

The Adverbial Quantifier Map

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Abstract

I propose the phenomenon “The Adverbial Quantifier Map”. This phenomenon introduces the mapping between a mass adverbial antecedent, and this verb phrase VP it modifies. This is illustrated in the contrast between these sentences: “*He this period of time jumped”, and “He this period of time is jumping”. The tense or aspect of this verb in this VP, gives rise to the quantification of the event this VP denotes, in: either the mass of a token event, or the mass of a type event. An Adverbial Quantifier Map is further instantiated in a set of devices, which gives rise to the mapping between this mass adverbial antecedent of time, and this count or mass event denoted by this verb phrase VP.

Key Words: Quantifier, Event, Mass, Count, Tense, Aspect, Token, Type

1. Introduction

I propose the phenomenon “The Adverbial Quantifier Map”. This phenomenon introduces the mapping between a mass adverbial antecedent, and the verb phrase V it modifies. The tense or aspect of this V, gives rise to the quantification of the event this V denotes, in: either the mass of a token event, or the mass of a type event. An Adverbial Quantifier Map is devised by either this mass of a token event, or this mass of a type event.

2. A Simple Past Tense Sees Exactly One Token Event, and is Incompatible with a Mass Adverbial Antecedent

I propose that exactly a simple past-tense verb phrase PV, which denotes a past token event, is incompatible with a mass adverbial antecedent ADV, illustrated in (1)(i)a1. This is in contrast to a mass-mass correspondence between this ADV and a progressive aspect in (1)(i)a2. On the contrary, a simple past-tense verb phrase is compatible with a count antecedent, illustrated in (1)(i)b.

(1)(i)a1. *He [_{Adverbial}this period of time] jumped.

*Ta [_{Adverbial}zhe duan shijian / suoyou-shijian] tiao le.

he this_{CL} time all time jump_{LE}

“He this period of time jumped.”

a2. He [_{Adverbial}this period of time / since the beginning] is jumping.

Ta [_{Adverbial}zhe duan shijian / suoyou-shijian] tiao zhe.

he this_{CL}time all time jump_{IMPERF}

“He [this period of time/all this time] has been jumping.”

a3. He [since the beginning right] jumped. / He [this period of time right] jumped.

Ta [[_{Adverbial}cunyikaishi] jiu] tiao le. / Ta [[_{Adv}zheduanshijian] jiu] tiao le.

he since the-beginning right-at jump_{LE}hethis period time right-atjump_{LE}

“He jumped right at the beginning. / He jumped right at this period of time.”

b. He [_{Adverbial}every minute][₁. jumped / ₂. was jumping].

Ta [_{Adverbial}meifenzhong][₁.(dou) tiao le / ₂. (dou) tiao zhe].

he every minute all jump_{LE}all jump_{IMPERF}

“₁. He every minute (all) jumped.” Or “₂. He is every minute jumping.”

He [this period of time] [every minute] jumped.

Ta [zhe duan shijian][meifenzhong] tiao le.

he this period time each minute jump_{LE}

“He this period of time every minute jumped.”

2. For An Adverbial Quantifier Map, Either (A) Or (B) is Necessary

I propose that For An Adverbial Quantifier Map, Either (A) Or (B) is Necessary:

(A) The following elements, are necessary for this simple past-tense verb phrase PV, to be compatible with a mass adverbial antecedent: [(I) On this PV, a quantifier as its NP complement, or an adverbial. This is illustrated in (1)(i)e, f, h.Or (II) an accomplishment verb in the simple past-tense, which gives rise to this mass measure to this token event. This is illustrated in (1)(i)g. — Map Devices to a simple past tense verb phrase MDV.

(1)(i)e. *He* [_{Adverbial} *this period of time*] *jumped once.* / *He since the beginning, jumped once.*
Ta [_{Adverbial} *zheduan shijian / cunyikaishi*] *tiao le yixia.*
 he this period time since the-beginning jump_{LE} once
 “He [this period of time / from the beginning] jumped once.”

f. *He* [_{Adverbial} *this period of time*] *jumped over the bridge.*
Ta [_{Adverbial} *zheduan shijian*] *tiao guolezhezuoqiao.*
 he this period time jump past_{LE} this_{CL} bridge
 “He this period of time jumped over this bridge.”

g. *He* [_{Adverbial} *this period of time*] [*rose. / disappeared.*]
Ta [_{Adverbial} *zheduan shijian*] [*pangsheng le. / xiaoshile.*]
 he this period time rise_{LE} disappear_{LE}
 “He this period of time [rose. / disappeared.]”

h. *He* [_{Adverbial} *this period of time*] *jumped constantly.*
Ta [_{Adverbial} *zhe duan shijian / suoyou-shijian*] *buduantiaoyao.*
 he this_{CL} time all time constantly jump
 “He this period of time constantly jumped.”

