Voice and Little v and VO–OV Word-Order Variation in Chinese Languages

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Abstract. This article addresses some issues related to Voice and little v. It does so by discussing and analyzing the variation that exists in the Chinese language family with respect to object placement (VO versus OV). It turns out that this variation can be accounted for straightforwardly as long as we assume, first, that Voice and v are sometimes split and sometimes bundled, even within one language, and, second, that Voice does not always select vP; it can also select VP.

1. Introduction

The goal of this article is twofold. First, I hope to contribute to the development of ideas on the role and nature of Voice and little v, the division of labor between them, and the extent to which they are interdependent. I will do so by discussing an empirical puzzle constituted by the variation in the word order of verb and object that we find in the Chinese language family. The second goal of the article, then, is to propose a novel analysis of this variation.

More in particular, we will see that the word-order variation can be accounted for quite straightforwardly with the use of current theories of Voice and v, with consequences for our ideas on the structure of the verbal domain in Chinese. At the same time, the Chinese data bring up the need to further look into a number of issues, such as the proposal in Pylkkänen 2008:chap. 3 about bundling or not bundling $Voice^0$ and v^0 as a parameter of crosslinguistic variation: the Chinese data suggest that we can find $Voice^0$ and v^0 both bundled and unbundled within one language, so it may not only be a matter of parametric variation. Another issue touches upon the question whether $Voice^0$ and v^0 can operate independently of each other. Pylkkänen 2008:chap. 3 and Harley 2017 present examples of vPs that are not embedded in a VoiceP. The set of Chinese data discussed here contains phrases that are best analyzed as VoicePs without containing a vP.

With respect to $Voice^0$ and v^0 and the division of labor between them, my point of departure is what seems to have emerged as the standard view in the literature, namely that of Pylkkänen 2008 and Harley 2013a, 2017—analyses that go back, in some of their

essentials, to Hale & Keyser 1991, Chomsky 1995:315, and Kratzer 1996, which in turn built on Marantz 1984 and Larson 1988; see also Bowers 1993, as well as Merchant 2013, Anagnostopoulou 2017, and Ramchand 2017, to name just a few.[1] According to this view, v^0 introduces causative semantics while at the same time being "external-argument-less" (Harley 2013a:35; cf. Harley 2017:21). This is in line with Pylkkänen 2008:86, whose Cause only introduces a causing event, not a theta role. v^0, then, does a semantics job but not a syntactic one (cf. Harley 2013a:50). Voice^0 complements v^0 in both respects: it introduces no additional semantics (in Harley's words, it is "a dedicated functional projection which makes no lexical-semantic contribution whatever": 2013a:34), but it does the syntactic job that v^0 does not do. First, it introduces the external argument, which bears the role of the agent of the event introduced by 'cause' in v^0 (Pylkkänen 2008:88; see also Ramchand 2017:234–235), and, second, it is ultimately responsible for providing accusative case (for the details, see section 4). This makes the postulation of Voice^0 the ideal explanation of the Burzio generalization, because the connection between the licensing of the internal argument and the presence of an external argument is now exclusively an affair of formal-structural licensing. Unlike unsplit v^0 in the past, Voice^0 has no role in content licensing: it does not itself assign the external role; all it does, besides its role in licensing the internal argument, is provide the structure such that the external argument can be realized.

Harley 2013a and others also take v^0 to be "verbalizing" (or it is a "categorizer" or "category-defining head": Marantz 1997, for instance). This is the part of the consensus view that I would like to put up for discussion, since the Chinese data to be laid out in section 2 seem to suggest that causativity and verbalization (or categorization) need not go hand in hand.[2]

2. The Data

Although Chinese languages are generally considered to be SVO,[3] they commonly display SOV surface orders as well as SVO surface orders.[4] They differ with respect

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[1] See D'Alessandro, Franco & Gallego 2017 for a comprehensive overview as well as additional references.

[2] This article is only about the v that Chomsky 2013:43, fn. 29, calls "v*," the one for "transitive/ unergative," as opposed to "v," the one for "unaccusative/passive," which I ignore.

[3] In terms of head parameters and default or unmarked order, there are good reasons for taking Chinese (now and in the past) as basically VO: see Mulder & Sybesma 1992, Peyraube 1997, Paul 2015:chap. 1, Aldridge 2017, and Sybesma 2017b. For more discussion on word order in Chinese, see Huang 1982 and Y.-H. Li 1990. It is important to keep in mind, though, that, as Kayne 2018:3 has argued recently, the order of V and O can be "canonical/neutral" even if O occupies a derived position.

[4] In this article, the term *object* (O) is used in the sense of "internal argument." This can be some kind of thematic patient (receiving an internal role from V if internal roles exist) or the subject of an embedded secondary predicate like we see in resultatives, even if no thematic relation between V and the embedded subject is conceivable. Thus, *John* is the object in all of the following sentences: *I saw John* (thematic object of *saw*), *We pushed John off his chair* (subject of *off his chair* and conceivable as thematic object of *pushed*) and *They drank John under the table* (subject of *under the table* and not conceivable as thematic object of *drank*); see Hoekstra 1988, 2004.

Furthermore, although I will consistently talk about "SOV" and "SVO" (because it is important that the sentences we investigate are truly transitive), the positioning of the subject will be left undiscussed. I assume that the external argument is generated in the specifier position of the projection that closes off the functional layer of the VP (VoiceP or Voice/vP) and that it will, for feature-licensing reasons, eventually end up in a position higher in the structure (let's say, spec,IP).

to the conditions under which we find these orders and whether they are optional or not. This will be illustrated using data from three varieties of Chinese: colloquial Hong Kong Cantonese, Northern Mandarin, and Luqiao Wu (henceforth "Luqiao"; for a short introduction to these languages, see the appendix). For a start, in all varieties, a bare verb is typically followed by its object, regardless of whether it is indefinite, as in (1), or definite, as in (2).[5]

(1) a. Ngo5 gam1maan5 soeng2 jam2 tong1. Cantonese
      1SG tonight   want drink soup
      'I would like to eat soup tonight.'

   b. Wǒ jīntiān wǎnshang xiǎng chī (liǎng-ge) mántou. Mandarin
      1SG today evening   want eat two-CLF steamed.bun
      'I want to eat (two) steamed buns tonight.'

   c. Ŋo^{42} t'ie^{33}ŋɦiã^{22} k'u^{33}ɕiəŋ^{33} tɕ'oʔ^{5} (liã^{42}-tsəʔ^{5}) Luqiao
      1SG tomorrow   morning   eat   two-CLF
      mɛ^{31}tio^{31}.
      steamed.bun
      'Tomorrow morning, I will eat (two) steamed buns.'
                     (Dīng 2014:(10a), 2017:(30d); see also Liú 2015:(9))

   d. Ŋo^{42} me^{42} niəʔ^{5} toʔ^{5} mɦið^{22} ʃy^{33}.
      1SG each day all   read   book
      'I read every day.'
                     (Based on Dīng 2014:(16a))

(2) a. Ngo5 hou2 soeng2 tai2 lei5 cam4jat6 bei2 ngo5 ge3 Cantonese
      1SG very want   read 2SG yesterday give 1SG MOD
      syu1.
      book
      'I would very much like to read the book you gave me yesterday.'

   b. Wǒ jīntiān wǎnshang xiǎng kàn nèi-běn shū. Mandarin
      1SG today evening   want read DEM-CLF book
      'I want to read that book tonight.'

   c. Ŋo^{42} t'ie^{33}ŋɦiã^{22} k'u^{33}ɕiəŋ^{33} tɕ'oʔ^{5} kəʔ^{5}-tsəʔ^{5} mɛ^{31}tio^{31}. Luqiao
      1SG tomorrow   morning   eat DEM-CLF steamed.bun
      'Tomorrow morning, I will eat that steamed bun.'
                     (Dīng 2014:(9a); cf. (1c) above)

   d. Ŋo^{42} me^{42} niəʔ^{5} toʔ^{5} mɦið^{22} kəʔ^{5}-pəŋ^{42} ʃy^{33}.
      1SG each day all   read DEM-CLF   book
      'I read that book every day.'
                     (Dīng 2014:(15a); cf. (1d) above)

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[5] MOD = modification marker; PRT = particle.

e. Ŋo⁴² tʼie³³ŋɦiã̠ ²² mɦõ̃ ²² kəʔ⁵-pəŋ⁴² ʃy³³, ɕie³³ kʼð̃⁵⁵
   1SG tomorrow read DEM-CLF book first put
   ʃy³³pɔ³³-li⁴² tɕʼi⁴².
   bag-inside PRT
   'I am going to read this book tomorrow; I put it in my bag for now.'

(Dīng 2017:(8a))

For the indefinites, we see bare nouns in (1a–c) and nouns preceded with a numeral and a classifier in (1b, c); the object in (1d) is a nonreferential, nongeneric dummy object (Cheng & Sybesma 1998, Badan 2013). We also see different types of sentences, with a modal, without a modal, and with a habitual meaning. I do not illustrate all different types of sentences and objects with all three languages, but all types exist in all three. Similarly, for the definites in (2), we have different types of sentences and different types of definite nouns, which could have been illustrated using any of the three languages.

For indefinite objects with bare verbs, VO is the only order. For definite objects, VO is the default order, but definite objects can be preposed. This is true for all three languages. We will look at some examples in section 3 below.

While with respect to object placement relative to bare verbs the languages are basically the same, they differ when the verb is "complex" in that it is followed by one or more aspectual elements.[6] (Henceforth, *bV* stands for "bare verb" and *VX* refers to a verb followed by one or more aspectual elements. Both are instantiations of *V*, which can refer to either or generalize over both.) With complex verbs, we still find SVO orders in Cantonese and Mandarin, as seen in (3), but in Luqiao, this order is no longer possible: all we have is SOV, as in (4). The definiteness of the object plays no role, as is clear from the grammatical and ungrammatical examples in (3) and (4), which feature bare, definite, and (specific) indefinite objects.

(3) a. Ngo5 tai2-zo2 jat1/li1-bun2 syu1.   Cantonese
       1SG read-PRF one/DEM-CLF book
       'I read one/that book.'

   b. Tā kàn-wán-le   wǒ-de/liǎng-ge bóshì lùnwén.   Mandarin
       3SG read-finished-PRF my/two-CLF   doctor thesis
       'He finished reading my dissertation/two dissertations.'

(4) a. Ŋo⁴² tɕiəŋ⁵⁵nɦiəŋ³¹ kʼu³³ɕiəŋ³³ mɛ³¹tio³¹   tɕʼoʔ⁵-ɦɔʔ³¹.   Luqiao
       1SG today   morning   steamed.bun eat-PRF
       'I ate steamed buns this morning.'

(Dīng 2017:(30a))

   b. Kɦie³¹ kʌ⁴²-pɦø³¹ pɦu³³tɦɔ³¹ tɕʼoʔ⁵-ɦue³¹-ɦɔʔ³¹.
       3SG DEM-plate grapes   eat-finished-PRF
       'He finished that plate of grapes.'

