

Main clause phenomena and discourse moves: Mandarin incompleteness in subordinate clauses¹

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Abstract. This paper identifies a tense-aspectual phenomenon called “incompleteness” (Kong, 1994; Tang and Lee, 2000; Gu, 2007) as a novel case of Main Clause Phenomenon (MCP) based on its distribution in various kinds of subordinate clauses. I show that an existing pragmatic analysis of incompleteness in matrix clauses (Sun, 2021, 2023) can be extended to capture the full data pattern, together with Djärv (2022)’s claim that root-like clauses that host MCP share the conventional discourse effects of putting an issue on the Discourse Table (Farkas and Bruce, 2010). By contrast, a strictly syntactic account cannot straightforwardly capture the distribution of incompleteness in subordinate clauses. I conclude that the case of Mandarin incompleteness implicates that, at least for some MCP, a semantic-pragmatic component is necessary in the analysis, supporting the long-existing idea that MCP is related to the so-called “asserted” clauses (Hooper and Thompson, 1973; Heycock, 2006; De Cat, 2012).

Keywords: main clause phenomena, assertion, at-issueness, discourse moves, aspect.

1. Introduction

Main Clause Phenomena (MCP) are known as a set of constructions that typically occur in matrix (or root) clauses but are also allowed in a restricted set of subordinate clauses (Emonds, 1970; Hooper and Thompson, 1973; Andersson, 1975; Heycock, 2006; Aelbrecht et al., 2012). Negative inversion in English, for instance, can normally occur in matrix clauses, as in (1).

- (1) I have never seen such a crowd in my life.
→ Never in my life have I seen such a crowd.

Turning to subordinate clauses, its occurrence is much restricted. According to Hooper and Thompson (1973), sentential complements of certain verbs like *say* and *discover* allow negative inversion but complements of verbs like *doubt* and *deny* do not, cf. (2), (3).

- (2) Mary said [that never in her life has she seen such a crowd].
(3) *Mary doubts that [that never in her life has she seen such a crowd].

Verb Second phenomenon in languages such as German and Swedish is another well studied MCP (Den Besten, 1983; Heycock, 2006; Aelbrecht et al., 2012). While matrix clauses in German are obligatory Verb Second (V2), sentential complements of verbs exhibit a familiar contrast between *say* and *doubt* in that the former allows in its complement while the latter does not allow V2 in the complement (Truckenbrodt, 2006; Djärv, 2022).

The puzzle here is, what are the relevant “root-like” properties that license MCP, which are shared by matrix clauses and some subordinate clauses like (2)) but are missing in other subordinate clauses like (3)? One widespread view is that the licensing of MCP could be attributed to the syntax of the left periphery of a clause, which leads to two major implementations in the

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literature: the truncated accounts which argue that MCP target certain projections in the left periphery that are only available in matrix clauses and certain subordinate clauses (Emonds, 2004; Haegeman, 2003, 2006), and intervention accounts which argue that MCP are blocked in certain subordinate clauses involving operator movements due to intervention effects (Haegeman, 2012a, b). These strictly syntactic approaches, however, fail to capture the distribution of at least some MCP, as pointed by Larson and Sawada (2012) and De Cat (2012, 2013).

In fact, this idea can go back to Hooper and Thompson (1973) (H&T), who propose that MCP are admitted in a clause as long as it is “asserted” in some sense like matrix declaratives. H&T identify a list of subordinate clauses as asserted clauses including sentential complements of verbs of saying, non-restrictive *because*-clauses, and relative clauses with indefinite head nouns, whose semantic content is “the main proposition”, or “may be identified as that part which can be negated or questioned by the usual application of the processes of negation and interrogation”. While H&T do not provide a formal definition for “assertedness”, their characterization and diagnostics of asserted clauses are closely related to the properties of being “at-issue” for a proposition expressed by a sentence (Tonhauser, 2012; Simons et al., 2017; Koev, 2018). More recently, Djärv (2022), focusing on Swedish V2, proposes that embedded V2 clauses share with matrix clauses their conventional discourse effects of putting an issue on the Discourse Table (Farkas and Bruce, 2010).

This paper aims to identify Mandarin “incompleteness” as a novel example of MCP, which I argue falls into the kind of MCP that requires a semantic-pragmatic characterization. Mandarin is known as a “tenseless” language which does not show morphological distinction between present tense and past tense as tensed languages like English. As in (4), the same form of a predicate can have either a present tense or a past tense reading, depending on the presence of overt temporal adverbials and contextual information.

- (4) Mali ({xianzai /yiqian}) xihuan donghuapian.
 Mary now before like cartoon
 ‘Mary {likes cartoon (now) /liked cartoon (before)}’.

On the other hand, Mandarin has a rich inventory of (bounded/free) viewpoint aspectual morphemes such as the perfective marker *-le* and progressive marker *zai*, as in (5).

- (5) a. Mali he -le kafei.
 Mary drink PERF coffee
 ‘Mary drank coffee’
 b. Mali ({xianzai /gangcai}) zai he kafei.
 Mary now just.now PROG drink coffee
 ‘Xiaoli {is drinking coffee (now) /was drinking coffee (just now)}’

In fact, those markers are often considered to be mandatory in matrix clauses expressing episodic readings like (5).² If those markers are dropped as in (6), the zero-marked sentence sounds like an *incomplete* utterance (even with appropriate frame adverbials constraining the topic time), as shown in (6).³

²We refer to the instantiation of a single event (in progress or completed) in the actual world as an episodic reading.

³In this paper we use “incomplete” or “incompleteness” as a descriptive term for this particular kind of degraded sentences just to follow the tradition in Chinese Linguistics (Kong, 1994; He, 1994).

