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## Resultative and termination

### A unified analysis of Middle Chinese VP-YI

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This paper proposes an account of the reanalysis of the Chinese morpheme 已 *yǐ* from an intransitive verb meaning ‘end, terminate’ into a functional category marking completive aspect. We posit that this grammaticalization was triggered by the loss of aspectual affixes, prompting YI to be reinterpreted from a lexical verb to a secondary predicate supplying the endpoint to an event expressed by a preceding predicate. The use of YI as a secondary predicate was made possible in part by changes in Chinese VP structure which allowed an endpoint-denoting secondary predicate to occupy a VP-internal position in this period.

**Keywords:** aspect, grammaticalization, Middle Chinese, resultative, telicity

#### 1. Introduction

Early Chinese translations of Buddhist texts reveal numerous cases of intransitive verbs 已 *yǐ*, 竟 *jìng*, 畢 *bì*, or 訖 *qì* originally meaning ‘terminate’ or ‘finish’ appearing in final position in a modifying subordinate clause to indicate completion of the event expressed by that clause. These subordinate clauses are followed by the main clause, which expresses an action following sequentially after the completion of the event expressed by the clause containing 已 *yǐ*, 竟 *jìng*, 畢 *bì*, or 訖 *qì*.

- (1) a. 王 升 車 已, 群 臣 跪 賀  
*wáng shēng chē yǐ, qún chén guì hè*  
king mount carriage YI, all ministers kneel bless

‘After the king mounted the carriage, all ministers knelt down and gave their blessings.’

(*Zhongben qi jing* 2nd–3rd c.) (*Taishō* 4, no.196, p. 153b)

- b. 佛 坐 飯 竟, 行 澡 水 畢, 為 說 經 法。  
 fó zuò fàn jìng, xíng zǎo shuǐ bì, wèi shuō jīng fǎ  
 Buddha sit eat finish, go wash water finish, for say sutra dharma  
 ‘After the Buddha had sat down and finished his meal, and after he had washed himself, he explained the sutra and the dharma (to them).’  
 (*Zhongben qi jing*, 2nd–3rd c.) (*Taishō* 4, no.196, p. 162a)

These aspectual verbs grammaticalized from lexical verbs and continued to be used as such in the same period. The verbal use is clear in the following examples from the fact that they are negated.

- (2) a. 女 舞 未 竟, 忽然 不 見,  
 nǚ wǔ wèi jìng, hūrán bù xiàn  
 woman dance NEG<sub>asp</sub> finish, suddenly NEG visible  
 ‘The woman had not stopped dancing yet when she suddenly became invisible.’ (*Zhongben qi jing*, 2nd–3rd c.) (*Taishō* 4, no.196, p. 149b)
- b. 數 譖 不 已, 王 頗 惑 之。  
 shuò zèn bù yǐ, wáng pō huò zhī  
 several slander NEG finish, king quite confuse OBJ  
 ‘The various slandering had not stopped, and the king found it quite confusing.’ (*Zhongben qi jing*, 2nd–3rd c.) (*Taishō* 4, no.196, p. 157c)

Among these verbs of completion, 已 *yǐ* was by far the one most commonly used as an aspectual marker. The goal of this paper is to propose an analysis of how YI was reanalyzed from a verb to an aspectual marker signaling the completion of an event. Before presenting our analysis, we first summarize other approaches which have been put forth in the literature.

Because of the predominant occurrence of aspectual YI in Buddhist texts, Cheung (1977) has speculated that this usage might be a borrowing from Sanskrit. Specifically, the Chinese verb YI was co-opted in order to translate the Sanskrit gerundial suffix *-tvā*. Cheung further suggests that this accounts for the clause-final position, since Sanskrit is a verb-final language, and the suffix follows the verb stem.

In contrast, Mei (1999) proposes that the aspectual use of YI was a native Chinese development, identifying several early examples in very Early Middle Chinese of the 1st century BCE, before the introduction of Buddhism to China.

- (3) a. 鑽 中 已, 又 灼 龜 首  
 zuān zhōng yǐ, yòu zhuó guī shǒu  
 bore center YI, again burn tortoise head  
 ‘After boring through the center (of the shell), then they burned the tortoise head.’ (*Shiji*: 128; 3240, 100 BCE; from Mei 1999: 289)

- b. 飯已, 盡 懷 其餘肉持去, 衣  
*fàn yǐ, jìn huái qí yú ròu chí qù, yī*  
 eat finish, completely hold.in.bosom POSS rest meat take leave, dress  
 盡 汗  
*jìn wū*  
 completely dirty  
 ‘After eating, they took all their remaining meat with them (in their bosom) and left, and their clothes became completely soiled.’  
 (Shiji: 126; 3205; from Mei 1999: 289)

Jiang (2001, 2007) revises Mei’s (1999) proposal by arguing that the native development was limited to YI which occurred with atelic events, particularly with durative verbs. The function of YI was to supply the endpoint to the event. This can be seen in Mei’s examples in (3). In (3b), for instance, the function of YI is to indicate the end of the eating event.

In addition to this, Jiang proposes that a second function of YI was innovated under Sanskrit influence. This YI occurred with telic predicates, both accomplishments and achievements and signaled specifically that the endpoint of the event had been reached. This is illustrated in the following unaccusative examples. These are achievement predicates, which are both punctual and telic.

- (4) a. 然於後世, 事究竟 已, 言談 斐粲  
*rán yú hòu shì, shì jiùjìng yǐ, yántán fěicàn*  
 so in later generation, affair thoroughly. realize YI, utterance brilliant  
 ‘So in later generations, after these things had been thoroughly comprehended, words and utterance became brilliant, ...’  
 (Zheng fahua jing, 3rd century) (Taishō 9, no.263, p. 88a)
- b. 佛 滅度 已, 受 持 經卷。  
*fó mièdù, yǐ, shòu chí jīngjuàn*  
 Buddha reach.extinction YI, receive hold scripture  
 ‘... and after the Buddha has reached his extinction, they will receive and hold on to the scriptures.’  
 (Zheng fahua jing, 3rd c.) (Taishō 9, no.263, p. 101a)

This paper traces the origin of both types of YI and develops the proposal of Meisterernst (2011: 38) that the function of YI expressing either endpoint or completion of the event had its origin in the verb YI ‘terminate’. It is true that early examples of VP-YI predominantly involve atelic predicates, with YI signaling termination rather than completion, but we argue that this is due to the following two factors. First, the original meaning of verbal YI was ‘stop’ or ‘terminate’ and did not entail completion of an event. Secondly, until the end of the Late Archaic period, the language retained a trace of the derivational affixes employed in Archaic

Chinese to derive telic from atelic verbs. YI did not occur with verbs that were marked as telic while the function of the morphology was still transparent.