(Dīng 2017:(26a))

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[6] Result-denoting elements are also regarded as (inner) aspectual here; more on this in section 4.

c.   Khie³¹   liã⁴²-tsəʔ⁵   pɦiəŋ³¹ku⁴²   tɕʻoʔ⁵-ɦɔʔ³¹.
     3SG   two-CLF   apple   eat-PRF
     'He ate two apples.'

(Dīng 2017:(5); cf. Liú 2015:(45))

d.   *Ŋo⁴²   tɕiəŋ⁵⁵nɦiəŋ³¹   kʻu³³ɕiəŋ³³   tɕʻoʔ⁵-ɦɔʔ³¹   (liã⁴²-tsəʔ⁵)
     1SG   today   morning   eat-PRF   two-CLF
     mɛ³¹tio³¹.
     steamed.bun
     Intended: 'I ate (two) steamed buns this morning.'

(Based on Dīng 2017:(30b), (6b))

e.   *Khie³¹   tɕʻoʔ⁵-ɦue³¹-ɦɔʔ³¹   (kʌ⁴²-pɦø³¹)   pɦiu³³tɕʻɔ³¹.
     3SG   eat-finished-PRF   DEM-plate   grapes
     Intended: 'He finished (that plate of) grapes.'

(Based on Dīng 2017:(26b); cf. (b) above)

Interestingly, while, as is clear from (4), SOVX is the only order in Luqiao, for Cantonese, the SVXO order illustrated by (3a) is the only possible order (Liú 2001, Tang 2006); Mandarin, however, does display an alternative SOVX order for sentences that contain a definite or specific indefinite (i.e., "strong") object, but in such sentences the object is obligatorily preceded by the element *bǎ* (originally meaning 'take'):[7]

(5) Tā   bǎ   wǒ-de bóshì   lùnwén   kàn-wán-le.   Mandarin
    3SG *BA* my   doctor thesis read-finished-PRF

    'He finished reading my dissertation.'   (Cf. (3b))

If there are differences between (3b) with 'my dissertation' and (5), they lie in the domain of information structure (Y.-H. Li 2017a; for a recent contribution to the discussion, see Xiè 2018). Since in Chinese sentences, generally speaking, new information is presented in the right-hand portion of a sentence and is thus focalized, in (3b) the informational focus is on the object, while in (5) it is on the verbal complex (Li, Thompson & Zhang 1998). The heavier (in terms of both number of elements and semantic content) the verbal complex is, the stronger is the preference to use the *bǎ* construction. (For recent overview articles on the *bǎ* construction, also known as the "disposal construction" or "pretransitive construction," see Y.-H. Li 2017a, 2006/ 2017b.) *Bǎ* sentences are very common in Mandarin.

Cantonese does not provide a similar (or, as I just mentioned, any other) SOV option; for discussion of this claim, see the appendix. In Luqiao we saw that, unlike in Mandarin, SOVX is obligatory rather than optional. Crucially, although Luqiao does feature an element comparable to *bǎ* (namely *pəʔ⁵*), SOVX sentences typically do not contain this element, which is, at best, optional and is definitely dispreferred; see the appendix. In this article, *BA* (in small caps) will be used to represent the element that

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[7] Mandarin SOV sentences without *bǎ* will be discussed in section 3 (see (10)).

appears before the object that in turn precedes the verb, abstracting away from its actual form (e.g., *bǎ* in Mandarin, *pəʔ⁵* in Luqiao, and *zoeng1* in noncolloquial Cantonese; see the appendix).

The data presented so far display two types of variation, within languages and across languages. *Within* some languages we see variation (sometimes optional) in the position of O relative to V: VO when V is bV, OV when V is VX. *Across* languages we see variation in what orders we find and whether they are obligatory or not. With bV, all three languages have VO, but with VX, they behave differently: Cantonese has VXO throughout, Luqiao has OVX, and Mandarin allows for both, but when O precedes VX, it is itself obligatorily preceded by *bǎ*.[8]

The accounts that will be proposed for these two types of variation can be summarized as follows. The variation *across* the different languages with respect to the positioning of the object relative to VX is argued to stem from variation in bundling or not bundling Voice and v. Bundling will lead to VXO, nonbundling will lead to OVX. If we hypothesize that bundling is obligatory in Cantonese, not possible in Luqiao, and optional in Mandarin, we get the word-order patterns I just described. The intralinguistic variation *within* Luqiao between bVO and OVX is argued to be related to the absence or presence of v.

The proposal will be spelled out in detail in section 5. In sections 3 and 4, we will do some groundwork. In section 3, I will show that the object in OVX orders is not in its preverbal position as the result of an A′ movement operation (topicalization). In section 4, I will present and motivate in detail the structure I will use as well as the mechanisms that play a role in the derivation of the different types of sentences that concern us here. Although the technical and other details are, of course, important for assessing if and, if so, how the account works, the account in section 5 can be understood without having gone through all of them. Sections 6 and 7 will discuss some of the theoretical issues raised in the introduction.

3. The Preverbal Object Is Not a Topic

The SOV orders in Wu languages have received considerable attention in the Chinese literature.[9] To analyze the VO–OV variation (within and across languages), essentially two approaches have been taken. Entirely in line with Kayne 2018's statement that "all word order differences and all morpheme order differences are

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[8] Luqiao displays the pattern that is typical of a large sample of the Wu family: the main factor deciding between SVO or SOV is the status of the verb, bV or VX (Dīng 2014, Liú 2001). In some of the Wu languages, other or additional factors may play a role. In any case, Liú 2001:335 reports that OV orders are more common in yes–no questions and negative sentences. Liú 2015 adds animacy as a factor. Two other phenomena need more research: firstly, in some of the languages mentioned in Liú 2001, OSVX orders are more common as an alternative to SVXO than SOVX orders are, and secondly, as mentioned in Liú 2001, Xú & Shào 1998, and Matthews & Yip 1994, under certain circumstances (which I have not been able to identify precisely) a resumptive pronoun may follow VX in S*BA*OVX sentences.

[9] Although the commonness and obligatoriness of SOV orders had been noted in descriptions of several individual languages (such as Shanghainese and Wenzhounese), the phenomenon was put on the research agenda as a topic of theoretical interest by Liú 2001, 2002. Liú and Tang (Tang 2006) do not restrict their attention to Wu languages.

invariably to be attributed to movement differences" (p. 2), it is either assumed that O has moved from its base position after V to derive OV (e.g., Liú 2001, Dīng 2014, Liú 2015, Dīng 2017) or it is proposed that the OV order is the result of V not moving as far up as it does in VO phrases (Tang 2006).

In this section we will see that, whatever position the object occupies, it is not a (typical) topic position; this part is based on arguments developed in Dīng 2017 (see also Liú 2001). There are two types of evidence. First, when we look at cases that are without any doubt instantiations of topicalization, we discover that indefinite DPs cannot undergo such movement, and this being the case, preverbal indefinite objects in OVX sentences must have ended up in their preverbal position in another way. Second, it can be shown that the position that is occupied by the object in S(*BA*)OVX sentences is not a topic position.

As to the first point, I assume that topicalization is defined as A′ displacement of an XP from the position in which it is formally licensed into the left periphery of the sentence; topicalization is primarily induced by information-structural considerations. As is well known, typically, topicalized DPs are definite or generic. In sentences with a bare verb—in which the default position for the object, as we saw in the last section, is the postverbal position—only definite and generic DPs can alternatively occupy a position to the left of the verb. This is shown in (6) for Luqiao, with $kə\textipa{P}^5\text{-}pəŋ^{42}$ $ʃy^{33}$ 'this book' in positions that are generally acknowledged to be topic positions (see below); each of these positions precedes high temporal adverbs, including the sentence-initial position in (6a). I assume that 'this book' has moved to these positions from its postverbal licensing position.[10]

(6) a. Kə$\textipa{P}^5$-pəŋ^{42} ʃy^{33} ŋo^{42} t'ie^{33}ŋɦiã^{22} mɦõ^{22}, ɕie^{33} k'õ^{55} Luqiao

    DEM-CLF   book 1SG tomorrow read first put

    ʃy^{33}pɔ^{33}-li^{42} tɕ'i^{42}.

    bag-inside   PRT

    'This book I am going to read tomorrow; I put it in my schoolbag first.'

                 (Dīng 2017:(8b); cf. (2e) in section 2)

   b. Ŋo^{42} kə$\textipa{P}^5$-pəŋ^{42} ʃy^{33} t'ie^{33}ŋɦiã^{22} mɦõ^{22}, ɕie^{33} k'õ^{55}

    1SG   DEM-CLF   book tomorrow read first put

    ʃy^{33}pɔ^{33}-li^{42} tɕ'i^{42}.

    bag-inside   PRT

    'This book I am going to read tomorrow; I put it in my schoolbag first.'

                 (Dīng 2017:(8c); cf. (2e) in section 2)

   c. Ŋo^{42} kə$\textipa{P}^5$-pəŋ^{42} ʃy^{33} me^{42} niə$\textipa{P}^5$ to$\textipa{P}^5$ mɦõ^{22}.

    1SG DEM-CLF   book each day all read

    'This book I read every day.'

                 (Cf. Dīng 2014:(15b); cf. (2d) in section 2)

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[10] Topicalization in sentences with a bare verb is less easy than in sentences with more complex, "heavier" verbs. This may be due to the fact that bare verbs are informationally speaking too light to be in focus (see discussion of (5) in section 2). Contrastivity enhances the possibility of object preposing in such sentences. See Ernst & Wang 1995 and Paul 2002. For us, all that counts is that it is possible at all.

Crucially, however, as Dīng 2014 points out, indefinite objects cannot undergo such fronting. This is clear from (7a), based on (1c), and (7b), based on (1d). The bare NP in (7b) is a nonreferential, nongeneric dummy object.

(7) a. *{Liã^{42}-ʦə$ʔ^5$ mɛ^{31}tio^{31}}　ŋo^{42} {liã^{42}-ʦə$ʔ^5$ mɛ^{31}tio^{31}}　me^{42}niəʔ^5
　　　 two-CLF　　 steamed.bun 1SG　 two-CLF　　 steamed.bun every.day
　　　 kʻu^{33}ɕiəŋ^{33}　 tɕʻoʔ^5.
　　　 morning　　 eat
　　　 Intended: 'Two steamed buns, I eat every morning.'

<div style="text-align:right">(Ding Jian, p.c.; cf. (1c) in section 2)</div>

　　 b. *Ŋo^{42} ʃy^{33}　 me^{42} niəʔ^5 toʔ^5 mɦɤ̃^{22}.
　　　　1SG　 book each day　 all　 read
　　　　Intended: 'I read every day.'

<div style="text-align:right">(Cf. Dīng 2014:(16b); cf. (1d) in section 2 and (6c) above)</div>

What I conclude is that when it comes to uncontroversial cases of topicalization, definite objects can do it, whereas indefinite objects cannot, as expected. This makes it less likely that the object in OVX sentences (which can be indefinite) has landed in its position to the left of the verb as a result of an A′ movement operation. Note that the sentences in (6) and (7) feature a bare verb; as we saw in section 2, unmarked sentences with bV have the object in postverbal position, as a rule, regardless of whether it is definite or not.

