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A structural account of the difference between achievements and accomplishments: evidence from Changsha Xiang Chinese

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Abstract This paper offers an analysis of *ka*^{41}, an aspectual element in Changsha Xiang Chinese. It is argued that this element occupies a position in the inner-aspectual structure of the clause, between the higher aspectual marker *ta*^{21} and the lower elements expressing a lexical result (like *clean* in *wash clean*). On the basis of its co-occurrence with various verb types, we treat *ka*^{41} as an achievement marker: when present, it blocks any reading in which the denoted event proceeds along a multi-point scale, allowing only the instantaneous, two-point scale reading in which the beginning and the endpoint of the event coincide. On the basis of its syntactic distribution we argue that the syntactic position *ka*^{41} occupies is an intermediate aspectual projection (Asp2P) in the inner aspect domain, which is sandwiched between the lowest inner aspectual projection dedicated to telicity and the highest one signaling perfectivity (or realization of the end point). We review the implications of the analysis for the aspectual domain of Mandarin clauses and point out that the intermediate inner aspectual projection (Asp2P) we introduce for Changsha appears to be a suitable syntactic position for the structural analysis of the small set of grammaticalized items generally known as "Phase complements" as well.

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1 Introduction: achievements and accomplishments

1.1 Definitions and general issues

This paper is primarily about the marker *ka*^{41} in Changsha Xiang Chinese (henceforth "Changsha"), the language of Changsha, the capital of Hunan province in Central China. However, it also touches upon the difference between Vendlerian achievements and accomplishments. We will argue that *ka*^{41} is an achievement marker and that, consequently, since *ka*^{41} occupies a certain position in the structure, the difference between accomplishments and achievements may be a structural affair—at least in this language.

The Changsha data will be introduced in the following section. The broader theoretical context will be laid out presently.

Although both are generally considered to be telic (defined here as: with a specified endpoint), there are several behavioral differences between accomplishments and achievements. One is that accomplishments are compatible with the progressive, while achievements are not[1]:

(1) a. The assistant was repairing his computer
b. *His son was finding his key

Another difference is that, when combined with adverbs like *almost*, accomplishments are ambiguous between a reading with a focus on the beginning (e.g., for (2a), 'almost started writing') and one with a focus on the result ('almost finished it'), whereas achievements exclusively focus on the result (see (2b)).[2]

(2) a. She almost wrote a letter
b. She almost broke her arm

These differences are often explained as resulting from a difference in the internal make up of these two verb types. Although both are telic, they differ in that accomplishments involve a process in addition to an endpoint, while achievements are generally assumed to lack this process, as a result of which beginning and

[1] Achievement verbs can occur in the progressive form, but the semantics of such forms is irregular, as Piñón (1997) calls it. They either "cover the time preceding the actual punctual transition to the goal" (Rappaport Hovav 2007, 28), as in *The train was reaching the station when it hit the obstacle*, or they refer to multiple events (as in: *Guests were arriving all afternoon*; Rothstein 2007). These readings will be irrelevant in the current paper.

[2] This is often referred to as Dowty's "adverbial scope test"; see Dowty (1979, 58). The two readings are sometimes called the "counterfactual" and "scalar" reading respectively. Dowty's test goes back to work on decomposition by Jim McCawley and others. For other useful tests, see Piñón (1997).

endpoint coincide (or are adjacent). Because accomplishments contain a process and achievements do not, only accomplishments are compatible with the progressive, and because beginning and endpoint are hard to distinguish in achievements, we only get one interpretation for achievements in sentences like (2), while this is not the case for accomplishments, in which beginning and endpoint are separated by the process.

Rothstein (2007) calls achievements "non-extended" and accomplishments "extended". Achievements are "non-extended" in that the change from α to ¬α is "instantaneous" (p. 45). As Rothstein says, "for technical reasons it is easiest to see them as two adjacent instants, one the last one at which α holds and the second the first at which ¬α holds" (p. 45). In contrast, accomplishments are best described as "extended" because the two instants in question are not adjacent. With accomplishments, "changes from β to α [allow] for a middle period at which both ¬β and ¬α hold" (p. 45).

This is in line with Rappaport Hovav's (2007) view of these verb types. As she phrases it, with accomplishments, when used in the past tense, "some change along the scale is entailed, but change along the entire scale is only inferred by conversational implicature" (pp. 26–27), while with achievements, "the full transition is entailed" (p. 28). This follows from the fact that in her view, accomplishments are associated with a multi-point scale, while when it comes to achievements, we are dealing with a mere two-point scale (p. 26). The two points on this scale coincide (or are immediately adjacent): the beginning point is the endpoint and there is nothing in between. Accomplishments, on the other hand, have a beginning and endpoint too, but there is also something in between, let's say, a process (which achievements lack), so that we can view them as involving a multi-point scale.[3]

Travis (2010) also qualifies achievements as "processless" but when discussing the fact that the progressive is compatible with accomplishments she puts things in a different and, for our Chinese context, quite insightful perspective by saying that "the progressive strips off the endpoint" (p. 124). She does not delve into this more deeply herself, but the perspective it opens is that the difference between accomplishments and achievements may not (always) be characterizable in terms of the presence or absence of a process. It may alternatively be the case that there actually always is a process between the beginning and the endpoint and that the difference between achievements and accomplishments lies in the syntactic accessibility of this process. If this process is accessible, we have an accomplishment and the progressive can be formed. If the process is not accessible, the beginning and endpoint are effectively immediately adjacent, as is the defining property of achievements, as we just saw, and, consequently, the progressive cannot be formed.

[3] For characterizations of accomplishments and achievements and the difference between them in terms of dynamism and durativity see, among others, Verkuyl (1972, 1989), Olsen (1997) and Rothstein (2004). Pustejovsky (1991) puts the crucial difference on agentivity, which accomplishments have and achievements do not. For a systematic overview, see Piñón (1997). See Yang (2011) for an insightful discussion of Mandarin, where achievements and accomplishments are characterized as encoding "result" and "leading to result" respectively.

This paper will not investigate the hypothesis that all achievements actually do involve a process. Instead, focusing on data from Changsha, it focuses on the cases in which the presence of a process is not at issue (there clearly is one) and investigates the question whether it is the case that access to the process leading up to the endpoint is determined by the nature of the endpoint denoting element or by structural factors.

1.2 Mandarin

The idea that the presence or absence of a process may not always be the only factor in what constitutes an achievement is interesting if we compare English achievements with their Mandarin counterparts. If we look at a random list of English achievement verbs—*appear*, *arise*, *arrive*, *awaken*, *break*, *die*, *disappear*, *discover*, *find*, *happen*, *hear*, *lose*, *notice*, *see*, *understand*, *vanish*, *win*—and we translate them into Mandarin, we discover that, although some of these have monosyllabic simplex counterparts (like *dào* 'arrive', *sǐ* 'die', *yíng* 'win'), the counterparts of several of these are complex and analyzable as consisting of two elements, expressing a process and a result respectively. This is an old observation, going back at least to the work by James H. Y. Tai in the late seventies of the twentieth century (Tai and Chou 1975, Tai 1984). Here are some Mandarin examples, with SUCC short for 'brought to a successful end'.[4]

(3)	zhǎo-dào	look for + arrived/SUCC	'find'
	zhùyì-dào	pay attention + arrived/SUCC	'notice'
	kàn-jiàn	look + appeared/SUCC[5]	'see'
	tīng-jiàn	listen + appeared/SUCC	'hear'
	fā-xiàn	extend + appeared/SUCC	'discover'

As shown in (4), the verbs in (3) are incompatible with the progressive, which is a characteristic of achievements, as we have seen. A Mandarin sentence can be put in the progressive by placing *zài* 'be at' or *zhèngzài* 'just be at' right before the verb.

(4)	a.	*zhèng-zài	zhǎo-dào
		PROG	search-arrived/SUCC
		INTENDED:	'be finding'
	b.	*zhèng-zài	fā-xiàn
		PROG	extend-appeared/SUCC
		INTENDED:	'be discovering'

So, despite the fact that there is a clearly identifiable process incapsulated in these forms, the progressive is not possible.

[4] Other glosses used in this paper: BA is used for the preverbal object marker, CL stands for "classifier", DEM for "demonstrative", NEG for "negation", PASS for "passive marker", PRF for "perfective", PROG for "progressive", SFP for "sentence final particle", SUB for "subordination marker", 1/2/3s/P for "1st/2nd/3rd person singular/plural". We gloss Mandarin verb *le* and its Changsha counterpart *ta*^{21} as PRF despite the fact that we are aware that this is an oversimplification (as is clear from the discussion of the structure in (28)).

