　c. Ta bu-xihuan Zhangsan. Wo *(ye) shi bu-xihuan Zhangsan.
　　　he not-like　Zhangsan I　　also be not-like　Zhangsan
　　　'He does not like Zhangsan. I also don't like Zhangsan.'

(13) a. Ta bu-neng qu. Lisi ye　(??shi) [$_{\Sigma P}$ bu [$_{ModP}$ neng [[$_{vP}$ v [$_{VP}$]]]]].
　　　he not-can go Lisi also　be　　not　　can
　　　'He can't go, and Lisi can't, either.'
　　b. Ta neng qu. Lisi　ye　(??shi) [$_{\Sigma P}$ zero [$_{ModP}$ neng [[$_{vP}$ v [$_{VP}$]]]]].
　　　he can　go Lisi also　　be　　　　can
　　　'He can go, and Lisi can, too.'
　　c. Ta bu-xihuan Zhangsan. Lisi ye　(??shi) [$_{\Sigma P}$ bu [$_{ModP}$
　　　he not-like　Zhangsan Lisi also　be　　not
　　　[[$_{vP}$ v-xihuan [$_{VP}$]]]]].
　　　　　　Like
　　　'He doesn't like Zhangsan, and Lisi doesn't, either.'
　　d. Ta xihuan Zhangsan. Lisi ye　(??shi) [$_{\Sigma P}$ zero [$_{ModP}$
　　　he like　　Zhangsan Lisi also　　be
　　　[[$_{vP}$ v-xihuan [$_{VP}$]]]]].
　　　　　　Like
　　　'He likes Zhangsan, and Lisi does, too.'

(14) a. Ta neng qu. dan Lisi　(que)　　(*shi)　[$_{\Sigma P}$ bu [$_{ModP}$ neng
　　　he can　go but Lisi　however　be　　　not　　can
　　　[[$_{vP}$ v [$_{VP}$]]]]].
　　　'He can go, but Lisi can't.'

(i)　Yaya　xihuan Liya. Lina ye (shi) xihuan Liya.
　　Yaya　like　Liya, Lina also be　like　Liya
　　'Yaya likes Liya. Lina also likes Liya.'

b. Ta xihuan Zhangsan. dan Lisi   (que)   (*shi)   [$_{\Sigma P}$ bu [$_{ModP}$
   he like   Zhangsan   but Lisi however   be   not
   [[$_{vP}$ v-xihuan [$_{VP}$]]]]].
        Like
   'He likes Zhangsan, but Lisi doesn't.'

c. Ta bu-neng qu, dan Lisi   (que)   (*shi)   [$_{\Sigma P}$ zero [$_{ModP}$ neng
   he not-can go   but Lisi   however   be   can
   [[$_{vP}$ v [$_{VP}$]]]]].
   'He can't go, but Lisi can.'

d. Ta bu-xihuan Zhangsan, dan Lisi (que)   (*shi) [$_{\Sigma P}$ zero [$_{ModP}$
   he not-like   Zhangsan but Lisi however   be
   [[$_{vP}$ v-xihuan [$_{VP}$]]]]].
        Like
   'He doesn't like Zhangsan, but Lisi does.'

From (8)-(14), we illustrate that Soh's analysis ignores the subtle relationship between the polarity symmetry/asymmetry and the adverbial *ye/que* and that it also lacks convincing explanations on the presence of auxiliary *shi*.

3. OUR SOLUTION

3.1 The Focal Structure of Mandarin VP-ellipsis

I propose that Soh's structure in (7) can be revised into (15), which contains two focus projections. One is a FocP, headed by an obligatory *ye* or optional *que* higher than TP and the other is PolP (ΣP), headed by an affirmative polarity focus *shi* or a covert negative polarity focus, located in the position preceded by TP and optionally followed by NegP. The main discrepancies between this two-focus analysis and Soh's single focus analysis lie in the postulation of another contrastive FocP in addition to PolP (ΣP) and of the function of PolP (ΣP), which is located in a position higher than NegP and which is responsible for maintaining the polarity symmetry or the polarity asymmetry between conjuncts via the affirmative marker *shi* and the covert negative maker (~).

(15) [$_{FocP}$ Ye/(Que) [$_{TP}$[$_{PolP(\Sigma P)}$ Pol (Σ) [$_{NegP}$ (Neg)[$_{ModP}$ Mod [$_{vP}$v [$_{VP}$V]]]]]]]

The literature has long been ignored the contrast between *ye* 'also' and *que* 'however' in dealing with Mandarin VP-ellipsis. Linguists interested in VP-ellipsis only pay attention to the three variants of the *ye*-pattern, including *ye-shi*, *ye-Aux*, and *ye-V* (Huang 1988a, b, 1991, Otani & Whitman 1991, Li 2002, Xu 2003, Ai 2006, Li 2007, etc.). None has focused on the fact that there is another *que*-pattern contrary to the *ye*-pattern in polarity. The *que*-set consists of (*que*)-Aux and (*que*)-V, with a missing gap **que-shi* 'however be', in comparison with the prevalent *ye-shi*, as shown in (9), (11), and (14). Concerning the syntactic properties of *ye* and *que*, we propose that both can be analyzed as two variants of the focus head, each of which can be projected into a FocP, that is, YeP and QueP, respectively. Further, they contain a contrastive focus feature, being checked off by a contrastive element, which is raised from the TP below in the second conjunct to the Spec of FocP.

In addition to the contrastive focus in FocP, we postulate that there is another polarity focus, PolP (ΣP), under TP in the elided clause, along the lines of López & Winkler (2000), Winkler (2000), López (1995), and Laka (1990). The polarity focus, lower than the contrastive focus (FocP) but higher than NegP or ModP, contains two potential heads, the affirmative polarity marker or the negative polarity marker, whose function is to affirm or negate the previous correlates, respectively. That is, unlike Soh's analysis, the function of the negative polarity marker is different from that of negation. The negative polarity marker dominates the operation of polarity asymmetry, which directly affects the presence/absence of the negation *bu* 'not'. More specifically, in (16a), polarity asymmetry is illustrated by the negative polarity *que*-set; in this case, when the first conjunct is positive, the second conjunct will be overtly negated by negative markers such as *bu* 'not'. On the other hand, when the first conjunct is negative as in (16b), the element after the *que*-set in the second conjunct will not be negated.

(16) a. [$_{Foc}$ Ta] [$_{Polarity Foc}$ neng qu]. [$_{Foc}$ Wo] (que) [$_{Polarity Foc}$ bu neng].
       He   can go   I however   not can
              [+]   Negative Polarity [-]
   b. [$_{Foc}$ Ta] [$_{Polarity Foc}$ bu neng qu]. [$_{Foc}$ Wo] (que) [$_{Polarity Foc}$ neng].
       He   not can go   I however   can
              [-]   Negative Polarity [+]

In contrast, the affirmative polarity marker (*ye*-set) is responsible for the polarity symmetry between conjuncts in (16c, d). It follows that when the first conjunct is negative, the second conjunct will be negative as well as in (16c). The negative marker (Neg) *bu* 'not' appears in both conjuncts. On the other hand, when the correlate clause is positive, the second conjunct will be the same. In this case, there will be no place for Neg.