- (6) ??Mali ({xianzai /gangcai}) he kafei.
 Mary now just.now drink coffee
 Int: ‘Mary {is drinking/was drinking/drank} coffee’ (Out-of-the-blue)

Quite similar to the syntactic-pragmatic debate in MCP, the existing accounts of Mandarin incompleteness attribute this requirement of having overt aspectual markers in matrix episodic clauses either to a syntactic property of the left periphery (Tang and Lee, 2000; Tsai, 2008) or to the semantic-pragmatic property of matrix clauses (Smith, 1997; Fan, 2021; Sun, 2022). Intriguingly, it has been observed that incompleteness does not apply to some subordinate clauses (Tang and Lee, 2000; Lin, 2006; Sun, 2015; Fan, 2021). For a relative clause like (7), it allows an episodic interpretation without overt aspectual markers. However, a systematic examination of this property in subordinate clauses is lacking.

- (7) wo renshi na ge [RelC he kafei de] nvhai.
 I know that CL drink coffee DE girl
 ‘I know the girl who {is drinking/was drinking/drank} coffee’

This paper first demonstrates that there is a striking overlapping between the subordinate clauses where incompleteness persists and those that admit MCP reported in H&T, establishing incompleteness as a kind of MCP that occur in the so-called “asserted” clauses (Section 2). Then I argue that Djärv (2022)’s characterization that asserted clauses all put forth proposals on the discourse table can be combined with an existing pragmatic account of incompleteness (Sun, 2023) to capture all the data regarding incompleteness (Section 3). A representative syntactic alternative is examined to show that it cannot be directly extended to cover the same range of data compared to the proposed pragmatic account (Section 4). Section 5 concludes.

2. Mandarin incompleteness as MCP

Before turning into the distribution of incompleteness in subordinate clauses, it is necessary to first clarify a few more things about Mandarin incompleteness in matrix clauses. Firstly, it arises with all kinds of eventive predicates, regardless of whether or not they are transitive, and whether they semantically describe activities, accomplishments, or achievements (Klein et al., 2000; Sun, 2014; He, 2020; Sun, 2022), as in (8).

- (8) a. na ge bingren zuotian paobu ??(-le).
 that CL patient yesterday run PERF.
 ‘That patient ran yesterday.’ (intransitive)
 b. na ge bingren zuotian chi ??(-le) hetun.
 that CL patient yesterday eat PERF blowfish
 ‘That patient ate blowfish yesterday.’ (activity-type)
 c. na ge bingren zuotian chi ??(-le) san bang hetun.
 that CL patient yesterday eat PERF three pound blowfish
 ‘That patient ate three pounds of blowfish yesterday’ (accomplishment-type)
 d. zuotian na ge bingren qushi ??(-le).
 yesterday that CL patient die PERF
 ‘Yesterday that patient died.’ (achievement-type)

Due to space constraints, I focus on activity-type transitive predicates, but the reported pattern

should also be applicable to other types of eventive predicates.

Secondly, incompleteness is only relevant when we are talking about the episodic reading of a clause. For clauses with eventive predicates that are intended for generic (/habitual) or scheduled futurate readings, they are typically zero-marked (Sun, 2014; He, 2020; Sun, 2022).

- (9) na ge bingren {pingshi /mingtian} chi hetun.
 that CL patient usually tomorrow eat blowfish
 ‘That patient eats blowfish {usually/tomorrow}’ (Generic/Scheduled readings)

That means, some subordinate clauses that do not admit overt aspect markers or cannot express episodic readings are less relevant and will be excluded in our discussion. With this standard in mind, I focus on the following kinds of subordinate clause in the rest of the section, including sentential complements (of verbs or nouns), relative clauses, adverbial clauses expressing causation or time (marked by *because*, *when*, *after*, etc), all of which admit overt aspect markers and can express regular episodic readings. The question is, when overt aspect marker is removed, whether the sentence is still acceptable on the episodic reading, or it becomes incomplete. We will show in those subordinate clauses that are asserted (i.e. at-issue), incompleteness persists just like what happens in matrix clauses; while in those clauses that are not asserted, incompleteness disappears.

2.1. Sentential complements

2.1.1. Sentential complements of predicates

H&T sort the predicates that can take sentential complements into five classes as in (10) and propose that Class A (non-factives like *say*), Class B (non-factives like *suppose*), and Class E (cognitive and perception factives like *discover*) predicates license MCP in their complements because in these cases, the complement can be the main assertion and the matrix predicate can function parenthetically (see also Simons, 2007). By contrast, Class C (non-factive “response stance” verbs like *deny*) and Class D (emotive factives) predicates cannot license MCP in their complements because these complements cannot be asserted (e.g. presupposed or given).

- (10) The complement must or can be “asserted”: MCP allowed
- a. I said/think [that never in my life had I seen such a crowd]. (A)
 - b. I supposed/expected [that this book he read thoroughly]. (B)
 - c. I realized/discovered [that never before had he had to apologize]. (E)
- (11) The complement cannot be “asserted”: MCP disallowed
- a. *I denied/doubted [that never in my life had I seen such a crowd]. (C)
 - b. *I regretted/was surprised [that never in my life had I seen such a crowd]. (D)

Intriguingly, a similar pattern is found with Mandarin incompleteness. For complements of verbs including *shuo* “say”, *renwei* “think”, *caixiang* “suppose”, *faxian* “discover”, they behave largely like matrix clauses in that incompleteness persists there. As in (12), when the overt aspect marking in clausal complement is removed, this sentence sounds incomplete:

- (12) wo {renwei/tuice/faxian} [bingren zuotian chi ??(-le) hetun]
 I think/suppose/discover patient yesterday eat PERF blowfish
 ‘I {think/suppose/discovered} [that the patient ate blowfish yesterday].’