[5] *Jiàn* (and its Changsha counterpart *tɕian*^{45}) may alternatively be glossed as 'perceived/SUCC'.

Before we draw any conclusions, let's look at some more data. First, it must be noted that it is not the case that, generally, verb-result combinations cannot be put in the progressive, as the following grammatically acceptable examples show ((5c) from Wang 2018, 98 (52a), tone marks added):

(5) a. wǒ zhèng-zài cā-gān bōlí
1S PROG wipe-dry glass
'I am wiping the glasses dry'

b. tīngqǐlái, wǒ érzi zhèng-zài nòng-huài wǒ-de diànnǎo
hear.start 1S son PROG do-broken 1S-SUB computer
'from the sound of it, my son is destroying my computer'

c. Zhāng Sān zài shā-sǐ tā-de zhū
Zhāng Sān PROG kill-dead 3S-SUB pig
'Zhāng Sān is killing his pig(s)'

d. Zhāng Sān zài shuā-bái zhè-dǔ qiáng
Zhāng Sān PROG brush-white DEM-CL wall
'Zhāng Sān is painting this wall white'

Applying Dowty's *almost* test, the verbs in (3) behave like achievements once more (see (6a)), while verb-result combinations like the ones in (5) and other accomplishments do not (as in (6b) and (6c), the latter from Yang 2011, (29)):

(6) a. chàyìdiǎr zhǎo-dào-le
almost look.for-arrived/SUCC-PRF
UNAMBIGUOUS: 'almost found it'

b. chàyìdiǎr bǎ diànnǎo nòng-huài-le
almost BA computer do-broken-PRF
'almost destroyed the computer'
AMBIGUOUS: almost started doing it/almost completed it

c. tā jīhū xiě-le yì-fēng xìn
3S almost write-PRF one-CL letter
'he almost wrote a letter'
AMBIGUOUS: almost started doing it/almost completed it; cf. (2a)

However, there are other cases, which look the same, but behave differently in that they are incompatible with the progressive.[6] Consider the following examples:

[6] Two reviewers point out that this descriptive claim may not be extendable to all cases like the ones in (7). In response, we tested a variety of cases, some involving *wán* 'finished/SUCC' and *hǎo* 'good/SUCC' and some others with *diào* 'off', and all were rejected, except when *diào* 'off' was analyzable as an "R" rather than a "Ph" (terms to be explained below). In some cases, we got mixed results, e.g., with *guān-shàng* 'close' (of 'the door'), which some accepted and others did not. In one case, with *dá-dào* 'reach' (of 'goals') the sentence was acceptable to one speaker consulted, but in one of the interpretations we discarded as irrelevant in fn. 1, 'about to reach'. Although we take the claim in the text as by and large correct (but what to do with *guān-shàng* 'close'?), we acknowledge that a more systematic, quantitative investigation is necessary.

(7) a. wǒ chī-hǎo-le zuótiān kǎo-de miànbāo
1s eat-good/SUCC-PRF yesterday bake-SUB bread
'I ate up (i.e., finished) the bread I baked yesterday'
b. tāmen xǐ-wán-le tāmen-de yīfu
3P wash-finished/SUCC-PRF 3P-SUB clothes
'they washed their clothes'
c. wǒ mǎi-dào-le!
1s buy-arrived/SUCC-PRF
'I bought it!'

(8) a. *wǒ zhèng-zài chī-hǎo zuótiān kǎo-de
1s PROG eat-good/SUCC yesterday bake-SUB
miànbāo
bread
INTENDED: 'I am finishing the bread I baked yesterday'
b. *tāmen zhèng-zài xǐ-wán tāmen-de yīfu
3P PROG wash-finished/SUCC 3P-SUB clothes
INTENDED: 'they are finishing washing their clothes'
c. *Wǒ zhèng-zài mǎi-dào!
1s PROG buy-arrived/SUCC
INTENDED: 'I am succeeding in buying it'

For reasons of space, we will not illustrate it here, but the forms in (7) and (8) yield unambiguous results in the face of Dowty's adverbial scope test, just like achievements.

Elements like *hǎo* 'good/SUCC', *wán* 'finished/SUCC' and *dào* 'arrived/SUCC' as used in (7) and (8) are called "phase complements" in Chao (1968, 446). Stripped of their lexical content, they are functional elements that indicate that the action denoted by the verb has a definitive endpoint: there is a closure. This endpoint can be a natural (or inherent) endpoint (e.g., the endpoint that an action typically leads to) or it can be a more arbitrary endpoint, examples of which we will see below.

Chao's functional phase complements are different from lexical elements such as *gān* 'dry' and *huài* 'broken' in (5). Together with the DP that is interpreted as the object of the sentence as a whole, they form a phrase (a small clause, a simple subject-predicate combination). This phrase not only provides an endpoint but also specifies what the endpoint (the resulting state) is (in (5): *bōlí gān* 'the glass [is] dry' and *wǒ-de diànnǎo huài* 'my computer [is] broken'). In a similar fashion, though without mentioning the terms "functional" and "lexical", Chao (1986, 446) characterizes the difference as follows: the phase complements "express the phase of an action", i.e., the action denoted by the preceding verb (the phase, as we understand it, being the natural endpoint as just defined), while other elements express "some result in the action or goal".

From now on, we will refer to the functional phase complements as "Ph-elements" (or just "Ph") and the lexical result denoting ones as "R-elements" ("R"). We will return to the issue of the Phs in Sect. 3, where we will also explain the cumbersome glossing (e.g., of *dào* as 'arrived/SUCC').

Importantly, what we have just seen is that verb phrases containing a Ph behave differently from those with an R in the face of both the progressive test and Dowty's adverbial scope test. Phrases with Ph behave like achievements, those with R behave like accomplishments. By way of conclusion we hypothesize that Phs block syntactic access to the process preceding the endpoint, thus making progressive formation impossible, while Rs do not. In the scalar terms, referred to by Rappaport Hovav (2007) above, we could say that Phs operate as scale-reducers: they reduce a multi-point scale to a two-point scale. We will investigate this hypothesis as we go along.

Since we are aiming for a structural analysis, we will concentrate on combinations for which it is conceivable that they are formed in syntax, like the ones in (7) and (8). As a result, even though they are without doubt complex forms, we will not return to the examples in (3), because they are highly lexicalized forms, and deriving them in syntax would at best be controversial.

1.3 Highlighting the issue further: *mài* 'sell'

To further illustrate the issues concerning the availability of different types of endpoints, we now introduce into the discussion the following pair (still from Mandarin)[7]:

(9) mài vs. mài-diào 'sell'
sell sell-off

From the look of it (and what we know about their counterparts in English), both members of this pair (and the pairs in fn. 7) seem to be achievement verbs, but only one member has an overt endpoint denoting element (*diào* 'off'). This latter form is not compatible with the progressive, whereas the bare verb is. This contrast was observed in Nagelhout (2011).

(10) a. tā zhèng-zài mài zuótian kǎo-de dàngāo
3S PROG sell yesterday bake-SUB cake
'he is selling the cakes he baked yesterday'
b. *tā zhèng-zài mài-diào zuótian kǎo-de dàngāo
3S PROG sell-off yesterday bake-SUB cake
INTENDED: 'he is selling the cakes he baked yesterday'

[7] Similar pairs are *guān* /close/ vs. *guān-diào* /close off/ 'close', *wàng* /forget/ vs. *wàng-diào* /forget-off/ 'forget'. We use 'off' as the gloss for *diào* because this is the closest equivalent we can think of. We do not imply that Mandarin *diào* and English *off* have to be analyzed the same way.

The adverbial scope test leads to the same result: *chàyìdiǎr mài-le* 'almost sold' is ambiguous ('almost put it up for sale' and 'almost managed to get rid of it in exchange for money') and *chàyìdiǎr mài-diào-le* 'almost managed to get rid of' is not.

Following our earlier logic, we would have to say that the verb form in (9) containing *diào* 'off' is an achievement, while the other one is not (like the forms in fn. 7). In accordance with our hypothesis formulated above, *diào* 'off' would be a Ph. But what is *mài* 'sell'?

There are (at least) two possible answers.[8] One possible answer is that Mandarin *mài* 'sell' is an atelic activity verb—no wonder that it can be used in the progressive and no wonder that the addition of *diào* 'off' makes it telic. The other possible answer is that *mài* 'sell' is a telic verb, an accomplishment (after all, you cannot speak of "selling" until some object has changed ownership in return for money), with the endpoint represented by a phonologically empty element: [mài ø].