We propose the following historical development for aspectual YI. First, with the loss of the aspectual morphology at the end of Archaic Chinese, the verb YI was reanalyzed as a secondary predicate in the VP in order to mark the endpoint of an event. The VP-internal position of YI suggests a close connection with lexical aspect, i.e. aktionsart, rather than grammatical aspect like perfectivity. We further propose that the reanalysis was facilitated by changes in Chinese VP structure which permitted an endpoint denoting secondary predicate to appear within the VP in Early Middle Chinese. As an endpoint denoting secondary predicate, YI most naturally occurred with activity predicates and served to supply the endpoint for the event.

Regarding the later use of YI to signal the realization of a telic event, we propose that this was not a borrowing from Sanskrit but rather a natural extension of the use of the endpoint denoting YI. The loss of the aspectual morphology had the concomitant result of neutralizing the formal distinction between telic and atelic verbs in Chinese, which may in turn be the origin of the well-known lack of inherently telic verbs in Modern Mandarin today, as noted by Tai (1984), Sybesma (1997), and others. In Middle Chinese, once telic verbs were no longer distinguished from atelic verbs, the endpoint denoting secondary predicate YI could co-occur with both types of predicate to supply the endpoint in the case of activities or indicate that the natural endpoint of the event had been reached in the case of achievements and accomplishments. These two functions of YI are essentially parallel, respectively, to the 'endpoint' and 'realization' functions proposed by Sybesma (1997, 1999) for the Modern Mandarin aspectual marker *le* 了.

In sum, our proposal sides with Mei (1999) in claiming that the function of YI as an aspectual marker was a wholly indigenous Chinese development.<sup>1</sup> However, we go beyond Mei (1999) in providing an analysis of the diachronic development of the (multiple) aspectual functions of YI from the verbal YI. We additionally provide an explanation for why a VP internal aspectual marker emerged precisely in the beginning of the Middle Chinese period, as this was the time in the history of Chinese when the morphological aspectual distinctions had been lost and a position in the VP had been innovated for hosting resultative secondary predicates.

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1. This has also been claimed in Meisterernst (2011) and later, independently in Wei (2015).

## 2. Aspect in Late Archaic Chinese

In this section, we provide a brief overview of the impact that the loss of Late Archaic Chinese aspectual morphology had on changes in the aspectual system. Traditional proposals connect the aspectual morphology to grammatical aspect. However, Meisterernst (2015b) claims that this morphology concerns lexical aspect, aktionsart, rather than grammatical aspect. Aktionsart features, i.e. telicity features, are VP internal and aktionsart formation belongs to derivational morphology (Kiefer 2010: 145).<sup>2</sup> Derivational morphology adds semantic features to the verb such as ingressivity, terminativity, iterativity, etc. (Kiefer *ibidem*). Some of these functions have also been proposed for several of the Archaic Chinese affixes reconstructed by Sagart (1999), among others.

The following two morphemes are relevant in the present discussion: a) a former prefix that caused voicing of the following consonant resulting in a voiceless – voiced alternation of the root initial; and b) the suffix \*-s. This suffix (OC \*-s, \*-h) which developed into the falling tone (*qùshēng*) (Haudricourt 1954; Downer 1959; Sagart 1999, and many others) has been connected diachronically to the Tibeto-Burman suffix -s (Schuessler 2007: 42, Huang Kunyao 1992, Jin Lixin 2006, and others). The -s suffix was the most productive affix in Classical Tibetan and it had aspectual functions related to perfective and perfect readings. Thus Tibeto-Burman aspectual morphology provides supporting evidence for the hypothesis that the [+/- voice] alternation and the suffix \*-s also had aspectual functions in Archaic Chinese. Unger (1983), Huang Kunyao (1992), and Jin Lixin (2006) propose that these morphemes served to distinguish the imperfective and perfective aspects. Two arguments specifically challenge this hypothesis: (a) the morphological marking in Archaic Chinese is not mandatory,<sup>3</sup> though the categories imperfective and perfective which refer to grammatical aspect are mandatory (for instance in Russian); and (b) grammatical aspect is hosted in an Outer Aspect Phrase above *vP*, but the verb in Archaic Chinese did not move out of *vP*.<sup>4</sup> Accordingly, the

2. It has been proposed that derivational morphology is characteristic of the Tibeto-Burman languages (LaPolla 2003: 22). The Sinitic languages are a member of the Tibeto-Burman / Sino-Tibetan language family and a morphological system affecting verbal categories similar to that of other languages of this group has also been reconstructed for Pre-Archaic Chinese (before 11th c. BCE).

3. The constraints on the employment of the verbal morphology in pre-Archaic Chinese have not been figured out yet.

4. One piece of evidence for this is the fact that object *wh*-phrases move to a position preceding the verb but below *vP*-external material like the aspectual adverb *jiang*. Aldridge's (2010) analyses object *wh*-movement as targeting the outer edge of *vP*.

aspectual morphology has to be VP internal. Both facts argue for an analysis of the verbal morphology as being hosted by the Inner Aspect Phrase (Travis 2010) in which the telicity features, i.e. the lexical aspect, of the verb are checked.