For complements of verbs including *fouren* “deny”, *jingya* “surprised”, they behave unlike matrix clauses in that when overt aspect marking is removed, the sentence remains generally acceptable (if not perfect) on the episodic readings:

- (13) wo {fouren-le/hen jingya} [bingren zuotian chi ?(-le) hetun]
 I deny-PERF/very surprised patient yesterday eat PERF blowfish
 ‘I {denied/am surprised} [that the patient ate blowfish yesterday].’

We can use the question-answer pair test to further diagnose the (non-)assertedness of complements. If the complement proposition is the main assertion, then it should be able to felicitously address the Question Under Discussion, or the QUD (Roberts, 2012; Tonhauser, 2012; Koev, 2018). I construct the question answer pair as in (14). While in both cases (A and A’) the complement proposition is semantically relevant to the question, only the former is felicitous.

- (14) Q: zhe ge bingren zenme le?
 this CL patient how LE
 ‘What happened to this patient?’
 A: yisheng {renwei/tuice/faxian} [ta zuotian chi -le hetun]
 doctor think/suppose/discover he yesterday eat PERF blowfish
 ‘The doctor {thinks/supposes/discovers} [that he ate blowfish yesterday].’
 A’: #yisheng {fouren-le/hen jingya} [ta zuotian chi -le hetun]
 doctor deny-PERF/very surprised he yesterday eat PERF blowfish
 ‘#The doctor {denied/is surprised} [that he ate blowfish yesterday].’

This confirms that in Mandarin the complements of Class A, B, E can be put forth as at-issue (/asserted) just like their English counterparts, while the complements of Class D and E cannot have such a discourse status.

2.1.2. Noun complements

According to H&T, sentential complements of nouns (/noun complements) as in (15) are not asserted since the embedded proposition expressed is “not a claim to truth on the part of either the speaker of the logical subject”; nor does (15) logically imply the embedded proposition.

- (15) Professor Canton denied the claim [that the math department was folding].

This correctly captures that MCP is not applicable in noun complements as in (16).

- (16) a. *I don’t believe the report that up the street trotted the dog.
 b. *Your notion that never before have the children had so much fun is absurd.

Mandarin incompleteness disappears in this kind of complements as well: the overt aspectual marking can be dropped without making the sentence degraded, as in (17).

- (17) a. yisheng zhidao [bingren zuotian chi (-le) hetun] zhe jian shi.
 doctor know yesterday patient eat PERF blowfish] this CL affair
 ‘The doctor knows the affair that [the patient ate blowfish yesterday].’
 b. yisheng xiangxin [bingren zuotian chi (-le) hetun] zhe ge shuofa.
 doctor believe patient yesterday eat PERF blowfish this CL claim
 ‘The doctor believes the claim that [the patient ate blowfish yesterday].’

Applying the question-answer pair test, we confirm that Mandarin noun complements cannot be the main assertions, as the sentences in (17) all fail to address a question to which the embedded proposition is semantically relevant (regardless of the presence of the overt aspectual marking). This test can be reduplicated in English as well, as shown in the translation.

- (18) Q: zhe ge bingren zenme le?
 this CL patient how LE
 ‘What happened to the patient?’
 A: #yisheng zhidao [bingren zuotian chi **-le** hetun] zhe jian shi.
 doctor know [yesterday patient eat PERF blowfish] this CL affair
 ‘#The doctor knows the affair that [the patient ate blowfish yesterday].’
 A’: #yisheng xiangxin [bingren zuotian chi (**-le**) hetun] zhe ge shuofa.
 doctor believe [yesterday patient eat PERF blowfish] this CL claim
 ‘#The doctor believes the claim that [the patient ate blowfish yesterday].’

2.2. Relative clauses

An interesting contrast observed by H&T is that MCP are allowed in restrictive relative clauses (RRs) with indefinite head nouns but not in RRs with definite head nouns, as illustrated in (19).

- (19) a. I saw a dress [which under no circumstances would I have bought].
 b. *I saw the dress [which under no circumstances would I have bought].

H&T argue that the proposition expressed by the relative clause in (19a) can be “asserted” in that when the entire sentence is negated as in (20), the truth of the relative clause is questioned as well (at least when the indefinite is interpreted as non-specific):

- (20) I didn’t see a dress [which under no circumstances would I have bought].
 ↗ There is a dress which under no circumstances would I have bought.

In contrast, the proposition expressed by the relative clause in (19b) is not “asserted” but pre-supposed because when the entire sentence is negated as in (21), the truth of the relative clause is not questioned:

- (21) I didn’t see the dress [which under no circumstances would I have bought].
 ↘ There is a dress which under no circumstances would I have bought.

Turning to Mandarin, we see that incompleteness does persist in the relative clauses with an indefinite noun head like (22), but disappears in the relative clauses with a definite non head as in (23). To rule out the potential specific reading of the indefinite phrase, the existential construction is used in (22).

- (22) you yi xie [zuotian chi ??(**-le**) hetun] de ren zai yiyuan.
 have one CL_{PL} yesterday eat PERF blowfish DE person at hospital
 ‘Some people [who ate blowfish yesterday] are in the hospital’
 (23) na yi xie [zuotian chi (**-le**) hetun] de ren zai yiyuan.
 that one CL_{PL} yesterday eat PERF blowfish DE person at hospital
 ‘Those people [who ate blowfish yesterday] are in the hospital’

To show that the discourse status of the proposition expressed by the RR differs in those two cases, we can apply a test in the same spirit as (20)-(21) (see Tonhauser, 2012) by transforming

the sentences in (22) and (23) into polar questions as in (24), and indeed only in the first case (involving the indefinite head noun) the RR proposition is questioned.

- (24) a. you yi xie [zuotian chi -le hetun] de ren zai yiyuan ma?
 have one CL_{PL} yesterday eat PERF blowfish DE person at hospital YNQ
 ‘Are there any person [who ate blowfish yesterday] in the hospital?’
 ↗ There are people who ate blowfish.
 b. na yi xie [zuotian chi -le hetun] de ren zai yiyuan ma?
 that one CL_{PL} yesterday eat PERF blowfish DE person at hospital YNQ
 ‘Are those people [who ate blowfish yesterday] in the hospital?’
 ↘ There are people who ate blowfish.

