

Hierarchy in the Telicity of Mandarin Accomplishments

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Abstract: The double-incremental-theme effect suggests that the telicity effect of different incremental objects of accomplishments depends on each other in English. This paper shows that this kind of aspectual effect is not manifested in accomplishments in Mandarin. The assumption is that the telicity effect of different incremental objects of an accomplishment is independent of each other in Mandarin. The quantization of the theme determines the telicity of a motion predicate or a change-of-state predicate, whose telicity is originally supposed to be contributed by the boundedness of the path or the scale of the change of state. When the figure is with quantized reference, a motion predicate in Mandarin is telic whether the path is bounded or not. Likewise, the change-of-state predicate in Mandarin, with a theme of quantized reference, is telic, no matter whether the relevant change of the state on the scale involved is bounded or not. Therefore, this study argues that there is a hierarchy in incremental themes that are co-occurring to contribute to the aspectual effect of accomplishments in Mandarin. For motion predicates and change-of-state predicates in Mandarin, the quantization of the incremental theme is more decisive in determining their telicity than the boundedness of the path or change-of-state in question.

Keywords: Telicity, Motion Predicates, Change-of-State Predicates, Quantization, Mandarin Accomplishment

1. Introduction

Since Vendler's seminal work [1], verbal predicates are assumed to be classified into different aspectual classes based on the temporal structure of the denoted events. Two of the generally accepted principles distinguishing different aspectual classes of verbal predicates are telicity, the denoted event in question has a culmination point or not, and duration, the denoted event is durative or punctual. Based on these two properties, we can have accomplishments, a type of telic and durative predicate. Concerning the question of what determines the aspectual class of a predicate, there is no doubt that the head verb plays a vital role. The theme or the event participant, however, also has an effect on the composition of aspectual properties of the eventual predicate [2-5].

Consider the following example in which the quantization of the referent of the patient of a consumption verb contributes to the aspectual property of the predicate in question.

(1a) Mary ate two apples in ten minutes /? for ten minutes¹.

(1b) Mary ate apples for ten apples/? in ten minutes.

According to Dowty [6], the *in* and *for* temporal adverbials are feasible test for telicity. Telic predicates are compatible with *in*-adverbials, while atelic predicates are compatible with *for*-adverbials. *Two apples* has a quantized reference and the predicate *ate two apples* can be modified by *in*-adverbial. Therefore, the predicate in (1a) is telic. In contrast, "apples" does not have quantized reference and the predicate "ate apples" can only be modified by *for*-adverbial. The predicate in (1b) is atelic.

Similarly, the boundedness of the path can make a motion predicate telic. Consider the contrast shown in the following examples, in which the bounded path renders the predicate in (2a) telic while the unbounded path renders the predicate in (2b) atelic. The criterion for determining whether a path is bound or not is to see whether it has a starting point and ending point or not.

(2a) Mary drove from school to home in an hour/ *for an hour.

(2b) Mary drove for an hour/ *in an hour.

Following Dowty [6], this study takes as incremental unnatural the statement is.

¹ The question mark indicates that the statement sounds unnatural. It should be noted that the more question marks there are, the more

themes arguments that function in aspectual composition in the above way.

Likewise, accomplishment predicates in Mandarin has incremental themes as well [7-9]. For instance, the quantized reference of the object in (3a) makes the predicate telic while

(3a)	张三	(在)	半小时	(内)	吃	了	两	个	苹果。
	Zhangsan	(zai)	banxiaoshi	(nei)	chi	-le	liang	ge	apple
	Zhangsan	at	half hour	inner	eat	PER	two	CL	apple
	Zhangsan ate two apples in half an hour.								

(3b)	?张三	(在)	半小时	(内)	吃	了			苹果。
	Zhangsan	(zai)	banxiaoshi	(nei)	chi	-le			pingguo
	Zhangsan	at	half hour	inner	eat	PER			apple
	*Zhangsan ate apples in half an hour.								

As seen, the incremental themes of this kind also enter into aspectual composition in Mandarin. The quantization of the argument of the consumption verb *chi* ‘to eat’ affects the telic property of the predicate. Aspectual composition in this way is

(4a)	张三	(在)	半小时	内	跑	了	三	千米。
	Zhangsan	(zai)	banxiaoshi	(nei)	pao	le	san	qian mi
	Zhangsan	at	half hour	inner	run	PER	three	kilometers
	*Zhangsan ran 3000 meters in an hour.							

(4b)	*张三	(在)	半小时	内	跑	了		步。
	Zhangsan	(zai)	banxiaoshi	(nei)	pao	le		bu
	Zhangsan	at	half hour	inner	run	PER		step.
	*Zhangsan ran in an hour.							