The development of the suffix \*-s has been discussed under the label ‘derivation by tone change: ‘four tones, different meanings’ (*sì shēng bié yì*) (Mei 1980; Sagart 1999: 131, and many others). It is the most widely accepted aspectual derivation and refers to an alternation between any tone and the falling tone. This process is the ‘youngest’ morphological layer and continued to be transparent, if not fully productive, in Archaic Chinese (Schuessler 2007: 38). Haudricourt (1954) proposes that the falling tone developed from a former derivational suffix \*-s, which became -h and further resulted in the falling tone.<sup>5</sup> Jin (2006: 325) distinguishes two different functions of this suffix: a transitivizing function and a deverbalizing function. Only the latter one is at issue in this discussion. Jin claims that the aspectual function is the basic function of this suffix; the deverbalizing function can be derived from the change from imperfective to perfective reading (Jin 2005, 2006). The derived form in the falling tone could function as an adjective or a noun, resulting in deverbal adjectives and nominals (Jin 2005: 2, 2006: 323f). The derivation by tone change and its aspectual function are represented by the verb *zhì* 治 in (6). This verb has two different readings in Archaic Chinese, one with and one without the suffix \*-s: \*r-de / \*r-de-s (reconstruction by Jin (2006)).<sup>6</sup>

(5) The different readings of (*chí*/) *zhì* 治 in Archaic Chinese: \*r-de / \*r-de-s.

(Jin 2006)

In (6a), the causative verb (*chí*/) *zhì* 治 (*r-de*) ‘put in order, govern’ refers to the process part of an accomplishment; no endpoint is provided (Meisterernst 2016). In (6b) the verb (*r-de-s*) is unaccusative. It refers to a telic situation, i.e. to the resultant state of ‘govern’ ‘be governed = in good order’. Telicity in the sense of an endpoint is added to the verb by the suffix \*-s. This results in an achievement reading.

- i. 我 將 何 求?  
*Wǒ jiāng hé qiú?*  
 1 will what ask.for  
 ‘What will I ask for?’

See also Meisterernst (2016) on the position of *jiang* in the outer aspect phrase.

5. Eight different functions of the falling tone derivations have been listed by Downer (1959); these have been reduced to two basic functions of the underlying suffix \*-s in Jin (2006: 317, 321, 325f).

6. The originally voiced initial of this word in the level tone (without the suffix) should have resulted in a Modern Chinese reading *chí*. However, in Modern Chinese only the reading *zhì* survives.

- (6) a. 政 以 治 民, 刑 以 正 邪.  
 Zhèng yǐ chí (\*r-de) mǐn, xíng yǐ zhèng xié  
 government CONJ regulate people, punishment CONJ correct bad  
 ‘The government is necessary in order to correct the people, the  
 punishments are necessary to correct the bad.’

(Zuozhuan, Yin 11, 5th–4th c. BCE)

- b. 使 為 左師 以 聽政, 於是 宋  
 Shǐ wéi zuǒshī yǐ tīngzhèng, yúshì Sòng  
 cause become *zuoshi* CON manage.government, thereupon Song  
 治.  
 zhì (\*r-de-s)  
 ordered  
 ‘He made him *Zuoshi* and let him manage the government, and  
 thereupon Song became well ordered.’

(Zuozhuan, Xi 9, 5th–4th c. BCE)

The other less frequent morphological alternation with aspectual function is the alternation of a voiceless with a voiced initial consonant (Karlgren 1933; Chou 1962; Wang 1958; Norman 1988; Mei 1988, 1991, 2015; Jin 2006; Hong & Yang 2010; and others). Pulleyblank (1973), Baxter (1992), and Baxter and Sagart (1999) reconstruct an earlier sonorant consonantal prefix for (Pre-)Archaic Chinese as the source of the voicing alternation.<sup>7</sup> Jin (2006) connects the [–VOICE] transitive variant to the imperfective aspect and the [+VOICE] unaccusative variant to the perfective aspect.<sup>8</sup> This alternation is represented by the verb *bài* 敗 in the examples in (8). Jin (2006: 83f) reconstructs the different Archaic Chinese readings for this verb as \**plad-s* / \**blad-s*.<sup>9</sup>

- (7) The different readings of *bài* 敗: \**plad-s* / \**blad-s*. Jin (2006: 83f)

In (8a) the verb is the causative accomplishment verb ‘destroy / defeat’, and no endpoint is provided. The unaccusative variant in (8b), with the meaning ‘destroyed / defeated’, explicitly refers to the endpoint and the resultant state of the telic event. In (8b) the [+voice] feature, which most likely developed from a Pre-Archaic sonorant prefix, adds telicity, i.e. an endpoint to the verb, similar to the \*-s suffix in the example above. The derived verb expresses an achievement and the resultant state.

7. They date the voicing alternation to Middle Chinese. The origin of the voicing alternation is more controversial than that of the \*-s suffix (Mei 2015).

8. Schuessler (2007) distinguishes between exoactive and endopassive variants.

9. Because *bài* 敗 has a falling tone reading, the different reconstructions are not reflected in Modern Chinese.



- (8) a. 惠公之季年，敗宋師于黃。  
*Huì gōng zhī jì nián, bài (\*plad-s) Sòng shī yú Huáng*  
 Hui gong GEN last year, defeat Song army at Huang  
 ‘In the last year of duke Hui he defeated an army of Song in Huang.’  
 (Zuozhuan Yin 1, 5th–4th c. BCE)
- b. 王卒亂，鄭師合以攻之，王卒  
*Wáng zú luàn, Zhèng shī hé yǐ gōng zhī, wáng zú*  
 king soldier chaotic, Zheng army unite CON attack OBJ, kind soldier  
 大敗。  
*dà bài (\*blad-s)*  
 great defeated  
 ‘The king’s soldiers were in chaos; the army of Zheng united in order to  
 attack them and the king’s soldiers were devastatingly defeated.’  
 (Zuozhuan, Huan 5, 5th–4th c. BCE)

The alternation between (causative) accomplishment and (unaccusative) achievement readings of the same verbs in the preceding examples demonstrates the close relation of the aspectual morphology to the aktionsart features of the verb. The affixes explicitly mark the verbs as telic in adding an endpoint to the process part of the respective affix-less verb. The affixed (unaccusative) variant refers to a resultant state. The affix-less variant marks the process part of a causative event, i.e. an accomplishment, and no endpoint is provided. This close relation between the archaic morphology and telicity features, i.e. the aktionsart of the verb, suggests an analysis as telicity markers located in an Inner Aspect Phrase, which hosts the aktionsart features of the verb (Travis 2010).