As to the position occupied by the object in OVX sequences and the unlikelihood that it is a topic position, it is generally assumed that there are two potential topic positions in a Chinese sentence (for relevant accounts in English, see, e.g., Ernst & Wang 1995, Paul 2002): a position high in the structure preceding the subject, presumably spec,TopP (the "primary," "external," or "high" topic position), and one following the subject but preceding low adverbs such as 'already', which Paul 2002 provides good reasons to identify as the specifier position of a functional projection above the (unsplit) vP (the "secondary," "internal," "low" topic position). Dīng 2017 shows that, in sentences containing low adverbs such as i^{42}ʨieŋ^{33} 'already', indefinite preverbal objects can only *follow* such adverbs, in a position right in front of the verb, which is not one of the topic positions just mentioned:

(8) a.　 Ŋo^{42} i^{42}ʨieŋ^{33} sɛ^{33}-ʨɦie^{31} i^{33}sɦɤ̃^{31} ffɦoŋ^{42}-hɔ^{42}-hɔ^{42}.　　　　　 Luqiao
　　　　1SG　 already　 three-CLF　 clothes　 sew-done-PRF
　　　　'I already mended three pieces of clothing.'　　 (Dīng 2017:(14e))

　　 b. *Ŋo^{42} sɛ^{33}-ʨɦie^{31} i^{33}sɦɤ̃^{31} i^{42}ʨieŋ^{33} ffɦoŋ^{42}-hɔ^{42}-hɔ^{42}.
　　　　1SG　 three-CLF　 clothes　 already　 sew-done-PRF
　　　　Intended: 'I already mended three pieces of clothing.'　 (Dīng 2017:(14f))

Definite objects can occupy that position too, of course, but, as is easy to see on the basis of the sentences in (6) and (7), they have more options, since the topic positions in front of 'already' and in front of the subject are available to them as well.

The data in (9) confirm that the position occupied by the object of VX in Luqiao is not a topic position. In both sentences in (9), a verb–object combination functions as the—possibly nonfinite—complement of the verb $t\tilde{\mathrm{a}}^{42}s\phi^{55}$ 'plan'.

(9) a. *$\mathrm{N}o^{42}$ $t\tilde{\mathrm{a}}^{42}s\phi^{55}$ $k\mathrm{a}\text{?}^5$-$ts\mathrm{a}\text{?}^5$ $m\varepsilon^{31}tio^{31}$ $t\varepsilon\text{'}o\text{?}^5$.   Luqiao
    1SG   plan   DEM-CLF   steamed.bun   eat
    Intended: 'I plan to eat that steamed bun.'

    b. $\mathrm{N}o^{42}$ $t\tilde{\mathrm{a}}^{42}s\phi^{55}$ $k\mathrm{a}\text{?}^5$-$ts\mathrm{a}\text{?}^5$ $m\varepsilon^{31}tio^{31}$ $t\varepsilon\text{'}o\text{?}^5$-$\text{fiue}^{31}$.
    1SG   plan   DEM-CLF   steamed.bun   eat-finished
    'I plan to finish that steamed bun.'   (Ding Jian, p.c.)

In (9a), the verb is a bare verb and the definite object precedes it. It does not occupy the postverbal position, the default position with a bare verb. This is not a problem in general, as definite objects can move to a preverbal topic position. However, (9a) is ungrammatical. Apparently, in complement clauses like those in (9), no topical landing site is available right in front of the embedded verb. If this is the right conclusion and if the conclusion I drew earlier (that the O in OVX orders does not occupy an A′ landing site) is also correct, we predict that, in contrast with *ObV, OVX is grammatical even in sentences like (9). This prediction is borne out, as (9b) shows.

I conclude, then, with Dīng 2017, on the basis of these two pieces of evidence, that the position that directly precedes VX and that is occupied by the object in unmarked VX sentences is not a topic position. Prior to Dīng 2017, Liú 2001:335–337 had also reached this conclusion, observing that it is not always the case that an object is in preverbal position for information-structural reasons.[11]

Before turning to the analysis, I need to discuss one more fact, from Mandarin. As mentioned in footnote 7, in addition to S*bǎ*OV sentences, Mandarin has plain SOV sentences, that is, sentences with a preverbal object but without *bǎ*. In these sentences, the object is a (low) topic. Here are two examples, with a generic object and a definite object (Ernst & Wang 1995).

(10) a. Zhāng Sān zhūròu bù chī.   Mandarin
    Zhang San pork   not eat
    'Pork, Zhang San does not eat.'

    b. Zhāng Sān lùnwén xiě-wán-le.
    Zhang San thesis   write-done-PRF
    'Zhang San, his thesis, he finished it.'

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[11] The overall analysis in Dīng 2017 is different from the one developed here. Dīng assumes a second, preverbal, object position, which is occupied by indefinite objects under certain circumstances (for which view, see also Liú 2001:335). Although this position must be distinguished from a topic position, Dīng assumes that the indefinite object gets there by movement from its base/licensing position. Since Dīng's and Liú's analyses are not cast in the same formal terms I am using in this article, it is difficult to compare their approaches to the one developed here and decide which one is "better." In view of the differences in basic assumptions and overall aims, there is no way to make such an evaluation; both approaches have their pros and cons.

Investigating sentences like this from different angles, Paul 2002 concludes that the object in them is a topic, which is not internal to or even adjoined to the vP. According to Paul, it occupies the specifier position of a functional projection between the subject and vP. This is confirmed if we look at the distribution of preverbal objects in such sentences relative to presumably low adverbs such as *yǐjīng* 'already', the Mandarin counterpart of Luqiao *i*⁴²*ʨieŋ*³³ in (8) (others are *zǎojiù* 'already' and *yìzhí* 'all the time'):

(11) Zhāng Sān {lùnwén} yǐjīng   {*lùnwén} xiě-wán-le.
     Zhang San thesis   already   thesis   write-done-PRF
     (Intended): 'Zhang San, his thesis, he already finished it.'

<div align="right">(Cf. Dīng 2017:(12c), (13))</div>

As we see here, the object must precede the adverb. I join Paul in concluding that the object in these sentences is a topic.[12]

However, in sentences with *bǎ*, adverbs like *yǐjīng* 'already' preferably precede *bǎ* O.[13] The same applies much more strongly to sentences containing negation (Li & Thompson 1981:479). The following sentences illustrate.

(12) a. Tā {yǐjīng} bǎ yīfu   {??yǐjīng} féng-hǎo-le.
       3SG   already *BA* clothes   already sew-finished-PRF
       'He already sewed the clothes.'

     b. Tā {méi-yǒu} bǎ yīfu   {*méi-yǒu} féng-hǎo.
       3SG   not-have *BA* clothes   not-have   sew-finished
       'He hasn't sewn the clothes.'

Ernst & Wang 1995:fn. 1 points out that *bǎ* NPs "have a rather different distribution from bare preposed NPs; for example, they always occur after modals, while bare preposed objects do so only rarely"; see also Paul 2002 and Y.-H. Li 2006/2017b and, for more references, Sybesma 1999:170.

The difference between topicalized objects and objects following *bǎ* is illustrated once more in the following minimal pair, with *bǎ* (grammatical) and without *bǎ* (ungrammatical), once again from Mandarin. This contrast reminds us of the Luqiao contrast in (9).

(13) Wǒ dǎsuàn *(bǎ) zhè-dùn fàn   chī-wán.
     1SG plan   *BA* DEM-CLF food eat-finished
     With *bǎ*: 'I plan to finish this meal.'
     Without *bǎ*, intended: 'I plan, as to this meal, to finish it.'

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[12] There are data in Ernst & Wang 1995 in which the object follows adverbs like *yǐjīng* 'already'. However, in the sentences in question, another adverb (*yě* 'also' or *dōu* 'all') is always inserted between the object and the verb, which saves the sentence from ungrammaticality. See Paul 2002 for discussion.
[13] Ernst 2002:303 reports that there is no difference for the position of *bǎ* NPs relative to *yǐjīng* 'already'.

This suggests two things. First, in Mandarin, the O in S*bǎ*OV sentences is not in the same position as its counterpart in SO_{TOP}V sentences. Second, rather than its SOV sentences, it is Mandarin's *bǎ* sentences that are the direct counterpart of the SOV sentences in Luqiao and other Wu languages. This confirms Liú's intuition that "the meaning that one is inclined to express using a *bǎ* sentence in Beijing Mandarin is expressed using a sentence with a preposed object in Shanghainese" (Liú 2001:336; my translation). As we will see in section 5.1, this parallel is exactly what the analysis proposed in this article turns out to be able to account for in structural terms.
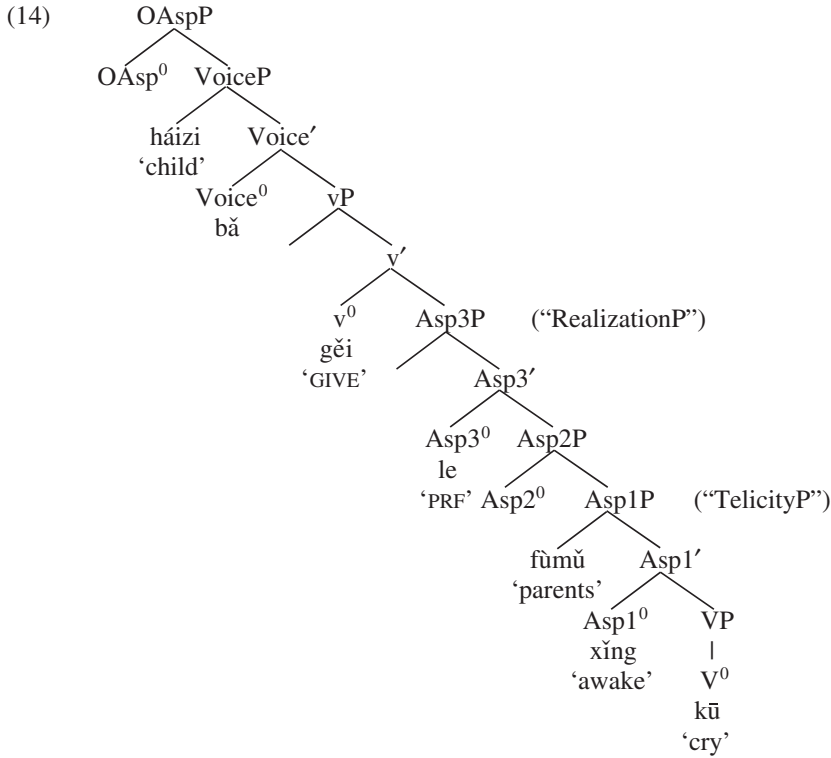
Now that we have established that the position of O in the OVX sentences that we are interested in is not a topic position, we have to determine what position it is. We will do so now.