Furthermore, it is also noted that some predicates in English have multiple incremental themes [11-13]. Consider the telicity of motion predicates again. As observed in Filip [11] and Beavers [12], the quantization of the figure argument influences the telicity of the motion predicate with a bounded path argument. The quantization of the figure and the boundedness of the path make (5a) (adapted from Beavers [12]) telic. The same predicate, however, with a non-quantized figure or unbounded path or both is atelic, as shown in (4b)-(4d).

(5a) The tsunami shook a basket off the table in a minute/? for a minute.

(5b) The tsunami shook baskets off the table? in a minute/ for a minute.

(5c) The tsunami shook a baskets? in a minute/ for a minute.

(5c) The tsunami shook baskets? in a minute/ for a minute.

Therefore, Beavers [12] argues that aspectual properties of different incremental themes depend on each other in English. Some predicates have two or more interdependent incremental themes that enter into the aspectual composition of the proposition.

In contrast, the double incremental theme effect has rarely been investigated in Mandarin. This study aims to make an investigation of whether predicates have two incremental themes that both enter into aspectual composition in Mandarin. In the following part, section 2 looks at whether the boundedness of the path and the quantization of the figure are

the non-quantized reference of the object in (3b) makes the predicate in (3b) atelic. The Chinese correspondence of English *in*-adverbial is “*zai*+ temporal measurement phrase+*nei*” [7, 10].

also observed in motion verbs in Mandarin. As seen in the following examples, the boundedness of the path also affects the telicity of the motion predicate in question.

interdependent on each other in the aspectual composition of motion predicates in Mandarin. Section 3 offers an investigation of whether both the quantization of the figure and the boundedness of the change-of-state on the relevant scale enter into the aspectual composition of change-of-state predicates in Mandarin. Section 4 shows that the double-incremental-theme effect elaborated in Beavers [12] does not manifest in Mandarin and proposes a hierarchy of the double or multiple incremental themes a predicate has. The last section concludes this study.

2. Aspectual Composition of Incremental Themes of Motion Predicates in Mandarin

The motion predicate *drive* in English is a typical activity verb because it is insensitive to the quantized reference of its argument. As in (6), the predicate *drive a car* is felicitous to co-occur with *for*-adverbial.

(6) Mary rode a bike for half an hour and then drove a car for half an hour.

However, *kaiche* ‘to drive’, the Chinese counterpart of *drive*, has the quantization of the reference of its theme playing a part in its aspectual composition. Consider the following example: the theme with quantized reference makes the sentence compatible with the Chinese counterpart of

in-adverbial.

- (7) 张三 在 一 个 小时 内 开 了 五 辆 车。
 Zhangsan zai yi ge xiaoshi nei kai le wu liang che
 Zhangsan in one CL hour inner drive PRE five CL car.
 Zhangsan drove five cars in an hour.

Here *kaiche* ‘to drive’ means changing different cars to drive. That is to say, Zhangsan has changed five different vehicles to drive in half an hour.

Furthermore, as a motion predicate, the telic property of

kaiche ‘to drive’ is inherently sensitive to the boundedness of the path argument. As seen in (8), the bounded path leads to a telic reading of the predicate.

- (8) 张三 在 半小时 内 从 A 地 开 了 车 (到 B 地)。
 Zhangsan zai ban xiao shi nei cong A di kai le che dao B di.
 Zhangsan in Half hour inner from A station drive PRE car arrive B address.
 Zhangsan drove a car from station A to station B in half an hour.

As we can see, the quantization of the figure in the above sentence is unspecified, but the bounded path of the motion predicate leads to the telicity.

But things become complicated when both the figure and

path enter into the aspectual composition of motion predicate in Mandarin. The combination of a quantized figure and a bounded path makes the motion predicate in (9) telic.

- (9) 张三 在 半小时 内 (从 A 地) 开 了 五 辆 车 (到 B 地)。
 Zhangsan zai ban xiao shi nei cong A di kai le wu liang che dao B di.
 Zhangsan in half hour inner from A station drive PRE five CL car arrive B address.
 Zhangsan drove five cars from A to B in half an hour.

However, it is observed that a motion predicate, when the boundedness of the path argument is negated, is telic as long as the figure has quantized reference.

- (10) 张三 是 在 半小时 内 开 了 五 辆 车,
 Zhangsan shi zai ban xiao shi nei kai le wu liang che,
 Zhangsan SHI in half hour inner drive PRE five CL car,
 Zhangsan drove five cars in half an hour,
 可是 每 一 辆 车 都 没 开 到 终点。
 ke shi mei yi liang che dou mei kai dao zhongdian
 but every one CL car DOU not drive arrive destination.
 but none of the cars reached the terminal.

Hence, the quantization of the incremental theme still invokes the telicity in the previous scenario when the boundedness of the path is negated, as in (9). Besides, the path in (7) can be taken as being omitted at all. This suggests that telicity induced by the boundedness of the path in (7) and (9) is, in fact, an implicature rather than an entailment when the

quantization of incremental theme is performing the telicity effect in the double incremental theme model.

