Say Complementation in Mandarin: Analyzing postverbal *shuo* and sentence-initial *shuo*

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1. Introduction

Say-based complementation has been extensively documented cross-linguistically (Chappell 2008, Paul 2014, Grimshaw 2015, Major 2021, among others). However, there has not been a detailed study of the different constructions involving the say verb shuo in Mandarin Chinese (Mandarin) and their specific functions. *Shuo* in Mandarin is dominantly used as a speech verb, illustrated in (1) where *shuo* takes John as the agentive subject, optionally takes Mary as the goal,
and takes the inflectional phrase as the linguistic material.

(1) Yuehan (dui Mali) shuo mingtian hui xiayu.
John (to Mary) say tomorrow will rain
'John said (to Mary) it would rain tomorrow.'

The example in (1) aligns neatly with the proposed universal SAY schema (Grimshaw 2011). Moreover, *shuo* exhibits versatility in its usage beyond its role as a matrix verb; it also appears in postverbal and sentence-initial positions, as exemplified in (2) and (3)[1], respectively.

(2) Yuehan baoyuan shuo mingtian hui xiayu.
John complain say tomorrow will rain
'John complained that it would rain tomorrow.'
(3) Shuo Yuehan xihuan jufa, Mali bing bu xiangxin.
say John like Syntax Mary at.all NEG believe
'That John likes Syntax, Mary doesn't believe at all.'

The presence of *shuo* in these two distinct positions prompts a comparison with its usage as a speech verb in (1). This raises important questions: Does *shuo* assume different interpretations in varying positions? How are the different usages of *shuo* interconnected? Furthermore, it is intriguing to note that in certain instances, postverbal *shuo* and sentence-initial *shuo* can be interchangeable. For instance, consider the example below, where the clause introduced by sentence-initial *shuo* in (3) is relocated to a position below the matrix verb.

(4) Mali bing bu xiangxin shuo Yuehan xihuan jufa

[1] The use of sentence-initial *shuo* seems to have regional differences and variations among speakers. But among the individuals I consulted from the region of Jianghuai, there was a consistent consensus on its usage.

Mary at.all NEG believe say John like Syntax
'Mary doesn't believe at all that John likes Syntax.'

The observed interchangeability implies the possibility of movement of *shuo*-clauses across different positions. Nevertheless, it's worth noting that fronting the embedded *shuo*-clause is deemed infelicitous in certain contexts, as demonstrated below.

(5) a. Shuo Yuehan xihuan jufa, Mali dangran zhidao.
say John like Syntax Mary sure know
'That John likes Syntax, Mary knows for sure.'
b. *Mali dangran zhidao shuo Yuehan xihuan jufa.
Mary sure know say John like Syntax
'Mary knows for sure that John likes Syntax.'

The inconsistent behavior in these forms prompts an investigation into the syntactic derivations of postverbal *shuo* and sentence-initial *shuo*: are they a result of movement or high base-generation? In order to figure out those puzzles, this paper firstly investigates the interaction between postverbal *shuo* and sentence-initial *shuo* with the different types of predicates proposed by Anand et al. (2017) and the distinction in the types of arguments that those two *shuo*s take. The rest of this proposal is organized as follows. Section 2 presents more data about the use of *shuo* in both postverbal position and sentence-initial position, thus generalizing the compatability of *shuo* with different predicates and arguments. Section 3 reviews previous accounts of the syntactic properties of say in Sinitic languages. Section 4 provides a working proposal, explaining the syntactic status of *shuo* in different positions, which in turn accounts for the distinction in their compatibility with different predicates and their interchangeability with respect to different predicates. Section 5 recapitulates the research questions of this qualifying paper and summarizes the issues to be addressed in the next phase.

2. Data

This section provides additional data regarding the usage of *shuo* in various positions. Following Anand et al. (2017), predicates are categorized into four main types based on their intuitive meaning: communicative predicates, doxastic predicates, emotive predicates, and inferential predicates. I will examine how these predicate types interact with both postverbal *shuo* and sentence-initial *shuo* constructions.

2.1 Postverbal shuo

2.1.1 The compatibility of shuo with different predicates

Communicative predicates, expressing communicative acts are further divided into SAY +Force, SAY +Means/Manner and SAY +Attitude, like ask, mutter, complain respectively in English. How the corresponding communicative predicates interact with postverbal *shuo* is illustrated as follows.