4. The Structure

4.1. The Structure and Its Components

As discussed at the beginning of the previous section, the variation between VO and OV orders has been explained in two ways: either O is viewed as occupying different positions in the two orders or V is. We saw that it is unlikely that the OV order arises as the result of movement of the object out of its postverbal licensing position to an A′ position higher in the structure. However, both possibilities remain: it is possible that the object is in different positions because there are different positions in which it is licensed (A positions) depending on the structural context; it is also possible that it is V that is not in the same position all the time, thus leading to two different orders. As I mentioned, the latter tack is taken by Tang 2006. Tang assumes that there are different positions in the extended VP that V can occupy (which he labels V^0, v^0, X^0, and Y^0) and that members of the Chinese language family differ from each other with respect to which position is V's eventual landing site. As we will see, some of the crosslinguistic variation is indeed due to different positionings of V, but the object may not be in exactly the same position all the time either (Tang, by the way, is not very specific when it comes to the position occupied by the object).

I will now present the structure we will work with; I will motivate it with Mandarin data. It is given in (14); the lexical material that is inserted for illustrative purposes is from the sentences in (15), which we will discuss in more detail in sections 4.2 and 4.3. The structure in (14) is, I think, a logical next step in the development of the structural analysis of the verbal domain in Mandarin; it builds on ideas about inner aspect and the distribution of *gěi* 'GIVE' proposed in Xuán 2008, Sybesma & Shěn 2006, Xuán 2011, and Shěn & Sybesma 2012 (incorporating insights from Travis 2010) and on the conclusions about the separation of *bǎ* and little v drawn in Huang, Li & Li 2009, as well as Kuo 2010's discussion of that proposal. Kuo arrives at a structure that is similar to (14) in several respects but different in others (which, regretfully, I cannot discuss here, for reasons of space).

(14)

```
OAspP
├── OAsp⁰
└── VoiceP
    ├── háizi 'child'
    └── Voice′
        ├── Voice⁰ bǎ
        └── vP
            └── v′
                ├── v⁰ gěi 'GIVE'
                └── Asp3P ("RealizationP")
                    └── Asp3′
                        ├── Asp3⁰ le 'PRF'
                        └── Asp2P
                            ├── Asp2⁰
                            └── Asp1P ("TelicityP")
                                ├── fùmǔ 'parents'
                                └── Asp1′
                                    ├── Asp1⁰ xǐng 'awake'
                                    └── VP
                                        └── V⁰ kū 'cry'
```

(15) a. Háizi bǎ fùmǔ gěi kū-xǐng-le.   Mandarin
     child *BA* parents GIVE cry-awake-PRF
     'The child cried the parents awake.'

   b. Háizi bǎ fùmǔ kū-xǐng-le.
      child *BA* parents cry-awake-PRF

   c. Háizi kū-xǐng-le fùmǔ.
      child cry-awake-PRF parents

Before turning to the details of the derivation of these sentences, I will introduce the components that are relevant for the current article.[14] To begin, I need to explain the presence of *gěi* 'GIVE' right in front of the verb in (15a) and why it should be in the head of vP in (14), as well as why *bǎ* is placed in the head of VoiceP.[15]

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[14] Asp2P plays no role in the current discussion. I include it in the structures given here for the sake of consistency with other publications. For a proposal regarding Asp2P, see Lu, Lipták & Sybesma 2019.

[15] The analysis presented here of GIVE is offered without the pretension that it is an account of all instantiations of GIVE in all varieties of Chinese; for a recent treatment and for useful references, see Chen & Yap 2018 (for other useful references, see Shěn & Sybesma 2010).

Investigating Mandarin preverbal *gěi*, Shěn & Sybesma 2010 concludes that *gěi* provides transitivity/causativity (external force) but does not provide (the structure for) an external argument. The article comes to this conclusion after considering minimal pairs like the following (the sentences will be analyzed structurally in detail in section 4.2: see (18)).

(16) a. Fùmǔ   kū-xǐng-le.
          parents cry-awake-PRF
          'The parents woke up as the result of a crying event.'

      b. Fùmǔ   gěi   kū-xǐng-le.
          parents GIVE cry-awake-PRF
          'The parents were woken up as the result of a crying event.'

(17) a. Mǐfàn zhǔ-hú-le.
          rice   cook-burnt-PRF
          'The rice got burnt.'

      b. Mǐfàn gěi   zhǔ-hú-le.
          rice   GIVE cook-burnt-PRF
          'The rice was burnt.'

According to Shěn & Sybesma, the (a) sentences can be characterized as involving no external argument (no external force or cause). These sentences are unaccusative: it happened—no one did it or caused it. In contrast, the (b) sentences express that some external force was involved—someone did/caused it—but this someone is not overtly expressed.[16] Thus, all (16a) means is that there was a crying event and that the parents woke up as a result of it. It is possible that the parents did the crying themselves ('they cried themselves awake') or that someone else (their baby?) cried them awake: truth conditionally, the sentence is applicable to both scenarios. The sentence in (16b), on the other hand, no longer covers the scenario where the parents did the crying themselves: someone else was involved who cried and caused them to wake up. This initiator-causer cannot, however, be expressed nonobliquely. That is why Shěn & Sybesma conclude that *gěi*, which they assign to a position labeled Vt—the *t* standing for "transitivizing"— provides the initiation-causativity but not (a structural position for) the external argument itself. In other words, structures with *gěi* involve initiation-causativity semantically but have no position to license an argument bearing the initiator-causer role associated with it.

This characterization of *gěi* comes close to the description of the function of v^0 given in the introduction. This means that we can look at intransitive sentences like (16b) and (17b), which contain the element *gěi*, as instantiations of structures that involve vP but not VoiceP. I propose that *gěi* (or, more generally, GIVE) occupies v^0.

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[16] Shěn & Sybesma compare sentences like these to the middle, which also differs from unaccusatives in that it involves an external force that, however, can only be expressed obliquely, if at all. No claims are made regarding other properties that middles may have in other languages (such as genericity in English). For the source of these ideas, see Den Dikken & Sybesma 1998.

The element *bǎ* (or BA), which in structures presented in Sybesma 1999 and Xuán 2008 was taken to occupy the then still undivided v^0, is now a good candidate for insertion in Voice^0: as we will see shortly, *bǎ* heads the projection that provides the vP headed by *gěi* with the necessary structure to realize the external argument.[17]

Besides VoiceP (with *bǎ* in the head), vP (with *gěi*), and VP—along with OAspP (Outer Aspect Phrase)—the structure in (14) contains three inner aspectual projections between VP and vP. Asp1P, which Xuán 2008 dubs "TelicityP," marks the structure as telic by providing the state that is the result of the action denoted by V. The resulting state is represented by a simple subject–predicate combination: the predicate occupies the head of Asp1P (in our example: *xǐng* 'awake'), the subject its specifier (*háizi* 'the child').[18] Asp2P is not relevant; see footnote 14. Asp3P ("RealizationP" in Sybesma 1999) is the highest inner aspectual projection. If its head is filled by the particle *le*, it expresses that the end point denoted by the result state in Asp1P (*fùmǔ xǐng* 'parents awake') has been reached (realized).[19]

4.2. Deriving the Sentences in (15)–(16)

Applying the structure in (14) and the ideas incorporated in it, we can derive the set of sentences in (18b, d, f, h, j); the structures are given in (18a, c, e, g, i), respectively, mainly to indicate the position of VX.[20] The sentences in (18b, d) (which are the same as those in (16)) are included for the sake of completeness; I will focus on the transitive sentences, that is, (18e, g, i) (which are the same as (15)), referring to (18b, d) in passing. Note that in all five sentences in (18), *fùmǔ* 'parents' starts out in spec, Asp1P; in the intransitives (18b, d), it moves to spec,IP to get licensed (as does *háizi* 'child' in the transitive (18f, h, j); see footnote 4).[21]

(18) Unaccusatives—no vP, no VoiceP
    a. [Asp3P [Asp3o kū-xǐng-le] [. . .]]
    b. Fùmǔ   kū-xǐng-le.
       parents cry-awake-PRF
       'The parents were awake as the result of (someone) crying.'

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[17] I am not in any way suggesting that this represents the consensus approach to *bǎ* sentences nor that it covers all different types of such sentences. *Bǎ* sentences are among the most discussed and analyzed topics in Chinese linguistics; for reasons of space, I cannot discuss alternative proposals here. See Y.-H. Li 2006/2017b for an excellent overview of different approaches; see also Huang, Li & Li 2009 and Paul 2015.

[18] In other words, Asp1P is what was the result-denoting small clause in Sybesma 1999 (which constituted an application to Chinese of Hoekstra 1988; see also footnote 24), which was embedded in the (big) VP.

[19] If *le* is involved in expressing the perfective, as I assume here, one may object that it should be located in outer rather than inner aspect. There are syntactic reasons for assuming that, in sentences like these, *le* occupies Asp3^0—that is, it is below vP (Sybesma 2017a)—but is nonetheless interpreted in OAspP, above VoiceP (Cheng 2019). For reasons of space, I cannot go into the details here. In section 6, we will come across sentences in which *le* may be taken as occupying OAsp^0.

[20] The overview here is based on the presentation in Shěn & Sybesma 2010:231, which is analytically less explicit and in which Voice^0 and v^0 are not split.

[21] Also recall from section 2 that (18f, h, j) are identical truth conditionally, though not necessarily information structurally.

[22] See footnote 16.

Middles—vP, no VoiceP

c. $[_{vP} [_{v^o}$ gěi-kū-xǐng-le$_i$$]$ $[_{Asp3P} [_{Asp3^o} t_i]$ [. . .]]]

d. Fùmǔ   gěi   kū-xǐng-le.

   parents GIVE cry-awake-PRF

   'The parents were cried awake.'

Transitives—both vP and VoiceP—with *bǎ* and *gěi*: OVX

e. $[_{VoiceP}$ háizi $[_{Voice^o}$ bǎ$]$ $[_{vP}$ fùmǔ $[_{v^o}$ gěi-kū-xǐng-le$_i$$]$ $[_{Asp3P} [_{Asp3^o} t_i]$ [. . .]]]]

f. Háizi bǎ fùmǔ   gěi   kū-xǐng-le.

   child *BA* parents GIVE cry-awake-PRF

   'The child cried the parents awake.'

Transitives—both vP and VoiceP—with *bǎ*, without *gěi*: OVX

g. $[_{VoiceP}$ háizi $[_{Voice^o}$ bǎ$]$ $[_{vP}$ fùmǔ $[_{v^o}$ kū-xǐng-le$_i$$]$ $[_{Asp3P} [_{Asp3^o} t_i]$ [. . .]]]]

h. Háizi bǎ fùmǔ   kū-xǐng-le.

   child *BA* parents cry-awake-PRF

   'The child cried the parents awake.'

Transitives—both vP and VoiceP—without *bǎ* or *gěi*: VXO

i. Option 1: VX has moved on to Voice^0 (to be rejected)

   $[_{VoiceP}$ háizi $[_{Voice^o}$ kū-xǐng-le$_i$$]$ $[_{vP}$ fùmǔ $[_{v^o} t_i]$ $[_{Asp3P} [_{Asp3^o} t_i]$ [. . .]]]]