If (see fn. 8) *mài* is telic and underlyingly [mài ø], then there are two analytical possibilities for [mài diào]. The first analysis says that all *diào* 'off' does is act as the overt counterpart of ø: [mài ø]=[mài diào]. The fact that [mài ø] behaves like an accomplishment while [mài diào] behaves like an achievement can then be said to be due to a difference in nature between *diào* and ø, comparable to what we just saw as a difference between Ph and R: while the latter (ø, R) does not block access to the process that comes before the change of ownership (thus making the progressive possible), the former (*diào*, Ph) does.

The second possible analysis for a surface string *mài-diào* /sell-off/ 'sell' is that ø is still there and that what we have is [mài ø diào]; in other words, *diào* 'off' does not replace ø, it is added to it; it occupies a different position in the structure. If this is the right approach, the difference between an accomplishment and an achievement does not lie in the lexical nature of the element added to the verb, but, rather, lies in the presence of an extra structural layer. In *mài-diào* /sell-off/ 'sell' the process is inaccessible not because *diào* 'off' is, by nature, an element that blocks access, but because of its position in the structure. In this analysis, it is not [mài ø] as opposed to [mài diào], but the opposing forms are [mài ø] vs. [mài ø diào].

So, with respect to achievements and accomplishments, the question we raise here is whether, at least for (some) Chinese languages, the difference between

[8] As this is not the aim of the paper, we will not choose between the two possibilities. There are arguments for both. For *mài* 'sell' as an activity verb, there is the fact that it behaves as one according to some tests, e.g., it is compatible with durational adverbs. For instance, in one of Liu Zhenyun's famous novels (*Yí jù dīng yíwàn jù*), the protagonist wants to sell a girl called Qiǎolíng. He goes to the market but is not successful: *mài yì tiān Qiǎolíng, méi mài-chū-qù* /sell one day Qiǎolíng, not.have sell-out-go/ 'he sold her for a whole day, didn't manage to sell her' (p. 228, edition published by Chángjiāng Wénhuà *in 2009).* On the other hand, for *mài* 'sell' as a telic verb, we can argue that, even in Chinese, the endpoint is always there. Despite the previous sentence from Liú's novel, if I say *wǒ mài-le wǒ-de fángzi* /1s sell-PRF my house/ (without the durative adverb), a follow-up with *kěshi wǒ méi mài-chéng* 'but I did not manage to sell it' would not be grammatical. It is different from *shā* 'kill' in this respect; see (15). In the text we pursue a line of reasoning which assumes that *mài* 'sell' is telic; we do this for the sake of the argument and for illustrating the broader issue we want to discuss.

achievements (where the process between the beginning and the end is not accessible) and accomplishments (where the process *is* accessible) can be accounted for in purely structural terms.

2 Changsha *ka*^{41}

The Changsha element *ka*^{41} has been investigated before. Most often, it is analyzed as a special kind of perfective particle (Lǐ 1991 and Wǔ 1999, among others; see Lu 2017 for a critical evaluation). We agree that it is indeed an aspectual element which is associated with complete events, but we will argue that it is not a (special) perfective marker.[9] Here is an overview of its distributional and other properties.[10]

To get an idea of what *ka*^{41} is, we start with some minimal pairs[11]:

(11) a. Tsan^{33}san^{33} ɕi^{41} ta^{21} i^{33}fu
Tsansan wash PRF clothes
AMBIGUOUS: 'Tsansan washed (the) clothes [not finished]'
OR: 'Tsansan washed the clothes [finished]'

b. Tsan^{33}san^{33} ɕi^{41} ka^{41} ta^{21} i^{33}fu
Tsansan wash KA PRF clothes
UNAMBIGUOUS: 'Tsansan washed the clothes [finished]'

(12) a. ŋo^{41} k^{h}an^{41} ta^{21} la^{45}-pən^{41} xy^{33}
1S read PRF DEM-CL book
AMBIGUOUS: 'I read in that book'
OR: 'I read that book (and finished it)'

b. ŋo^{41} k^{h}an^{41} ka^{41} ta^{21} la^{45}-pən^{41} xy^{33}
1S read KA PRF DEM-CL book
UNAMBIGUOUS: 'I read that book (and finished it)'

[9] According to Wǔ (1999, 215) *ka*^{41} developed from *tɕia*^{33} 'lead, send away' or *tɕhyɛ*^{41} 'take away'. It is no longer used with its original lexical meaning.

[10] This overview is based on Chapter 3 of Lu (2017), which has built on previous scholarship, viz., Lǐ (1991), Lú (2007), Wǔ (1999) and several contributions in Wǔ (1996), especially Wǔ's own. We have also consulted Dīng (2006) and Péng (2005).

[11] For the (b)-sentences in this set of data, there is also a variant with the perfective marker *ta*^{21} in post-object/phrase-final position, with no consequences for the meaning or the analysis we will be proposing for *ka*^{41}. Thus, (11b) can also be realized as *Tsan*^{33}*san*^{33} *ɕi*^{41} *ka*^{41} *i*^{33}*fu ta*^{21}/Tsansan wash KA clothes PRF/ with the same meaning.

(13) a. Tsan^{33}san^{33} tɕia^{24} ta^{21} la^{45}-tsa^{24} pin^{13}ko^{41}
Tsansan eat PRF DEM-CL apple
AMBIGUOUS: 'Tsansan ate at that apple'
OR: 'Tsansan ate that apple'
b. Tsan^{33}san^{33} tɕia^{24} ka^{41} ta^{21} la^{45}-tsa^{24} pin^{13}ko^{41}
Tsansan eat KA PRF DEM-CL apple
UNAMBIGUOUS: 'Tsansan ate that apple'

In (11)–(13), we see that the (a)-sentences, with the perfective marker *ta*^{21} but without *ka*^{41}, have two readings: the events of washing the clothes, reading a book and eating an apple are completed or they are not. Thus, (12a) either expresses that I did some reading in that book and then stopped or that I read the whole book. When we insert *ka*^{41}, as we have done in the (b)-sentences, only the completion reading is left; for (12b), we finished the book.

The following sentences illustrate the same pattern:

(14) a. Tsan^{33}san^{33} iou^{13} (ka^{41}) ta^{21} iun^{41}
Tsansan swim KA PRF swim
WITHOUT KA, AMBIGUOUS: 'Tsansan swam'
OR: 'Tsansan did his swim'
WITH KA, UNAMBIGUOUS: 'Tsansan did his swim'
b. ŋo^{41} p^{h}ao^{41} (ka^{41}) ta^{21} pu^{21}
1s run KA PRF step
WITHOUT KA, AMBIGUOUS: 'I jogged'
OR: 'I did my jogging'
WITH KA, UNAMBIGUOUS: 'I did my jogging'

If Tsansan has the (supposedly) healthy habit of swimming 2000 meters or 45 min every day, then, after he comes home, we can utter (14a), with and without *ka*^{41}, expressing that he finished his daily routine: he did his swim. If he does not have such a routine, and just went to the swimming pool without any plan, we can, after his return, only utter (14a) without *ka*^{41}: he went for a swim. In other words, *ka*^{41} is only compatible with a definite object or, in any case, an event with a preset boundary.

This applies to the data in (11)–(13) as well. It is important to note, for all data in (11)–(14), that it is not the case that *ka*^{41} *makes* the event bounded; after all, without it, the bounded event interpretation is also available (the (a)-sentences are ambiguous). With respect to the sentences with and without *ka*^{41} presented so far, we could look at the variants with the bounded or completed event reading from Rappaport Hovav's (2007) perspective on the difference between accomplishments and achievements, introduced above: with *ka*^{41}, the full transition is entailed, while without it, it is only inferred by conversational implicature.