Likewise, the boundedness of the path yields the telicity of the motion predicate when the quantization of the figure is negated, as in (11).

- (11) 张三 是 在 半 小时 内 把 车 从 A 地 开 到 了 B 地,
 Zhangsan shi zai ban xiao shi nei ba che cong A di kai dao le B di,
 Zhangsan SHI in half hour inner BA car from A address drive arrive PRE B address
 Zhang San drove his car from place A to place B within half an hour,
 不过 没有 把 安排 的 车 都 开 了 过去。
 bu guo meiyou ba anpai de che dou kai le guoqu
 But not BA arrange DE car DOU drive PRE go
 but he did not drive all the cars he had arranged.

Suppose that Zhangsan is supposed to drive all cars from Address A to Address B, and he will repeat his driving events

several times. As seen in (11), the boundedness of the figure part in the composition of telicity, no matter whether the

amount of how many carts were driven is specified or not.

Furthermore, the quantization of the incremental theme of the motion predicate cannot be negated, as in (12).

- (12) *张三 在 半 小时 内 (从 A 地) 开 了 五 辆 车 (到 B 地),
 Zhangsan zai ban xiaoshi nei cong A di kai le wu liang che dao B di.
 Zhangsan in half hour inner from A station drive PRE five CL car arrive B address
 Zhangsan drove five cars from A to B in half an hour,

不过 没有 把 五 辆 车 都 开 了 过去。
 bu guo meiyou ba wu liang che dou kai le guoqu
 But not BA five CL car DOU drive PRE go
 but he did not finish driving all the five cars.

This suggests that the telicity induced by the incremental theme in the ternary model of telicity is entailment when the quantization of the figure matters the telicity. Therefore, the argumentation is that the motion predicates with two incremental themes in Mandarin, unlike their English counterpart, do not have the two arguments simultaneously entering into aspectual composition.

Aspectual composition of incremental themes of change-of-state predicates in Mandarin.

According to scholars like Hay et al. [14], the change of state on a particular scale is taken as an abstract motion along an abstract path [14-15]. The boundedness of change-of-state on a specific scale determines telicity, while both unboundedness of the change-of-state on the scale and omitted scale give rise to atelicity. The scalar change enters into the aspectual composition of change-of-state verbs, and therefore is incremental theme as well. Consider the following examples: the definite change on the scale of cleanness yields the telicity in (13a), while the unspecified change gives rise to atelicity in (13b). The omitted change of state brings about atelicity in (13c).

(13a) Mary mopped the floor clean in ten minutes/ *for ten minutes.

- (15a) 张三 在 半 小时 内 修 好 了 电脑。
 Zhangsan zai ban xiaoshi nei xiu hao le diannao.
 Zhangsan in half hour inner repair good PER computer
 Zhangsan fixed computers in half an hour
 (15b) 张三 在 半 小时 内 修 了 电脑。
 Zhangsan zai ban xiaoshi nei xiu le diannao
 Zhangsan in half hour inner repair PER computer
 Zhangsan repaired computer in half an hour
 Zhangsan repaired computer after half an hour.

The *in*-adverbial in (15a) has an *after* reading, and the sentence has an inchoative reading. Therefore, the absence of the result yields atelicity in (15b). The secondary predicate in the resultative predicate in (13a), in contrast, supplies endpoints for the change of state the computer has gone through, which has an

(13b) Mary mopped the floor cleaner and cleaner *in ten minutes/ for ten minutes.

(13c) Mary mopped the floor *in ten minutes/ for ten minutes.

In addition, Beavers [12] noted that not only does the presence of the result determine the telicity of this kind of predicate, but so does the quantized reference of the patient argument, as in (14).

(14a) I dyed the water red in/ for an hour.

(14b) I dyed water red for/ in an hour.

These examples suggest that change-of-state predicates, on par with motion predicates, have a double-incremental theme effect in English.

All Chinese mono-phonological counterparts of Dowty's [6] inherent accomplishments, like *xiu* 'to fix', *qie* 'to cut with knives' and *sha* 'to kill', are actually manner verbs without encoding change of state [7]. The action in the denotation of those verbs is developing toward some results [14] rather than encoding results. Unlike their English counterparts, the aspectual composition of the type of predicate in Mandarin factors into the boundedness of the relevant scalar change, as shown in (15).

aspectual effect on the telicity of the predicate.

On par with motion predicates, the patient arguments with quantized reference also determine telicity of change-of-state predicates in Mandarin. The theme argument with quantized reference enters into the composition of telicity of (16).