(6) a. SAY+Force: *xunwen* ('ask')
Yuehan xunwen shuo mingtian shifou hui xiayu.
John ask say tomorrow whether will rain
'John asked whether it would rain tomorrow.'

b. SAY+Means/Manner: *dunang* ('mutter')
Yuehan dunang shuo mingtian hui xiayu.
John mutter say tomorrow will rain
'John muttered that it would rain tomorrow.'
c. SAY+Attitude: *baoyuan* ('complain')
Yuehan baoyuan shuo mingtian hui xiayu.
John complain say tomorrow will rain
'John complained that it would rain tomorrow.'

In Mandarin, the postverbal *shuo* is compatible with all subtypes of communicative predicates. The same compatibility applies to those inferential predicates.

(7) Inferential predicates: *xianshi* ('show')
Tianqi yubao xianshi shuo mingtian hui xiayu.
weather report show say tomorrow will rain
'The weather report shows that it will rain tomorrow.'

However, a factivity distinction is observed among the other two types of predicates, as shown below.

(8) Doxastic predicates: *juede/renwei* ('think'), *zhidao* ('know')
a. Yuehan juede/renwei shuo mingtian hui xiayu.
John think say tomorrow will rain
'John thought that it would rain tomorrow.'

b. *Yuehan zhidao shuo mingtian hui xiayu.
John know say tomorrow will rain
'(int.) John knew that it would rain tomorrow.'

(9) Emotive predicates: *danxin* ('fear'), *houhui* ('regret')
a. Yuehan danxin shuo zuoye bu-neng anshi wancheng.
John fear say homework NEG-can on-time finish
'John fears that the homework can't be finished on time.'
b. *Yuehan houhui shuo meiyou hao.hao xuexi.
John regret say NEG good study
'John regretted that he didn't study hard.'

2.1.2 Permissible arguments of postverbal shuo

As part of the effort to connect the proposed *SAY* schema (Grimshaw 2011) with Mandarin *shuo* constructions, I will investigate the types of arguments that postverbal *shuo* accommodates as Linguistic Material. Postverbal *shuo* is naturally suited for introducing direct quotations, as exemplified in (10).

(10) Yuehan baoyuan shuo, "mingtian hui xiayu."
John complain say "tomorrow will rain"

'John complained, saying "it will rain tomorrow."'

In (10), the content following *shuo* constitutes a direct quote within the complement position. However, it is noteworthy that non-communicative predicates such as *xiangxin* ('believe'), *faxian* ('discover'), *zhidao* ('know'), and so forth do not permit the inclusion of quotes, as illustrated below.

(11) *Yuehan xiangxin/faxian/zhidao shuo, "mingtian hui xiayu."
John believe/find/know say "tomorrow will rain"
'(lit.) John believes/finds/knows saying "it will rain tomorrow."'

Postverbal *shuo* is found to be felicitous to combine with an IP or an IP with a dropped subject, represented as in (12a) and (12b).

(12) a. Yuehan baoyuan shuo mingtian hui xiayu.
John complain say tomorrow will rain
'John complained that it will rain tomorrow.'
b. Yuehan baoyuan shuo __ bu keneng.
John complain say __ NEG possible
'John complained that it is impossible.'

However, postverbal *shuo* is unable to combine with syntactic complements smaller than an IP. This limitation is evident in the following example, where the content following *shuo* is a DP:

(13) *Yuehan baoyuan shuo tianqi.
John complain say weather
'(int.) John complained about the weather.'

2.2 Sentence-initial *shuo*

2.2.1 Verbs compatible with sentence-initial *shuo* construction

In contrast to postverbal *shuo*, the use of sentence-initial shuo remains unaffected by the factivity of matrix predicates. The grammaticality of sentence-initial *shuo* is contingent upon whether the matrix predicate is communicative or non-communicative. Sentence-initial *shuo* is acceptable in the presence of non-communicative matrix predicates; however, it is prohibited when the matrix predicates are communicative. Some illustrative data are provided as below to exemplify this phenomenon.