(16) c. [Foc Ta] [Polarity Foc bu neng qu]. [Foc Wo] ye [Polarity Foc   bu neng].
          He   not can go   I   also   not can
                          [-]   Affirmative Polarity [-]
     d. [Foc Ta][Polarity Foc neng qu].[Foc Wo] ye [Polarity Foc   neng].
          He   can   go   I   also   can
                          [+]   Affirmative Polarity   [+]

These examples bear out our claim that PolP and NegP are different in syntactic projection and in grammatical function.

One of the reviewers casts doubt on the additional focus projection in addition to the ΣP claimed by Soh (Laka 1990 and López 1994). The ideas of Focus projection (FP) in this paper are mostly taken from the ones proposed by Culicover (1991), Drubig (1994, 1998), Winkler (2000), and López and Winkler (2000), etc. They argue that the polarity focus which realizes the NEG/AFF features is projected into ΣP below TP. Further, López and Winkler (2000) also propose that the remnant in front is free to assume either a topic or a contrastive focus function. The topic, which simply repeats previous information, is not our concern here. However, contrastive focus is analyzed as a syntactic feature that selects for and merges with TP to project a phrase: FP (Laka 1990, Howard 1993). Meanwhile, in terms of Drubig's (1998) theory of focus in question-answer contexts, they also observe that contrastive focus is allowed in the English VPE, whereas it is prohibited in the Spanish VPE, as illustrated in (17) and (18), respectively.

(17) A: Some fat guys will bring the booze.
     B: a. No, MARY\ will (not the fat guys).
          b. Even JOHN\ will.
          c. No, only JOHN\ will.

(18) A: Unos Chicos traerán   las   bebidas.
       some boys   will-bring the   drinks
       'Some boys will bring the drinks.'
   B: a. *No, MARIA\ sí.   [cf. –No, pero   María sí.]
          no, Maria   yes-will   no, but   Maria yes-will
       b. *Incluso JUAN\ sí.
          Even Juan   yes-will
       c. *No, sólo JUAN\ sí.
          no, only Juan   yes-will

López and Winkler (2000) attribute this difference to the existence of the projection TP. Since the English VPE includes a TP, it is possible for the TP to be selected by a focus feature and consequently the remnant in question should be capable of including a focus constituent. As to the case of the Spanish VPE, the impossibility of contrastive focus is due to its lack of a TP.

    Given that this analysis is on the right track, we may use it to ascertain whether Mandarin VPE may have contrastive FP as below.

(19) A: sansheng yao qu shang yinyue ke.
      boys   will go take   music class
      'The boys will go to the music class.'
   B: a. bu, NUSHENG cai   yao.
        no girls   then   will
        'No, it is the girls who will go to the music class (, not the boys).'
      b. Lian LISI ye   yao.
        Even Lisi also will
        'Even Lisi also will.'
      c. bu, zhiyou LISI yao.'
        no   only   Lisi will
        'No, only Lisi will.'

The examples in (19) show that the Mandarin VPE behaves just like the English VPE in allowing contrastive focus, which may also lead to the conclusion that there may be a TP projection in Mandarin. In other words, this analysis probably sheds light on cartographic structure in Mandarin (Rizzi 1997, 2004) as in (20).

(20)　Top > Focus > TP > ΣP > VP

3.2 The Genesis of the Polarity Concord: Feature Copying

Based on these understandings, the examples in (16) can be further interpreted. The contrastive focus as a syntactic feature is checked off by raising the subject *wo* 'I' to the Spec of Focus. The polarity focus ΣP under TP containing either the NEG or AFF feature needs to be checked off by polarity concord between Foc and Pol. In the context of polarity symmetry, *ye* always patterns with the affirmative polarity marker with the AFF feature, while in the context of polarity asymmetry, *que* always interacts with the negative polarity marker with the NEG feature. Theoretically speaking, we temporarily assume that there are three alternative analyses to explain the polarity concord; it seems that the last one, which includes the feature copying approach, is more tenable.

First, the polarity concord between Foc and Pol may be achieved by head movement. That is, after ellipsis, the head of the remnant elements after PolP such as Neg, Mod, or V has to be raised to *v*, Pol, T, and ideally Foc to check off the polarity feature, which will be instantiated by the analysis of Bunun VP-ellipsis in Section 4.4. However, languages vary with respect to the distance of head-movement and even the possibility of V-raising or VP(pred)-raising for languages with word orders other than SVO. For instance, English can implement V-to-T movement, while Mandarin only exerts V-to-*v* movement (Tang 2001). VOS languages such as Atayal are derived from SVO by predicate-raising, while VSO languages such as Bunun come from SVO by V-raising (Holmer 2005, and Travis 2005). Therefore, there are still many languages such as Mandarin, English, Japanese, and Atayal that cannot obtain polarity concord by thorough head-movement to Foc.

Second, we assume that polarity concord is probably implemented at the level of LF through the interaction of the two focus markers, Foc and Pol. According to May (1985), the focuses can be analyzed as quantifiers with different scopes at LF. We suggest that the polarity focus (Pol) may be first raised to the spec of CP, while the contrastive focus (Foc) is later adjoined to the CP, forming a CP layer, represented as [$_{CP}$ Foc [$_{CP}$ Pol [...]]]. The contrastive focus as a quantifier takes scope over the polarity focus. Since the two focuses are adjoined or amalgamated, by means of feature agreement, the polarity concord is reached. Here, a problem still arises. Since there is no NEG/AFF polarity feature in the head of FocP,

what kind of feature is checked or agreed? It follows that the Foc has to be postulated to contain an additional polarity feature in parallel to that of Pol. Watanabe's (2004) analysis of negative concord may help clarify this featural mystery and will shed light on polarity concord in question.

Third, before giving the proposed analysis, I would like to give a brief introduction to the theory of feature checking in Chomsky (1995, 2000, 2001), which is essential to the subsequent discussion. The crucial element in the theory of feature checking is the behavior of formal features, for which Chomsky (2000) establishes the notions of Agree, probe, and goal. Agree is defined as an operation in which a set of formal features within a head H serves as a probe, searching for a set of matching features in the sister constituent of H under the locality of closest c-command. The latter set of matching features is the goal. There are two types of formal features in terms of LF interpretability. The interpretable formal features are the ones that continue to be available to the syntactic computation even after checking at LF. The uninterpretable formal features must be eliminated at PF after the Agree operation to ensure LF convergence. Otherwise, failure to remove uninterpretable features causes the derivation to crash at LF. Chomsky (2000) further imposes the condition that the goal must be active in order for Agree to take place, meaning that the goal must be rendered active by the presence of an uninterpretable feature.

Watanabe (2004) utilizes the notions above along with some additional specifications of feature copying to analyze negative concord in Modern Greek, Japanese, and West Flemish, as shown in (21).