2.3. Adverbial clauses

2.3.1. Adverbial clauses expressing causation

According to H&T and subsequent work in Haegeman (2012a), adverbial clauses expressing causation can be sorted into two kinds, central and peripheral ones (or “restrictive vs. non-restrictive” in H&T’s terms), c.f. (25), (26).

- (25) Central *because*-clause:
 [_m Mary quickly ran away], because [_p I just saw her in front of a restaurant].
 (26) Peripheral *because*-clause:
 [_m Mary is going out for dinner], because [_p I just saw her in front of a restaurant].

In the central use, the adverbial clause (*p*) expresses the cause for the state of affairs expressed by the matrix clause (*m*). But in the peripheral use, the adverbial clause presents the speaker’s evidence for making the claim that *m*.

H&T argue that while the central adverbial clause can be either asserted or presupposed, the peripheral adverbial clause must be asserted. As predicated, both kinds of adverbial clauses in English allow MCP:⁴

- (27) Mary quickly ran away, [_{Central} because in front of a restaurant I just saw her].
 (28) Mary is going out for dinner, [_{Peripheral} because in front of a restaurant I just saw her].

In Mandarin, the prediction with regard to incompleteness will be slightly different. Since the absence of overt aspect marking is only allowed when the clause is not asserted, we predict that incompleteness persists in adverbial clauses that cannot be presupposed (e.g. the peripheral ones), while incompleteness disappears in adverbial clauses that can be presupposed (e.g. the central ones). The predictions are born out as shown by the contrast between (29) and (30).

- (29) Yisheng hen danxin, yinwei Yuehan zuotian chi (-le) hetun.
 doctor very worried because John yesterday eat PERF blowfish
 ‘The doctor is worried [_{Central} because John ate blowfish yesterday]’

⁴Haegeman (2012a) instead argues that only the peripheral but not the central adverbial clauses allow MCP. For space reasons we remain ignorant about the English generalizations but will focus on the distribution of Mandarin central and peripheral clauses.

- (30) Yuehan hen yonggan, yinwei ta zuotian chi ?(-le) hetun.
 John very brave because he yesterday eat PERF blowfish
 ‘John is brave [Peripheral because he ate blowfish yesterday]’

2.3.2. Adverbial clauses expressing time

Lastly, we turn to adverbial clauses expressing time which begin with *before*, *after*, etc. H&T observe that such clauses consistently resist MCP, since they are always presupposed:

- (31) a. *They had dinner before into the kitchen trooped the children.
 b. *The guests laughed out loud after into the kitchen trooped the children.

The presupposed status can be straightforwardly confirmed by the projection test. When (31) is negated or questioned, the proposition expressed by the temporal adjunct is still conveyed:

- (32) a. Did they have dinner before the children trooped into the kitchen?
 b. They didn’t have dinner before the children trooped into the kitchen.
 ~→ The children trooped into the kitchen.

In Mandarin we observe the same pattern. Incompleteness disappears in those temporal adverbial clauses, and their content is presupposed alike as in (34).

- (33) tamen [zai Yuehan chi (-le) hetun zhihou] hen danxin.
 they at John eat PERF blowfish after very worried
 ‘They were quite worried [after John ate blowfish].’
- (34) a. tamen [zai Yuehan chi (-le) hetun zhihou] hen danxin ma?
 they at John eat PERF blowfish after very worried YNQ
 ‘Were they quite worried [after John ate blowfish]?’
 b. tamen [zai Yuehan chi (-le) hetun zhihou] meiyou hen danxin.
 they at John eat PERF blowfish after NOT very worried
 ‘They were not worried [after John ate blowfish].’
 ~→ John ate blowfish.

2.4. Interim summary

In sum, this section demonstrated that whether Mandarin incompleteness persists in a subordinate clause closely correlates with whether this kind of subordinate clause can host (certain) MCP in English. Based on this parallel, I identify Mandarin incompleteness, namely the requirement of having overt aspectual marking for episodic readings, as a potential case of MCP.

3. Proposal

This section shows that a semantic-pragmatic characterization of root-like clauses work well with an existing analysis of incompleteness to capture the data in Section 2. Section 3.1 goes through the account of incompleteness in Sun (2021, 2023) which focuses on root clauses only. Section 3.2 extends this account to capture the pattern of incompleteness in subordinate clauses, building on Djärv (2022)’s proposal that asserted clauses share the conventional discourse effect of putting forth a proposal on the discourse table.

3.1. An existing account of incompleteness in root clauses

Let us start with aspectually marked sentences like (35) to illustrate our basic assumptions on tense and aspect in Mandarin.

- (35) Yuehan gangcai chi -le hetun.
John just.now eat PERF blowfish
“John ate blowfish just now”

We adopt a classic neo-Reichenbachian theory of time (Reichenbach, 1947; Klein, 1994; see implementations in Mandarin in Smith, 1997; Klein et al., 2000): the temporal information of a clause can be described with relations between three time intervals: the speech time (t_c), the topic time (or “reference time”), and the eventuality time. To temporally locate an eventuality, (viewpoint) aspect is introduced to constrain the relation between the eventuality time and topic time, and tense is introduced to constrain the relation between the speech time and topic time.

Within a neo-Davidsonian theory in which eventualities are linked to individuals by thematic relations (Parsons, 1990; Davidson, 1967), a sentence radical (νP) in Mandarin denotes a property of eventualities, as in (36). I assume the postverbal *-le* in (37) has the regular perfective semantics (based on Smith, 1994), which converts properties of eventualities into properties of time intervals, as illustrated in (37).