(14) a. SAY+Force: xunwen ('ask')
*Shuo mingtian shifou hui xiayu, Yuehan xunwen.
say tomorrow whether will rain John ask
'(int.) Would it rain tomorrow or not, John asked.'

b. SAY+Means/Manner: *dunang* ('mutter')
*Shuo mingtian hui xiayu, Yuehan dunang.
say tomorrow will rain John mutter

'(int.) That it would rain tomorrow, John muttered.'

c. SAY+Attitude: *baoyuan* ('complain')
*Shuo mingtian hui xiayu, Yuehan baoyuan.
say tomorrow will rain John complain
'(int.) That it would rain tomorrow, John complained.'

(15) Doxastic predicates: *juede/renwei* ('think'), *zhidao* ('know')[2]

a. Shuo mingtian hui xiayu, Yuehan ye zheyang juede/renwei.
say tomorrow will rain John too in-this-way think
'That it will rain tomorrow, John also thinks.'

b. Shuo mingtian hui xiayu, Yuehan bing bu zhidao.
say tomorrow will rain John at.all NEG know
'That it will rain tomorrow, John doesn't know.'

(16) Emotive predicates: *danxin* ('fear'), *houhui* ('regret')
a. Shuo mingtian hui xiayu, Yuehan hen danxin.
say tomorrow will rain John very fear
'That it will rain tomorrow, John fears a lot.'

b. Shuo meiyou hao.hao nuli, Yuehan hen houhui.
say NEG good work.hard John very regret
'Not working hard, John regretted a lot.'

(17) Inferential predicates: *xianshi* ('show')
Shuo mingtian hui xiayu, tianqi yubao zheyang xianshi.
say tomorrow will rain weather report in.this.way show
'That it will rain tomorrow, the weather report shows.'

2.2.2 Permissible arguments of shuo

Unlike postverbal *shuo*, sentence-initial *shuo* does not accommodate direct quotes as the Linguistic Material. However, sentence-initial *shuo* is similar to postverbal *shuo* in that they both permit the realization of IP (with or without a dummy subject or a discourse-salient subject) as the Linguistic Material but disallows DP realization.

(18) a. *Shuo "mingtian hui xiayu", Lisi cai bu xiangxin
say "tomorrow will rain" Lisi modal-ADV NEG believe
'(lit.) That "it will rain tomorrow, John doesn't believe at all."'
b. Shuo mingtian hui xiayu, Lisi cai bu xiangxin.

[2] Interestingly, had there been no negation or degree modification of the factive predicate, this sentence would have been degraded.

say tomorrow will rain Lisi modal-ADV NEG believe
'That it will rain tomorrow, John doesn't believe at all.'

c. *Shuo tianqi, Lisi bing bu manyi.
say weather Lisi really NEG satisfy
'(int.) Lisi is unsatisfied about the weather.'

2.3 Data generalizations

The preceding subsections have presented data concerning the types of verbs and arguments that *shuo* is compatible with in both 'V+shuo' and 'Shuo-clause, matrix clause' constructions. The distinction between postverbal *shuo* and sentence-initial *shuo* can be summarized in the following two tables.

(19) Predicate types that are compatible with these two *shuo*s

	Communicative predicates			Emotive predicates		Inferential predicates	Doxastic predicates	
	SAY+Force	SAY+Means/Manner	SAY+Attitude	non-factive	factive		non-factive	factive
postverbal *shuo*	✓	✓	✓	✓	×	✓	✓	×
sentence-initial *shuo*	×	×	×	✓	✓	✓	✓	✓

(20) Argument types that these two *shuo*s introduce

	QuotationP (u)	IP (t)	DP (e)
postverbal *shuo*	✓	✓	×
sentence-initial *shuo*	×	✓	×

Drawing from the observations in (19) and (20), we can discern a distinction between the usage of the postverbal *shuo* and the sentence-initial *shuo* based on their acceptance of quotational phrases, hinting at differing syntactic statuses for these two usages of *shuo*. In terms of compatibility with predicate types, the data reveal an asymmetry between communicative and non-communicative verbs, as well as between factive and non-factive verbs.

(21) a. Communicatives VS. Non-communicatives (influencing the acceptability of the sentence-initial *shuo*): If the verb is communicative, the sentence-initial *shuo* will be prohibited from co-occurring.

b. Among non-communicatives: factives VS. non-factives (influencing the acceptability of the postverbal *shuo*): If the verb is factive, the postverbal *shuo* will be prohibited from co-occurring.