The same dichotomy is illustrated once more, using the infamous Chinese verb for 'kill' and similar cases (Tai and Chou 1975; Soh and Kuo 2005):

(15) a. t^ha^{33} sa^{24} (ka^{41}) ta^{21} la^{45} $lian^{41}$-ko^{45} $zən^{13}$
3s kill KA PRF DEM two-CL people
WITHOUT KA: 'he killed those two persons [they may or may not be dead]'
WITH KA: 'he killed those two persons [they are definitely dead]'

b. t^ha^{33} $kuan^{33}$ (ka^{41}) ta^{21} $tian^{45}si^{41}$
3s close KA PRF television
WITHOUT KA: 'he turned off the television (may not have succeeded)'
WITH KA: 'he turned off the television (successfully)'

(16) a. t^ha^{33} $ɕiə^{41}$ ta^{21} i^{21}-$fən^{33}$ $ɕin^{41}$, $ko^{41}si^{21}$ mau^{21}
3s write PRF one-CL letter but NEG
$ɕiə^{41}$-$oŋ^{13}$
write-finished/SUCC
'he wrote a letter, but he did not finish it'

b. *t^ha^{33} $ɕiə^{41}$ ka^{41} ta^{21} i^{21}-$fən^{33}$ $ɕin^{41}$, $ko^{41}si^{21}$ mau^{21}
3s write KA PRF one-CL letter but NEG
$ɕiə^{41}$-$oŋ^{13}$
write-finished/SUCC
INTENDED: 'he wrote a letter, but he did not finish it'

The Changsha sentence in (15a) is a variant of Mandarin sentences that have been discussed at length (see Basciano 2017 for an excellent summary of the discussion), yielding translations such as 'Li Si killed Zhang San (twice) but he was not dead'. The sentence in (15a) without *ka*^{41} can also have a follow-up sentence stating that both persons are still alive. With *ka*^{41}, however, this is not possible. Again, while in the sentences in (15)–(16) a full transition is implied (or conversationally inferred; see above) in the sentences without *ka*^{41}, it is straightforwardly and undeniably entailed in the sentences with *ka*^{41}.

That *ka*^{41} co-occurs with bounded events (and does not *make* them bounded) is also clear from the following sets of data, which, unlike (11)–(14), include explicit indications of boundedness: in the sentences in (17) and (18) the verb is followed by a result denoting R, which is in turn followed by *ka*^{41}. We keep the sentences with $oŋ^{13}$ 'finished/SUCC' apart from the other ones, because we will discuss them more in depth later on. As before, *ka*^{41} is optional in these sentences; what is different from before is that the variant without *ka*^{41} is no longer ambiguous.

(17) a. $ŋo^{41}$ $tɕia^{24}$-$oŋ^{13}$ (ka^{41}) ta^{21} li^{41} $kə^{41}$ $ŋo^{41}$ $tsou^{41}$ -ti
1s eat-finished KA PRF 2s for 1s make -SUB
$tɕiau^{41}$tsi
dumpling
'I finished the dumplings you prepared for me'

b. $ŋo^{41}$ $ɕiə^{41}$-$oŋ^{13}$ (ka^{41}) ta^{21} tso^{24}:$iə^{24}$
1s write-finished KA PRF homework
'I finished my homework'

(18) a. li^{41} nən^{21}-xuai^{21} (ka^{41}) ta^{21} ŋo^{41}-ti tian^{45}lau^{41}!
2s make-broken KA PRF 1s-SUB computer
'you destroyed my computer!'

b. Tsan^{33}san^{33} k^{h}u^{24}-xən^{13} (ka^{41}) ta^{21} ŋiã^{41}jin^{33}
Tsansan cry-red KA PRF eyes
'Tsansan cried his eyes red'

c. tsuo^{24}-uan^{41}shan^{41} ŋo^{41} pɛi^{21} lei^{13}shan^{33} xə^{24}-ɕin^{41}
last.night 1s PASS thunder frighten-awake
(ka^{41}) ta^{21}
KA PRF
'I was scared awake by the thunder last night'

d. tsi^{24}lian^{41} ti^{13}-kau^{33} (ka^{41}) ta^{21}
quality rise-high KA PRF
'the quality has been improved'

e. Tsan^{33}san^{33} kuan^{41}-tau^{41} (ka^{41}) ta^{21}
Tsansan stumble-fall KA PRF
'Tsansan stumbled down'

f. Tsan^{33}san^{33} tɕ^{h}ia^{24}-tsɛ^{45} (ka^{41}) ta^{21}
Tsansan drink-drunk KA PRF
'Tsansan got drunk'

In the following sentences, *ka*^{41} is similarly optional: its absence or presence has no consequences for the grammaticality or the interpretation. What these sentences have in common with the sentences with a resultative R above, is that the boundedness, that is, the presence of an endpoint (or closure), is explicitly expressed, in these cases by different types of quantity expressions (for (19c) cf. (12)–(13) above).

(19) a. Tsan^{33}san^{33} k^{h}an^{45} (ka^{41}) ta^{21} san^{33}-pən^{41} xy^{33}
Tsansan read KA PRF three-CL book
'Tsansan has read three books (finished the books)'

b. Tsan^{33}san^{33} iou^{13} (ka^{41}) ta^{21} san^{33}-ko^{41} ɕiao^{41}si^{13} iun^{41}
Tsansan swim KA PRF three-CL hour swim
'Tsansan has swum for three hours (he has stopped now)'

c. Tsan^{33}san^{33} k^{h}an^{45} (ka^{41}) ta^{21} san^{33}-tsi^{45} ko^{24}-pu^{21} tian^{45}in^{41}
Tsansan watch KA PRF three-time DEM-CL movie
'Tsansan watched this movie three times'

If *ka*^{41} is compatible with predicates with an endpoint, we expect it to be found with achievement verbs and (other) change-of-state verbs as well. This expectation is borne out, as is clear from (20) and (21) respectively:

(20) a. $t^ha^{33}mən^{21}$ $(tsau^{41}tɕiu^{21})$ tau^{41} *(ka^{41}) ta^{21}
3P already arrive KA PRF
'they have arrived (a long time ago)'
b. $ts^hə^{33}tsi$ fan^{33} *(ka^{41}) ta^{21}
car turn.over KA PRF
'the car turned upside down'
c. $Tsan^{33}san^{33}$ xy^{33} *(ka^{41}) ta^{21}
Tsansan lose KA PRF
'Tsansan lost'
d. $Tsan^{33}san^{33}$ $ɕi^{41}$ *(ka^{41}) ta^{21}
Tsansan die KA PRF
'Tsansan died'

(21) a. xua^{33} $xɛn^{13}$ *(ka^{41}) ta^{21}
flower red KA PRF
'the flowers turned red'
b. $Tsan^{33}san^{33}$ sou^{45}*(ka^{41}) ta^{21}
Tsansan thin KA PRF
'Tsansan has become thin'
c. $t^hian^{33}tɕi^{41}$ $lən^{41}$ *(ka^{41}) ta^{21}
weather cold KA PRF
'it has turned cold'

Note that in these cases ka^{41} is not only possible, it is obligatory, as indicated.

Two more facts need to be recorded to get a complete picture of ka^{41}. The first is that, in contrast to the impression that one may have gotten in view of the data above, the occurrence of ka^{41} is not limited to sentences reporting on past events. In the sentences in (22), we have ka^{41} following verbs embedded under a modal; in (23) it appears in a habitual sentence and in a suggestion. As before, ka^{41} is not obligatory in these sentences, but with it the desire/intention to complete the activity denoted by the verb ("the full transition") is quite explicit, while without it, it is left vague.

(22) a. $ŋo^{41}$ $ɕian^{41}$ k^han^{45} ka^{41} ko^{24}-$pən^{41}$ xy^{33}
1s want read KA DEM-CL book
'I want to read that book'
b. $Tsan^{33}san^{33}$ $ɕian^{41}$ sa^{24} ka^{41} la^{45}-ko^{45} $zən^{13}$
Tsansan want kill KA DEM-CL person
'Tsansan wants to kill that person'
c. t^ha^{33} $kən^{41}tin^{45}$ xui^{21} p^hao^{41} ka^{41}
3s surely will run KA
'he will definitely run away'
d. $Tsan^{33}san^{33}$ $xai^{13}si^{41}$ pu^{45} $se^{41}tə^{24}$ tiu^{33} ka^{41}
Tsansan still NEG want throw KA
'Tsansan still does not want to throw it away'

(23) a. t^ha^{33} i^{24} $tɕin^{45}$ $mən^{13}$, $tɕiu^{21}$ t^ho^{24} ka^{41} $xai^{13}tsi$
3S as.soon.as enter door then take.off KA shoes
'he takes off his shoes as soon as he enters the house' (as a habit)

b. $uan^{45}san^{21}$, li^{41} pa^{41} $mən^{13}$ $kuan^{33}$ ka^{41}
evening 2S BA door close KA
'you should close the door in the evening'

Similarly, ka^{41} is compatible with negation (this is another property which sets it apart from the regular "perfective" particles in Chinese languages, which are incompatible with negation):

(24) a. $Tsan^{33}san^{33}$ mau^{21} k^han^{45} ka^{41} ko^{24}-$pən^{41}$ xy^{33}
Tsansan NEG read KA DEM-CL book
'Tsansan has read (finished) that book'

b. $Tsan^{33}san^{33}$ mau^{21} $ɕi^{41}$ ka^{41} $i^{33}fu^{24}$
Tsansan NEG wash KA clothes
'Tsansan did not wash/finish washing his clothes'

c. $Tsan^{33}san^{33}$ mau^{21} $tɕ^hia^{24}$-$tsɛ^{45}$ ka^{41}
Tsansan NEG drink-drunk KA
'Tsansan did not get drunk'

With achievement verbs we see a similar picture, except that, here, ka^{41} is highly preferred, if not obligatory.