- (36) $\llbracket [\nu P \text{ Yue chi hetuan}] \rrbracket$
 $= \lambda w \lambda e. \text{eat}(e, w) \wedge \text{Agent}(e, w) = j \wedge (\exists y [\text{blowfish}(y, w) \wedge \text{Theme}(e, w) = y])$
 Abbreviated as: $\lambda w \lambda e. \mathbf{J}\text{-eat-bf}(e, w)$

- (37) $\llbracket \text{-le}_{\text{PERF}} \rrbracket = \lambda w \lambda P_{\langle s, vt \rangle} \lambda t. \exists e [P(e, w) \wedge \tau(e, w) \subseteq t]$

For the encoding of tense, we assume (based on Sun, 2014; He, 2020) that there is a covert pronominal non-future tense in Mandarin, which can be understood as a tense feature underspecified between the present and past tense (as long as it is not a future one), as in (38).⁵

- (38) a. $\llbracket [\text{TP}_i \text{ NONFUT}_j [\text{AspP } zai\text{-}le/\dots [\nu P \text{ Mali he kafei}]] \rrbracket$
 b. $\llbracket \text{NONFUT}_j \rrbracket^{s,c} = \lambda w. g(j)$ defined iff $g(j) \leq t_c$

Lastly, temporal adverbials can be optionally added (as adjuncts of AspP) to restrict the topic time. The semantic derivation of (35) is illustrated in (39).

- (39) a. $\llbracket [\text{AspP } \text{-le } [\nu P \text{ Yuehan chi hetun}]] \rrbracket = \lambda w \lambda t. \exists e [\mathbf{J}\text{-eat-bf}(e, w) \wedge \tau(e, w) \subseteq t]$
 b. $\llbracket [\text{AspP } [\text{AdvP } gangcai] [\text{AspP } \text{-le } [\nu P \text{ Yuehan chi hetun}]]] \rrbracket$
 $= \lambda w \lambda t. \exists e [\mathbf{J}\text{-eat-bf}(e, w) \wedge \tau(e, w) \subseteq t] \wedge t \subseteq \text{just.now}$
 c. $\llbracket [\text{TP}_i \text{ NONFUT}_j [\text{AspP } [\text{AdvP } gangcai] [\text{AspP } \text{-le } [\nu P \text{ Yuehan chi hetun}]]]] \rrbracket$
 $= \lambda w. \exists e [\mathbf{J}\text{-eat-bf}(e, w) \wedge \tau(e, w) \subseteq g(j)] \wedge (g(j) \subseteq \text{just.now})$ defined iff $g(j) \leq t_c$

Following Sun (2023), since zero-marked forms have typical imperfective uses such as the generic use and futurate use, they contain a phonologically null imperfective morpheme \emptyset_{IMPF} , which involves an inertia modal component in its semantics as in (40). The modal base “**IN-ERT**” returns the inertial continuations of the evaluation world since (the beginning of) the

⁵Sun (2014) shows that a Mandarin sentence cannot get a future tense reading without a prospective marker (/modal verb) (e.g. *hui*), showing that there must be some restrictions on the value of topic time even there is no overt tense morphology. This constraint can be potentially captured in some other way; the covert pronominal tense analysis is adopted for convenience but is independent of the current proposal.

topic time, so that the event is ongoing or completed in the possible worlds that are identical to the evaluation world w before the topic time and develop in ways most compatible with the regular course of the relevant affairs since the topic time.

$$(40) \quad \llbracket \emptyset_{\text{IMPF}} \rrbracket = \lambda P_{\langle s, vt \rangle} \lambda w \lambda t. \forall w' \in \mathbf{INERT}(w, t) : \exists e [P(e, w') \wedge \tau(e, w') \supseteq t]$$

A zero-marked sentence such as (41) thus has an intensional meaning as in (42).

(41) ??Yuehan gangcai chi hetun.

John just.now eat blowfish

(Out-of-the-blue) Int: ‘John {ate/was eating} blowfish just now’

$$(42) \quad \lambda w. \forall w' \in \mathbf{INERT}(w, g(j)) : \exists e [\mathbf{J-eat-bf}(e, w') \wedge \tau(e, w') \supseteq g(j)] \wedge (g(j) \subseteq \mathbf{just.now})$$

defined iff $g(j) \leq t_c$

According to Sun, (42) does not entail the existence of the event in the actual world, but tends to imply it via pragmatic strengthening. Based on the Gricean Quantity-2 Maxim ‘Say no more than you need’ (Grice, 1967), which is elaborated as ‘What is stereotypical needs not be said’ in Atlas and Levinson (1981), the stereotypical situation is that the actual world indeed develops inertially so that the eating-blowfish event has indeed actualized at the topic time ($g(j)$). When no other information uttered by the speaker or in the context contradicts this default assumption, (41) can conversationally implicate an episodic-like reading (which is underspecified between an event-in-progress and an event-completion reading due to the ‘ \supseteq ’ relation).

But if so, why is (41) ever degraded in Mandarin? Sun proposes that compared to the aspectually marked counterparts like (35), the zero-marked imperfective form is not a good form to express episodic readings since it is intensional and truth-conditionally weaker than the perfective or progressive forms. The overtly marked forms necessarily entail the actualization of the entire or partial event at the topic time, ruling out the possibility that the event does not start at all. When the intended meaning is an episodic reading, and the information that the event has occurred is relevant to the Question Under Discussion (which is the case in an out-of-the-blue context such as (41)), these ‘better’ alternatives are mandatorily evoked, leading to conflicting Quantity-1 and Quantity-2 implicatures:

(43) Using (41) (when the event occurrence is relevant to the QUD)

$\rightsquigarrow_{\text{Quantity-2}}$ The event of John eating blowfish is actualized within the topic time.

$\rightsquigarrow_{\text{Quantity-1}} \neg$ (The event of John eating blowfish is completed within the topic time),

\neg (The event of John eating blowfish is ongoing within the topic time).