3 Previous accounts of say in Sinitic languages

3.1 The complementizer analysis of say in Sinitic languages

Yeung (2006) extensively examines the status of *waa6* in Cantonese and offers various diagnostics to differentiate its complementizer use from its verbal use. These distinctions are evident in terms of argument selection, compatibility with aspectual markers, response to verb-doubling, the coordination constituency test, and proposition negation in non-factive predicates. Several of these diagnostics can be adapted for the analysis of Mandarin *shuo*, a discussion I will delve into later.

Chappell (2008) provides an overview of the grammaticalization process of complementizers derived from verbs of saying in Sinitic languages. The initial stage involves the use of the verb, such as say, in Quotative constructions, where it is employed to introduce direct or indirect speech. The corresponding syntactic configuration is presented below.

(22) $NP_{SUBJECT}$ ($PP_{ADDRESSEE}$) $V_{QUOTATIVE}$: [QUOTATION]

The second stage involves the transformation of these verbs, such as say, into semi-complementizers that follow speech act or communication verbs. The syntactic configuration for this stage is as follows.

(23) $NP_{SUBJECT}$ V_1[SPEECH ACT/COMMUNICATION]X V_2[SEMI-COMPLEMENTIZER/QUOTATIVE]: [QUOTATION]

In the third stage, the quotative property of V_2 is lost, and it fully evolves into a complementizer when V_1 is a cognition or perception verb, such as 'think', 'reckon' or 'plan'. The last two stages also involve the use of the verbal form as a complementizer, with Stage IV combining with emotion and stative verbs, and Stage V with modal verbs. Chappell (2008) argues that this grammaticalization process of say verbs into complementizers varies in degree among different Sinitic languages.

In this paper, I aim to investigate how Mandarin shuo responds to different types of predicates, initially examining its grammaticalization process. Building upon this, Huang (2021) delves into Mandarin *shuo*, analyzing it as a complementizer. Huang argues that *shuo* introduces a specific type of CP called non-referential CPs. The syntactic position of *shuo* is depicted below, where it is posited as the head of non-referential CPs with a [-definite] feature. Referential CPs, on the other hand, are headed by an obligatorily null C with a [+definite] feature, thus explaining the unacceptability of *shuo* in referential clauses.

(24) a. V...[$C_{[-DEF]}$ shuo...]
b. V...[$C_{[+DEF]}$ Ø...]

Huang (2021) attributes the unacceptability of sentence-initial *shuo* to the presence of the [-definite] feature, as Mandarin typically disallows indefinite subjects in clause-initial positions.

(25) (*Shuo) Lisi hui lai, wo yiwei
say Lisi will come 1sg believe
'(int.) That Lisi will come, I believe.'

However, the contribution of the [-definite] feature to the unacceptability of sentence-initial *shuo* warrants further examination. Notably, slight modifications to (25) can make the sentence acceptable.

(26) a. Shuo Lisi hui lai, zhangsan zheyang yiwei
say Lisi will come Zhangsan in.this.way believe
'That Lisi will come, Zhangsan believes.'

b. Shuo Lisi hui lai, wo hen jingya
say Lisi will come 1sg. very surprise

'That Lisi will come, I'm very surprised.'

The acceptability of sentence-initial shuo in (26) indirectly suggests that the [-definite] feature proposed by Huang (2021) may not be the primary reason for the ungrammaticality of sentences like (25). This paper aims to generalize cases where the sentence-initial *shuo* is allowed and where it is prohibited and tries to give an account for such an asymmetry.

3.2 Against the complementizer analysis of say in Sinitic languages

Paul (2014) challenges the complementizer analysis of *shuo* by providing cases where shuo should have been allowed as a complementizer but is infelicitous (though the analysis in Paul (2014) to some examples may be disputed in this paper):

(27) (*Shuo) shenghuo li que-le dian shenme, wo zongshi juede
say life in miss-PERF a.bit something 1SG always feel
'That something is missing in life, I have always thought so.'

In response to Huang (2021), it is suggested that the acceptability of *shuo* in (27) may result from other reasons, as we have already encountered examples where the sentence-initial *shuo* is allowed. In addition to afterthought constructions like (27), Paul (2014) extends the discussion of the unacceptability of the sentence-initial *shuo* to cases involving sentential subjects and stranding, as illustrated respectively below.

(28) a. (*Shuo) Yuehan bu xihuan jufa shi laoshi-men gandao hen shengqi
say John NEG like syntax make teacher-PL feel very angry
'(int.) That John doesn't like syntax makes all the teachers angry.'
b. ??Shenghuo li que-le dian shenme, wo zongshi juede shuo
life in miss-PERF a.bit something 1SG always feel say
'(int.) That something is missing in life, I have always thought so.'