(25) a. li^{41} $tsai^{45}$ uan^{13} ti-xua^{21}, xui^{21} xy^{33} $^{??}(ka^{41})$
2S again play if will lose KA
'if you continue to play, you are bound to lose'

b. la^{45}-tsa^{24} $niau^{41}$ kan^{45} $ian^{21}tsi$ xui^{21} $ɕi^{41}$ $^{??}(ka^{41})$
DEM-CL bird from.the.look.of.it will die KA
'it seems that that bird is bound to die'

c. li^{41} $tsai^{45}$ xo^{24} ti-xua^{21} xui^{21} $tsɛ^{45}$ $^{??}(ka^{41})$
2S again drink if will drunk KA
'if you continue to drink, you will get drunk'

d. $Tsan^{33}san^{33}$ mau^{21} tau^{41} ka^{41}
Tsansan NEG arrive KA
'Tsansan has not arrived'

e. xua^{33} mau^{21} $xɛn^{13}$ ka^{41}
flower NEG red KA
'the flowers haven't turned red'

Finally, to complete the picture it must be noted that predicates which include *ka*[41] cannot be put in the progressive. This is shown in (26). Note that, as in Mandarin (see (5)), result denoting elements, the Rs, *are* compatible with the progressive, as illustrated in (26b) and (27).

(26) a. Tsan[33]san[33] tsai[21]ko[24] tɕia[24] (*ka[41]) la[45]-tsa[24] pin[13]ko[21]
Tsansan PROG eat KA DEM-CL apple
'Tsansan was eating that apple'
b. li[41] tsai[21]ko[24] nən[21]-xuai[21] (*ka[41]) ŋo[41]-ti tian[45]lau[41]!
2s PROG do-broken KA 2s-SUB computer
'you are destroying my computer!' (cf. (18a))

(27) a. tʰa[33] tsai[21]ko[24] tʰan[45]-tɕʰən[33] i[33]fu
3s PROG iron-flat clothes
'he is ironing the clothes (i.e. flat)'
b. tʰa[33] tsai[21]ko[24] fa[24]-tən[21] tʰa[33]-ti tɕi[45]tɕʰə[33]
3s PROG start-move 3s-SUB car
'he is starting his car'

In short, Changsha *ka*[41] is an element that can (and with achievements and change-of-state verbs, must) be combined with events that are independently telic. It is only added to an event that already has an endpoint. Interestingly, closely related Mandarin does not have an element that is easily identifiable as the counterpart of *ka*[41].

In what follows we will present an analysis of sentences with *ka*[41].

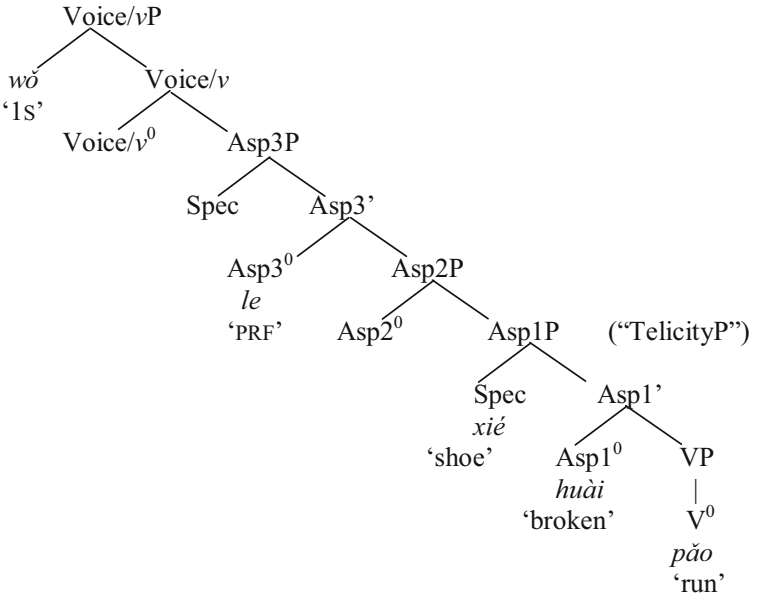
3 Analysis

3.1 Structural assumptions about the VP domain

To pave the way for the analysis of the Changsha facts in Sect. 3.3, we first introduce our structural assumptions about the VP domain, as developed for Mandarin over the past decades or so on the basis of Sybesma (1999) and, most importantly, (the pre-publication version of) Travis (2010) (see Xuán 2008, 2011; Sybesma and Yáng 2006; Yáng and Sybesma 2012; for a comprehensive introduction, see Sybesma 2017). The assumptions are presented here in a simplified version.[12] The lexical items are drawn from the Mandarin example in (29).

[12] One of the simplifications is that Voice[0] and v^0 are presented as a bundled head consistently here, while when taking a larger set of data into consideration, the conclusion is inescapable that there are sentences (from Mandarin and other Chinese languages) for which it is more insightful to assume that they are split, which has consequences for what the final landing site of the different constituents is. For ease of exposition, we leave sentences with preverbal object marker *bǎ* out of the analytical discussion. Another simplification is that we do not go into the technical details regarding the derivation of the surface order from the initial order. For both aspects of the structures presented here, see Sybesma (2018).

(28)



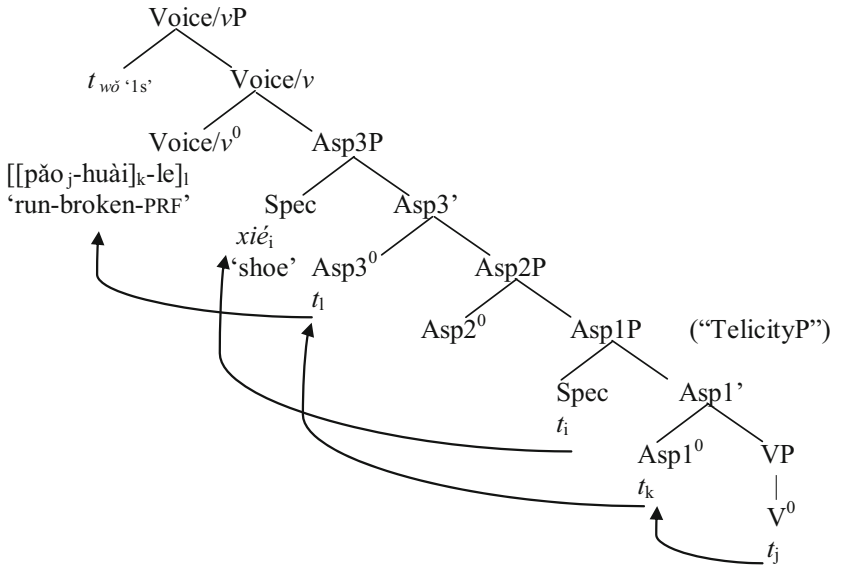
(29) wǒ pǎo-huài-le wǒ-de yùndòngxié
1s run-broken-PRF 1s-SUB sport.shoe
'I ran my running shoes to pieces'

The top of the structure is formed by the projection of a head which is composed of Voice^0 and v^0. The structure above Voice/*v*P is not given; it will consist of the standard IP and CP-type projections associated with such notions as outer aspect, tense, modality, focus and topic. Between Voice/*v*P and VP at the bottom, we have three projections labeled "Asp", which together make up the inner aspectual domain of a Chinese sentence. Asp1P, dubbed "TelicityP" in Xuán (2008), marks the structure as telic by providing the state that constitutes the result of the action denoted by V. The resulting state is linguistically represented by a simple subject-predicate combination: the predicate, which is the R we introduced in Sect. 1, occupies the head of Asp1P (in (28)–(29) *huài* 'broken') and its subject occupies its spec (*wǒ-de yùndòngxié* 'my running shoes'). Asp3P ("RealizationP" in Sybesma 1999) is the highest inner aspectual projection. If its head is filled by the particle *le*, it expresses that the endpoint denoted by the result state in Asp1P has been reached ("has realized").[13] This sentence then means: 'my shoes are broken as the result of my running.'