   Option 2: Voice^0 and v^0 are bundled (to be adopted)

   $[_{Voice/vP}$ háizi $[_{Voice/v^o}$ kū-xǐng-le$_i$$]$ $[_{Asp3P}$ fùmǔ $[_{Asp3^o} t_i]$ [. . .]]]

j. Háizi kū-xǐng-le   fùmǔ.

   child cry-awake-PRF parents

   'The child cried the parents awake.'

In deriving the grammatical surface strings in (18b, d, f, h, j), two things happen (as per Sybesma 1992, 1999, Xuán 2008). First, in all cases, the VX *kū-xǐng-le* 'cry-awake-PRF' is formed: V^0 *kū* 'cry' moves up to *xǐng* 'awake' in Asp1^0, after which the resulting *kū-xǐng* 'cry-awake' moves up to *le* 'PRF' in Asp3^0,[23] after which, for (18d, f, h, j), *kū-xǐng-le* moves up to v^0. Second, in the transitive cases (18f, h, j), the object (really the subject of the resultative predicate in Asp1^0; see footnote 4), *fùmǔ* 'parents', moves to spec,vP. I will now take a close look at these processes and how they can be accounted for in current theoretical terms (thus updating the works just mentioned, which are less explicit and assume an unsplit v^0).

First, in the formation and movement to v^0 (rather than to Voice^0) of VX, several factors play a role. For a start, this process may just instantiate the general process of V-to-v movement. Even though the motivation given is not always the same, it is generally assumed that, as a rule, the lexical V^0 moves to the functional v^0 (e.g., Chomsky 1995:315, elsewhere in Chomsky 1995, Chomsky 2008:148, 2013). This movement must be seen, I think, as an instantiation of the general phenomenon of a

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[23] In principle, Asp2^0 will not be skipped, but as mentioned in footnote 14, I ignore it.

lexical X^0 moving to a functional x^0 (or a dominating y^0) in order to check the relevant features or secure the interpretation of certain relations. The obligatory movement of L^0 to f^0 may be due to the presence of a strong feature or an EPP feature (Chomsky 1995:232), and the presence of an EPP feature may in turn be interpreted, as in Pesetsky & Torrego 2001, as signifying that it is important that the elimination of the relevant unvalued features be made visible.

Additional motivation for forming the VX cluster may be the following (cf. Sybesma 1999). The vPs in (18) constitute a complex entity that is complete in terms of both aspect and participant semantics: it contains (i) the causing event, provided by v^0; (ii) the action or process, denoted by V^0; and (iii) the end point or resulting state that the action in V leads to, expressed by the inner aspectual heads.[24] The formation of the VX cluster (apparently by successive head movement) has the effect that all heads relevant for the aktionsart interpretation of the sentence are connected, thus making the right interpretation possible. Effectively, an inner-aspect chain is formed, comparable to the tense chain of Guéron & Hoekstra 1995. This is done, and presumably motivated, in the customary fashion: checking off the relevant features against each other.

That VX ends up in v^0 rather than $Voice^0$ may be explained in two different ways. First, v^0 is the highest head of the relevant functional domain: by the time VX has reached v^0, all the features relevant to the aspect and participant semantics have been checked off. As we saw in the introduction, $Voice^0$ only provides the syntax necessary for the realization of the external argument; it does not provide any additional semantics, so there is no reason (no more features to check) for VX to move on to it. As such, our v^0 may literally be Chomsky 2008's v^*, "the functional head associated with full argument structure" (p. 143); see also footnote 2. The second reason why VX does not move on to $Voice^0$ has to do with the fact that the latter is a phase head. As Chomsky argues (e.g., pp. 148, 156), phase heads bequeath their Agree or ϕ features and the EPP feature to the heads of their complements. The situations he discusses are C–T and v^*–V (C and v^* phase heads, T and V the heads of their respective complements). What C–T and v^*–V have in common is that the ϕ features and the EPP feature are effectuated on T and V. But in Chomsky 2008, there are also two asymmetries between C–T and v^*–V. Chomsky does not connect them, but there does seem to be a relation. First, TP can appear without C, but VP cannot appear without v^* (p. 148). Second, in the typical case, T does not move to C, while V always moves to v^* (pp. 147–148). Both differences are likely to be related to the fact that TP is a functional projection while VP is not. Lexical categories never appear without a functional shell, and as I just noted, typically the lexical head moves up to adjoin to the head of the functional projection dominating it.

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[24] Cf. Ramchand 2017. The idea of the complete aspectual complex (consisting of initiator, process, and result) goes back to Hale & Keyser 1991, Kratzer 1996, and Chomsky 1995:chap. 4, p. 315, at least as far as the initiation is concerned (all these works were in turn inspired by Marantz 1984 and Larson 1988); see also Bowers 1993. Some of the ideas involved were also developed in Hoekstra 1984, 1988, 1992 and subsequent work (see Hoekstra 2004), with more focus on the structural and semantic relation between V (typically an atelic activity verb) and the result-denoting part of the clause. For an early application of Hale & Keyser's and Hoekstra's ideas to Mandarin, see Sybesma 1992. For a more recent and comprehensive formulation of the whole picture, see Ramchand 2008.

In Chomsky 2008, v* has not been split into Voice^0 and v^0: the head of v*P is the only functional head dominating VP, and as a consequence, V has to move and adjoin to v*. However, now that we have split v* into Voice^0 and v^0, it makes sense to treat the relation between Voice^0 and v^0 as identical to that between C^0 and T^0. After all, just as TP can appear independently of C^0, vP can appear independently of Voice^0, as Pylkkänen 2008:chap. 3 and Harley 2017 show and as is exemplified by (18c/d) above. If it is indeed the case that Voice–v is like C–T, then it is also explained why v^0 does not standardly move on to Voice^0.

The placement of the object in spec,vP also follows from the assumptions laid out above. If Voice^0 is the phase head and vP its complement, its Agree features (Case features in this case) and its EPP features are inherited by vP, as a consequence of which the object (e.g., *fùmǔ* 'parents' in (18f, h, j)) will raise to spec,vP, as indicated.

In addition to the formation of VX, its placement in v^0, and the placement of the object in spec,vP, the structures laid out in (18) incorporate a number of other claims and assumptions. For one thing, as argued in section 4.1, *gěi* occupies v^0, and in (18c, e), VX has joined *gěi* there, because, as we just saw, that is where VX goes. The order *gěi kū-xǐng-le* 'GIVE cry-awake-PRF', rather than *kū-xǐng-le gěi* 'cry-awake-PRF GIVE' as may have been expected, is determined by *gěi* being a prefix; this implements Harley 2013b's idea that (categories of) affixes may have specific linearization preferences. An alternative analysis of the sentences in (18d, f) would put *gěi* in v^0 and leave VX in Asp3^0, saying that when *gěi* is present in v^0, it obviates the need for VX to move there. The structure for (18f) would then be the following instead of (18e).

(19) [$_{VoiceP}$ t_i [$_{Voice^0}$ bǎ] [$_{vP}$ fùmǔ [$_{v^0}$ gěi] [$_{Asp3P}$ kū-xǐng-le [. . .]]]]
    BA   parents   GIVE   cry-awake-PRF

Either analysis will do for the purposes of this article. I go with the representations in (18c, e) to be consistent both with the motivation set out above for the formation of the cluster and movement all the way up to v^0 and with the structures without *gěi*, but nothing else depends on this choice. When there is no *gěi*, there is no doubt that VX occupies v^0 (as indicated in (18g)).

The other additional claim is that, with or without *gěi*, *bǎ* invariably occupies Voice^0, heading the projection that provides the vP with the necessary structure to introduce the external argument; this is clear when we compare (18c–d) and (18e–f) (see also section 4.1).

4.3. Deriving (15c)/(18j)

Assuming, as we have so far, that VX moves to v^0 and O to spec,vP, the transitive sentence without *bǎ* or *gěi* in (18j) offers an interesting challenge. After all, if O is in spec,vP, then to get the right surface order, VX should go to Voice^0 (option 1 in (18i)), and that is problematic for two reasons. Besides the theoretical reason why VX does not move on to Voice^0 that was presented in detail in the last section, there is also an empirical reason, which has to do with the distribution of manner adverbs. In

S*bǎ*OVX sentences, manner adverbs can both precede and follow *bǎ* O (Li & Thompson 1981:349–352, Y.-H. Li 2006:409):

(20) Tā {zǐxì-de} bǎ wǒ-de wénzhāng {zǐxì-de} kàn-wán-le.   Mandarin
     3SG careful-ly *BA* my   article   careful-ly read-done-PRF
     'He read my paper carefully.'

This can be accounted for, if Voice^0 and v^0 are split, by saying that manner adverbs adjoin to VoiceP (or a projection dominating it) as well as to vP:

(21) {Zǐxì-de} [$_{\text{VoiceP}}$ [$_{\text{Voice}^0}$ bǎ] [$_{\text{vP}}$ wǒ-de wénzhāng [$_{\text{vP}}$ {zǐxì-de}
     careful-ly   *BA*   my   article   careful-ly
     [$_{\text{v}^0}$ kàn-wán-le] [. . .]]]]^{25}
         read-done-PRF

Note that (22) is ungrammatical, from which fact we can deduce that there is no adjunction site for manner adverbs lower than vP (so, Asp3P and below are not available).

(22) *Tā bǎ wǒ-de wénzhāng kàn-wán-le   zǐxì-de.
      3SG *BA* my   article   read-done-PRF careful-ly
      Intended: 'He read my paper carefully.'

This is in line with Ernst 2002:257, where it is argued that manner adverbs adjoin to the verbal projection that includes all its arguments. This especially applies to subject-oriented adverbs like 'carefully'; see Travis 1988:301 and, more generally, Cinque 1999.

   If we were to derive (18j), the transitive sentence without *bǎ*, by moving VX into Voice^0, we would predict both (23a) and (23c) to be acceptable: even though VX has moved on, as indicated in the derivations in (23b) and (23d), vP is still there, thus offering a potential adjunction site. However, (23c) is not grammatical (cf. Y.-H. Li 2006:451, Kuo 1990:117).

(23) a. Tā zǐxì-de   kàn-wán-le   wǒ-de wénzhāng.
        3SG careful-ly read-done-PRF my   article
        'He read my paper carefully.'

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^{25} See Chomsky 1995:353 on why the order object–adverb–vP is not a problem. I liken the licensing of the object by the Voice–v complex to the way the subject is supposed to be licensed by the C–T complex. The highest specifier/adjunction position under C is the position for the subject, and, in the case at hand, the highest specifier/adjunction site under Voice is for the object. That means that the object is predicted to appear above the adverb if there is one, and that is what we get.

b. Tā . . . zǐxì-de [$_{VoiceP}$ [$_{Voice^o}$ kàn-wán-le$_i$] [$_{vP}$ wǒ-de
   3SG   careful-ly   read-done-PRF   my
   wénzhāng [$_{v^o}$ t_i] [. . .]]]
   article

c. *Tā kàn-wán-le   wǒ-de wénzhāng zǐxì-de.
   3SG read-done-PRF my   article   careful-ly

d. Tā . . . [$_{VoiceP}$ [$_{Voice^o}$ kàn-wán-le$_i$] [$_{vP}$ wǒ-de wénzhāng
                        read-done-PRF   my   article
   [$_{vP}$ zǐxì-de [$_{v^o}$ t_i] [. . .]]]]
        careful-ly

So, the challenge posed by (18j) is how to derive it while sticking to the upshot of the theoretical discussion in the last section, namely, that VX moves to v^0 and O to spec, vP.