The ungrammaticality of (28a) raises questions about the complementizer status of shuo, as a true complementizer should be able to appear in a clausal subject position. However, the ban on sentence-initial *shuo* might be due to other reasons since adding a dummy subject before the causative verb *shi* renders the sentence acceptable.

(29) Shuo Yuehan bu xihuan jufa, **zhe** shi laoshi-men gandao hen shengqi
say John NEG like syntax it make teacher-PL feel very angry
'That John doesn't like syntax makes all the teachers angry.'

On the other hand, the ungrammaticality of (28b) may not necessarily undermine the complementizer analysis, as stranding could be subject to other constraints. This echoes Abels' (2003) Icelandic examples where TPs do not strand their embedding complementizers.

(30) a. Jón heldur að María sé að lesa.
Jon think that Maria is to read
'Jon thinks that Maria is reading.'
b. ?Að María sé að lesa heldur Jón.

that Maria is to read think Jon
'(int.) That Maria is reading, Jon thinks.'
c. *María sé að lesa heldur Jón að
Maria is to read think Jon that
'(lit.) Maria is reading, Jon thinks that.'

Huang (2018) offers an additional counterexample, arguing that *shuo* is not a complementizer, as shown in (31), where *shuo* is not allowed to appear in the clausal complement of a noun.

(31) Zongcai fouren-le (*shuo) gongsi jiang caiyuan de yaoyan.
CEO deny-PFV say company FUT layoff DE rumor
'The CEO denied the rumor that the company would lay off workers.'

However, such a noun complement becomes permissible in (32).

(32) Yuehan shoudao xiaoxi shuo gongsi jiangyao caiyuan
John receive news say company PFV layoff
'John got the news that the company would lay off workers.'

It seems that complements preceding nouns are not allowed but following nouns are permissible.

3.3 Neither a lexical verb nor a complementizer

Knyazev (2023) presents challenges to the complementizer analysis of *teze* in the Chuvash language, particularly when considering nominalized forms such as *tenine*, instantiated in the following example excerpted from Knyazev (2022).

(33) ep abi-ren [jonaʐar jal-da poʐar pol-nə te-n-in-e] elt-r-ëm.5
I mother-Abl neighbor village-Loc fire be-Ptcp say-Ptcp-Poss.3-Acc hear-Pst-1Sg
'I heard from my mother that there has a been a fire in the neighbouring village.'

The presence of tenine does not seem to align with the decompositional approaches used for converbial forms. Such nominalized forms are problematic for decompositional analyses, as they do not function as modifiers, leading to incorrect interpretations. In contrast to the complementizer and converbial analyses, Knyazev (2023) provides a new perspective on the analysis of say-complementizers in Chuvash, suggesting that a reportative evidential analysis may offer a more suitable account of their syntactic and semantic behavior. Building on Simeonova (2020), Knyazev (2023) argues that say in complementizer-like forms carries a semantic equivalence to a reportative evidential marker. This is initially supported by the fact that *te* ('say') independently permits reportative evidential usage. This perspective aligns with the evidential flavor of Mandarin *shuo*, which will be delved into in more detail later on.

4 A working proposal

4.1 The syntactic properties of postverbal shuo

Firstly, postverbal shuo distinguishes itself from the predominant speech verb use of shuo in the following ways: i. Argument Types: They differ in their ability to take specific argument types. The speech verb use of shuo can take a DP, while the postverbal shuo cannot. ii. Optionality: The postverbal shuo can be omitted under certain predicates without altering the sentence's interpretation or causing a degradation in acceptability. Conversely, when shuo functions as a matrix verb, its omission impact both the sentence's interpretation and overall acceptability.

(34) a. Zhangsan renwei (shuo) jufa hen youqu.
Zhangsan think say syntax very interesting
'Zhangsan thinks that Syntax is very interesting.'
b. Zhangsan *(shuo) jufa hen youqu.
Zhangsan say syntax very interesting
'Zhangsan says that Syntax is very interesting.'

As demonstrated in (34), the presence or absence of the postverbal *shuo* under non-factive doxastic predicates, as in (34a), does not yield a discernible difference in meaning. Conversely, when *shuo* functions as a matrix verb, as shown in (34b), its presence is obligatory. The optional nature of *shuo* in (34a) raises the possibility of a complementizer analysis for the postverbal *shuo*, with the proposed structure provided as follows.