Under this pragmatic account, the degradedness of the zero-marked sentences is attributed to the conflict between Quantity-1 and Quantity-2 implicatures. Crucially, in certain contexts where the more informative alternatives are not invoked because the event occurrence is not directly addressing the QUD, the Quantity-1 implicatures do not arise, nor does the conflict. Sun (2023) discusses those cases such as when adding narrow focus to a root zero-marked clause, where the effect of incompleteness can disappear. In the next section, I show how this account can further extend to capture the data concerning the subordinate clauses.

3.2. Extending to incompleteness in subordinate clauses

Following Djärv (2022), we assume that the asserted (/root-like) clauses (which include matrix clauses and certain subordinate clauses) share the conventional discourse effect of putting forth

a singleton proposition set (containing the proposition expressed by the clause) on the discourse table as a proposal. To illustrate it more clearly, we adopt a formal discourse theory in Farkas and Roelofsen (2017) which incorporates various insights from Hamblin (1971), Gunlogson (2003), Roberts (2012), Farkas and Bruce (2010) and many others. The theory represents a basic discourse context as a triple $\langle \text{participants}, \text{table}, \text{commitments} \rangle$, where *participants* is set of discourse participants; *table* is a stack of propositions, representing the proposals made so far; and *commitments* is a function that maps each participant $x \in \text{participants}$ to a set of possibilities that x is publicly committed to (Farkas and Roelofsen, 2017: ex. (22)).

The basic discourse effects of A's uttering a mono-clausal declarative in (44) are shown in (45). By uttering (44), the participant *Sp* puts an issue (a singleton set of propositions $\{p\}$ because what is uttered is a declarative) on the top of the Table, and adds the proposition *p* to their public commitment set.⁶

- (44) Yuehan gangcai chi -le hetun.
John just.now eat PERF blowfish
'John ate blowfish just now'
- (45) Discourse effects of the speaker (*Sp*) uttering (44) to the addressee (*Ad*):
Let $p = \llbracket (44) \rrbracket$;
a. $\{p\} \downarrow$ is placed on the TABLE ⁷
b. *p* is added to COMMITMENTS (*Sp*)

The relevant point is that, within this framework, we can potentially disentangle what is placed on the table and what is added to commitments (*Sp*), which is sometimes referred to as asymmetric discourse update (Murray, 2014; Faller, 2019; Murray and Starr, 2021). This is particularly useful when modeling the discourse effect of uttering complex sentences involving subordination, which we turn to in the rest of the section.

3.2.1. Asserted subordinate clauses

I argue that the following subordinate clauses in (46) pattern with root clauses in terms of incompleteness because as asserted clauses, they can put forth an issue onto the discourse table. This renders the actualization of the embedded event directly relevant to the resolution of the QUD and the use of the zero-marked imperfective form for episodic readings is blocked due to the conflicting Quantity implicatures.

- (46) a. Sentential complements of *say, think, discover*, etc
b. Relative clauses with indefinite head nouns
c. Peripheral adverbial clauses

For complex sentences involving sentential complements of Class A, B, C predicates such as (47), I follow Djärv (2022) in assuming that both the matrix proposition $p_m (= \llbracket (47) \rrbracket)$ and the embedded proposition $p_e (= \llbracket \text{ta zuotian chi -le hetun} \rrbracket)$ are at-issue.

⁶There might be some special discourse effects with marked sentences such as the degree of the speaker's credence (Farkas and Roelofsen, 2017) but we ignore those effects here since they are not relevant.

⁷The downward closure is used in inquisitive semantics in order to capture that meanings are downward closed, namely if a proposition *p* resolves a given issue, any proposition *r* that entails *p* can also resolve that issue. For any set of propositions *P*, we write a downward closed set of propositions as $P \downarrow$.

- (47) yisheng {renwei/tuice/shuo -le} [ta zuotian chi -le hetun]
 doctor think/suppose/say PERF he yesterday eat PERF blowfish
 ‘The doctor {thinks/supposes/said} [that he ate blowfish yesterday].’

The conventional discourse effects of uttering a complex sentence like (47) are illustrated in (48). According to Djärv, p_m and p_e each contribute to a proposal on the discourse table; but only the former is committed by the speaker while the latter is anchored to contextually specified person (i.e. the doctor). This captures that by uttering (47), the speaker needs not be committed to the truth of p_e .

- (48) Discourse effects of the speaker (Sp) uttering (47) to the addressee (Ad):
- CA (Contextually specified commitment anchor) is added;
 - $\{p_e\}\downarrow$ and $\{p_m\}\downarrow$ are placed on the TABLE;
 - p_m is added to COMMITMENTS (Sp);
 - p_e is added to COMMITMENTS (CA).

Importantly, since the proposition p_e is put onto the table just like how the matrix proposition is updated in the case of a simple root declarative in (45), it is directly relevant to addressing the QUD in this case. For this reason, the use of \emptyset_{IMPF} will be similarly blocked by the overtly marked alternatives due to the conflicting implicatures.

When uttering a complex sentence involving a relative clause with an indefinite head noun as in (49), both the matrix and embedded propositions are at-issue, and in this case both are anchored to the speaker as in (51). Again, the embedded proposition contributed by the subordinate clause has a similar discourse status as it is presented as a root clause in (45).

- (49) you yi xie [zuotian chi ??(-le) hetun] de keren shengbing le.
 have one CL_{PL} yesterday eat PERF blowfish DE guest sick LE
 ‘Some guests [who ate blowfish yesterday] got sick’

- (50) a. $p_m = \llbracket (49) \rrbracket$;
 b. $p_e = \llbracket \text{you yi xie keren zuotian chi -le hetun} \rrbracket$

- (51) Discourse effects of the speaker (Sp) uttering (47) to the addressee (Ad):
- $\{p_e\}\downarrow$ and $\{p_m\}\downarrow$ are placed on the TABLE;
 - p_m and p_e are added to COMMITMENTS (Sp).