[13] We assume that Asp3P is involved in expressing the perfective, despite the fact that it is an inner aspectual projection. However, there are good reasons to assume that *le*, although it occupies Asp3^0 which is lower than *v*P, is actually interpreted in an outer aspectual projection, above *v*P. The reasons are syntactic, historical and semantic. Cheng (2019), for one, shows that in sentences without *le* the *wh*-word *zěnme* can get a high causal reading, 'why', as well as a low manner reading, 'how'. In sentences with *le*, however, the manner reading is no longer available, presumably because the link that must be established

Before introducing Asp2P, we say a few words about the derivation of the surface string in (29). In deriving the grammatical surface string in (29), two things happen. First, the object (that is, the subject of the resultative predicate in Asp1^0, *wǒ-de yùndòngxié* 'my running shoes' in (28) and (29)) moves to SpecAsp3P to get licensed (get Case). Second, the verbal complex *pǎo-huài-le* 'run-broken-PRF' is formed: V^0 *pǎo* 'run' moves up to *huài* 'broken' in Asp1^0 after which the resulting *pǎo-huài* 'run-broken' moves up to *le* 'PRF' in Asp3^0 (Asp2^0 will not be skipped, of course; see below), after which the complex head moves to its final destination in Voice/v^0. This is represented in (30). Note that these are all standard derivational movements for such sentences, independent of our analysis of the issues central to this paper; see the references mentioned above.

(30)



3.2 Asp2P

So, what is Asp2P for? The motivation for proposing it has to do with the Phs like *wán* 'finished/SUCC', *hǎo* 'good/SUCC' and *chéng* 'become/SUCC' introduced in Sect. 1 and illustrated once more in (31) ((a) and (c) adapted from Xuán 2008).

Footnote 13 continued
between *le* in inner aspect and Asp^0 in outer aspect where it is interpreted interferes with the relation between *wh*-element *zěnme* 'how' and its operator in the CP domain. See also Sybesma (2017).

(31) a. kètīng wǒ zǎo-jiù cā-wán-le cf. (17a)
living.room 1s long.since wipe-finished/SUCC-PRF
'the living room I finished cleaning a long time ago'

b. mén suǒ-hǎo-le méi-yǒu?
door lock-good/SUCC-PRF NEG-have
'did you lock the door?'

c. wǒ yìzhí méi kàn–chéng nèi-bù
1s all.along NEG look-become/SUCC DEM-CL
diànyǐng
film
'I never succeeded in seeing that movie'

In principle, the sentence in (31a) can be analyzed in two different ways. For a start, it could be analyzed the way we analyzed (29), with *kètīng* 'living room' in SpecAsp1P and *wán* 'finished/SUCC' in Asp1^0, which means that *wán* 'finished/SUCC' predicates over *kètīng* 'living room', expressing 'the living room is done' (*kètīng wán* 'living room [is] finished'), which would then be the result of my cleaning, completely parallel with (29). *Wán* 'finished/SUCC' would be an R.

However, as Xuán observes, it may be questioned whether this is the right paraphrase of what (31a) means. Whereas *huài* 'broken' in (29) clearly predicates of *wǒ-de yùndòngxié* 'my running shoes' (they are broken), it is not as evident that *wán* 'finished/SUCC' and *kètīng* 'living room' have the same relation (although it is feasible as we just argued). After all, rather than 'the living room is done as the result of my cleaning' the meaning of the sentence is more appropriately expressed in English as 'I'm done cleaning the living room'. In other words, *wán* 'finished/SUCC' may not predicate of *kètīng* 'living room', as it would, if it were the predicate of the result denoting clause (the R). It rather expresses that we succeeded in cleaning the room: we went all the way along the telicity scale.

The sentences in (31b) and (31c) illustrate this even better. Whereas for (31a), we could still force ourselves to believe that the basic meaning is that the living room is finished as the result of the cleaning event (we return to this below, when we discuss (37)), for (31b,c) our imagination would be stretched too far if we were to look at them in a similar fashion: the movie in (31c) has not come into being as the result of our watching. Just like *wán* 'finished/SUCC' in (31a), *hǎo* 'good/SUCC' and *chéng* 'become/SUCC' in (31b-c) bring about the entailment of the full transition.

From this we could conclude that *wán* 'finished/SUCC', *hǎo* 'good/SUCC' and *chéng* 'become/SUCC', not being Rs, are not in Asp1^0. If they are not in Asp1^0 they must be somewhere else and we propose that they are in Asp2^0. This is the second possible analysis of (31a) (as well as the only possible one for (31b-c)).

Before evaluating this proposal, we need to look at elements like *wán* 'finished/SUCC', *hǎo* 'good/SUCC' and *chéng* 'become/SUCC' a bit more closely. For one thing, as we have seen, some of these elements can also be used with their full lexical meaning. This also applies to the Phs we introduced in Sect. 1, like *dào* 'arrived/SUCC'. Even in the position immediately following the verb, some of them can, depending on the context, retain their lexical meaning, as is illustrated in (32) ((32b)

is Xuán's 2008 (670)). We already saw two examples with *oŋ*[13] 'finished/SUCC', the Changsha counterpart of *wán*, in (17) above.

(32) a. tā hē-wán-le nǐ zuótiān gěi tā zuò
3s drink-finished-PRF 2s yesterday for 3s make
-de tāng
-SUB soup
'he finished the soup you prepared for him yesterday'

b. tā huā-le hěn duō qián cái qǐng-dào-le
3s spend-PRF very much money only invite-arrive-PRF
nèi-ge yǎnyuán
DEM-CL actor
'only after spending a lot of money he succeeded in inviting the actor to come'

In (32a), for instance, *wán* 'finished/SUCC' can be analyzed straightforwardly (and justifiably) if we place it in the head of Asp1P where it predicates over *nǐ zuótiān gěi tā zuò de tāng* 'the soup you prepared for him yesterday'. In this sentence, *wán* 'finished/SUCC' has a full lexical meaning. From (32) looking back to (31), we can see that *wán* 'finished/SUCC' and the others behave more like functional elements in (31) than in (32); it is clear that they have grammaticalized. In their more functional use, they are also often referred to as Ph. So, they behave like Rs in (32) and like Phs in (31). Their dual nature explains why we use a slash when we gloss them: in some sentences, when it functions as an R (as in (32a)), *wán*, for instance, means 'finished', while in other sentences, when it is a Ph (see (31a)), it means 'done, succeeded'. It is not always clear which function it performs, as we saw when we discussed (31a).

Let's now return to the question of what position elements like *wán* 'finished/SUCC' occupy in their functional, grammaticalized use (as Ph). One option, favored by Xuán (2008), is to say that they occupy the same position as their fully lexical counterparts, that is, Asp1^0. Just like those, they provide the closure, but, having grammaticalized, they do not have the ability to take a subject (so that SpecAsp1P will remain empty). The object of the sentence will occupy another object position (to be determined; there are several possibilities). The essence of this approach is that functional Phs occupy the same position as lexical Rs and (recalling our discussion of the difference between ø and *diào* 'off' in [mài ø] and [mài-diào] in the previous section) that the difference is lexical: functional Phs cannot take a subject, while lexical Rs can. An important argument in favor of this approach is that in Mandarin, Ph and R are in complementary distribution (but see possible exceptions below).

Alternatively, we say that such elements occupy a different position in the structure, between Asp1^0 and Asp3^0. In this approach the difference is essentially structural: the degree of functionality of an element depends on the position in the structure. This tallies with the work by Roberts and Roussou (2003), in which it is proposed that grammaticalization corresponds to upward movement in the functional domain. In our case, from denoting an endpoint as part of a result

denoting phrase (Asp1^0, the lowest functional head in the extended domain of VP), an element goes to a position from where it denotes an endpoint (or closure) more definitely (Asp2^0), after which it could grammaticalize further and move further upwards, in this case to the position generally occupied by *le* (Asp3^0), which signals that the endpoint of the event was actually reached—the viewpoint endpoint of the sentence. In support of this view we can refer to the history of *le* (as Xuán 2008 does) which, as is generally known, started out as a full-fledged lexical element analyzable as the predicate of a phrase denoting a resulting state. Another case in point may be the fact that there are cases in which *wán* 'finished/SUCC', which we have seen with its full lexical meaning in (32a) (in Asp1^0) and more functional in (31a) (Asp2^0, as we propose), seems to function as if it has already moved all the way up to Asp3^0:

(33) a. tā chī-wán fàn, jiù zǒu-le
3s eat-finished/SUCC rice then leave-PRF
'he left as soon as he had finished eating'
b. tā chī-le fàn, jiù zǒu-le
3s eat-PRF rice then leave-PRF
'he left as soon as he had finished eating'

In (33a), *wán* 'finished/SUCC' can be replaced by the perfective marker *le* without any consequences for grammaticality or meaning, as (33b) shows.