(B) On the other hand, the following elements, on the mass adverbial antecedent ADV, are necessary for this simple past-tense verb phrase PV, to be compatible with a mass adverbial antecedent: [a quantification, including a quantifier, a preposition, or an adverbial, on the mass adverbial antecedent — Map Devices to the mass adverbial antecedent MDA] (B) is illustrated in (1)(i)c, d, a3.

(1)(i)c. *He* [[_{Adverbial} *this period of time / since the beginning*] (**all/*each*)] *jumped.*
Ta [_{Adverbial} *cunyikaishi*] (**dou / *meige*) *tiao le.*
 he since the-beginning all each_{CL} jump_{LE}
 “He since the beginning [all/each] jumped.”

d. *He in this period of time jumped.*
Ta [_{Adverbial} *zheduan shijian li*] *tiao le.*
 he this period time in jump_{LE}
 “He in this period of time jumped.”

a3. *He* [*since the beginning right*] *jumped.* / *He* [*this period of time right*] *jumped.*
Ta [[_{Adverbial} *cunyikaishi*] *jiu*] *tiao le.* / *Ta* [[_{Adv} *zheduan shijian*] *jiu*] *tiao le.*
 he since the-beginning right-at jump_{LE} he this period time right-at jump_{LE}
 “He jumped right at the beginning. / He jumped right at this period of time.”

(1)(i)c illustrates that: (1) A mass-mass correspondence is accepted between the mass object of time denoted by the adverbial quantifier “this period of time / since the beginning”, and the mass event denoted by “all jumped”. (2) The quantifier “each” makes countable this mass antecedent “this period of time / since the beginning”, and enables a count-count map between this count adverbial antecedent “each of this period of time / since the beginning each unit”, and this count event denoted by this verb phrase “jumped”.

(1)(i)d: I propose that: The preposition “in” turns the unacceptable mass-count mapping between [the mass object of time denoted by this adverbial “this period of time” — MT] and [the count event denoted by this verb phrase “jumped” — CJ], to an acceptable *Inclusion* from the latter CJ. With this preposition “in” in the former MT, CJ, could have taken place at any time point at MT, instead of the direct map between the mass-count distinction, between MT and CJ. This is illustrated in (1)(i)d. This *inclusion* is differentiated from the necessary and incompatible mass-count mapping without this preposition “in”, between MT, and CJ, as in (1)(i)a1.

(1)(i)a3: I propose that this adverbial “right” fixates to a count, temporal point, the mass object of time denoted by [“since the beginning” — S] or [“this period of time” — T], and enables this count-count mapping between this count object denoted by “since the beginning right” or “this period of time right”, and this count event denoted by “jumped”. This mapping further suggests that this adverbial “right” modifies S and T in (1)(i)a3, rather than that it modifies this verb phrase “jumped”.

(A) gives rise to an Adverbial Quantifier Map, with (i) a mass adverbial antecedent ADV and (ii) a simple past tense verb PV, which turns into a mass quantification, the former of which is free of MDA.

(B) gives rise to an Adverbial Quantifier Map, with (i) a simple past tense verb PV and (ii) a mass adverbial antecedent ADV, which turns into a count quantification, the former of which is free of MDV.

On the contrary, the following aspect or tense, denotes a type event, and is mass, which is compatible with a mass adverbial antecedent: a progressive aspect, a perfective aspect, a present simple tense, and a future simple tense, illustrated in (1)i, j, k.

(1)(i)i. *He* [*Adverbial*next five minutes] will jump.
Ta [*Adverbial*xiawufenzhong] hui tiao.
 he next five minutewill jump
 “He next five minutes will jump.”

j. *He* [[*Adverbial* this period of time] [is jumping. / was jumping. / has jumped. / had jumped. / has been jumping. / had been jumping.]
Ta [*Adverbial*cunyikaishi]. [tiao zhe. / yi-jingtiao le. / yi-jingtiaozhe.]
 he since the-beginning jump_{IMPERF}already jump_{LE}alreadyjump_{IMPERF}
 “He since the beginning [is or was jumping. / has or had already jumped. / has or had already been jumping.]”

k. *He* [*Adverbial* all the time] jumps.
Ta [*Adverbial*zheduan shijian] tiaoyao.
 he this periodtime jump
 “He this period of time jumps.”

An English Adverbial or any Mandarin particle is a quantifier. In (1)(i)a3, the adverbial “right” or “jiu”, introduces a quantification of or fixation at the beginning, to the mass adverbial antecedent, for a count map with the past tense verb.