(21) a. I   Theodra   *(dhen)   enekrine   {kanena/KANENA}
       the Theodra   NEG   approved-3SG any/no
       sexedhio.
       plan
       'Theodra didn't approve any plan./Theodra approved no plan.'
    b. . . . da   Valère   *niemand*   nie   (en)-kent.
          that   Valère   nobody   not   Neg-know
          ' . . . that Valère doesn't know anybody.'
    c. John-wa   *nani-mo*   tabe-nak-atta.
       John-Top   what-MO   cat-NEG-PAST
       'John didn't eat anything.'

He argues that the negative concord arises when the interpretable neg-feature of the Neg heads (probe), *dhen*, *nie*, *-nak-* in (21a, b, c), undergoes checking with the neg-feature of negative concord items (goal), *kanena*, *niemand*, *nani-mo*, which are made active by an uninterpretable focus feature, realized as stress in PF computation, proposed by Watanabe (2002), to trigger Q-feature checking for *wh*-questions. From the analysis of the elliptical answers, he finds that in fact, within the negative concord structure, it is not the Neg head but the negative concord item that inherently carries the meaning of negation (Haegeman and Zanuttini 1991, 1996). In other words, the negative meaning of a negative concord structure merely comes from the negative concord item itself. Thus, technically, in order to cancel the negative meaning of Neg, he makes use of a feature copying mechanism (Chomsky 1995, 1998) to interpret the Agree operation in polarity concord. According to the feature copying hypothesis, the Agree operation that takes a feature H as probe and F as goal in (22) will produce the structure in (23a), instead of the one in (23b). This indicates that there will be two neg-features under Neg after feature copying, as instantiated in (24), taking Japanese negative concord for example. As a result, two neg-features will cancel each other out and mean the same thing as affirmation.

(22) H [… [$_{XP}$ …F …] …]

(23) a. [(XP) H + F [… [$_{XP}$ …F…] …]]
    b. [(XP) H [… [$_{XP}$ … F …] …]]

(24)
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              NegP
             /     \
         VP          Neg
        /   \       [neg] [neg]
     Nani-o
     [neg] [focus]
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When we try to approach polarity concord from the point of view of negative concord analysis, some adjustments have to be made, as shown in (25).

(25)   FocP
              /   \
          Foc   …..
      [AFF]/[NEG]   /   \
                    …   PolP
                   [AFF]/[NEG] ~~[focus]~~
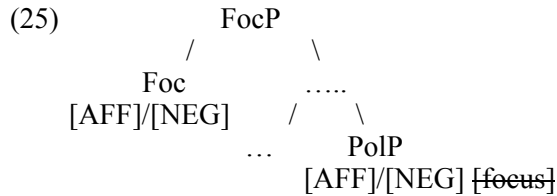
First of all, following Watanabe's analysis, we assume that there is also an uninterpretable focus feature in PolP, which activates the goal to undergo the Agree operation with the focus head as a probe in FocP. The assumption is validated by the fact that the uninterpretable focus feature under PolP is often stressed at the end of the sentence after VP-ellipsis for PF realization. Second, we further stipulate that the NEG/AFF feature is an interpretable feature, which is copied onto the Foc in accordance with feature copying theory. It follows that when [AFF] undergoes feature copying, the particle *ye* is realized; on the other hand, when [NEG] is copied, *que* comes out. That is to say, the difference between negative concord and polarity concord lies in whether the interpretable feature in question is nullified or not. For the former, the neg-features are nullified as affirmation; as for the latter, the polarity feature not only retains but also manifests different forms according to the value of the polarity, since there is no other similar feature in the Foc head capable of affecting the feature copying. Note that in our analysis, the polarity feature [NEG] is distinct from the negative feature [neg] in the sense of Watanabe (2004). The former is for inter-sentential polarity balance, while the latter is purely for negation. Syntactically, the former is higher in the Pol position than the latter in the Neg position. Later, we will see that in the context of the illicit **que-shi*, a certain kind of feature conflict does happen, to be discussed in Section 3.3, and that in another context when the *que* and *ye* coexist, it is possible to exercise the Agree operation of the two [AFF] and [NEG] simultaneously under a reanalysis of the two focus heads.

In brief, what we have proposed here is not a displacement/movement analysis but an *in-situ* feature copying mechanism, which avoids the dilemma of the first alternative. In addition, it also evades the vague agreement of the second CP layer analysis.[5]

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[5] We have tried to explain the Agree operation hidden beneath the polarity concord, but we leave such details as are still lacking for further research.

3.3 Affirmative Polarity Focus vs. Negative Polarity Focus

In this section, we will argue that the auxiliary *shi* is a realization of the affirmative polarity marker, whereas the negative polarity marker is inherently implicit.

That *shi* is an affirmative polarity marker can be based on the following grounds. Examples in (4) show that *shi* is higher than Neg, in contrast to the English *do*, which is lower than Neg. Given that PolP is distinct from NegP as argued in (15), it follows that *shi* could be located in PolP or in the position between FocP and PolP. We consider it to be the head of PolP since its function of being an affirmative marker is exactly identical to the properties of PolP. If *shi* is a dummy auxiliary TP as Soh has claimed, not only will the affirmative focal property of *shi* be missed but also illicit sentences such as (13) and (14) will be generated. In fact, its pure affirmative use can be easily identified through the answer to a yes-no question. For instance, in (26), the simple answer *shi* is used to respond to the question in an affirmative way, no matter the nature of the polarity of the question. In (26a), *shi-de* affirmatively answers the positive question *ni xihuan ta ma* 'Do you like him?'. In (26b), it also can affirmatively respond to the negative question *ni bu xihuan ta ma* 'Don't you like him?'. Along this line, we may argue that the syntactic position of the affirmative maker *shi* is realized after the affirmative *ye* in Mandarin VP-ellipsis.[6] In addition, the affirmative marker *shi* can be further discriminated by one crucial property, as explored by Soh (2007). It differs from the copula *shi* in syntactic position, as illustrated in Soh (7).[7]

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[6] I would like to thank the reviewer who pinpointed a descriptive contradiction in my analysis. Functional focus projections (FP's) of *ye* and *que* have been proposed in this analysis. In other words, *ye* and *que* are taken to be functional heads, not adverbials, which are used only for descriptive convenience. However, to avoid any analytical confusion, I will consistently use the affirmative *ye* or the negative *que* instead throughout the paper.

[7] Soh has claimed that the affirmative *shi* also departs from the cleft/emphatic *shi* with respect to the fact that the latter may not appear after a *wh*-phrase within the same island as in (ia), while the former can as in (ib).

(i) a. *shei shi song   ta   yi-ben-shu?
       who be   give   he   one-Cl-book
       'Who DID give him a book?'

(26) a. A: Ni xihuan ta ma?
　　　　 You like him Q
　　　　 'Do you like him?'
　　　 B: *Shi*-de,　 wo xihuan ta.
　　　　　 be-Part　I　like　him
　　　　　 'Yes, I like him.'
　　 b. A: Ni　 bu-xihuan ta　 ma?
　　　　　 you not-like　 him　 Q
　　　　　 'Don't you like him?'
　　　 B: *Shi*-de,　 we bu-xihuan ta.
　　　　　 be-Part　I　not-like　him
　　　　　 'No, I don't like him.'