So, this is our proposal: Asp2^0 in (28) is the position for Phs, that is, elements which denote that an event has an undeniable closure. This is different from R, the (generally, lexical) element in Asp1^0, which is the predicate of a phrase which as a whole denotes the resulting state. With just Asp1^0 filled, the full transition (in Rappaport Hovav's terms) is only conversationally inferred; with Asp2^0 filled, it is entailed. In other words, we propose that if Asp2^0 is filled, syntactic access to the process denoted by the verb is blocked. Or, in yet other words: with Asp2^0 filled, we only have a two-point telicity scale. In sum, with Asp2^0 filled we have an achievement; without it we have an accomplishment (or an activity, when there is also no active Asp1^0).

A proposal to add a position (in fact, a layer) to existing positions/layers in a structure is weakened if the different positions/layers are never filled at the same time and possible candidates for the different positions are in complementary distribution. In the Mandarin data presented so far, Asp2^0 and Asp1^0 were never both filled at the same time: the lexical resultative R-elements were in complementary distribution with the Phs.

Let's now return to Changsha *ka*^{41}.

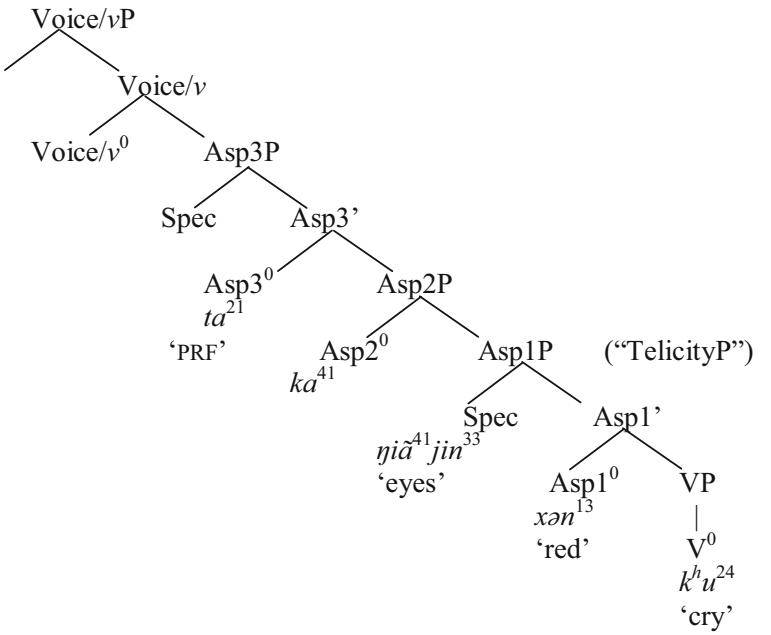
3.3 Back to Changsha *ka*^{41}

The Changsha data laid out in Sect. 2 constitute support for the idea that there is a separate projection in the inner aspectual domain of the verb with a function which is related to telicity and finalization, but which is different from making the event telic by providing a resulting state. We propose, then, that the Changsha element

ka^{41} occupies Asp2^{0}. With *ta*^{21} 'PRF' in Asp3^{0} and the R in Asp1^{0}, there is no other place available. Thus, the base positions of the different elements in a sentence like (18b) (repeated here, as (34), without the optionality brackets around *ka*^{41}) are indicated in (35).

(34) Tsan^{33}san^{33} k^{h}u^{24}-xən^{13} ka^{41} ta^{21} ŋiã^{41}jin^{33}
Tsansan cry-red KA PRF eyes
'Tsansan cried his eyes red.'

(35)



This analysis does a number of things for us. First, it gives a structural account of the data, in full accordance with existing analyses of Chinese sentence structure. At the same time, it does full justice to the meaning of the Changsha sentences with and without *ka*^{41}. Finally, it confirms the structural perspective on the difference between achievements and accomplishments we suggested above. As we have seen, verb phrases involving *ka*^{41} are just like achievements in having a two-point scale, entailing the full transition along that scale. We could call *ka*^{41} a scale reducer: it reduces a multi-point scale to a two-point scale. Syntactically, the reduction has the consequence that the points in between the beginning and endpoint—the process—are no longer syntactically accessible (hence, no progressive is possible with *ka*^{41}).

Following the spirit of Hoekstra (1988, 2004) in assuming that accomplishments always involve a TelicityP like Asp1P in the structures above and drawing activities into the picture as well, we could characterize the nature of activities, accomplishments and achievements in structural terms as follows:

(36) Activity V
Accomplishment: V + R
Achievement: V + R + KA/Ph

In reference to the structures presented so far, R is the head of Asp1P, which provides an endpoint to the open-ended event denoted by the activity V; it makes the event telic. What KA/Ph does is provide a closure—not by providing an endpoint (we already have one), but by making it impossible to access the process that precedes the endpoint. The multi-point scale has become a two-point scale. It has become an achievement.

The data presented above support this idea. We saw in (26) and (27) that structures with ka^{41} are incompatible with the progressive, just like achievements are, whereas V-R combinations are compatible with the progressive, just like accomplishments.

3.4 What about the Phs in Changsha?

We proposed that Mandarin Phs occupy $Asp2^0$ and that in Changsha, ka^{41} is in $Asp2^0$. How about Changsha Phs: do they co-occur, or are they in complementary distribution, with ka^{41}? Consider the following sentences (% indicating variation in grammaticality judgments):

(37) $^{\%}ŋo^{41}$ $tsau^{41}$ $tɕiu^{21}$ pa^{41} $k^hə^{24}tin^{33}$ ts^ha^{24}-$oŋ^{13}$
1s already BA living.room sweep-finished/SUCC
ka^{41} ta^{21}
KA PRF
'I already cleaned the living room'

(38) a. $mən^{13}$ so^{41}- {xau^{41} /ka^{41}} ta^{21} mau^{21}?
door lock- good/SUCC KA PERF NEG
'did you lock the door?'
b. *$mən^{13}$ so^{41}-xau^{41} ka^{41} ta^{21} mau^{21}?
door lock-good/SUCC KA PERF NEG
'did you lock the door?'

(39) a. ŋo^{41} i^{24} tsi^{24} mau^{21} k^{h}an^{45}- {tsen^{13} /ka^{41}}
1s all.along NEG watch- become/SUCC/KA
la^{45}-pu^{21} tian^{45}in^{41}
DEM-CL film
'I never succeeded in seeing that movie'

b. *ŋo^{41} i^{24} tsi^{24} mau^{21} k^{h}an^{45}-tsen^{13} ka^{41} la^{45}-pu^{21}
1s all.along NEG watch-become/SUCC KA DEM-CL
tian^{45}in^{41}
film
'I never succeeded in seeing that movie'

The data are consistent with what we have seen so far. Let's look at (37) first. The mixed acceptability (some informants accept it and some do not) confirm the picture that was presented to us by Mandarin. When we discussed *wán* 'finished/SUCC', the Mandarin counterpart of *oŋ*^{13} 'finished/SUCC', we saw that it has a dual face—R and Ph—and that it is not always clear which face we are looking at. Even in (31a) (as we saw there) and (37) we can reason both ways: *wán*/*oŋ*^{13} 'finished/SUCC' can be a Ph: the event of cleaning the living room is brought to a successful end; or it is an R: as the result of our cleaning, "the living room is finished". When it is a Ph, it is incompatible with *ka*^{41}, but as an R it is compatible with it (as Rs are, as we have seen). The mixed results reported by speakers underwrite the fact that the facial duality invites different analyses.