Pylkkänen 2008 offers bundling or nonbundling of Voice and v as a locus of crosslinguistic variation. However, if we take it as a potential point of *intra*linguistic variation, the difference between (18h) and (18j) is easy to explain: while in (18h) Voice and v are separate, in (18j) they are bundled—the derivation labeled as option 2 in (18i). VX still moves to v^0, the only difference being that now v^0 is part of a complex head. O no longer moves to spec,vP, but it still moves to the specifier of the XP immediately dominated by the head that contains or is Voice^0, which is no longer vP but rather Asp3P; Voice/v^0 is the phase head, and the Agree and EPP features are now inherited by Asp3^0.

Note that, when Voice and v are bundled, only one adjunction site is available, namely the one above VoiceP, which is now the bundled Voice/vP. There are no available adjunction sites lower down (including Asp3P, as argued above):

(24) Tā . . . zǐxì-de [$_{Voice/vP}$ [$_{Voice/v^o}$ kàn-wán-le$_i$] [$_{Asp3P}$ wǒ-de
    3SG   careful-ly   read-done-PRF   my
    wénzhāng [$_{Asp3^o}$ t_i] [. . .]]]
    article

In sum, the hypothesis that Voice and v are bundled in (18j) (i.e., option 2 in (18i)) yields the right surface order, without the need to revisit the conclusions drawn independently on theoretical grounds with respect to the landing sites of VX and O. What is more, this assumption also explains the ungrammaticality of (23b).

With the structural framework finally in place, we now return to the VO–OV variation in Chinese.

5. Accounting for the Variation and the Consequences for Voice and v

One of the goals of this article is to explain in terms of Voice^0 and v^0 two types of variation found in the Chinese language family. First, there is, in some languages, internal variation in the position of O relative to V, which depends on the complexity

of the latter: we have bVO versus OVX. Second, there is the crosslinguistic variation in the availability of OVX and its optionality versus obligatoriness. Can the structural assumptions laid out in section 4, which incorporate current ideas on Voice^0 and v^0, throw any light on the variation in these respects? Let us turn to the crosslinguistic variation first.

5.1. Crosslinguistic Variation: Bundling $Voice^0$ and v^0 or Not

We have observed three different types of languages:

(25)   a.   Languages like colloquial Cantonese, which consistently display SVXO
     b.   Languages like Luqiao, which only have SOVX (optionally S*BA*OVX)
     c.   Languages like Mandarin, which have both orders, but when O precedes VX, O is in turn obligatorily preceded by *BA*: S*BA*OVX

   Assuming that, because they are the result of general principles of syntax, the two processes in (26) apply uniformly in all varieties, the variation in (25) can be described straightforwardly in the structural terms developed in section 4, as in (27).

(26)   a.   VX is formed for aspectual-chain-checking reasons and ends up in v^0 rather than Voice^0.
     b.   The object ends up in the specifier position immediately dominated by the head that includes or is Voice^0: spec,vP when Voice^0 and v^0 are separate and spec,Asp3P when they are bundled.

(27)   a.   In Cantonese, Voice^0 and v^0 are always bundled; VX moves to v^0, which in this case is part of Voice/v^0. Result: SVXO. This is illustrated in (28).
     b.   In Luqiao (and other Wu languages), Voice^0 and v^0 are always separate; here too, VX moves to v^0 and no further. Result: SOVX. This is illustrated in (29).
     c.   In Mandarin, Voice^0 and v^0 are sometimes bundled—result: SVXO—and sometimes separate, in which case Voice^0 is overtly marked with *bǎ*— result: S*bǎ*OVX. This was illustrated in (18i–j) and (18g–h), respectively.

(28)   a. $[_{\text{Voice/vP}}$ $[_{\text{Voice/v}^o}$ joek3-laan6-zo2$_j]$ $[_{\text{Asp3P}}$ deoi3 haai4 t_j [. . .]]]
                                                Cantonese (cf. (18i), option 2)

     b.   Ngo5   joek3-laan6-zo2   deoi3   haai4.
        1SG   wear-out-PRF   pair shoe
        'I've worn out this pair of shoes.'

(29)   a. $[_{\text{VoiceP}}$ $[_{\text{Voice}^o}$ ø] $[_{\text{vP}}$ kʌ^{42}-pɦø^{31} pɦu^{33}tɦɔ^{31} $[_{\text{v}^o}$ tɕ'oΩ^5-ɦue^{31}-ɦɔ$\Omega^{31}{}_j]$
        $[_{\text{Asp3P}}$ t_j [. . .]]]]   Luqiao (cf. (18g))

b. Kɦie³¹ kʌ⁴²-pɦø³¹ pɦu³³tɦɔ³¹ tɕ'oʔ⁵-ɦue³¹-ɦɔʔ³¹.   (= (4b))
3SG   DEM-plate   grapes   eat-finished-PRF
'He finished that plate of grapes.'

It is important to point out once more that in this picture, SOVX in Luqiao and languages like it comes out as the structural counterpart of S*bǎ*OVX in Mandarin: VX moves to v^0 in both cases, even though Mandarin has *BA* in Voice^0 while Luqiao has it only optionally (an option that is not preferred: see section 2 and the appendix). As I pointed out at the end of section 3, this is a welcome result, since SOVX in Wu and S*bǎ*OVX in Mandarin have crucial properties in common, including the specific distributional properties of O. The straightforwardness of this picture (VX invariably moves to v^0 and no further in all languages discussed here) confirms the correctness of the rejection of option 1 for the account of (18j): if VX moved on to Voice^0 in such sentences in Mandarin, there would be no reason why it could not do so in Luqiao.[26]

As a result, the crosslinguistic variation with respect to VXO versus OVX turns out to boil down to two points only:

(30) a. Whether Voice^0 and v^0 are bundled or not (Pylkkänen 2008:chap. 3)
     b. Whether we have *BA* or not

But what is *BA*? What deeper property does it reflect, if any? Of the three types of languages investigated here, Mandarin is the only one that (if the analysis proposed in this article is correct) shows variation with respect to the bundling or separation of Voice^0 and v^0. It is also the only language in which *BA* sentences are common and in which *BA* is obligatory for the type of sentence under discussion here. So Mandarin *bǎ* can be seen as signaling that v^0 and Voice^0 are separate, in a language in which bundling is also an option. Cantonese has no *BA* because Voice^0 and v^0 are never separate (so there is no separation to signal), and Luqiao has no obligatory *BA* because Voice^0 and v^0 are always separate, so signaling the separation is not necessary. In other words, if *BA* has this signaling function, we expect obligatory *BA* in languages in which Voice^0 and v^0 are sometimes bundled and sometimes not. This means that the parameters in (30) can be replaced by these:

(31) a. Voice^0 and v^0 are always bundled or always separate (= (30a); cf. (27a, b))
     b. Voice^0 and v^0 are neither always bundled nor always separate (cf. (27c))

While Pylkkänen 2008 offers the options bundled and not bundled as a parametric difference among languages, it seems that analysis of the facts discussed in this article suggests that both options may be available in one language; this is one consequence

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[26] This means not following Tang 2006's account of the word-order variation in terms of variable positions for V: I claim that V always ends up in the same position, namely v^0. But Tang is still right in that the position V ends up occupying is not the same relative to the position occupied by the stationary object: when v^0 and Voice^0 are separate, v^0 follows O, but if they are bundled, v^0 has joined Voice^0, as a result of which it precedes O. After all, O is always right below Voice^0.

of (31). The bundling or not of Voice^0 and v^0 in Mandarin seems to be a point of free variation, but even though, as pointed out in section 2, this is the case syntactically and truth conditionally, from an information-structural point of view the variation is not free. With both S*bǎ*OVX and SVXO sentence types available, each is associated with its own information pattern. In the former, much like topic sentences (Tsao 1987), the new-information focus is on VX, and pragmatically, *bǎ* has acquired a (secondary?) role in marking O as "old information." This means that, even if we continue to see *bǎ* in Mandarin as signposting the separation of Voice^0 and v^0, it is not inserted postsyntactically. It is, so to speak, part of the numeration (I am grateful for a reviewer for continuing to press me on this issue). We will return to this briefly in section 7.

Before turning to the language-internal variation in Luqiao (between bVO and OVX), we need to address one final issue, namely how to explain the presence of GIVE. In addition to what I have said about GIVE in intransitive sentences (see (16) and (17) in section 4.1 and the accompanying discussion), what we observe is that if it appears in a transitive sentence, it is always accompanied by BA (compare (18f, h, j)). In other words, if v^0 is marked by a separate element, so is Voice^0.[27] Note that (colloquial Hong Kong) Cantonese, which never separates Voice^0 and v^0, features no instantiation of GIVE in transitive sentences. Although the pattern is clear, what is not clear is why GIVE shows up when it does in transitive sentences; I will have to leave this issue for future research.

In short, the languages under investigation here only differ minimally, namely with respect to whether Voice^0 and v^0 are (always) separate or not. In Luqiao, they always are, and with O consistently moving to spec,vP and VX consistently moving to v^0, we get SOVX orders. In contrast, in Cantonese, Voice^0 and v^0 are always bundled, and with O always in spec,Asp3P and VX invariably in the head of the bundled Voice/vP, we always have SVXO. Finally, Mandarin has both options, bundled and separate. In S*bǎ*OVX sentences, Voice^0 and v^0 are separate, and O and VX are in the same positions as they are in Luqiao SOVX sentences, with *bǎ* in Voice^0. Mandarin SVXO sentences, with Voice^0 and v^0 bundled, are the same as the corresponding sentences in Cantonese.
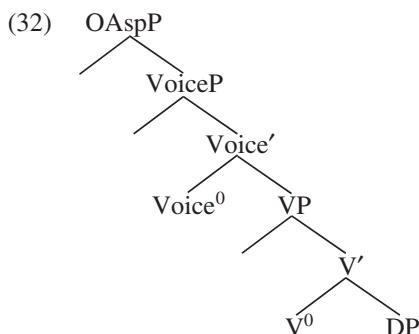
5.2. Language-Internal Variation: Voice^0 without v^0

The second type of variation I set out to account for is the variation in the relative order of O and V that is observed in Luqiao and many other Wu languages, where the order is determined by the complexity of V: we get bVO but OVX. In section 4 we discussed the OVX cases and determined that VX is in v^0 and O occupies its specifier (spec,vP). O is Case checked by v^0 under inheritance of the relevant features from Voice^0 and raises to spec,vP as a result, and VX ends up in v^0 for similar reasons.