(35) [VP[V][CP[shuo][IP]]]

The positional behavior of postverbal *shuo* aligns with the behavior of the English complementizer that, offering one piece of evidence in favor of the complementizer analysis for postverbal *shuo*. Additionally, the complementizer analysis holds merit, particularly when considering postverbal *shuo* embedded under doxastic predicates. In such cases, a process of semantics bleaching occurs, where the verbal sense of *shuo* diminishes, and it likely functions as a complementizer that marks the relationship between the matrix verb and the embedded clause.

However, extending the conventional complementizer analysis to postverbal *shuo* also presents several challenges. Firstly, unlike English that, postverbal *shuo* can license direct quotes under certain predicates.

(36) a. Yuehan baoyuan shuo, "mingtian hui xiayu."
John complain say "tomorrow will rain"
'John complained, saying "it will rain tomorrow."'
b. *John complained that "It will rain tomorrow".

The contrast between (36a) and (36b) challenges the straightforward claim that postverbal *shuo* can be treated as a typical complementizer. In addition to this counterexample, it is worth noting that the optionality of *shuo* does not appear to be uniform across all types of predicates, as illustrated below.

(37) a. Yuehan baoyuan shuo mingtian hui xiayu.
John complain say tomorrow will rain
'John complained that it would rain tomorrow.'
b. Yuehan baoyuan mingtian hui xiayu.
John complain tomorrow will rain

'John complained it would rain tomorrow.'

Sentences (37a) and (37b) exemplify distinct semantic nuances with and without the presence of the postverbal shuo. In (37a), what follows the postverbal *shuo* resembles an indirect quotation, while in (37b), the absence of the postverbal *shuo* specifies the content of the Linguistic Material, expressing a complaint about the information itself regarding the rain.

Thus far, it has been observed that the postverbal *shuo* exhibits different behaviors under communicative and non-communicative contexts, affecting their ability to license direct quotes and their optionality. Another diagnostic for discerning their differences lies in the aspectual marker test, specifically their interaction with *guo* and *zhe*.

(38) a. Yuehan baoyuan zhe shuo mingtian hui xiayu.
John complain PROG say tomorrow will rain
'John said in a whining way that it would rain tomorrow.'
b. Yuehan baoyuan guo shuo mingtian hui xiayu.
John complain PST say tomorrow will rain
'John once complained that it would rain tomorrow.'

(39) a. *Yuehan renwei zhe shuo mingtian hui xiayu.
John think PROG say tomorrow will rain
'(int.) John was thinking that it would rain tomorrow.'
b. *Yuehan renwei guo shuo mingtian hui xiayu.
John think PST say tomorrow will rain
'(int.) John once thought that it would rain tomorrow.'

As demonstrated in (38) and (39), postverbal *shuo* following communicative predicates passes the aspectual marker test, whereas its co-occurrence with non-communicative predicates is prohibited. Another significant challenge to the complementizer analysis of postverbal *shuo* is the unacceptability of its co-occurrence with factive predicates, as evidenced in (40).

(40) Yuehan zhidao (*shuo) mingtian hui xiayu.
John know say tomorrow will rain
'John thought that it would rain tomorrow.'

Based on these empirical findings, I propose there are two different uses of the postverbal *shuo*:

(41) a. [VP[V_{-comm}][CP[Cshuo][IP]]]
b. [VP[V_{+comm}][shuo]]

When a non-communicative predicate is followed by postverbal *shuo*, I propose that *shuo* adopts the structure (41a). In this context, *shuo* undergoes a semantics bleaching process, transforming into a pure complementizer. In contrast, when postverbal *shuo* appears under communicative predicates, I argue that it assumes the structure in (41b). In this case, *shuo* retains elements of its speech verb use and functions in conjunction with the communicative predicate as a verbal complex. The distinction is further substantiated by the presence of *shuo* in wh-questions.

(42) a. Yuehan dunang (shuo) le shenme?
John mutter say ASP what

'What did John mutter?'
b. Yuehan renwei (*shuo) shenme?
John think say what
'What did John think?'