For a complex sentence involving peripheral adverbial clauses like (52), both the matrix proposition contributed by the entire complex sentence and the embedded proposition contributed by the periphery clause are at-issue. The discourse effects of uttering (52) are shown in (54), which is quite similar to the case of relative clauses:

- (52) Yuehan hen yonggan, yinwei ta zuotian chi ??(-le) hetun.
 John very brave because he yesterday eat PERF blowfish
 ‘John is brave [_{Peripheral} because he ate blowfish yesterday]’

- (53) a. $p_m = \llbracket (52) \rrbracket$
 b. $p_e = \llbracket \text{ta zuotian chi -le hetun} \rrbracket$

- (54) Discourse effects of the speaker (Sp) uttering (47) to the addressee (Ad):
- $\{p_m\}\downarrow$ and $\{p_e\}\downarrow$ are placed on the TABLE;

- b. p_m and p_e are added to COMMITMENTS (Sp);

In sum, the asserted subordinate clauses as presented above all place a set containing the proposition expressed by them (an issue) on the discourse table, together with the issue contributed by the entire complex sentences.

3.2.2. Non-asserted subordinate clauses

Turning to non-asserted subordinate clauses as in (55), the main difference is that they do not contribute a separate issue onto the table in terms of their content (besides the issue contributed by the entire complex sentence) — they are either presupposed or given in the discourse.

- (55) a. Sentential complements of *deny*, *doubt*, etc
 b. Noun complements
 c. Relative clauses with definite head nouns
 d. Central adverbial clauses
 e. Temporal adverbial clauses

For complex sentences involving sentential complements of Class C and D predicates, I propose that they only put one issue onto the table, namely the downward closed set involving the matrix proposition p_m (= \llbracket (56) \rrbracket). The embedded proposition expressed by the sentential complement (= \llbracket *bingren zuotian chi -le hetun* \rrbracket) is discourse-old information and does not contribute a separate issue to update the context.

- (56) *wo* {*fouren-le/hen jingya*} [*bingren zuotian chi (-le) hetun*]
 I deny-PERF/very surprised patient yesterday eat PERF blowfish
 ‘I {denied/am surprised} [that the patient ate blowfish yesterday].’

The discourse effects of uttering (56) can be represented in (57).

- (57) Discourse effects of the speaker (Sp) uttering (47) to the addressee (Ad):
 a. $\{p_m\} \downarrow$ is placed on the TABLE;
 b. p_m is added to COMMITMENTS (Sp);

Since the non-asserted subordinate clauses in (55) do not have the discourse effect of putting forth an issue on the Table, using the zero-marked imperfective form no longer invokes the more informative overtly marked forms to give rise to problematic Quantity-1 implicatures. With the Quantity-2 implicature alone, the zero-marked form can obtain an episodic-like reading:

Note that since the Quantity-2 implicature is typically insensitive to the embedding, as in (58), we assume that the meaning of the aspectually zero-marked subordinate clauses in (56) can also be enriched into ‘the patient ate blowfish yesterday’ via the Quantity-2 implicature.

- (58) a. John broke a finger.
 $\rightsquigarrow_{\text{Quantity-2}}$ John broke his own finger.
 b. The person [who broke a finger] was sent to the hospital.
 $\rightsquigarrow_{\text{Quantity-2}}$ The person [who broke his own finger] was sent to the hospital.

In a nutshell, by following Djärv (2022) in assuming that root-like clauses share the conventional discourse effect of placing an issue on the discourse table, we can extend an existing

pragmatic analysis of incompleteness (focusing on matrix clauses) in Sun (2023) to the distribution of incompleteness in the subordinate clauses.

4. Comparison to syntactic accounts of incompleteness

Section 3 shows that an existing pragmatic analysis of incompleteness can be extended to subordinate clauses based on a semantic-pragmatic characterization of root-like clauses. However, one might come up with a syntactic alternative that the requirement of having overt aspectual markers is related to the structurally richer left periphery of asserted clauses compared to the non-asserted ones.⁸ Since no such syntactic alternative has been explicitly proposed for incompleteness in subordinate clauses, I briefly examine an existing representative syntactic account of incompleteness in Tang and Lee (2000) (see also Tsai, 2008; Sybesma, 2019) to see whether it can capture the same range of data.

Tang and Lee's account is based on the Anchoring Principle in Enç (1987). Enç proposes that (in English) each tense in a clause must be anchored, which can be done in various ways:

- (59) Tense is anchored if it is bound in its governing category, or if its local Comp is anchored. Otherwise, it is unanchored.
- a. If Comp has a governing category, it is anchored if and only if it is bound within its governing category.
 - b. If Comp does not have a governing category, it is anchored if and only if it denotes the speech time.

The condition in (59b) captures how the tense in a matrix clause such as (60) is anchored. The local Comp of $PAST_i$ is anchored by denoting the speech time (with the index 0) since it does not have a governing category. And the tense in this matrix clause, $PAST_i$, is anchored since its local Comp is anchored.

- (60) Mary ran.
 [_S Comp₀ [_S NP [_T $PAST_i$ VP]]]

Tenses in subordinate clauses such as relative clauses and clausal complements can be anchored in different ways by being bound in its governing category, as in (61a), or by having a local Comp that is bound within its governing category, as in (61).

- (61) a. John saw the man who was crying. (Anchoring Relative Clause Tenses)
 [_S Comp₀ [_S NP [_T $PAST_i$ V [NP [Comp [... $PAST_i$...]]]]]]
- b. John heard that Mary was pregnant. (Anchoring Complement Tenses)
 [_S Comp₀ [_S NP [_T $PAST_i$ V [Comp_i [NP [$PAST_j$...]]]]]]

