

Telicizing with inner aspect *le*: Partitivity and the definiteness constraint

Overview. This paper argues that the postverbal *le* in Mandarin has a hitherto unnoticed use that is distinct from its more familiar perfective use. We show that this *le* has unique syntactic and semantic properties and is an instance of inner aspect (Smith 1991; Travis 2010; Sybesma 2017) which manipulates the telicity of predicates via encoding a maximal degree of change in the event.

Diagnosing inner aspect *le*. In a set of environments that are well known to be incompatible with perfective aspect (for syntactic and/or semantic reasons) such as the complements of control predicates (1), the scope of deontic modals (2), or imperatives (3), we observe that the particle *le* can in fact occur when the predicate contains a definite theme object, as shown by the (c) examples in (1-3).

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| (1) <i>vP</i> -complements | (2) Deontic modals | (3) Imperatives |
| a. wo dasuan pao (* <i>le</i>) bu.
I plan run LE foot
'I plan to run' | a. ni bixu pao (* <i>le</i>) bu!
you must run LE foot
'You have to run!' | a. pao (* <i>le</i>) bu!
run LE foot
'Run!' |
| b. wo dasuan chi (* <i>le</i>) san-ge li.
I plan eat LE 3-CL pear
'I plan to eat three pears.' | b. ni bixu chi (* <i>le</i>) san-ge li!
you must eat LE 3-CL pear
'You have to eat three pears!' | b. chi (* <i>le</i>) san-ge li!
eat LE 3-CL pear
'Eat three pears!' |
| c. wo dasuan chi (<i>le</i>) zhe-ge li.
I plan eat LE this-CL pear
'I plan to eat (up) this pear.' | c. ni bixu chi (<i>le</i>) zhe-ge li!
you must eat LE this-CL pear
'You must eat (up) this pear!' | c. chi (<i>le</i>) zhe-ge li!
eat LE this-CL pear
'Eat (up) this pear!' |

We argue that this use of *le* should be distinguished from the familiar perfective *le*.

First, this use is restricted to certain kinds of predicates as in (1c, 2c, 3c), but cannot be used with intransitive verbs (1a, 2a, 3a), predicates with indefinite objects (1b, 2b, 3b), or predicates with non-theme objects (5), while perfective *le* is much more permissive as in (4). We further find that the predicates admitted under this use are **mostly** the so-called “incremental theme predicates” in which the theme is gradually affected over the course of the event (Krifka 1989), as in (6):

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| (4) a. wo pao <i>le</i> bu.
I run PERF foot
'I ran' | (5) a. wo dasuan dao (* <i>le</i>) Suzhou.
I plan arrive LE Suzhou
'I plan to arrive Suzhou' (goal) | (6) a. du (<i>le</i>) zhe-ben shu!
read LE this-CL book
'Read (all of) this book!' |
| b. wo chi <i>le</i> zhe/san-ge li.
I eat PERF this/3-CL pear
'I ate {this pear/three pears}.' | b. ni bixu xihuan (* <i>le</i>) zhe-ben shu!
you must like LE this-CL book
'You must like this book!' (stimulus) | b. chai <i>le</i> zhe-zuo qiao!
destroy LE this-CL bridge
'Destroy (all of) this bridge!' |
| c. wo dao <i>le</i> Suzhou.
I arrive PERF Suzhou
'I arrived in Suzhou' | c. pao (* <i>le</i>) yi yingli!
run LE one mile
'Run a mile!' (measure) | c. he (<i>le</i>) zhe-bei jiu!
drink LE this-cup wine
'Drink (up) this cup of wine' |

Second, this *le* does not manipulate the relation between event time and topic time like the perfective *le* but contributes a completive meaning quite similar to verbal complements (or inner aspect in Sybesma 2017) such as *wan* ‘finish’. Comparing (1c, 2c, 3c, 6) with *le* and (7) to their counterparts without *le* or *wan* such as (8), the latter, unlike the former, do not force a telic interpretation of the predicate.

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| (7) wo dasuan chi <i>wan</i> zhe-ge li.
I plan eat finish this-CL pear
'I plan to eat up this pear.' | (8) wo dasuan chi zhe-ge li.
I plan eat this-CL pear
'I plan to eat (at least part of) this pear.' |
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Since this use of *le* occupies a lower position than the perfective *le* (given that it can survive under *vP*-complements (1c) and deontic modals (2c)) and forces a completive reading just like *wan*, it seems reasonable to treat it as an instance of inner aspect (Travis 2010). We call it “inner aspect *le*”.