As exemplified in (42a), *shuo* is allowed to co-occur with the communicative predicate dunang ('mutter'). Conversely, as observed in (42b), *shuo* is prohibited from co-occuring with the non-communicative predicate renwei ('think'). This disparity serves to underscore the divergent applications of *shuo* when employed in conjunction with communicative and non-communicative predicates, respectively. The proposal of two structures for postverbal *shuo* is further supported by the behavior observed in coordination constructions, exemplified below.

(43) a. Yuehan baoyuan shuo mingtian hui xiayu bingqie (shuo) hui hen nan dache.
John complain say tomorrow will rain and say will very hard call.a.taxi
'John complained that it would rain tomorrow and that it would be hard to call a taxi.'
b. Yuehan renwei shuo mingtian hui xiayu bingqie (*shuo) hui hen nan dache.
John think say tomorrow will rain and say will very hard call.a.taxi
'John thought that it would rain tomorrow and that it would be hard to call a taxi.'

Given the structural considerations presented in (41a) and (41b), we might expect (43a) to be unacceptable whereas (43b) acceptable. This seeming contradiction, in fact, fortifies my argument for their structural differentiation. The ungrammaticality of the conjunction of two *shuo*s in (43b) can be accounted from the ban of real CP and CP strings (due to being semantically deviant) as discussed in Bassi & Bondarenko (2020). Bassi & Bondarenko (2020) argues that true CP conjunction is impossible and and strings CP and CP always involve conjunction reduction. This explanation sheds light on the underlying reasons for the unacceptability of the conjunction of two postverbal *shuo*-clauses in (43b). Nevertheless, a more nuanced exploration is warranted to elucidate why the mechanism of conjunction reduction is inapplicable within this particular context.

How verbal complex coordination works deserves attention too.

As for the differential compatibility of the postverbal *shuo* with factive and non-factive predicates, it can be attributed to the role of shuo in signaling the source of information for the prejacent proposition, specifically the beliefs or at-hand evidence of the subject of the matrix clause. In the construction 'Subject+V+shuo+ψ,' when the matrix verb is factive, such as *zhidao* ('know'), it entails the truth-value of ψ. Consequently, ψ is no longer asserted based on the subject's belief but rather their knowledge. This tension between the evidential nature of *shuo* and the established fact accounts for the incompatibility of the postverbal *shuo* with factive verbs. Conversely, with non-factive verbs, the truth-value of the *shuo*-clause remains undetermined, permitting the co-occurrence of such verbs with the postverbal *shuo*. This perspective aligns with Kastner's (2015) selectional requirements for presuppositional verbs and Huang's (2021) analysis of *shuo*'s [-def] feature. Kastner (2015) delineates the selectional differences between non-presuppositionals and presuppositionals:

(44) a. non-presuppositionals: [V CP]
b. presuppositionals: [V [DP Δ CP]]

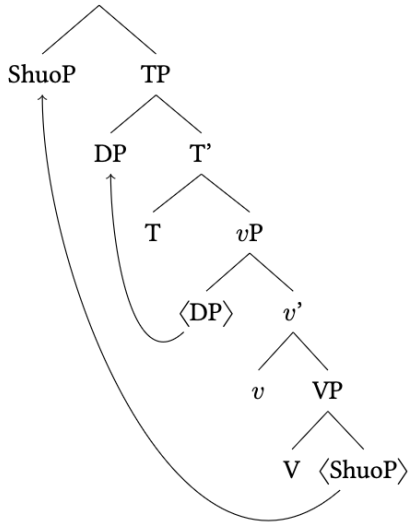
It has been argued that presuppositional verbs select for a semantically-sensitive definite determiner (D), and this determiner, in turn, selects for a complementizer phrase (CP) with a

presuppositional Force head. The referentiality of the selected CP conflicts with the [-def] feature of *shuo*, which results in the exclusion of the co-occurrence of the postverbal *shuo* with factive verbs.

4.2 The syntactic properties of sentence-initial shuo

In order to elucidate the syntactic properties of sentence-initial *shuo*, I propose several approaches. In the construction of 'Shuo-clause, matrix clause,' one plausible approach is to posit that the *shuo*-clause is base-generated under the matrix clause verb and subsequently undergoes movement. The proposed structure is as follows, accompanied by a supporting example.