　　Concerning the negative polarity marker, it is not realized in Mandarin, differing from the overt affirmative one. Its implicitness is closely related to the optionality of *que* and the concomitant conjunctive

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　　 b. shei ye　　shi　song　ta　yi-ben-shu?
　　　　who also　 be　 give　 he one-Cl-book
　　　　'Who also gave him a book?'
The reviewers have suggested that Soh's claim in (i) may not be true as illustrated in (ii), which obviously allows the cleft/emphatic *shi* after the *wh*-word *shei* 'who'.
(ii) a. shei shi mingtian　 yao　 song　 ta　 yi-ben-shu?
　　　　who be tomorrow　 will　 give　 he one-Cl-book
　　　　'Who is it that will give him a book tomorrow?'
　　 b. shei　 shi song-le　 ta yi-ben-shu?
　　　　who　 be give-Asp he one-Cl-book
　　　　'Who gave him a book?'
Note that in our analysis, (ib) is still not acceptable as was also the case in (12c); however, the acceptability of (ib) is surely better than (ia). In Note 8, we assume that the *shi* in non-elliptical structures may possibly be analyzed as the cleft/emphatic marker *shi*. If this inference is correct, it is not surprising to be able to note that *shi* as a cleft/emphatic marker in (ii) is grammatical. However, a problem still then arises. Why is (ia) even less acceptable than (ii)? It seems that the *shi* in (ia) is apt to be taken as a specificational copula (Tham 2008) as in (iii). In this case, the copula is usually obligatory. We speculate that it may be the nature of the syntactic and semantic conflict between the emphatic/cleft copula and the specificational one that causes such an anomaly. This issue is open for future research.
(iii) *shei shi　 song　 ta　 yi-ben shu　　 (de　 ren)?
　　　 who be　 give　 he　 one-Cl book　　 De　 person
　　　 'Who is the person who gave him a book?'

dan(shi) 'but'. As depicted, the contrastive focus marker *ye* and *que* will pattern with the following affirmative and negative polarity focus maker in polarity, respectively. *Ye*, obligatorily coupled with the affirmative polarity marker *shi*, forms *ye-shi*, *ye-(neg)-Aux*, and *ye-(neg)-V*. For the latter two types, the pure affirmative marker *shi* is preferably kept implicit in Mandarin due to the presence of Aux and V (cf. (13)). At the same time, *que* always accompanies the covert negative marker, which in our analysis is responsible for negative polarity in contrast to the affirmative marker *shi*. In addition, the optionality of *que* further reveals that this negative-set, including an optional *que* and a covert negative marker ~, is weakening in form over time even if it is still at work in VP-ellipsis as illustrated in (27).

(27) Ta xihuan Zhangsan, dan(shi) [_{FocP} Lisi (que) [_{TP} [_{PolP} ~
 he like Zhangsan but Lisi however
 [_{NegP} bu [_{vP} xihuan]]]]].
 not like
 'He likes Zhangsan, but Lisi doesn't.

The weakening can be seen from the fact that the function of the *que*-set can also be overtly assumed by the prevalent conjunctive *dan(shi)* 'but', which is often used as a device to present polarity asymmetry between conjuncts. This inference can be justified by investigating a cross-linguistic trend of the weakening/implicit negative set and of extensive conjunctive use, as will be explored in Section 4. In other words, we can assume that the waning of the *que*-set in its surface form is a natural consequence of the use of the conjunctive *dan(shi)* 'but' and such phenomenon is widespread among languages.

3.4 *Shi*-Support as a Last Resort

Given this account, we can further predict that the ungrammaticality of *(que)-shi* in (14) and (28a) is caused by the polarity conflict between the negative *que* and the affirmative *shi* as illustrated. This can be supported by (28b), showing that given Soh's structure in (7), when *shi* is a copular verb within *v*P rather than the affirmative *shi* involving polarity in (28a), the string *(que)-shi* is allowed.

(28) a. *Zhangsan bu   xihuan ta,   danshi [FocP Lisi   (que)
       Zhangsan not   like   him   but   Lisi   however
       [TP [PolP shi   [vP]]]]^8
                 be
       'Zhangsan doesn't like him, but Lisi does.'

    b. Zhangsan   bu-shi   ribenren, danshi [FocP Lisi   (que)
       Zhangsan   not-be   Japanese but   Lisi   however
       [TP [PolP ~   [vP shi]]].
                      be
       'Zhangsan is not Japanese, but Lisi is.'

From this observation, one may expect that the examples in (13), partially repeated below, should be acceptable as there is no polarity conflict between *ye* 'also' and *shi*. However, this expectation is not borne out. Even though the examples in (13) are better than the examples in (14) by intuition, they are far from being acceptable, as shown below.

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^{8} One of the reviewers gives us a counterexample in (i), found in the Google Search Engine, to argue against our claim that the sequence *(que)-shi* is only possible when *shi* is a copular and not the affirmative *shi* involving polarity. That is, if (28a) is ruled out by the polarity conflict, then (i) should be predicted to be unacceptable, contrary to the fact. However, I would like to say that (i) may not be a counterexample to our analysis.

(i) ni   (shi)   nayang   baquan, wo que   (shi) ruci ai   ni.
    you be   that.such   supreme I   however be   such love   you
    'You are so supreme; however, I am so fond of you.'

The major difference between (i) and (28a) and (14) is that the former one is not a typical VPE construction with redundant VP elements, but a construction with a contrastive predicate, while the latter two are VPE *per se*. In addition, there is another importance characteristic of the *shi* in (i). The *shi* in question and its counterpart in the first conjunct are optional. The copula is reminiscent of the ones given by Soh (2007:186) in (12c) and (i) of Note 4. Both *shi*'s are also optional in the non-elliptical structures in her intuition. Here, we propose that the *shi* in elliptical (28a) and (14) tends to be interpreted as an affirmative *shi* in our judgment, and the meaning and function are contrary to that of *que* 'however', as we have claimed. For those speakers who accept (i), (12c), and (i) of Note 4, we suggest that the copula is much closer to the emphatic/cleft *shi* because of the optional nature of the copula. This can be deduced from the fact that it is more feasible to emphasize an overt (contrastive/redundant) predicate than to futilely emphasize an elided one. Therefore, it seems that (i) is not a counterexample to our analysis.

(13) a. Ta bu-neng qu. [$_{FocP}$ Lisi   ye [$_{TP}$ [$_{PolP}$ (??shi) [$_{NegP}$ bu
　　　 he not-can go　　　Lisi   also　　　　　 be　　　 not
　　　 [$_{ModP}$ neng [$_{vP}$]]]]]].
　　　　　　 can
　　　 'He can't go, and Lisi can't, either.'

(14) a. Ta neng qu. Dan(shi) [$_{FocP}$ Lisi　(que) [$_{TP}$ [$_{PolP}$ (*shi)
　　　　he can　go　but　　　　　 Lisi   however　　　 be
　　　 [$_{NegP}$ bu [$_{ModP}$ neng [$_{vP}$]]]]]].
　　　　　　 not　　　can
　　　 'He can go, but Lisi can't.'