(1)(i)a3. *He* [since the beginning right] jumped. / *He* [this period of time right] jumped.
Ta [[*Adverbial*cunyikaishi] jiu] tiao le. / *Ta* [[*Adv*zheduanshijian] jiu] tiao le.
 he since the-beginning right-at jump_{LE}he this periodtime right-atjump_{LE}
 “He jumped right at the beginning. / He jumped right at this period of time.”

A quantifier on this mass adverbial antecedent ADV gives rise to a pair reading, illustrated in (1)(i)c, analogous to (1)(i)b.

(1)(i)c. *He* [[*Adverbial* this period of time / since the beginning] (*all/*each)] jumped.
Ta [*Adverbial*cunyikaishi] (*dou / *meige) tiao le.
 he since the-beginning all each_{CL}jump_{LE}
 “He since the beginning [all/each] jumped.”

b. *He* [*Adverbial*every minute] [₁. jumped / ₂. was jumping].
Ta [*Adverbial*meifenzhong][₁. (dou) tiao le / ₂.(dou) tiao zhe].

he every minute all jump_{LE}all jump_{IMPERF}
 “1. He every minute (all) jumped.” Or “2. He is every minute jumping.”

He [this period of time] [every minute] jumped.

Ta [zhe duan shijian][meifenzhong] tiao le.

he this period time each minute jump_{LE}

“He this period of time every minute jumped.”

3. A Type Event is Mass

I propose that: A type event is mass. A simple present-tense verb phrase, a simple future-tense verb phrase, or a verb phrase with a perfective aspect, denotes a type event. To a Mass Adverbial Antecedent, this type event gives rise to A Mass Adverbial Quantifier Map, illustrated in (1)(i)i, k. A simple past-tense verb phrase denotes a token event, and requires such a quantification, either on the mass adverbial antecedent ADV, or on the simple past-tense verb phrase this ADV modifies, to give rise to An Adverbial Quantifier Map.

(1)(i)i. *He [Adverbial next five minutes] will jump.*

Ta [Adverbialxiawufenzhong] hui tiao.

he next five minutewill jump

“He next five minutes will jump.”

k. *He [Adverbial all the time] jumps.*

Ta [Adverbialzheduan shijian]tiaoyao.

he this periodtime jump

“He this period of time jumps.”

4. Two Types of Mass, Events

I further propose that there are two types of mass, events:

1. The mass of a token event MTOE, denoted by a verb phrase, for instance, marked with a progressive aspect, from which the mass measure of a token event is devised.
2. The mass of a type event MTYE, denoted by a verb phrase, marked with a perfective aspect, a present simple tense, or a future simple tense, from each of which the mass measure of a type event is devised.

MTOE and MTYE are further elaborated in the later sections.

(1)(i)l. *He *(continuously) jumped.*

**Ta [Adverbiallienshu] tiao le.*

he continuously jump_{LE}

“He continuously jumped.”

(1)(i)l presents an interesting contrast with (1)(i)l'. In (1)(i)l, this mass quantification of this adverbial “continuously”, mismatches the count quantification of the past tense verb, in (1)(i)l'. On the other hand, this mass quantification of this adverbial “continuously”, is the device for the mass-mass map between this adverbial antecedent “this period of time”, and this adverbial “continuously”.

(1)(i)l'. *He [Adverbialthis period of time] jumped continuously.*

Ta [Adverbialzhe duan shijian / suoyou-shijian] lienshutiaoyao.

he this_{CL} time all time constantly jump

“He this period of time continuously jumped.”

This mismatch of the mass-count mapping in (1)(i)l again disappears, with the supplementation of a quantification at the past tense verb. This is illustrated in (1)(i)m.

Scenario: In slow motion

(1)(i)m. *He continuously [jumped once. / jumped one step.]*

Ta [_{Adverbial}lienshu] *tiao le* [yixia. / yibu.]

he continuously jump_{LE} one unit one step

“He continuously jumped [once. / one step.]”

5. Either A Mass Adverbial Antecedent ADV Quantifier Map, or The Adverbial “Continuously”, requires: an MTOE, an MTYE, or a Quantification In Either Direction:

Either this Quantification is on an ADV, or this Quantification is on the Past Tense Verb Phrase this ADV modifies.

I propose 5. above:

Either A Mass Adverbial Antecedent ADV Quantifier Map, or The Adverbial “Continuously”, requires: an MTOE, an MTYE, a Quantification on this ADV, or a Quantification on the past tense verb phrase PV, this ADV modifies.

This Quantification includes: an NP Complement of this PV, an Adverbial Modification on this PV, a Preposition on this ADV, or a Mandarin Particle on this ADV.

(1)(i)m’ illustrates this device of a Mandarin particle. This post-predicate phrase Mandarin particle is a perfective marker. Hence, it yields a mass quantification for the mapping to the adverbial “lien shu (continuously)”.