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[27] Note that the reverse is not true, at least not for Mandarin and Luqiao, which can have sentences with BA but without GIVE (e.g., (18h)). Note also that while GIVE is optional in Mandarin, it cannot appear in preverbal position in Luqiao sentences with BA (Ding Jian, p.c.).

What is the difference between bV and VX such that we always have bVO? I take *bare* to mean, in structural terms, that the inner aspectual projections, Asp1P, Asp2P, and Asp3P, are missing. When discussing the causative semantics of v^0 in the introduction, I was vague on what was caused, the event denoted by V or the resulting state. Now I can be a bit clearer. In accordance with a large body of literature on resultatives (for an excellent overview, see Beavers 2012), I take it that the causal semantics of vP is linked to the resulting state: what is caused is the change of state, not the activity or process that leads up to it. This is also the direct consequence of the syntactic structures we have been working with: v^0 does not select VP but an inner AspP instead.

Thus, the well-known example *John wiped the floor clean* means something that is best paraphrased as 'John caused the floor to be clean as a result of a wiping event', rather than 'John caused an event of wiping that resulted in the floor being clean'. This way (as Beavers 2012 reminds us), it is parallel to the lexical counterpart, *John cleaned the floor* ('caused the floor to be clean').

If v^0 selects resultativity, then if we have vP we have the relevant telicity-related inner aspectual projections, but if there is no vP, these projections do not have to be there either (they can, of course, as (18a–b, c–d) testify). In any case, if these projections are not there, we also do not have vP. This means that our sentences with a bare V do not contain a vP. In such sentences, VP is the complement of $Voice^0$:

(32)   OAspP
         /\
        / VoiceP
           /\
          / Voice′
             /\
        Voice⁰ VP
                /\
               / V′
                  /\
                V⁰ DP

$Voice^0$ does what it always does: introduce the argument to execute the activity denoted by the head it selects, which in this case is not 'cause' but whatever activity is denoted by VP. (In a certain way, we are back to Bowers 1993's PrP.) The object in such sentences will be the complement of V instead of being generated in spec, Asp1P. The object is licensed in situ, under c-command (or pseudoincorporation takes place; see Dīng 2017 for a suggestion along this line).

Considering vP to be absent in verbal phrases involving unergatives may seem like a step back from having split the vP, but in fact it is a logical step forward, because this way we take seriously the syntactic contribution of $Voice^0$ (introducing structure for the external argument and facilitating the licensing of the internal one) and the semantic contribution of v^0 (introducing a cause event). Once we acknowledge the split and the functional complementarity, we no longer have a

reason to assume that both are always there. Just like we can have vP without VoiceP, as mentioned in section 4.1, there is no a-priori reason why we cannot have sentences with VoiceP and without vP. Activity verbs, for instance, do not need causative semantics. In fact, just like v^0 itself, all they need is the syntax such that there can be an argument to execute the event/activity denoted by them, and that is what Voice^0 provides.

This means that we don't need v^0 for all unergative verbs—unless, of course, v^0 has an additional function, that of verbalizer or categorizer, a function that is often ascribed to it (e.g., Chomsky 1995, 2008, Marantz 1997, Harley 2013a). The idea here is that there is no verb that does not contain v^0, since one cannot be verbal without it, given the fact that no lexical root is verbal of itself.

To be sure, there are cases of verbs that would not be verbs without v^0; one can find numerous examples in the literature, among which are English verbs like *blacken*. Another example would be Malagasy *an-sasa* 'wash' (from Hung 1988, as reported in Kratzer 1996), with *sasa* meaning 'having the quality of being washed' and *an-* identifiable as 'cause' (wash *x*: cause *x* to have the quality of being washed). If we take English *-en* and Malagasy *an-* as instantiations of v^0, causativization and verbalization seem to go hand in hand because, without *-en* and *an-*, *black* and *sasa* lack causative semantics and verbality (for discussion, see Alexiadou & Lohndal 2017).

However, in other cases in which v^0 is supposed to play a role, the verbalization part is harder to identify. Take transitive *break* in English and other languages as an example. Transitive *break* incorporates causative semantics, and if we ascribe this semantic contribution to v^0, then it is there in transitive *break*, even if it is nonovert. Transitive *break*, however, does not need verbalization, as unaccusative *break* is already verbal (which does not exclude the possibility that there is a nonverbal root contained in unaccusative *break*, of course). This point is made in Borer 2014.

It seems, then, that v^0 is primarily a 'cause' head, not a verbalizer. It is verbal, so if another morpheme is incorporated into it, the resulting form will be verbal, but that is not its primary function. Verbalization is a side effect.

In verbs that do not seem to incorporate any causative semantics and that have no overt marker that could be identified as categorizer, there is no reason to assume that v^0 is involved. According to Alexiadou & Lohndal 2017:102, in contrast to Hebrew, in which "functional morphemes and especially verbalizers are crucial in determining the interpretation of a root and thus a word," in English "the interpretation of the root and thereby the word is to a greater extent determined by the meaning of the root itself." Alexiadou & Lohndal do not go as far as abolishing v in such cases, but I think there is no reason not to do so, even if we assume that roots have no category. In accord with Borer 2003, 2014, I assume that certain roots surface as verbs, when they appear in the position in the sentence structure that is selected by Voice^0. If their semantics is such that the external argument

projected by Voice^0 can be associated with it agentively, the structure will be successful.[28]

Turning back to Chinese, in bVO phrases such as those in (33) (extracted from (1)), there is no need for v^0, and in view of the absence of causative semantics and an overt categorizer, there is also no reason to assume that it is there.

(33) a. chī   mántou   Mandarin
         eat   steamed.bun
      b. tɕʻoʔ^5 mɛ^{31}tio^{31} Luqiao
         eat   steamed.bun

As I have shown, the variation in surface word order—OV or VO—in Luqiao can be accounted for quite straightforwardly if we assume that v^0 is only present in certain well-defined cases and absent otherwise. If it is absent, Voice^0 selects VP and the object is the complement of V^0. As it can be licensed in situ, the surface order is VO. If v^0 is present, VX will move into it and O will move to its specifier, yielding the order OV, as I argued in the previous sections.

6. A Possible Additional Piece of Evidence

The idea that we can have VPs that do not involve vP may help us solve another puzzle, one that has bothered people in the field of Chinese linguistics for quite a while. The puzzle concerns sentences like the following (Tai & Chou 1975, Tai 1984, Soh & Kuo 2005; cf. Basciano 2017).

(34) a. Zhāng Sān shā-le   Lǐ Sì, kěshi tā méi sǐ.   Mandarin
         Zhang San kill-PRF Li Si but he NEG die
         'Zhang San killed Li Si, but he (i.e., Li Si) did not die.'
         ('tried to kill')

      b. Wǒ xiě-le   yì-fēng xìn kěshi méi xiě-wán.
         1SG write-PRF one-CLF letter but NEG write-done
         'I wrote a letter, but I did not finish it.'
         ('did some letter writing')

In English, these sentences present a contradiction, but in Mandarin, they are generally considered to be fine. As argued by James Tai (see the references just mentioned), the verb *shā* is not properly translated as 'kill'. It is better to view it as

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[28] Harley 2017:17 suggests that we need a fine-grained subdivision: verbalizing vP, subject-introducing VoiceP, and a productive CauseP. However, this Cause^0 is not what I identified as the cause-event-introducing v^0; it is more like the lexical causative morpheme in Japanese. Taking all this together, we may at times need four different components: a verbalizer/categorizer, a cause-event-introducing head, VoiceP to provide the structure for the external argument, and a productive CauseP. This discussion is reminiscent of the discussion about the different functions there are in the functional domain of NP (subordinator, quantifier, definitineness, number, gender) and whether or not they are performed by separate heads (D or otherwise; Szabolcsi 1987, 1994, Cheng & Sybesma 1999).

denoting the activity part that comes before the death of the object; alternatively, one could argue that its meaning can be rendered as 'try to kill'; it is an activity verb.

With respect to sentences like those in (34), a continuation in the form of a denial like 'but he did not die' or 'but I did not finish it' can only be added if the first clause contains a bare verb. If *bare* means, as we have assumed, that we do not have any result- or telicity-denoting projections, it is immediately clear why sentences like the ones in (34) are acceptable. By contrast, the *bǎ* counterpart of such sentences, as (35) illustrates for (34a), cannot have the same denial continuation. This is predicted by the account developed here, which claims that sentences with *bǎ* have a vP, which in turn requires the presence of the inner aspectual projections expressing the result.

(35) Zhāng Sān bǎ Lǐ Sì shā-le, (*kěshi tā méi sǐ).
     Zhang San *BA* Li Si kill-PRF but he NEG die
     Intended: 'Zhang San killed Li Si, but he (i.e., Li Si) did not die.'

In other words, the underlying structure of the first part of (34a) is different from that of its *bǎ* counterpart in (35): it is (36a), as opposed to (36b). The first of these structures is based on (32), with just VoiceP on top of VP, the structure of activity verbs. The second is based on (14), which includes all the inner aspectual projections we have discussed (see (18g)).

(36) a. [$_{OAsp^o}$ shā-le] [$_{VoiceP}$ ⟨Zhāng Sān⟩ [$_{Voice^o}$ ⟨shā⟩] [$_{VP}$ [$_{v^o}$ ⟨shā⟩] [$_{DP}$ Lǐ Sì]]]]
      b. [$_{OAsp}$ [$_{VoiceP}$ ⟨Zhāng Sān⟩ [$_{Voice^o}$ bǎ] [$_{vP}$ Lǐ Sì [$_{v^o}$ shā-∅-le] [$_{Asp3P}$ ⟨Lǐ Sì⟩
          [$_{Asp3^o}$ ⟨shā-∅⟩-le] [$_{Asp1P}$ ⟨Lǐ Sì⟩ [$_{Asp1^o}$ ⟨shā⟩-∅] [$_{VP}$ [$_{v^o}$ ⟨shā⟩]]]]]]]]

As a consequence, the sentence in (37) is structurally ambiguous.

(37)   Zhāng Sān shā-le Lǐ Sì.
       Zhang San kill-PRF Li Si
   a. 'Zhang San tried to kill Li Si' (went through the motions).
   b. 'Zhang San killed Li Si' (he's dead).

The underlying structure for (37a), like that of its counterpart in (34a), is (36a), while (37b) has the same amount of structure as we see in (36b), except that Voice^0 and v^0 are bundled (see (18i)):[29]

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[29] If this is correct, we predict that in a language that always bundles Voice^0 and v^0, the counterpart of (37) is never ambiguous and only has the (b) interpretation; as a result, the counterpart of (34a) is impossible. This prediction is indeed borne out, at least for Cantonese. However, the Cantonese counterparts of (33a, b) also exist and do not seem to be different from (33a, b) in any way. We need to look into this further.