I will not go into the details of Enç's analysis since the relevant point here is that a tense with an index i needs to be anchored by fixing its interpretation in either of the following two ways: (i) when i is anchored via an anchored local Comp with an index n , $g(n)$ saturates the evaluation

⁸Note that Mandarin incompleteness is slightly different from the other more familiar MCP in English and German. For the latter, it is an operation that is allowed in asserted clauses but disallowed in non-asserted ones. While for incompleteness, it is a property that is obligatory for asserted clauses but optional for non-asserted ones. However, hosting overt aspect marking is allowed in both asserted and non-asserted clauses. That means, we cannot directly apply the existing truncation accounts of MCP to the current case. A more promising direction is, what makes asserted clauses (including root clauses and certain subordinate clauses) distinguished from non-asserted clauses such that it makes dropping the overt aspect marking (for episodic readings) is impossible.

time encoded the in tense as in (62); (ii) when i is anchored via binding, its denotation is the same as its binder via co-indexing.

- (62) $[_S \text{ Comp}_0 [_S \text{ NP } [_T \text{ PAST}_i \text{ VP }]]]$
 $\llbracket \text{PAST}_i \rrbracket = g(i)$ iff $g(i) < g(0)$

Tang & Lee propose that in Mandarin, aspectual projections can “anchor” the tense by restricting the interpretation of a tense operator in C. The main idea is that, T head (or Infl head) in Chinese can either be overtly realized as some sentence final particles, or as a phonologically empty particle. In the former case, it does not need to be anchored via Comp since the sentence final particles already encode the relation between the event time and topic time (/speech time). In the latter case, this empty particle can be anchored either to a tense operator in C (whose interpretation is restricted by aspect-encoded markers), as in (63).⁹

- (63) $[_{CP} C_0 [_{TP} [_T e_i] [_{AspP} [_{Asp} \text{zai/-le/... }] [_{VP} \text{... }]]]]$

However, if incompleteness is indeed related to the anchoring of T, one prediction is that incompleteness should disappear in subordinate clauses like sentential complements because the T in the subordinate clause should be able to get anchored from the matrix clause. Consider a clausal-embedding construction in (64) whose matrix T is anchored by overt aspectual markers:

- (64) ??yisheng shuo -le [Yuehan zuotian chi hetun].
 doctor say PERF John yesterday eat blowfish
 Int: ‘The doctor said that [John {was eating/ate} blowfish yesterday].’

We further predict that the tense of the subordinate clause can be anchored either by being co-indexed with the matrix T or by being anchored to the local C which is co-indexed with the matrix T. In the former, the topic time of the clausal complement has the same value as the topic time of the matrix clause, which yields an overlapping reading such that the event time of eating blowfish should overlap with the event of saying. In the latter, the evaluation time of the topic time has the same value as the topic time of matrix clause so that the event time of the embedded event would precede that of the matrix event, yielding a precedence reading.

In both cases, the embedded tense in principle can be anchored to the matrix clause in some way and there should be no need to have overt aspectual markers in the embedded clauses to achieve anchoring. However, as mentioned before, a sentence like (64) without overt aspectual markers on the embedded verb in fact sounds incomplete. The overlapping or precedence readings are available only when overt aspectual markers are added to the clausal complement.

Moreover, a syntactic anchoring account in its current form fail to capture the difference between different kinds of subordinate clauses. We have seen that relative clauses with definite head nouns are exempt from incompleteness, as shown in (65). And the zero-marked clausal complement in (65) can have both overlapping or precedence readings (Lin, 2006; Sun, 2015).

⁹Since focused sentences in Mandarin could also be exempt from incompleteness, Tang and Lee further propose that a sentence can also be anchored by (projective) focus in Mandarin. The modified Anchoring Principle (re-named as Generalized Anchoring Principle) states that “Every sentence must be either tensed or focused at the LF interface level”. We do not have space to go further into this part of data but it can be handled in a pragmatic analysis in Sun (2023) as well since focus manipulates what is at-issue.

- (65) yisheng piping -le na ge [Re|C chi hetun de] ren.
 doctor criticize PERF that CL eat blowfish DE person
 ‘The doctor criticized the person who {was eating /ate} blowfish.’

Of course, one could always postulate that different kinds of subordinate clauses have different licensing conditions of anchoring Tense, but it is difficult for such a syntactic account not to refer to a semantic-pragmatic distinction such as the generalization established in Section 2.

5. Conclusions

This paper investigated the implications of a tense-aspectual phenomenon in Mandarin called incompleteness on the study of Main Clause Phenomenon (MCP). The existing Chinese literature more or less agree that incompleteness typically occurs in matrix clauses, but few of them provide a thorough discussion of this requirement in the subordinate clauses. This paper first established that incompleteness is a case of MCP by showing that the subordinate clauses where incompleteness arises just like in root clauses largely overlap with the so-called “asserted” clauses in Hooper and Thompson (1973) which admit (certain) English MCP. I further showed that an existing pragmatic analysis of incompleteness (focusing on matrix clauses) in Sun (2021, 2023) can be successfully extended to the data in subordinate clauses, as long as we adopt a semantic-pragmatic characterization of those asserted clauses— following a recent proposal in Djärv (2022), asserted clauses have the conventional discourse effect of putting an issue onto the discourse table. I compared such a semantic-pragmatic account to a potential syntactic alternative (Tang and Lee, 2000; Tsai, 2008), and argued that some of the data can be straightforwardly captured by the former but not the latter.

While it should be acknowledged that MCP is a potentially heterogeneous class of phenomena (Heycock, 2006; Aelbrecht et al., 2012) and for many of them a syntactic characterization of the root-like clauses that admit MCP is necessary, the case study of Mandarin incompleteness showed that for at least certain MCP, the conventional discourse effect of those root-like clauses are at stake, and a strictly syntactic characterization in terms of the structure of their left periphery is not sufficient.

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