These morphological affixes were certainly not productive any longer in Late Archaic Chinese, but the aspectual distinctions expressed by them still might have been transparent for the speaker of the time. This hypothesis can be supported by the fact that verbs with a transparent morphological distinction such as those discussed above only very infrequently combine with one of the adverbs *jì* 既 and *yǐ* 已 of Late Archaic and Early Middle Chinese (Meisterernst 2015b). These two adverbs are confined to preverbal position and they express perfectivity. Meisterernst (2016) proposes that they are located in the specifier of the Outer Aspect Phrase, because they show a close connection with the telicity features of the verb.<sup>10</sup> When they appear with activity verbs such as *shí* 食 ‘eat’ and *yán* 言 ‘speak’, as in the following examples, they provide an endpoint to the situation. Verbs such as *shí* 食

10. This means that the adverbs only modify verbs that provide an endpoint they can focus on, i.e. they are confined to stage level predicates. With state verbs that cannot provide a final endpoint, the adverbial modification induces an inchoative reading. With activity verbs, an endpoint is added to the activity.

and the Early Middle Chinese synonym of *yán* 言, *shuō* 說, are the first to appear with endpoint denoting secondary predicate YI in the Western Han and Early Buddhist literature (see also Wei 2015).

- (9) a. 吾既言之矣,敢不勉乎!  
*wú jì yán zhī yǐ, gǎn bù miǎn hū*  
 I II say OBJ SFP, dare NEG make.effort SFP  
 ‘After I said that, could I dare not to make the utmost effort!’  
 (Zuozhuan, Ai 11.1.10, 5th–4th c. BCE)
- b. 既食,而後食之。  
*jì shí, ér hòu sì zhī*  
 II eat, CONJ afterwards feed OBJ  
 ‘After they had eaten, they let him eat.’  
 (Zuozhuan, Xiang 24.8.3, 5th–4th c. BCE)

From the end of the Late Archaic period, the aspectual adverbs *jì* 既 and *yǐ* 已 can freely appear with not only atelic but also with telic achievement verbs, such as the verb *zhì* 治 ‘govern’, as in Example (6b),<sup>11</sup> but the ratio of instances of the verb *zhì* 治 ‘govern’ modified by an aspectual adverb is still low (less than 1%) in this period. In (10a), the unaccusative verb *zhì* 治 is modified by the perfective adverb *yǐ* 已 (in a succession of other predicates). In (10b), *yǐ* 已 modifies a transitive predicate headed by *zhì* (*chí*) 治。

- (10) a. 問之曰:『吾城郭已治,守備  
*Wèn zhī yuē: wú chéng guō yǐ zhì (r-de-s), shǒu bèi*  
 ask OBJ say: 1 wall outer-wall YI regulated, defence arrange YI  
 已具,錢粟已足,甲兵有餘  
*yǐ jù, qián sù yǐ zú, jiǎ bīng yǒu yú,*  
 ready, money grain YI sufficient, armour weapon have surplus,  
 ‘... asked him: “My walls are already in good order, my defence  
 arrangements are already ready, money and cereals are sufficient, the  
 armours and weapons are numerous,” (Han Fei Zi 10.6.16, 3rd c. BCE)
- b. 季子曰:『堯固已治天下矣,  
*Jì zǐ yuē Yáo gù yǐ (chí (r-de))/ zhì (r-de-s) tiānxià yǐ*  
 Jizi say: Yao certainly YI regulate empire SFP  
 ‘Jizi said: “Yao had certainly already regulated the empire.”’  
 (Lüshi chunqiu 25.3.2.1, 3rd c. BCE)

11. A comprehensive analysis of these adverbs has been presented in Wei (2015) and Meisterernst (2015a, 2016). Wei provides a statistical overview of the historical distribution between the two adverbs in the Late Archaic literature. Wei also proposes that the distinction between the two adverbs might be due to a dialectal difference.

The morphological distinctions probably began to lose their transparency around the end of the Late Archaic period. We propose in the next section that this provided the trigger for the development of YI as a secondary predicate in the VP expressing termination and completion in Middle Chinese.

### 3. Evolution of YI from verb to secondary predicate

In this section, we trace the development of YI from a verb to an endpoint denoting secondary predicate. We propose that this reanalysis took place after the loss of derivational affixes distinguishing telic from atelic verbs. The reanalysis was in turn facilitated by the emerging possibility of VP-internal secondary predicates.

#### 3.1 Late Archaic Chinese YI

In Late Archaic Chinese of the 5th to 3rd centuries BCE, YI was used as a verb, adverb, and sentence final particle. As a verb, it generally meant ‘terminate, end’. The following examples are from a 5th century BCE text.

- (11) a. 旦 而 戰, 見 星 未 已。  
*dàn ér zhàn, jiàn xīng wèi yǐ*  
 morning CONJ fight, see star NEG<sub>asp</sub> stop  
 ‘(They) began to fight in the morning and had not yet stopped when the stars appeared.’  
 (Zuozhuan, Cheng 16, 5th-4th c. BCE)
- b. 始 吾 有 虞 於 子, 今 則 已 矣。  
*shǐ wú yǒu yú yú zǐ, jīn zé yǐ yǐ*  
 beginning 1 have aspiration PREP 2 now then finish SFP  
 ‘In the beginning, I had high aspirations for you. But now that is over.’  
 (Zuozhuan, Zhao 6, 5th-4th c. BCE)

YI was also used as an adverbial meaning ‘already’.

- (12) a. 門 已 閉 矣。  
*mén yǐ bì yǐ*  
 door YI close SFP  
 ‘The door was already closed.’ (Zuozhuan, Ai 15.5.6, 5th-4th c. BCE)
- b. 諸侯 求 盟, 已 在 此 矣。  
*zhūhóu qiú méng, yǐ zài cǐ yǐ*  
 feudal.lord search alliance, already be.in this SFP  
 ‘The feudal lords are calling for an alliance and are already here.’  
 (Zuozhuan, Zhao 13, 5th-4th c. BCE)

The third use of YI in LAC was as a clause final particle. YI follows a stative VP and adds emphasis. Note that the aspectual YI is not descended directly from the clause final particle YI. First, the clause-final particle use is lost by the end of the Archaic period. Secondly, the clause-final particle occurred only with stative predicates, while aspectual YI accompanied dynamic predicates.