　　　 To solve this problem, we postulate that the emergence of *shi* in Mandarin VP-ellipsis is due to the last resort operation. The violation of the last resort seems to be milder than that of the polarity conflict. This can be verified through the following facts. First of all, we find that *shi* is obligatory only in the elided type of *ye-shi* as in (12a, b) and there is a low degree of acceptability for most of the people that I have consulted especially when Aux and V are present as in (13). This fact indicates that the focus particle *ye* actually needs a verbal element to maintain its existence especially within an elided conjunct. That is, when there is no verbal Aux or V, *shi* is required. Hence, we propose that the affirmative polarity focus *shi* can be thought of as a last resort in Mandarin VP-ellipsis.[9] In contrast, when it occurs in a non-last-resort context, defiance arises, resulting in low acceptability as in (13). From this perspective, the *shi*'s in (14) should also violate the last resort rule. But

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[9] In comparison with Taiwanese, a language close to Mandarin in Taiwan, *si* 'be', the counterpart of *shi*, can optionally precede Aux and V as (i). It follows that *si* 'be' is not a last resort in this language. We may assume that the affirmative polarity focus as a last resort may be subject to a dialectal variation.
(i) a. Tiu-e　　　khu　mikok, Li-e　ma　si.
　　　 Mr. Zhang go　　America Mr. Li also be
　　　 'Mr. Zhang went to America, and Mr. Li did, too.'
　　 b. Tiu-e　　　　bo-ai　　khu mikok, Li-e　　ma　　(si)　bo-ai.
　　　 Mr. Zhang　not-want go　America Mr. Li　also　 be　not-want
　　　 'Mr. Zhang doesn't want to go to America, and Mr. Li doesn't, either.'
　　 c. Tiu-e　　　khu-kue　jitpun, Li-e　　ma (si)　khu-kue.
　　　 Mr. Zhang　go-Exp　Japan　Mr. Li also be　go-Exp
　　　 'Mr. Zhang has been to Japan, and Mr. Li has, too.'

why does they differ from (13) in acceptability? We suggest that it is because the polarity conflict in syntax and semantics is understood as a more serious violation than that of the last resort rule. Given the feature copying analysis proposed in Section 3.2, the polarity conflict is thus explained. The realization of the affirmative focus *shi* indicates that it is the [AFF] polarity feature that undergoes feature copying on the probe Focus head, which is expected to be realized as *ye* during the PF computation. The emergence of *que* violates this Agree operation. That is the reason why (14) is less acceptable than (13) in terms of grammaticality.

3.5 The Collaboration of the *Que*-set and *Ye*-set

As mentioned above, the switch of polarity in Mandarin VP-ellipsis lies in the polarity concord between the FocP and PolP. More evidence shows that the negative set and the affirmative set can interact with each other in non-elliptical sentences as in (29). This fact lends further support to the proposed structure in (15) with its two unique projections, FocP and PolP, within the VP-ellipsis construction.

(29) a. ta[AFF-Pol bu xiang kan] [NEG-Pol na-bu lan dianying],
    he not want see that-Cl bad movie
    (que) *(ye) [AFF-Pol bu xiang kan]
    however also not want see
    [NEG-Pol zhe-bu hao dianying].
    this-Cl good movie
    'He doesn't want to see that bad movie; (but) he also doesn't want to see this good movie.'
  b. ta [AFF-Pol bu shi] [NEG-Pol junzi], (que) *(ye) [AFF-Pol bu shi]
    he not be gentleman however also not be
    [NEG-Pol xiaoren].
    petty.person
    'He is not a gentleman; (but) he isn't a petty person, either.'
  c. ta [*e* [NEG Pol jiu-le bieren]], (que) (ye)
    he save-Asp others however also
    [*e* [NEG Pol hai-le ziji]].
    hurt-Asp himself
    'He saves others, but (also) hurts himself.'

In (29a), the affirmative polarity focus, *bu-xiang-kan* 'don't want to see,' achieves polarity symmetry across conjuncts via the obligatory *ye*. As for the focuses of the negative polarity, *na-bu lan dianying* 'that bad movie' and *zhe-bu hao dianying* 'this good movie', both manifest polarity asymmetry in meaning across conjuncts by virtue of the contrast denoted by the degree adjectives *lan* 'bad' and *hao* 'good', respectively, which is bridged by the optional *que* in this case. The same reasoning also applies to (29b). The affirmative polarity focus is *bu-shi* 'not be', which is bridged by *ye*; the members of the negative set, including two semantic-contrast nouns, *junzi* 'gentleman' and *xiaoren* 'petty person', are balanced by the optional *que*.

It is interesting to note that in (29c) the optionality of *ye* and the absence of the affirmative set seem to be against our prediction. Given that *ye* and the affirmative polarity focus have to coexist as claimed in (15), we assume that in (29c) the affirmative polarity focus is on an empty action event, expressing the idea that 'he not only has performed the action of saving others but also has performed the action of hurting himself.' It is this implicit affirmative polarity focus that makes *ye* optional. This observation reinforces our claim that there is a strong bond between the Focus *ye* and its corresponding affirmative polarity focus. When the latter is overt, *ye* is obligatory; when covert, it becomes optional.[10] Note that when both polarity sets coexist, the adverb *que* 'however' has to precede *ye* 'also', whereas the affirmative polarity focus has to precede the negative one, as illustrated in (30a), which manifests the following external *que*-set and internal *ye*-set sequence in (30b).

(30) a. [(que)   *(ye) [AFF-Pol bu   xiang kan]
         however also   not   want   see
         [NEG-Pol zhe-bu hao   dianying].
              this-Cl good   movie

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[10] In English, the distribution of *too* is also subject to an argument-adjunct asymmetry, as claimed by Kaplan (1984). When the arguments such as indirect objects are in focus, *too* is required in (ia); otherwise, the sentence will be ungrammatical in (ib). In contrast, when peripheral adjuncts such as locatives are in focus, *too* is optional as in (ii).
(i)   a.   Jo showed the book *to Fred* and she showed it *to Bill* too.
       b.   *Jo showed the book *to Fred* and she showed it *to Bill*.
(ii)   a.   Jo has lived *in Philadelphia*, and she has lived *in San Diego* (too).
       b.   Jo wrote an article *in 1980* and she wrote one *in 1981* (too).

   b. [(*que*) [*ye*…Affirmative polarity focus] Negative polarity focus]