- (16) 张三 在 半 小时 内 修 了 三 台 电脑。
 Zhangsan zai ban xiaoshi nei xiu le san tai diannao
 Zhangsan in half hour inner repair PER three CL computer
 Zhangsan repaired three computers in half an hour

Therefore, we are now in the position to say that both the quantization of and the boundedness of the scalar change of the theme argument affect the aspectual effect of change of

state verbs in Mandarin. There is no doubt that a change-of-state predicate is telic when the theme argument with quantized reference, as in (17).

- (17) 张三 在 半 小时 内 修 好了 三 台 电脑。
 Zhangsan zai ban xiaoshi nei xiu hao le san tai diannao
 Zhangsan in half hour inner repair good PER three CL computer
 Zhangsan repaired three computers in half an hour.

Recall that in path-based accomplishments, the telicity induced by the quantization of figures determines the telicity of the predicates even when the paths are omitted or negated. Change-of-state-based accomplishments behave the same way

in that the quantization of the theme argument determines the telicity of the predicate when the change of state is omitted, as seen in (18).

- (18) 张三 在 半 小时 内 修 了 三 台 电脑，
 Zhangsan zai ban xiaoshi nei xiu le san tai diannao
 Zhangsan in half hour inner repair PER three CL computer
 不过 每 台 都 没 修 好。
 buguo mei tai dou mei xiu hao
 but every CL DOU not repair good.
 Zhangsan repaired three computers, but none of them was fixed.

However, The telicity determined by the quantization of the incremental theme cannot be negated.

- (19) *张三 在 半 小时 内 修 了 三 台 电脑，
 Zhangsan zai ban xiaoshi nei xiu le san tai diannao
 Zhangsan in half hour inner repair PER three CL computer
 不过 没有 一 台 修 完。
 Buguo meiyou yi tai vxiu wan.
 but not one CL repair complete.
 *John repaired three computers, but none of them was finished.

This suggests again that telicity induced by quantization of incremental theme is entailment when the change of state is expressed covertly. The implication is that the double-incremental theme effect is not manifested in change-of-state predicates in Mandarin.

3. Conclusion

From the above analysis, unlike their English counterparts, we can see that motion predicates and change-of-state predicates in Mandarin do not show the double-incremental theme effect. Concerning a motion predicate, the figure argument with quantized reference determines the telicity of the motion predicate even when the path is unbounded or omitted. Likewise, for a change-of-state predicate, the quantization of the theme argument determines that the change-of-state predicate is telic event if the change of state the theme undergoes is unbounded or omitted. Compared with the boundedness of the path or the scalar change, the quantization of the theme argument is more decisive in determining the telicity of a motion predicate or a change-of-state predicate that has two incremental themes in Mandarin. Following Beavers [12], we assume that a motion event or a change-of-state event can be decomposed into several motion subevents or change-of-state subevents. Each

of the motion subevent corresponds to a quantized part of the figure moving on the relevant path. Similarly, each change-of-state subevents corresponds to a quantized part of the theme argument undergoing a state of change on the relevant scale. The sub-motion event corresponding to a quantized subpart of the figure is telic because the unspecified or omitted path is implied to be bounded. Likewise, the sub-change-of-state event corresponding to a quantized subpart of the theme argument is telic as well because the unspecified or omitted path is also implied to be bounded. It should be noted that the sub-motion events and the sub-change-of-state events may not start or end at the same location. Nevertheless, they are all telic subevents. Therefore, this study proposes that the way for a motion or change-of-state predicate in Mandarin to be telic if the quantization restriction is manifested on either the theme argument or the involved path and scalar change. Besides, the quantization of the theme argument coerces the unspecified path or scalar change into bounded ones. Therefore, there is a hierarchy in the decisive forces of incremental themes in determining the telicity of motion predicates and change-of-state predicates. Namely, the quantization constraints of the theme argument are more decisive than the boundedness of the path or the scalar change in determining the telicity of those predicates.

The double-incremental theme effect in English is referred to as Figure/Path relation (FPR) in Beavers [12]. That is, for each quantized part of the figure, FPR identifies a unique change-of-state or motion event that crosses a bounded part of the path or undergoes a bounded part of the scalar change. FPR defines a homomorphic relation among the motion or change-of-state event and the path a part of the theme argument traverses and the change of state the theme argument undergoes. All those proposals are based on the observation of English accomplishment. However, as argued in Wang [15], the telic effect of Mandarin accomplishment originates from a procedure-based homomorphism. Each part of the change of the theme argument in question corresponds to each part of a stereotypical procedure of the event in question. Furthermore, Fan [16] shows that the aspectual effect of all dynamic predicates in Mandarin is highly affected by the argument with a numerical phrase. The Mandarin data examined in this study, on the one hand, shed light on a reconsideration of aspectual composition of incremental themes, and on the other, calls for a revised Figure/Path relation to account for the hierarchy of incremental themes in Mandarin.

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