- (13) a. 去 富子, 則 群 公子 可 謀 也 已.  
 qù Fù zǐ, zé qún gōngzǐ kě móu yě yǐ  
 remove Fu zi, then all prince can plotted.against SFP SFP  
 ‘Once Fuzi is out of the way, then all the other princes can be plotted against.’  
 (Zuozhuan, Zhuang 23, 5th–4th c. BCE)
- b. 今 老 矣, 無 能 為 也 已.  
 jīn lǎo yǐ, wú néng wéi yě yǐ  
 now old SFP, not.have can do SFP SFP  
 ‘Now I am old; there is nothing I can do.’  
 (Zuozhuan, Xi 30, 5th–4th c. BCE)

Throughout the LAC period, YI continues to be used as a verb and also as an adverb. (14a) shows that it appears with an unaccusative predicate. In (14b), it combines with a transitive predicate.

- (14) a. 號 令 已 定, 守 備 已 具.  
 hào lìng yǐ dìng, shǒu bèi yǐ jù  
 command order YI determined, defense preparation YI ready  
 ‘The commands and orders had already been determined and the defense arrangements were already prepared.’  
 (Han Fei Zi 10.6.20, 3rd c. BCE)
- b. 晉 已 取 虢, 還, 反 滅 虞.  
 jīn yǐ qǔ Guó, huán, fǎn miè Yú  
 Jin YI take Guo, return, return destroy YU  
 ‘After Jin had taken Guo, they returned, and returning they destroyed Yu.’  
 (Han Fei Zi 21.11.5, 3rd c. BCE)

However, it is unlikely that adverbial YI was the historical origin of aspectual YI, given the structural unlikelihood of a preverbal adverb being reanalyzed as a VP-internal secondary predicate. We therefore propose with Mei (1999), Jiang (2001, 2007), and Meisterernst (2011) that the origin of aspectual YI was the verbal YI and offer the following analysis of how the reanalysis took place.

We propose that the input to the reanalysis was a structural ambiguity of the following type, in which YI could be understood as either a verb or an aspect marker, depending on the interpretation of the preceding constituent. Like many words in Late Archaic Chinese, 飯 *fàn* ‘eat/meal’ in (15a) was ambiguous between

a verb and a noun. Likewise, 會盟 *huìméng*, in (15b) could mean ‘covenant’ in addition to ‘convene’.

- (15) a. 飯已, 盡 懷 其餘肉持去, 衣  
*fàn yǐ, jìn huái qí yú ròu chí qù, yī*  
 eat finish, completely hold.in.bosom POSS rest meat take leave, dress  
 盡 汗  
*jìn wū*  
 completely dirty  
 ‘After eating/after the meal had finished, they took all their remaining meat with them (in their bosom) and left, and their clothes became completely soiled.’ (Shiji: 126; 3205; from Mei 1999: 289)
- b. 會盟 已, 飲, 而 衛鞅伏甲士而  
*huì méng yǐ, yǐn, ér Wèi Yǎng fú jiǎ shì ér*  
 make.a.covenant YI, drink, CONJ Wei Yang hide armor officer CONJ  
 襲 虜 魏公子 卬,  
*xí lǚ Wèi gōngzǐ Áng*  
 attack imprison Wei prince Ang  
 ‘After they had concluded the covenant, they drank, and Wei Yang hid armored men in ambush and attacked and imprisoned the prince of Wei, Ang.’ (Shiji: 68; 2233)

If the constituent preceding YI is parsed as a noun, then YI must be understood as a verb taking this constituent as its argument, base generated as the internal argument of YI in VP and then moving to [Spec, TP] subject position. This is shown in (16a). However, the preceding constituent could also be understood as a verb, which forced YI to assume a different function. We propose that YI in this case functioned as a secondary predicate within VP specifying the endpoint for the event, as shown in (16b). This analysis of aspectual YI thus is parallel to Sybesma’s (1997, 1999) account of the Modern Mandarin aspectual marker *le* 了.

- (16) a. [<sub>TP</sub> *fàn* [<sub>VP</sub> [<sub>VP</sub> *yǐ* <*fàn*> ]]]  
           meal           YI  
 ‘After the meal had finished, ...’
- b. [<sub>TP</sub> *pro* [<sub>VP</sub> [<sub>VP</sub> *fàn* [<sub>xP</sub> *yǐ* ]]]]  
                           eat    YI  
 ‘After they finished eating, ...’

This reanalysis of YI as an aspectual secondary predicate was also aided by the loss of the aspectual morphology. Specifically, the loss of the aspectual morphology led to the existence of verbs unmarked for lexical aspect. Thus, if *fàn* in (15a) was parsed as a verb, there would have been no morphological marking indicating

telicity. Given that the lexical meaning of YI as a verb was ‘end, terminate’, it is reasonable to imagine that this YI could be interpreted as a telicity marker supplying an endpoint to the preceding atelic verb. (15a, b) thus become structurally ambiguous as a consequence of these two ambiguities: the categorical status of the preceding constituent and the loss of aspectual morphology on lexical verbs. This allowed YI to be co-opted to fulfill the aspectual function.

A welcome consequence of this analysis is that it might suggest an account for the fact that aspectual YI only occurs in subordinate, typically nonfinite, adverbial clauses, because the requisite ambiguity is obtained very easily in this context. Realization of an endpoint in Archaic and Early Middle Chinese, if expressed at all, required the perfective sentence final particle *yǐ* 矣. A similar effect obtains in a subordinate clause in sequence with another clause expressing an event which follows it and depends on completion of the first event. In this case, the endpoint of the first event must have been realized in order for the second event to take place. In the Late Archaic and Early Middle Chinese periods, such subordinate clauses were typically marked by the aspectual adverbial 既 *jì*.

- (17) a. 秦 始 皇 既 并 天 下 而 帝, 或 曰:  
*Qín Shǐ huáng jì bìng tiānxià ér dì, huò yuē*  
 Qin First Emperor YI unify empire CONJ emperor, someone say  
 ‘After the First Emperor of Qin had unified the empire and become emperor, someone said: ...’ (Shiji: 28; 1366)
- b. 桓 公 與 莊 公 既 盟 於 壇 上 曹 沫  
*Huán gōng yǔ Zhuāng gōng jì méng yú Tánshàng, Cáo Mò*  
 Huan duke and Zhuang duke YI make.covenant at Tanshang, Cao Mo  
 執 匕 首 劫 齊 桓 公  
*chí bǐshǒu jié Qí Huán gōng*  
 hold dagger assault Qi Huan duke  
 ‘After duke Huan and duke Zhuang had concluded the covenant, Cao Mo took a dagger and assaulted Duke Huan of Qi.’ (Shiji: 86; 2515)

We assume that the existence of this type of clause facilitated the interpretation of YI as expressing an endpoint when combined with another predicate, and it is precisely this structural context in which aspectual YI is used throughout the Middle Chinese period.