Even if the *ye*-set is surrounded by the *que*-set, they operate individually but still interact with each other to achieve a kind of polarity balance. Take (29a) for example. Separately, each of the two sets operates on its own. The *ye*-set achieves polarity symmetry as in (31a) and the *que*-set polarity asymmetry as in (31b). This contrast indicates that the projections headed by each of them are hierarchically unique as in (31c).
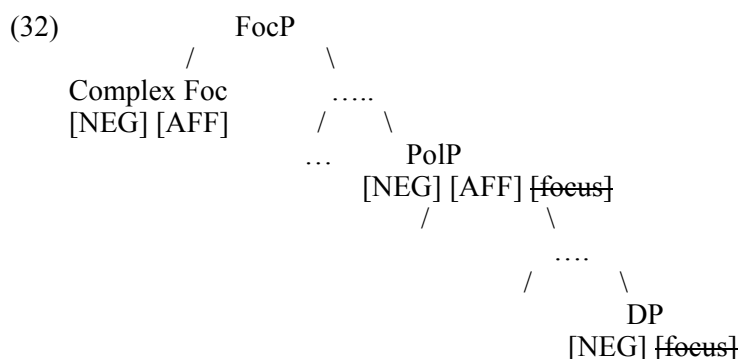
(31) a. [$_{\text{AFF-Pol}}$ bu   xiang   kan] … , …[$_{\text{FocP}}$ *(ye)   [$_{\text{TP}}$
               not   want   see   also
       [$_{\text{PolP}}$ AFF bu   xiang   kan]]].
                   not   want   see
    b. [$_{\text{NEG-Pol}}$ na-bu   *lan*   dianying], …[$_{\text{FocP}}$ (que) …
               that-Cl   bad   movie   however
       [$_{\text{vP}}$ … [$_{\text{NEG}}$ zhe-bu   *hao*   dianying]]].
                   this-Cl   good   movie
    c. .., [$_{\text{FocP}}$ (que)   *(ye) [$_{\text{TP}}$ [$_{\text{PolP}}$ AFF [$_{\text{NegP}}$ bu
               however   also   not
       [$_{\text{vP}}$ xiang   kan [$_{\text{DP(NEG)}}$ zhe-bu   *hao*   dianying]]]]].
           want   see   this-Cl   good   movie

   But how do the two sets syntactically and semantically interact in such context under feature copying analysis? We may temporarily assume that *que* and *ye* may be reanalyzed as a complex Focus head *que-ye*, which comprises both negative and positive values. This gains partial support from the fact that *que* and *ye* cannot be separated. In that sense, in light of feature copying analysis, before the [NEG]-[AFF] feature in PolP undergoes the Agree operation to be copied onto the composite focus head, we have to postulate that the interpretable [NEG] feature in DP as a goal has to be activated by another uninterpretable focus feature under the DP and later be copied onto the Pol as its probe, thereby being incorporated with the [AFF] feature, as suggested by Chomsky in (23a).[11] Notice that the two opposite values in Pol will not be nullified, unlike the two neg-features in the negative concord

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[11] In general, speakers are inclined to put a stress on the word *hao* 'good', in contrast to *lan* 'bad' in the first conjunct. We assume that the stress is the PF realization of the uninterpretable focus feature in line with Watanabe (2004).

(Watanabe 2004). The procedures of the Agree operation are illustrated in (32).[12]

(23) a. [(XP) H + F [… [$_{XP}$ …F…] …]]

(32)   FocP
            /   \
    Complex Foc   …..
    [NEG] [AFF]   /   \
            …   PolP
          [NEG] [AFF] [focus]
           /   \
                ….
              /   \
                 DP
             [NEG] [focus]

4. SOME EXTENSIONS: A CROSS-LINGUISTIC PERSPECTIVE

We expect that the two-focus account proposed in this work can shed light on cross-linguistic analyses on VP-ellipsis. Below, we will try to apply the analysis to four languages, inclusive of English (SVO), Japanese (SOV), Atayal (VOS), and Bunun (VSO), with a focus on identifying or verifying the following three properties: (i) the unique projections of FocP and PolP, (ii) the Agree operation of the polarity concord, and (iii) the waning trend in the use of the *que*-set. The results show that although there are differences among the languages in word order and in head-/predicate-movement, the basic tenets of the VP-ellipsis are still sustainable.

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[12] We would like to remind the readers that this special interaction only happens in non-elliptical sentences as in (29), which are only composed of polarity focuses and without contrastive focus. In contrast, it would be impossible for a fully-fledged focal structure incorporating both of the two sets to occur in the elided structure, probably because of the limited nature of the verbal content of the polarity focus especially after the operation of VP-ellipsis, which removes the possibility of the occurrence of another polarity focus.

4.1 English VP-ellipsis (SVO)

Given (15), the adverbs *too* and *either* can be taken as members of the group of affirmative polarity focus markers. *Too* can be realized as an affirmative polarity focus in Mandarin, while *either* is analogous to an affirmative polarity focus with a negation. In English, such affirmative sets are located in the sentence-final position as in (33a) and (34a). In fact, as in the case of the counterpart of the focus marker *ye* 'also', the English *also* merely appears in non-elliptical sentences such as (33b) and (34b).

(33) a. John likes apples, and Mary does, *too*.
    b. John likes apples, and Mary *also* likes apples.

(34) a. John doesn't like apples, and Mary doesn't, *either*.
    b. John doesn't like apples, and Mary *also* doesn't like apples.

The second conjunct in (34a) shows that the auxiliary verb *do* in English cannot contain negation, unlike the Mandarin *shi* 'be' (Soh 2007). It thus follows that *do* will be located in the ModP position lower than NegP, as illustrated in (35).

(35) [$_{FocP}$ [$_{TP}$ [$_{PolP}$ Pol   [$_{NegP}$ (Neg) [$_{ModP}$ Mod   [~~$_{vP}$ V [$_{VP}$ V~~]]]]]]
                   too/either;~   not   do

No doubt, the negative polarity set in English can be instantiated by the conjunctive *but* and the adverb *however*, an equivalent of *que*, which is only shown in non-elliptical sentences as in (36).[13] Likewise, in English, the negative polarity marker shows signs as having become weakened in the same way as Mandarin counterpart, as represented as ~ in the PolP in (35).

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[13] Most of the time, the adverb is in the initial position. The floating property of this adverb is different from that of the fixed position of *que*. From this point of view, the analogy seems to be problematic. So far, we take both the English *however* and the Chinese *que* as variants of the negative FocP in VP-ellipsis and leave the details for further research.

Ting-Chi Wei

(36) a. John doesn't like apples, *but* Mary does.
   b. John likes apples, *but* Mary doesn't.
   c. John likes apples; Mary, *however*, doesn't like apples.

In line with the V-raising analysis of VP-ellipsis proposed by Huang (1988a, b, 1991), Otani and Whitman (1991), and Li (2002), we propose that the auxiliary *do* is raised to Neg or directly to Pol to derive the various verbal complexes such as *do too* in (33a), *don't either* in (34a), *do~* in (36a), and *don't~* in (36b), respectively. In such case, the complexes will achieve polarity concord via the Agree operation through feature copying.[14] In fact, the polarity concord between Foc and Pol is also satisfied even if there is only Pol, *too/either*, with the lack of overt Foc. In addition, the *que*-set is replaced by *but* in English as predicted. Hence, the three properties mentioned above have been verified and these examples lend support to our analysis.