This is confirmed when we look at *xau*^{41} 'good/SUCC' and *tsen*^{13} 'become/SUCC' in (38) and (39), which, as we saw, are not interpretable as lexical Rs, predicating of *mən*^{13} 'door' and *la*^{45}-*pu*^{21} *tian*^{45}*in*^{41} 'that film' respectively. They are used here as Ph. As shown in (38)–(39), they are not compatible with *ka*^{41}. In fact, they are in complementary distribution, thus confirming that as Phs, *oŋ*^{13} 'finished/SUCC', *xau*^{41} 'good/SUCC' and *tsen*^{13} 'become/SUCC' are in Asp2^{0}, which means that *ka*^{41} is not the only potential occupant of Asp2^{0}.[14]

In all, the data in (37)–(39) show that *ka*^{41} can co-occur with Rs and cannot co-occur with Phs. The former, the Rs, are in Asp1^{0} and the latter are in Asp2^{0}

If the grammaticalized Phs are in Asp2^{0} in Changsha, they may also occupy that position in Mandarin. This would mean that in both varieties of Chinese Asp1^{0}

[14] The Changsha counterparts of the examples in (3) also behave as expected, if we consider them as lexical achievements. As such, we expect them to always appear with *ka*^{41}, just like the achievements we saw in (20)–(21) and (25), and this expectation is borne out:

khan^{45}-tɕian^{45}*(ka^{41}) ta^{21} look-appeared/SUCC KA PERF 'saw it'
tɕin^{13}-tau^{45} *(ka^{41}) ta^{21} search-arrive/SUCC KA PERF 'found it'
t^{h}in^{45}-tɕian^{45} *(ka^{41}) ta^{21} listen-appeared/SUCC KA PERF 'heard it'.

By the way, the fact that *ka*^{41} is always optional except with lexical achievements and change of state verbs, in which case it is obligatory, may seem unexpected: in the one verb type that is already an achievement, syntactic achievement marking is obligatory. However it is not unexpected at all. We have argued that only the forms with *ka*^{41} are achievements. We can turn this around and say that all achievements are marked with *ka*^{41}. This would include all verbs that are lexical achievements.

would be phonologically empty in sentences like (31b) and (38a). We turn to this point in the next section.

3.5 Back to *mài* 'sell'

Returning to Mandarin *mài* 'sell', the question we asked ourselves earlier on is: if we take it as an accomplishment (i.e., as [mài ø]), do we analyze *mài-diào* /sell-off/ 'sell' as in (40a) or as in (40b)?

(40) a. [mài diào]
sell off
b. [mài ø diào]
sell ø off

Or, reformulated in the terms developed so far: is *diào* 'off' in $Asp1^0$ (as per (40a)) or is it in $Asp2^0$, with a zero element in $Asp1^0$, as suggested in (40b)? The latter approach would make *diào* in cases like this an element like *ka*[41], which doubles an endpoint that is already there.

Mandarin[15] has no counterpart of Changsha *ka*[41], and, as we have already mentioned several times, Phs and Rs are in complementary distribution in Mandarin and $Asp1^0$ and $Asp2^0$ are never filled overtly at the same time, which makes it hard to argue that both positions are available in Mandarin at all. There are, however, a few possible cases in which both $Asp1^0$ and $Asp2^0$ are filled overtly, such as the following[16]:

[15] *Standard* Mandarin, that is. Song (2018) documents and analyzes the element *liu* in Dongying Mandarin (Shandong province), which in both distribution and function is very similar to Changsha *ka*[41]. Song's article came to our attention too late to incorporate a discussion of Dongying *liu* as a candidate for $Asp2^0$ into the current paper.

[16] Another possible sentence pattern that could be analyzed in such a way that both $Asp1^0$ and $Asp2^0$ are filled is that of sentences with directional elements following V: *ná-chū-lái* /take-out-come/, *zǒu-shàng-lái* /walk-up-come/, *chuān-jìn-qù* /penetrate-in-go/. The elements *chū* 'out', *shàng* 'up' and *jìn* 'in' are Rs and occupy $Asp1^0$, *lái* 'come' and *qù* 'go', which have a strong aspectual flavor in phrases like these (cf. Liáng 2007), could then occupy $Asp2^0$. This needs to be systematically investigated.

There is actually one more candidate for $Asp2^0$ in Mandarin. It is the *le* in sentences like the following:

(i) a. bǎ tā rēng le ba!
BA 3S throw LE SFP
'just throw them away!'
b. wǒ yào shā le nà-ge rén!
1S want kill LE DEM-CL person
'I will kill that person!'
c. nǐ bìxū chī le nà sān-ge píngguǒ!
2S must eat LE DEM three-CL apple
'you *must* eat those three apples!'

This *le* cannot be in either $Asp1^0$ or $Asp3^0$, but it does give the phrase a certain finality or definity, so it would be well-placed in $Asp2^0$. The sentences in (ib,c) are taken from Wang (2018; p. 78, (20a,b); tones and exclamation marks added), who has a different analysis for these sentences. See also Sybesma (1997, 1999, 77).

(41) a. wǒ bǎ tā nòng-sǐ-diào-le
1s BA 3s do-dead-off-PRF
'I killed him (off)'
b. tā bǎ wǒ-de yùndòngxié pǎo-huài-diào-le (cf. (29))
3s BA 1s-SUB sport.shoe run-broken-off-PRF
'he ran my running shoes completely to pieces'

At face value, the conclusion we can draw from these sentences is that even in Mandarin both positions are available and can both be filled at the same time. However, sentences like (41) are rare, and all grammatical sentences we have found involve *diào* 'off' following an R that already expresses a meaning similar to 'off'; in principle a scenario is possible where they form a complex head (e.g., *huài-diào* 'broken-off'), which occupies Asp1^0. On the other hand, these sentences have in common with the Changsha sentences with KA, that there is a sense of finality or definitive closure (full transition), which could lead one to assume both positions, each with its own function and each filled by a separate element (*huài* 'broken' in Asp1^0 and *diào* 'off' in Asp2^0). Note also that (5b,c) presents the progressive with *huài* 'broken' and *sǐ* 'dead' as R; with *diào* 'off' added, the progressive is no longer acceptable, thus strengthening the idea that, at least in (41), *diào* 'off' functions like *ka*^{41} in Changsha.

If, on the basis of these considerations, we decide that (40b) is the right analysis for the surface string *mài-diào* 'sell off' ([nòng-sǐ-diào] parallels [mài-ø–diào]) we may have an extra reason to analyze the sentences in (31b) and (38a) in a similar way, that is, with a phonologically empty element in Asp1^0, the object in SpecAsp1P and *hǎo*/*xau*^{41} 'good/SUCC' in Asp2^0:

(42) a. mén suǒ - ø - hǎo – le méi-yǒu? (31b)
b. mən^{13} so^{41}- ø - xau^{41} - ta^{21} mau^{21}? (38a)
door lock- ø - good/SUCC – PERF NEG
'did you lock the door?'

A consequence of this analysis would be that in the relevant cases in Mandarin, considering all the Changsha data with *ka*^{41} introduced in Sect. 2, either Asp1^0 (as in (42)) or Asp2^0 (all other syntactic achievements) would generally be empty.

4 Conclusions

In this paper we have investigated three topics: the distribution and interpretive function of *ka*^{41} in Changsha, the distribution and interpretive function of Phs in Mandarin and Changsha, and the differences between achievements and accomplishments.

Analyzing *ka*^{41}, we concluded that it is a scale reducer or achievement marker: it reduces a multi-point telicity scale to a scale with just two points.

We consequently argued that this function is derived from the structural position it occupies: the head of a projection, Asp2P, between Asp1P and Asp3P. We argued

further that, in fact, any element in this position, not just *ka*^{41}, has the effect of reducing the multi-point telicity scale to a two-point scale. Another way of expressing this is to say that elements in Asp2^{0} block syntactic access to the points between the two extremes (i.e., the process which leads up to the endpoint). Other elements we identified as occupants of Asp2^{0} are the Phs.

If whatever occupies Asp2^{0}, or in any case Changsha *ka*^{41} and any of its Phs, is an achievement marker or telicity scale reducer, the consequence is that, at least in Changsha (as well as other varieties of Xiang),[17] the difference between achievements and accomplishments is a structural matter.

For Mandarin, we concluded that, although Ph and R are generally in complementary distribution, meaning that Asp2^{0} and Asp1^{0} tend not to be filled at the same time, there does exist some evidence (i.e., sentences with and R followed by *diào* 'off') that Asp2^{0} may play a role in Mandarin as well. The postulation of Asp2^{0} in Mandarin, and assigning it the same function that it performs in Changsha, has the advantage, first, that it makes it possible to analyze the grammaticalized Phs in both languages in a parallel fashion and, second, that it does justice to the idea that grammaticalized elements are higher in the functional structure than lexical elements.

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[17] And possibly some non-Sinitic language spoken in the area. First explorations into Tujia and Hani seem to suggest that they display similar phenomena which can be analyzed in the same way.

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