### 3.2 Structural reanalysis

In the previous subsection, we proposed that the reanalysis of verbal YI to aspectual YI took place with the loss of aspectual affixes on verbs. YI was clearly not a bound morpheme, however, as it followed all other VP internal material. We

proposed above that YI was a resultative secondary predicate (following Sybesma's 1997, 1999 analysis of *le* 了) supplying an endpoint to an atelic event. In this subsection, we present evidence that the VP in Early Middle Chinese could in fact house a resultative secondary predicate.

In the Late Archaic period, VP internal endpoint denoting constituents were essentially limited to PPs expressing goal arguments or destinations.

- (18) a. 雍子發命於軍曰:  
*Yōng zǐ fā mìng yú jūn yuē*  
 Yong zi issue order to army say  
 'Yongzi issued an order to the army saying.'  
 (*Zuozhuan, Xiang* 26.10.15, 5th–4th c. BCE)
- b. 請王縞素辟舍於郊, 遣使於齊,  
*qǐng wáng gǎo sù pì shě yú jiāo, qiǎn shǐ yú Qí*  
 ask king plain silk avoid house at suburb, send envoy to Qi  
 'I beg the king to dress in plain silk and to avoid his dwellings and move to the suburbs, and to send an envoy to Qi.'  
 (*Lüshi chunqiu* 20.6.4., 3rd c. BCE)

However, it is unattested in the Archaic period for a verb to function as a resultative secondary predicate. In other words, the Modern Mandarin verb-resultative compounds like in (19a) are a much later development in the language. As shown in (19a), the second verb is always intransitive. The possibility of a secondary predicate expressing a resultant state, as in (19b), did not emerge until the 5th century. The word order found in Modern Mandarin VV compounds did not make its appearance until the 6th century.

- (19) a. 張三騎累了兩匹馬。  
*Zhāngsān qí-lèi-le liǎng pǐ mǎ.*  
 Zhangsan ride-tired-ASP two CL horse  
 'Zhangsan rode two horses tired.' (Cheng & Huang 1994: 188)
- b. 今當打汝前兩齒折。  
*Jīn dāng dǎ rǔ qián liǎng chǐ zhé.*  
 now should hit you front two tooth break  
 'Now I should break two of your front teeth.'  
 (*Xianyujing*, 5th c.)(*Taishō* 4, no. 202, p. 429a)
- c. 主人欲打死之。  
*Zhǔrén yù dǎ sǐ zhī.*  
 master want hit die OBJ  
 'The master wanted to strike him dead.'  
 (*Guang Gujin Wuxingji*, Guangji 91)

What can be found in Early Middle Chinese is coordinated transitive verbs sharing an object, as noted by Wang (1958), Ohta (1958), Shimura (1984), Mei (1991), Cao (1999), Jiang (1999), and Liang (2005), as in (20a). If the second verb was intransitive, then there could be no object and the shared argument was the subject, as in (20b). Since the second verb must be transitive when followed by an object, it cannot be analyzed as a secondary predicate denoting a result state.

- (20) a. 子嬰 遂 刺 殺 高 於 齋 宮。  
*Zǐyīng suì cì shā Gāo yú zhāi gōng.*  
 Ziying then stab kill Gao in cleanse palace  
 ‘Ziying then stabbed and killed (Zhao) Gao in the room for ritual  
 cleansing.’ (Shiji: 6, 275, 100 BCE)
- b. 百日 而 餓 死。  
*Bǎi rì ér è sǐ*  
 100day CONJ starve die  
 ‘After one hundred days, (he) starved and died.’ (Shiji: 79; 2411)

The Late Archaic source for this construction further suggests that the correct analysis is coordination, because it requires an overt coordination marker, specifically the subordinating conjunction 而 *ér*. Full VPs could be coordinated, as in (21a). If the two VPs shared an object, this object appeared in the second conjunct, as in (21b). This coordination marker was lost during Middle Chinese, so it does not appear between the adjacent verbs in the examples in (20).

- (21) a. 是 何 異 於 刺 人 而 殺 之?  
*Shì hé yì yú cì rén ér shā zhī?*  
 this how different from stab person CONJ kill OBJ  
 ‘How is it different from stabbing and killing people?’  
 (Mencius, 1A.3, 4th c. BCE)
- b. 豹 自 後 擊 而 殺 之。  
*Bào zì hòu jī ér shā zhī.*  
 leopard from back strike CONJ kill OBJ  
 ‘A leopard struck and killed him from the back.’  
 (Zuozhuan, Xiang 23.3.16, 5th-4th c. BCE)

The preceding discussion makes it unlikely that resultative secondary predicates were permitted to appear within VP. However, as Cao (1999) points out, there are a few cases in later Han period texts in which the second in a sequence of verbs is not a lexical verb selecting an argument but rather a functional category contributing aspectual information to the event structure. The example he provides is the verb *dé* 得 ‘obtain’. As a verb in the Late Archaic period, *dé* could be used in sequence with another verb with a similar meaning of ‘obtain’ or ‘capture’, as in



(22a). Cao analyzes these as cases of coordination. But examples emerge in later Han period texts in which *dé* no longer means ‘obtain’ but rather only signals that the action expressed by the first verb was successfully completed and realized. He points out further that the object in (22b) cannot be analyzed as the object of *dé*, because the sun did not come into the possession of the subject Yao.