4.2 Japanese VP-ellipsis (SOV)

The Japanese examples, (37) and (38), show that the copula *da* is higher than Neg in the syntactic hierarchy, since just like the Mandarin *shi* 'be', *da* is used to affirmatively respond to the previous conjunct, which may be positive as in (37a) or negative as in (38a), in concord with the focus marker *mo* 'also'. It thus follows that we can draw an analogy between the *mo-da* pattern in Japanese and the *ye-shi* one in Mandarin.

(37) a. John-wa   sushi-o   tabe-ta.
      John-Nom sushi-Acc eat-Past
      'John ate sushi.'
  b. Mary-mo   __ da.
     Mary-also-Foc   Cop
     'Mary ate sushi too.'

---

[14] We do find a seeming example showing the interaction between negative polarity and affirmative polarity in English VP-ellipsis (Kaplan 1984). In (i), *but* here denotes a contrast between "already-built-up discourse" implying that 'it is impossible for Mo to hit a homer' and "similarity" in the second conjunct, meaning that 'Mo unexpectedly hit a homer.'
(i) Jo hit a homer but Mo did too.

(38) a. John-wa   sushi-o   tabe-nakat-ta.
      John-Nom   sushi-Acc eat-Neg-Past
      'John didn't eat sushi.'
   b. Mary-mo   __da.   (*da* > Neg)
      Mary-also-Foc   Cop
      'Mary didn't eat sushi either.'

From (39) (Otani and Whitman 1991), we know that Japanese VP-ellipsis also manifests a V remnant analogous to the Mandarin *ye/(que)*-V. Further, when the verb *sute-ta* 'discard' is left as in (39b), the copula *da* cannot occur. Likewise, *da* seems to play the same role of a last resort as does the Mandarin *shi*. The structure of VP-ellipsis in Japanese is illustrated in (40), showing that the *mo-da* structure in (37-8) will initiate a Neg/*v*P deletion, while the *mo*-V pattern in (39) is produced via a *v*P-ellipsis after a V-to-*v*-to-Pol movement.

(39) a. John-wa   zibun-no   tegami-o   sute-ta.
      John-Nom self-of   letter-Acc discard-Perf
      'John threw out his own letters.'
   b. Mary-mo __ sute-ta.
      Mary-also   discard-Perf.
      'Mary also threw out her/John's letters.'

(40) [$_{FocP}$ [$_{TP}$ [$_{PolP}$ Pol   [$_{NegP}$ (Neg) [$_{ModP}$ (Mod) [$_{vP}$ v [$_{VP}$ V]]]]]]][15]
      mo   (da)

   In addition, Japanese makes use of the *soo*-structure 'so' to express polarity asymmetry, which is bridged by the conjunctive *ga* 'but', rather than the strategy of ellipsis as in (41).[16]

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[15] This analysis follows from the Kaynean anti-symmetric analysis (Kayne 1994), claiming that SOV is derived from the underlying SVO by object raising. Here, we have to assume that the object is deleted before object-raising. On the other hand, we may postulate that Japanese may have the following configurational structure as in (i). However, a problem arises. The focus marker –*mo* 'too' cannot be a head due to the head-final parameter. In this case, it can be assumed that it is a clitic-like element, attached with the contrastive focus, which is later raised from the Spec of TP to the Spec of Focus.

(i) [$_{FocP}$ [$_{TP}$ [$_{PolP}$ [~~$_{NegP}$~~ ~~[$_{ModP}$~~ ~~[$_{vP}$~~ ~~[$_{VP}$~~ ~~V]~~ ~~v]~~ ~~(Mod)]~~ ~~(Neg)]~~] Pol (Pol)]]]
      Mary-mo   (da)

(41) a. John-wa   sushi-o   tabe-ta   ga,
      John-Top   sushi-Acc   eat-Perf   but
      Mary-wa   soo-shi-nakat-ta.
      Mary-Top so-do-Neg-Perf.
      'John eats sushi, but Mary doesn't.'
   b. John-wa   sushi-o   tabe-nakat-ta   ga,
      John-Top   sushi-Acc   eat-Neg-Perf   but
      Mary-wa   soo-shi-ta.
      Mary-Top   so-do-Perf
      'John doesn't eat sushi, but Mary does.'

From the above descriptions, the two focuses in question also exist in Japanese VP-ellipsis. In that sense, the Agree operation between Foc and Pol can also partially occur in the case of the affirmative polarity *mo*-set, since the *que*-set is completely absent.

4.3 Atayal VP-ellipsis (VOS)

Following the Kaynean anti-asymmetric analyses on the word order of languages (Kayne 1994, Holmer 2005, and Travis 2005), we assume that Atayal, an Austronesian language with VOS word order spoken in northern Taiwan, is derived from SVO via an operation of predicate-fronting along with subject-raising.

In (42), the subject *i kawas* is first raised from the Spec of VP to the Spec of Focus headed by *uzi* 'also' as a contrastive focus. Then, the NegP *ini mani* 'not eat' in (42a) or the *v*P *mani* 'eat' in (42b) is raised to the TopP in accord with the left periphery of the CP proposed by Rizzi (1997). In this language, *uzi* 'also', the counterpart of *ye* 'also', is located in the final position of the second conjunct. There is no affirmative polarity marker under PolP. We propose that the paradigm of Atayal VP-ellipsis can be derived by means of the elision of different scopes of constituent within TopP. For instance, in (42a), either the object *ilox* 'banana', the *v*P *mani ilox* 'eat bananas' or the NegP *ini mani ilox* 'not eat banana' can be elided. The first is achieved by VP-ellipsis after V-to-*v* raising according to Huang's (1988a, b, 1991) and Li's (2002) analyses. The second retains the negative *ini* 'not' by *v*P-ellipsis, and the third is a kind of NegP-deletion, making the second conjunct become a

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[16] Thank Miyuki Sawada (p.c.) for pointing out this fact.

stripping-like structure, *i kawas uzi* 'Kawas, too'. Certainly, the affirmative polarity within the sequence [*uzi*-covert affirmative polarity focus] is still maintained even after various operations of ellipsis. By the same token, in (42b), either the [$_{VP}$ t *ilox*] or the [$_{vP}$ *mani ilox*] 'eat bananas' is omitted to derive the V-remnant or the stripping-like structure with affirmative focus and polarity in the final position.

(42) a. ini mani ilox i yumin, ru [$_{TopP}$ [$_{NegP}$ (ini)
      Neg AF-eat banana Nom Yumin Conj   Neg
      [$_{vP}$ (mani) _]]$_i$ [$_{FocP}$ i kawas uzi [$_{TP}$ [$_{PolP}$ [$_{NegP}$ t$_i$]]]]].
         AF-eat   Nom Kawas also
      'Yumin doesn't eat bananas, and Kawas doesn't, either.
    b. Mani ilox i yumin, ru [$_{TopP}$ [$_{vP}$ (mani) _]$_i$
      AF-eat banana Nom Yumin Conj   AF-eat
      [$_{FocP}$ i kawas uzi [$_{TP}$ [$_{PolP}$ [$_{vP}$ t$_i$]]]]].
         Nom Kawas also
      'Yumin eats bananas, and Kawas does, too.'