(45)



(46) Movement of *ShuoP*

a. Shuo Yuehan xihuan jufa, Mali ye zheyang juede.
say John like Syntax Mary also as think
'Mary also thinks that John likes Syntax.'
'(lit.) Saying John likes syntax, Mary also thinks so.'

b. Mali ye zheyang juede shuo Yuehan xihuan jufa.
Mary also as think say John like Syntax
'Mary also thinks that John likes Syntax.'

The interchangeable relationship observed between (46a) and (46b) lends support to the movement analysis. However, when examining factive predicates, the analysis takes a different turn, suggesting the base generation of the shuo-clause outside the matrix clause. This is evident in (47), where the matrix predicate is factive.

(47) a. Shuo Yuehan xihuan jufa, Mali dangran zhidao.
say John like Syntax Mary sure know
'Mary knows for sure that John likes Syntax.'

b. Mali dangran zhidao (*shuo) Yuehan xihuan jufa.
Mary sure know say John like Syntax
'Mary knows for sure that John likes Syntax.'

In this context, *ShuoP* can be left-fronted but is not allowed to be embedded under the matrix predicate. Such evidence challenges the view that *ShuoP* is base-generated outside the matrix clause, as illustrated in (48).

(48) a. *Shuo Yuehan bu xihuan jufa, Mali xiang yadang baoyuan.
say John NEG like Syntax Mary to Adam complian
'(int) Mary complains to Adam that John doesn't like Syntax.'
b. Mali xiang yadang baoyuan shuo mali bu xihuan jufa.
Mary to Adam complain say John NEG like syntax
'Mary complains (to Adam) that John doesn't like syntax.'

Contrary to what has been demonstrated in (47), (48) highlights that communicative predicates do not permit *ShuoP* to be left-fronted, yet they allow the co-occurrence of postverbal *shuo* with the matrix verb. This disparity in the co-occurrence of sentence-initial *shuo* between communicative and non-communicative predicates aligns with the previously proposed syntactic structures for postverbal *shuo*.

If we adhere to the movement analysis, the unacceptability of sentence-initial *shuo* with a communicative matrix predicate can be attributed to constituency issues. When the matrix predicate is communicative, *shuo* does not naturally form a constituent with the following IP, resulting in unacceptability when 'shuo+IP' is left-fronted together. However, if only the IP is left-fronted, the sentence becomes felicitous, as demonstrated in the following contrast.

(49) a. *Shuo mingtian hui xiayu, Yuehan baoyuan.
say tomorrow will rain John complain
'(int.) That it would rain tomorrow, John complained.'
b. Mingtian hui xiayu, Yuehan baoyuan shuo.
tomorrow will rain John complain say
' "It will rain tomorrow", John complained.'

5 Summary and future directions

In this paper, the focus has been primarily on the examination of *shuo* in two distinct positions: the postverbal position and the sentence-initial position. This paper represents an endeavor to investigate the correlation between the postverbal *shuo* and the sentence-initial *shuo*. Specifically, this study seeks to provide answers to the following pivotal questions: i. What are the syntactic derivations of the postverbal *shuo* versus the sentence-initial *shuo*? ii. How do the postverbal *shuo* and the sentence-initial *shuo* relate to each other, as well as to the lexical verb use of *shuo*?

To this end, I have presented data to generalize the types of predicates and arguments that *shuo* in the two targeted constructions is compatible with. In this respect, unlike the dominant use of *shuo* as a speech verb, postverbal *shuo* and sentence-initial *shuo* are more restricted in their distribution and the argument types they can take. As for postverbal *shuo*, I have argued that there are two subtypes: When postverbal *shuo* follows a communicative verb, it functions together with that verb as a verb complex. When postverbal *shuo* follows a non-communicative verb, it is a neutral complementizer but still assumes the evidential flavor. Among non-communicative verbs, if the verb is factive, postverbal *shuo* will be prohibited from co-occurring. Regarding sentence-initial *shuo*, its acceptability is closely linked to its syntactic position. Unlike postverbal *shuo*, the

asymmetry between factive and non-factive predicates in the matrix clause does not apply here, as the *shuo*-clause is not grounded in the beliefs, knowledge, or evidence of the matrix subject. While this proposal provides partial answers to the questions posed, several avenues for further investigation remain open. For instance, while we have elucidated the syntactic factors influencing the acceptability of fronting *shuo*-clauses under communicative verbs, the underlying syntactic reasons for the contrast between factive and non-factive predicates in their co-occurrence with both postverbal and sentence-initial *shuo* require further investigation.

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