- (22) a. 孟孫 獵 得 麋, 使 秦 西 巴 持 之 歸  
*Mèngsūn liè dé ní, shǐ Qín Xībā chí zhī guī*  
 Mengsun hunt get fawn, send Qin Xiba hold OBJ return  
 ‘Mengsun hunted and caught a fawn and he sent Qin Xiba to get it and return with it.’ (Han Fei Zi 22.22.3, 3rd c. BCE; cited by Cao 1999: 21)
- b. 堯 射 得 之, 猶 不 能 傷 日  
*Yáo shè dé zhī, yóu bù néng shāng rì*  
 Yao shoot get OBJ, but NEG can hurt sun  
 ‘Yao shot it, but he could not hurt the sun.’  
 (Lunheng 19.1.4, 1st c. CE; cited by Cao 1999: 21)

Examples like (22b) involving *dé* are difficult to find in the *Shiji*, but there is some indication that VV sequences did not all involve object sharing between coordinated VPs even in this text. In other words, it is possible to find a few cases in which the second verb functions only as a secondary predicate within the VP projected by the first verb. One such example is the unaccusative verb *dìng* 定. In LAC, *dìng* had both an unaccusative and causative use meaning ‘settle’ or ‘decide upon’.

- (23) a. 王 未 能 定 鄭 而 歸.  
*wáng wèi néng dìng Zhèng ér guī*  
 king NEG<sub>asp</sub> can settle Zheng CONJ return  
 ‘The king was not able yet to settle Zheng and returned.’  
 (Zuozhuan, Xiang 9.8.4, 5th–4th c. BCE)
- b. 君 既 定 矣, 又 何 求?  
*Jūn jì dìng yǐ, yòu hé qiú*  
 Prince II establish SFP, furthermore what seek  
 ‘Since my prince is already settled, what else would I wish for?’  
 (Zuozhuan, Ding 5.7.5, 5th–4th c. BCE)

In the *Shiji*, there are examples in which *dìng* follows another verb, but it does not seem to share the argument with that verb, as *dìng* did not have the sense of ‘settle’ when referring to situating the body in a sitting position.

- (24) a. 荊 軻 坐 定, 太 子 避 席 頓 首 曰:  
*Jīng Kē zuò dìng, tài zǐ bì xí dùn shǒu yuē*  
 Jing Ke sit settle, heir get.off mat knock.ground head say  
 ‘When Jing Ke had sat down, the heir got off his mat, knocked his head to the ground and said.’  
 (Shiji: 86; 2531, 100 BCE)

- b. 田 光 坐 定, 左 右 無 人, 太 子 避 席 而  
*Tián Guāng zuò dìng zuǒyòu wú rén, tài zǐ bì xí ér*  
 Tian Guang sit settle, entourage not.have man, heir get.off mat CONJ  
 請 曰:  
*qǐng yuē*  
 ask say  
 ‘When Tian Guang had sat down, no one of the entourage was around,  
 and the heir got off his mat and asked.’ (Shiji: 86; 2530)

Another reason to doubt the existence of argument sharing in (24) is the fact that there are no examples of argument sharing between *dìng* and *zuò* in a Late Archaic text. The only example in which *dìng* heads a VP coordinated with *zuò* that we found does not involve argument sharing.

- (25) 大 王 安 坐 定 氣, 劍 事 已 畢 奏 矣。  
*Dà wáng ān zuò dìng qì, jiàn shì yǐ bì zòu yǐ*  
 Great king calm sit settle spirit, sword affair YI finish achieve SFP  
 ‘The great king may sit calmly and settle his spirit; the affair of the sword has  
 already been finished.’ (Zhuangzi 30.2.10, 4th–3rd c. BCE)

We suggest here that, although there were no true resultative secondary predicates in Early Middle Chinese, there were some cases in which the second verb in a sequence was not a lexical verb but rather functioned to indicate that the event had come to successful completion. We propose that this was also the function of YI in this period.

#### 4. Extension of aspectual YI as a native development

In the preceding section, we proposed that aspectual YI was reanalyzed from the verb YI expressing termination of an event. The reanalysis took place in Early Middle Chinese. The trigger for the grammaticalization was the loss of aspectual morphology which marked telic verbs. YI served as a secondary predicate to mark the endpoint of an event. This is the YI which Jiang (2001, 2007) assumes to be a native Chinese development. Regarding the second use of YI, which Jiang claims is a borrowing from Sanskrit, we propose in this section that this function is also a native development, the result of extension of the endpoint denoting secondary predicate into an aspect marker signaling that the endpoint of an event has in fact been realized.

As mentioned briefly in Section 1, Jiang (2001, 2007) proposes that there were two related YI, but they had separate origins. The YI expressing endpoint was a native development, grammaticalizing from the verb YI meaning ‘terminate’. This

YI occurred with atelic events and supplied an endpoint to the event. The second function of YI was innovated under Sanskrit influence. This second YI occurred with telic predicates and signaled that the event had been accomplished. YI1 and YI2 are shown in (26a) and (26b), respectively.

- (26) a. 飲 已 復 吐.  
*yǐn yǐ fù tǔ*  
 drink YI again spit  
 ‘He drank, but spit it out again.’  
 (Fobenxing Jijing, 6th c.) (Taishō 3, no.190, p. 777a)
- b. 至 已 長 跪.  
*zhì yǐ zhǎng guì*  
 arrive YI ruler kneel. down  
 ‘After he had arrived, the ruler knelt down.’  
 (Fobenxing Jijing, 6th c.) (Taishō 3, no.190, p. 706c)

He proposes that YI1 and YI2 were used to translate the Sanskrit gerundive participle which was used to signal that one event was completed and then followed by a second event. The embedded clause projected by the gerund typically had the same subject as the main clause expressing the subsequent event. The primary diagnostic distinguishing the two types of YI is that only YI2 could occur with an achievement predicate.

However, in our view, there is no need to assume that YI2 could not have developed directly from YI without foreign influence. Once the morphology distinguishing telic from atelic verbs had been lost in Chinese, so was the constraint that an endpoint denoting secondary predicate could only occur with an atelic predicate. As we showed in Section 2, an aspectual adverb occurred with an atelic predicate in the early part of the Late Archaic period in order to signal the completion of the event, as in (27a). But by the end of the Late Archaic period, with the loss of aspectual morphological distinctions, these adverbs could be used with achievement verbs, where their function was to signal that the natural endpoint implied by the predicate was in fact reached, as in (27b). Given our proposal that the reanalysis of YI followed in the wake of the loss of aspectual morphological distinctions, it is natural to assume that YI served the same functions as these adverbs, providing an endpoint in the case of an activity or signaling completion in the case of achievements and accomplishments.