(1)(i)m’. Ta lienshu tiao le.

he continuously jump_{LE}

“He has continuously jumped.”

The verb phrase, with the tense or the aspect, which denotes a type event, which includes: a simple present or future tense, a progressive aspect, and a perfective aspect, are illustrated in (1)(i)n. Each of these type events, gives rise to an Adverbial Quantifier Map, with the adverbial “continuously”.

(1)(i)n. *He continuously [jumps. / jumped once. / is or was jumping. / will jump. / has jumped. / had jumped.]*

Ta [_{Adverbial}lienshu (-di)][tiaoyao. / tiao le yi-xia. / tiaozhe. / huitiao. / yijingtiao le.]

he continuous-ly jump_{LE} once jump_{IMPERF} / willjump / havejump_{LE}

“He continuously [jumps. / jumped once. / is or was jumping. / will jump. / has or hadjumped.]”

6. A Progress Aspect, A Simple Present Tense, A Simple Future Tense, A Perfective Aspect, as the Sub-Constituent of the Verb Phrase VP, each denotes the mass of a token event MTOE, or the mass of a type event MTYE.

I propose 7. above:

A Progressive Aspect denotes the mass of a token event MTOE, and: A Simple Present Tense, A Simple Future Tense, A Perfective Aspect, as the Sub-Constituent of the Verb Phrase VP, each denotes a type event MTYE.

This is illustrated in (1)(i)o, p, q, r.

Scenario: In slow motion

(1)(i)o. *He is continuously jumping.*

Ta [_{Adverbial}lienshu] *tiao zhe.*

he continuously jump_{IMPERF}

“He is continuously jumping.”

p. *He will continuously jump.*

Ta *jiang* [_{Adverbial}lienshu] *tiaoyao.*

he will continuously jump

“He will continuously jump.”

q. *He continuously jumps.*

Ta [_{Adverbial}lienshu] *tiaoyao.*

he continuously jump
 “He continuously jumps.”

r. *He has continuously jumped.*

Ta yijing [*Adverbial*lienshu] *tiao le.*
 he havecontinuously jump_{LE}
 “He has continuously jumped.”

7. A Present Perfective Aspect PPA, is Composed of, a Quantification and a Simple Past-Tense Verb Phrase PV

I propose that a *Present Perfective Aspect*, is composed of, and parallels[a simple past-tense verb phrase, and the adverbial quantifier phrase “In this period of time”]. This adverbial quantifier phrase “In this period of time” could be substituted by either of the devices of the proposals in this paper. This is illustrated in (1)(ii)a, b.

(1)(ii)a. : *He has jumped.*

Ta yijingtiao le.

hehavejump_{LE}

“He has jumped.”

b: In this peiord of time, *he jumped.*

[*Adverbial*Zaizheduan shijian] *Ta tiao le.*

at this period time he jump_{LE}

“In this period of time, he jumped.”

8. Quantifiers as a Focus Marker

I observe that:

In (1)(ii)c, with a count antecedent, each of the distributive antecedents, “all” and “each”, is a focus marker. In (1)(ii)d, with a mass antecedent, each of the distributive antecedents, “all”, “each”, “dou (all)”, and “meiyi duan (each period of time)” is a quantifier.

(1)(ii)c. *He every minute* [*all*_{Focus} / *each*_{Focus}] *jumps.*

d. *He this period of time* [*all* / *each*] *jumped.*

Ta [*Adverbial*zheduanshijian], [*dou* / *meiyiduan*] *tiaoyao.*

he this period time all each one periodjump

“He this period of time, [all / each / each period] jumps.”

9. The Presentation of “The Adverbial Quantifier Map”

The presentation of “The Adverbial Quantifier Map” is as follows:

(1)(iii) Adverbial Quantifier Map:

$AQM \leftrightarrow \exists e \exists E (e \in E) \wedge \exists PV (PV \rightarrow e) \wedge \neg M(e) \wedge \{AQM(PV) \rightarrow [M(e) \vee M(E)]\}$

10. Conclusion

In this paper, I propose the phenomenon “Adverbial Quantifier Map”. This phenomenon introduces the mapping between a Mass Adverbial Antecedent ADV, and the verb phrase it modifies. Specifically, an ADV is not compatible with a Past Tense Verb Phrase PV without any sub-constituents, while either a Quantification on this ADV, or a Quantification on this PV, resolves this incompatibility. Interesting issue of the Mass of a Token Event MTOE, and the Mass of a Type Event MTYE, is elaborated, which has the major impact on an Adverbial Quantifier Map. The tense or aspect of a verb phrase, which an ADV modifies, gives rise to either an MTOE, or an MTYE, for an Adverbial Quantifier Map.

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