Moreover, we also find negative polarity focus in Atayal, initiated by the conjunctive *ana* 'but' instead of overt focus markers as in (43). After the subject is raised to the focus position, either NegP in (43a) or *v*P in (43b) is fronted to the Topic position. In these two cases, only VP ellipsis is allowed to elide the small constituent [$_{VP}$ t *amerika*] after V-to-*v* raising.

(43) a. m-usa amerika i yumin, ana [$_{TopP}$ ga [$_{NegP}$ ini
      AF-go America Nom Yumin but   Top   Neg
      [$_{vP}$ m-usa [$_{VP}$ ~~t amerika~~]]]$_i$ [$_{FocP}$ i kawas [$_{TP}$ [$_{PolP}$ [$_{NegP}$ t$_i$]]]]].
         AF-go   America   Nom Kawas
      'Yumin is going to America, but Kawas isn't.'
    b. ini m-usa amerika i yumin, ana [$_{TopP}$ ga
      Neg AF-go America Nom Yumin but   Top
      [$_{vP}$ m-usa [$_{VP}$ ~~t amerika~~]]$_i$ [$_{FocP}$ i kawas [$_{TP}$ [$_{PolP}$ [$_{vP}$ t$_i$]]]]].
         AF-go   America   Nom Kawas
      'Yumin doesn't go to America, but Yumin does.'

Thus, the two-focus account proposed here is still tenable in interpreting this VOS language. The polarity concord is fulfilled and realized as the affirmative set *uzi*. Its negative-set is weakened and replaced by the

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conjunctive *ana* 'but', just as in the other languages. Below, we will see whether the analysis can account for the focal structure in the VSO language, Bunun.

4.4 Bunun VP-ellipsis (VSO)

Building on the fact that VSO is derived from SVO by V-raising (Holmer 2005, Travis 2005), we propose that Bunun, an Austronesian language with VSO word order spoken in southern Taiwan, makes use of a series of V/Neg-raising to derive the desired VP-elliptical structure from the following base-generated structure (44), in which the subject is first raised from the Spec of VP to the Spec of FocP head by *amin* 'also', an equivalent of *ye* 'also'.

(44) [TopP [FocP amin [TP [PolP Pol [NegP (Neg) [vP v [VP V]]]]]]]

To derive (45a), we suggest that the verb *m-aun* 'eat' is moved to v, and the V-v complex is further merged with Pol, T, and the Focus *amin* to arrive at the Top position, and finally the vP-deletion is exerted. On the other hand, when the negative exists in the affirmative polarity context as in (45b), the option is to raise the negative instead of V through Pol, T, and Foc *amin* to reach the Top position. In this case, the retention of the verb *m-aun* 'eat' is determined by the implementation of either vP or VP deletion.

(45) a. m-aun   a Tahai   nasi,   [TopP [V-Foc m-aun$_i$-*amin*]
        AF-eat Nom Tahai   pear   AF-eat also
        [FocP a   Bali [TP [PolP [~~vP~~ [~~vP~~ t$_i$]]]]]].
             Nom Bali
        'Tahai eats pears, and Bali does, too.'
    b. ni a   Tahai m-aun   nasi,   [TopP [Neg-Foc ni$_i$-*amin*]
        Neg Nom Tahai   AF-eat   pear   Neg-also
        [FocP a   Bali   [TP [PolP   [NegP t$_i$ [vP (m-aun)_]]]]]].
             Nom Bali   AF-eat
        'Tahai doesn't eat pears, and Bali doesn't, either.'

A dialect of Bunun, Takbanuaz, used in central Taiwan, also manifests the negative polarity VP-ellipsis. Similarly, it can initiate a V-raising through v, Pol, T, Focus, and Top as in (46a). Then, vP-deletion is

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implemented. Alternatively, the language can only trigger Neg-raising as in (46b) with the remnant V *m-aun* 'eat' left behind as a result of VP-ellipsis.

(46) a. ni   a   Tahai tu   m-aun nasi,   uqaitu
       Neg Nom Tahai Comp AF-eat pear   but
       [$_{\text{TopP}}$ [$_{\text{V-Foc}}$ m-aun] [$_{\text{FocP}}$ a   Bali [$_{\text{TP}}$ [$_{\text{PolP}}$ [$_{\text{vP}}$ [$_{\text{VP}}$ t_i]]]]]].
               AF-eat   Nom Bali
       'Tahai doesn't eat pear, but Bali does.'
   b. m-aun a   Tahai nasi, uqaitu [$_{\text{TopP}}$ [$_{\text{Neg-Foc}}$ ni_i]
      AF-eat Nom Tahai pear but   Neg
      [$_{\text{FocP}}$ a   Bali   [$_{\text{TP}}$ [$_{\text{PolP}}$ [$_{\text{NegP}}$ t_i [$_{\text{vP}}$ m-aun _]]]]]].
          Nom Bali   AF-eat
       'Tahai eats pear, but Bali doesn't.

Even though the head-movement is used extensively in an attempt to derive the desired word order, the point is that the two-focus account is still sustained. As to the Agree operation between Foc and Pol, we will assume that the polarity concord has been achieved instead by the successive head-movement to the Topic position, which is probably activated by the uninterpretable topic feature as suggested by Watanabe (2003). The affirmative set is realized as *–amin* at PF interface, while the *que*-set is waning.

5. CONCLUDING REMARKS

In this paper, we have modified Soh's analysis of Mandarin VP-ellipsis and have tried to set up a new focal structure with one contrastive focus and one polarity focus for Mandarin VP-ellipsis, in line with the notions entertained by López & Winkler (2000), Winkler (2000), López (1995), and Laka (1990). We note that the polarity concord between Foc and Pol is fulfilled via the Agree operation through feature copying (Chomsky 2000, 2001, Watanabe 2004). Further, it is also apparent that the negative half of the polarity feature may be waning in its surface form across languages. All of these claims have been fortified by a cross-linguistic investigation.

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漢語動詞刪略句的焦點結構:跨語言分析之印證

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本文論證 Soh(2007)之 ΣP 分析,只能解釋漢語動詞刪略句中極性運作的部分事實。我們以「也」和「卻」的新事證為基礎,提出動詞刪略句中有兩個焦點投射的分析;一為以「也」或「卻」為主要語的對比焦點投射 FocP,其位置比 TP 還高;另一為以「正的極性焦點」及「負的極性焦點」為主要語的極性投射 PolP,其位置比 TP 低;FocP 及 PolP 會在極性上互相呼應,形成「也」類前後極性一致的句式,及「卻」類前後極性相斥的句式;此互動可透過「呼應運作」(Chomsky 2000,2001)的理論架構,同時採用 Watanabe(2004)的「否定一致」特徵複製來達成。此外我們檢視各類語序的語言,包括英語(SVO)、日語(SOV)、泰雅語(VOS)、布農語(VSO),來驗證此焦點分析的合理性。

關鍵詞:動詞刪略句、極性焦點、對比焦點、極性一致、否定一致、特徵複製