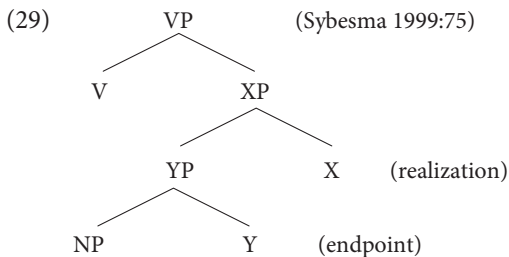
- (27) a. 既食, 而 後 食 之.  
*jì shí, ér hòu sì zhī*  
 YI eat, CONJ afterwards feed OBJ  
 ‘After they had eaten, they let him eat.’  
 (Zuozhuan, Xiang 24.8.3, 5th-4th c. BCE)

- b. 季子曰：堯固已治天下矣，  
*Jì zǐ yuē: Yáo gù yǐ chí/zhì tiānxià yǐ*  
 Jizi say: Yao certainly YI regulate empire SFP  
 ‘Jizi said: “Yao had certainly already regulated the empire.”’  
 (*Lüshi chunqiu* 25.3.2.1, 3rd c. BCE)

These are precisely the two functions proposed by Sybesma (1997, 1999) to account for Modern Mandarin *le* 了. LE in (28a) is analyzed as expressing the endpoint of the event, in agreement with Chao (1968), Lü (1991), and many others, who analyze LE as expressing completion. Chao (1968: 446) terms LE a phase complement, which expresses a phase of the action (in this case completion) rather than the resultant state. Sybesma (1999: 72) treats phase complement LE as a ‘neutral telic marker’. LE in (28b), however, must be treated differently. This is because the main verb is followed by a resultative secondary predicate expressing not only telicity but also specifying the resultant state of the object in this event. Consequently, LE itself cannot be expressing the endpoint of the event. Sybesma analyzes LE in (28b) as communicating that the endpoint has actually been realized. He terms this LE ‘realization LE’.

- (28) a. 他賣了他的幾頭豬。  
*Tā mài-le tā-de jǐ-tóu zhū.*  
 he sell-LE he-DE several-CL pig  
 ‘He sold those few pigs of his.’ (Sybesma 1999: 68)
- b. 張三擦乾了玻璃。  
*Zhāngsān cā-gān-le bōli.*  
 Zhang San wipe-dry-LE glass  
 ‘Zhang San has wiped the glass dry.’ (Sybesma 1999: 69)

Sybesma analyzes both types of LE as small clause predicates. Endpoint LE heads a result denoting small clause YP, while realization LE is a higher functional head X whose function is to indicate that the event expressed by the lower small clause has been realized. When LE co-occurs with a resultative secondary predicate, the resultative occupies the endpoint denoting position Y, while LE is in the position for realization X.



Our proposal for YI is that it first functioned as the endpoint denoting secondary predicate, Sybesma's Y. This use of YI is particularly common in Early Middle Chinese translations of Buddhist texts. In the following example, YI follows an atelic predicate and provides an endpoint for the event.

- (30) 供養 已, 皆白 佛 言:  
 gòngyǎng yǐ, jiē bái fó yán  
 sacrifice YI, all say Buddha say  
 'when the sacrifices were over, they all said to the Buddha ...'  
 (*Daoxing bore jing*, 2nd c.) (*Taishō* 8, no.224, p. 439b)

YI later came to take on the realization function (Sybesma's X), a use which becomes more common in subsequent centuries but can also be seen in Early Middle Chinese. We analyze this as a case of grammaticalization resulting from upward movement in the syntactic structure along the lines of Roberts and Roussou (2003). The following are examples of achievement predicates.

- (31) a. 既受 已, 復 持 反 遺 薩陀波倫 菩薩, 即  
 jì shòu yǐ, fù chí fǎn wèi Sàtuóbōlún púsà, jí  
 II accept YI, again hold return send Satuobolun bodhisattva, then  
 自 言:  
 zì yán  
 himself say  
 'After he had accepted them, he held on to them and sent them in return to the Satuobolun bodhisattva and said to himself.'  
 (*Daoxing bore jing*, 2nd c.) (*Taishō* 8, no.224, p. 476a)
- b. 佛 滅度 已, 受 持 經卷.  
 fó mièdù yǐ, shòu chí jīngjuǎn  
 Buddha reach.extinction YI, receive hold sutra  
 'After the Buddha has reached extinction, we will receive and hold the sutras.'  
 (*Zheng fahua jing*, 3rd c.) (*Taishō* 9, no.263, p. 101a12)

The occurrence of YI with an achievement predicate is fully expected on our analysis.<sup>12</sup> The loss of derivational morphology creating telic verbs naturally led to the consequence which obtains in Modern Mandarin today, i.e. that there are no inherently telic verbs, as proposed by Tai (1984), Sybesma (1997), and others. Consequently, it is not surprising that YI occurred with achievement predicates, not in order to supply the endpoint but simply to indicate that the natural end-

12. Wei (2015) also provides some arguments against Jiang's hypothesis with regard to the development of YI2. According to Wei, the fact that examples with YI are in general not very frequent explains why there are only very few examples with telic verbs in this combination. He does not exclude the possibility that the structure has its origin in dialectal variants of Chinese.

point of this type of event had been achieved. Thus, Sybesma's (1999) endpoint and realization positions can be viewed as a single functional category, the semantic difference between them resulting merely from the aspectual properties of the predicate YI occurred with.

## 5. Conclusion

In this paper, we have proposed an analysis of how the verb YI meaning 'terminate' came to be used as an aspectual marker signaling the end or completion of an event in Early Middle Chinese. We proposed that the trigger for this reanalysis was the loss of (Pre-)Archaic Chinese morphological affixes, which eliminated the formal distinction between telic and atelic verbs. YI was consequently reinterpreted as a secondary predicate in VP in order to supply an endpoint or to signal that the natural endpoint of an event had been realized. We further argued that the reanalysis of YI as a secondary predicate was made possible by changes in VP structure in Early Middle Chinese, which enabled the appearance of aspectual secondary predicates in the VP.

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