(38) $[_{OAsp} [_{Voice/vP} \langle$Zhāng Sān$\rangle [_{Voice/v^0} \langle$shā-$\varnothing$-le$\rangle$]$] [_{Asp3P}$ Lǐ Sì $[_{Asp3^0} \langle$shā-$\varnothing$-$\rangle$le]
$[_{Asp1P} \langle$Lǐ Sì$\rangle [_{Asp1^0} \langle$shā$\rangle$-$\varnothing$] $[_{VP} [_{v^0} \langle$shā$\rangle$]]]]]]$

The adoption of (32) for bV sentences, if correct, has the interesting consequence that the perfective marker *le* is not always based in the same position: compare (36a) with (36b). As noted in footnote 19, *le* is invariably interpreted in $OAsp^0$, even if it physically appears in $Asp3^0$. But we only have Asp3P if we have vP, which means that in sentences with (32) as their basic structure, *le* is in $OAsp^0$. Xuán 2008 suggests that Mandarin *le* illustrates very well Roberts & Roussou 2003's idea that grammaticalization corresponds to upward movement in the structure. *Le* started out, still in its phonologically full form (*liǎo* 'finished, complete'), as a lexical element in $Asp1^0$, expressing the end point of an action. Having moved upwards to $Asp3^0$ (I am skipping $Asp2^0$; see footnote 15) and having lost much of its lexical meaning, it now indicates that the end point expressed in $Asp1^0$ has been reached. We realize how correct the idea in Xuán 2008 is when we observe that, when *le* occurs yet higher, in $OAsp^0$, its scope is no longer limited to the inner aspectual domain: it now indicates that an event has ended. What may be a factor in determining its distribution (sometimes in $OAsp^0$, sometimes in $Asp3^0$) is its status as a suffix. Since it has reached the state of grammaticalization that it has, it prefers to sit in $OAsp^0$. However, related to its degree of grammaticalization, it is a suffix that has to be attached to a verbal element. In sentences in which $Voice^0$ and v^0 are separate heads, VX ends up in v^0; it has no reason to move on to $Voice^0$ (as we have seen), so it will not be able to move on to $OAsp^0$. As a consequence, if *le* is put in $OAsp^0$, it will be dangling, and the derivation will crash. Alternatively, perhaps *le* is only in $OAsp^0$ if there is no Asp3P. Phrased from the other perspective: elements filling $Asp1^0$ keep *le* back in an earlier phase of its development. The details of the consequences need to be worked out.

7. Voice and v and VO–OV: Summary and a Note on Language Change

In this article we have looked at two types of variation within the Sinitic language family through the lens of VoiceP and vP. First, we looked at crosslinguistic variation with respect to the positioning of O relative to VX. Some languages (type 1) only have SVXO, others (type 2) have S(*BA*)OVX (*BA* optional and dispreferred), and still others (type 3) have a choice between SVXO and S*BA*OVX (*BA* obligatory). The variation is straightforward in view of Pylkkänen 2008's idea that languages can differ in whether $Voice^0$ and v^0 are bundled or not, but only if we add the possibility that we may sometimes find both situations *within* languages as well. In languages of type 1 (such as Cantonese), $Voice^0$ and v^0 are always bundled, in those of type 2 (exemplified by Luqiao) they never are, and in languages that are of type 3 (e.g., Mandarin), they may or may not be (syntactic free variation, but with information-structural consequences, as we saw). In all languages, VX is always in v^0, and $Voice^0$, when it is separate, is either empty or occupied by *BA*. Sometimes—the precise conditions are not clear—when $Voice^0$ is occupied by *BA*, v^0 can be filled by GIVE. It is

important to point out once more that in this analysis, SOVX in Luqiao and languages like it comes out as the structural counterpart of S*bǎ*OVX in Mandarin.

This analysis, if correct, has the following consequences for Voice^0 and v^0. First, they can be bundled or not within one and the same language; it is not only a matter of parametric variation. Second, as 'cause', v^0 never selects a bare VP; it only selects verb phrases that involve a result (the thing that is caused). Finally, Voice^0 can select vP or VP: it introduces the syntactic structure for the external argument, which bears the role of the agent of the event introduced by Voice^0's vP or VP complement.

Given that language variation informs us about possible avenues of language change, the proposed way of looking at the sentence types under investigation makes it easy to understand why sentences with BA become more and more common so easily under the influence of Mandarin. For type 2 languages (Luqiao), Voice^0 and v^0 are already separate, so all that needs to be done for them to produce sentences with BA is to insert their instantiation of BA in Voice^0, which is normally left empty. For type 1 languages, like Cantonese, we need to unbundle Voice^0 and v^0 first, but since Voice/ v^0 is by nature a complex head, merging two different, complementary functions, unbundling these functions is not an unnatural operation, especially in a language environment in which this is standard practice. Conversely, the language change in the other direction (the appearance of VXO in type 2 languages that some authors complain about; see appendix) involves the bundling of Voice^0 and v^0, which is already an option in Mandarin (a language of type 3).

The second type of variation we considered was in the position of O relative to bV versus VX in one and the same language: bVO but OVX. To make sense of this variation, I proposed that simplex unergative activity verbs are not selected by v^0 but directly by Voice^0 instead. The activity that Voice^0 introduces the argument for is denoted by the VP (even if the VP is only categorically a VP by virtue of having been selected by Voice^0). The word-order variation results from the fact that in the bV cases, the object selected by bV is licensed in situ, while in the VX cases, which involve v^0, the object moves into spec,vP to get licensed and VX moves into the head position of vP.

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Appendix A. Note on the Languages

This article discusses data from Mandarin, Cantonese, and Luqiao, which belong to three different branches of the Sinitic language family. Mandarin is spoken as an L1 in a large geographical area. It has many varieties. In this article I take data from the variety spoken in the North, on which standard Mandarin (also known as *Putonghua*) is based. Northern Mandarin syntax is very well studied. The data are presented in the common pinyin transcription, ignoring tone sandhi. I use the Cantonese from Hong Kong, in the South, as the representation of the Yuè branch of Sinitic; with respect to syntax, it is probably the second best studied modern variety of Chinese, after Mandarin. The data are presented in the Jyutping transcription. The least well studied language included here is Luqiao (Lùqiáo 路桥). It is a variety of the Wu branch of

Sinitic, which is, roughly speaking, spoken in a large area around Shanghai. Luqiao itself is spoken in part of the coastal municipal area of Taizhou, which is located just south of the Ling River in Zhejiang province. The data are presented in IPA, disregarding tone sandhi.

The pattern we observe in Luqiao (i.e., bVO versus OVX and absence of an obligatory *BA*) is common in many (possibly most) languages belonging to the Wu subfamily. Besides Luqiao, it has been documented for, among others, the varieties spoken in Shanghai, Wenzhou, Shaoxing, Hangzhou, and Ningbo (Liú 2001, 2015, Tang 2006, Dīng 2014, 2017, Yán 1994; also Qián 1997 and Xú & Shào 1998 for Shanghainese, Pān 1996 and Zhèngzhāng 2008 for Wenzhounese). Outside of the Wu family, the phenomenon is also found in some varieties belonging to the Min branch, such as the Min varieties spoken in Fuzhou (Chén 1998:201, 2003), Quanzhou (R. Lǐ 1997), and Chenghai (Jin Jia, p.c.).

The reason why I use Luqiao to represent Wu rather than, say, the better known varieties of Shanghai or Wenzhou is that it presents the most consistent set of data. Another way of phrasing this, I guess, is by saying that Luqiao has, as yet, escaped the influence of Mandarin in a way the other languages have not. The language situation in China is, and probably has always been, very complex and in constant flux, in recent decades more than ever, due to the heavy-handed and highly effective promotion of the standard variety of Mandarin, to the detriment of other languages (Sinitic and otherwise) and their dialects. This has made it very difficult to make absolute claims about phenomena in the languages in question. Statements in older studies (e.g., "only OV is possible") with regard to certain languages, like Shanghainese, turn out to be no longer correct if one checks with current speakers. Some authors make this explicit. For example, here is Pān 1996:264 on Wenzhounese (my translation): "But under the influence of Putonghua [standard Mandarin], VO phrases involving [the perfective particle] *ɦuɔ* have begun to appear." For a similar statement about Shanghainese, see Qián 1997:262. I gather from the data presented in different sources that, besides Luqiao, the Wu variety of Ningbo has also resisted influence from standard Mandarin when it comes to the word-order phenomena that constitute the main concern of this article (e.g., Liú 2015:106).

The influence of Mandarin is also clear in the use of the so-called pretransitive or disposal construction, the *bǎ* construction in Mandarin. In the text of this article, it is stated that Cantonese does not have a counterpart of Mandarin *bǎ*. It may be objected that this claim is incorrect. After all, Cantonese has sentences in which the element *zoeng1* fulfills the same function as *bǎ* does in Mandarin. However, it is generally acknowledged that such sentences are not part of the colloquial register. Yue-Hashimoto 1993:143 says: "Many Southern dialects possess a disposal form [i.e., a form with *BA*] too, but it is used either in a very restricted context or in a loan stratum of the grammar." Norman 1988:221 claims that this construction "seems to be foreign" to the Yue dialect group to which Cantonese belongs. This was confirmed by Li Wei (W. Lǐ 1993), who investigated the acceptability of Cantonese sentences containing *zoeng1*. Informants reported that although some sentences can be said, they would never say them themselves. They told Li that such sentences have a "bookish flavor" to them (p. 61). This fits well with another finding reported in W. Lǐ

1993, namely that people with a university education are more likely to accept sentences with *zoeng1* than people "from the street" (loc. sit.). Li speculates that *zoeng1* is making its way into the language under the influence of written standard Chinese. Like Yue-Hashimoto 1993 and W. Lǐ 1993, Tang 2015:176, though acknowledging that in a limited array of cases sentences with *zoeng1* are (marginally) acceptable, says that "the most natural way of saying it is still with the object positioned after the predicate." In this article, I take colloquial Cantonese as an example of a language without a counterpart of *bǎ*. However, we need to acknowledge that such a counterpart does appear at least in some registers and may be becoming more common. Cheung 2007:89–91 discusses *zoeng1* without making any mention of register, and so does Matthews & Yip 1994:144.

With respect to the languages of the Wu branch, we see the same situation. Most sources on Wu languages I have consulted give examples of sentences with the counterpart of *bǎ* (e.g., Wenzhounese *de*[6], Shanghainese *ʔnɛ*[52], Luqiao *pəʔ*[5]). However, it is clear that this element is generally not obligatory like it is in SOVX sentences in Mandarin; Qián 1997:287–288, Xú & Shào 1998:205, and Liú 2001:336 say this explicitly for Shanghainese, that SOVX or OSVX sentences are preferred over sentences with *ʔnɛ*[52] (S*ʔnɛ*[52]OVX).

Note, finally, that neither Luqiao *pəʔ*[5] nor Cantonese *zoeng1* are cognates to Mandarin *bǎ*, and unlike Mandarin *bǎ* and Cantonese *zoeng1*, which both mean 'take', Luqiao *pəʔ*[5] means 'give, for'; for a cross-Sinitic overview, see Yue-Hashimoto 1993:146. From the perspective of the analysis of BA and GIVE in this article, it is interesting that there turns out to be some kind of continuum between BA and GIVE, or, more appropriately, between 'take' and 'give', there being many languages that, like Luqiao, use their 'give' to perform the function that is performed by *bǎ* 'take' in Mandarin.