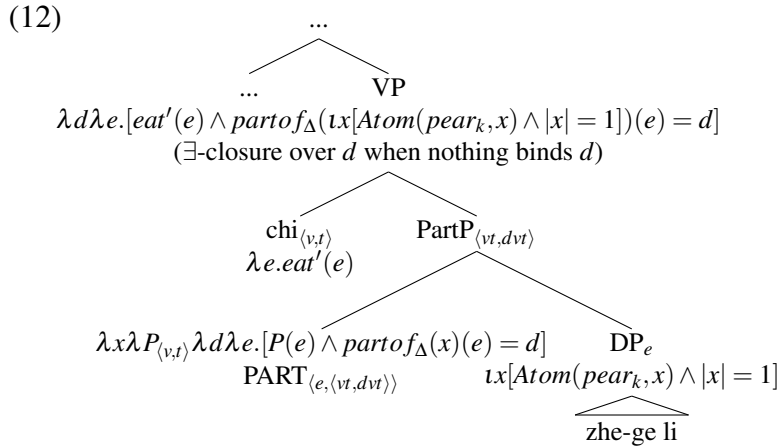
The puzzle. None of the existing analyses of inner aspect (Song 2018; Luo and Zhang 2021) can directly capture the extremely selective nature of inner *le*: *wan* can combine with both intransitive and transitive predicates, and crucially is not subject to the definiteness constraint:

- (9) Mali dasuan yi fenzhong nei {pao *wan* bu /chi *wan* san-ge li}.
- Mary plan one minute in run finish foot eat finish 3-CL pear
- 'Mary plans to finish {running/eating 3 pears} in a minute'
- (Note that adding 'in a minute' to the sentences in (1a, 1b, 2a, 2b, 3a, 3b) cannot improve them)

A correlation with non-culminating accomplishments. We observe that all predicates that can combine with inner *le* happen to be incremental theme predicates which can potentially have an *incomplete* reading under the perfective sentences (Soh and Kuo 2005; Zhang 2020). For instance, an incremental theme predicate with a definite object in (10) can license an incomplete reading, and inner *le* can co-occur with it to express a completive meaning as in (1c, 2c, 3c, 6). For predicates with indefinite objects in (11), it is extremely difficult to obtain the incomplete reading (if not entirely impossible), and the counterpart indeed cannot co-occur with the inner *le*, as in (1b, 2b, 3b).

- (10) Mali chi le zhe-ge li, dan mei chi wan. (11) Mali chi le san-ge pear, ??dan mei chi wan.
 Mary eat PERF this-CL pear, but not_{PERF} eat finish Mary eat PERF 3-CL pear but not_{PERF} eat finish
 ‘Mary ate some of this pear, but didn’t finish it’ Int: ‘Mary ate of 3 pears, but didn’t finish it’

Proposal. Following Zhang (2021), we attribute the source of incomplete readings in (10) to the referential property of the definite objects: *zhe-ge li* denotes a uniquely identifiable individual in the context, and it can combine with a covert partitive operator (PART, adapted from Kennedy 2012) that encodes a measure function, $partof_{\Delta}$ (type $\langle x, vd \rangle$), which measures the degree of change d in an event e based on the event scale created on the parts of x that are affected. In the event of eating this pear, the degree gradually increases from zero to the maximum when more and more parts of the pear are consumed. The degree variable introduced by PART, when left unsaturated, gets existentially closed and results in an atelic predicate as in (12): it is a property of events in which at least some of this pear is consumed and for this reason this predicate can obtain an incomplete reading in (10).



By contrast, indefinite objects such as *san-ge li* ‘three pears’ are non-referential and fail to provide a uniquely identifiable (group-level) individual and cannot combine with PART because it is impossible to track the parts of something if something is not uniquely identifiable. This constraint is mirrored in the partitive construction in (13) (Jackendoff 1977; Ladusaw 1982; Kennedy 2012; Zhang 2020).

- (13) some of {this pear, those pears, *three pears, ... }

We propose that inner *le* manipulates the unsaturated degree in $\llbracket \text{VP} \rrbracket_{\langle d, vt \rangle}$ and returns a telic predicate by forcing the degree of change to be the maximal one on the scale as in (14). This explains why with inner *le* the completive reading of an accomplishment type predicate is forced as in (1c, 2c, 3c, 6). In addition, since only referential objects that serve as gradually affected themes can combine with PART and introduce a degree argument which inner *le* can manipulate, this explains why inner *le* is extremely selective in terms of the predicates it can co-occur with.

- (14) a. $\llbracket \text{LE}_{inner} \rrbracket: \lambda P_{\langle d, vt \rangle} \lambda e. \exists d [P(d)(e) \wedge d = \text{max}]$
 b. $\llbracket \text{LE}_{inner} \text{ VP} \rrbracket: \lambda e. \exists d [eat'(e) \wedge partof_{\Delta}(1x[Atom(pear_k, x) \wedge |x| = 1])(e) = d \wedge d = \text{max}]$

Implications. Our identification of the inner aspect *le* enriches the inventory of aspectual markers in Mandarin and strongly supports the existence of an aspectual projection lower than the viewpoint aspect which manipulates the telicity of predicates. Moreover, the selective nature of inner *le* shows that different inner aspect markers can telicize a predicate in various ways: for *wan* ‘finish’, as argued by Luo and Zhang, it telicizes a predicate by ‘zooming in the final subpart of an event’; for inner *le*, it telicizes a predicate by manipulating the degree variable introduced by a partitive operator instead.

Selected references. Luo and Zhang 2021. The Architecture of the Perfective Viewpoint Aspect in Mandarin. CLS 56. | Smith 1991. The Parameter of Aspect | Sybesma 2017. Aspect, Inner. | Travis 2010. Inner aspect. | Zhang 2020. Referentiality, individuation and incomplete readings.