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Chinese: implications for restructuring and
the Chinese finiteness debate*

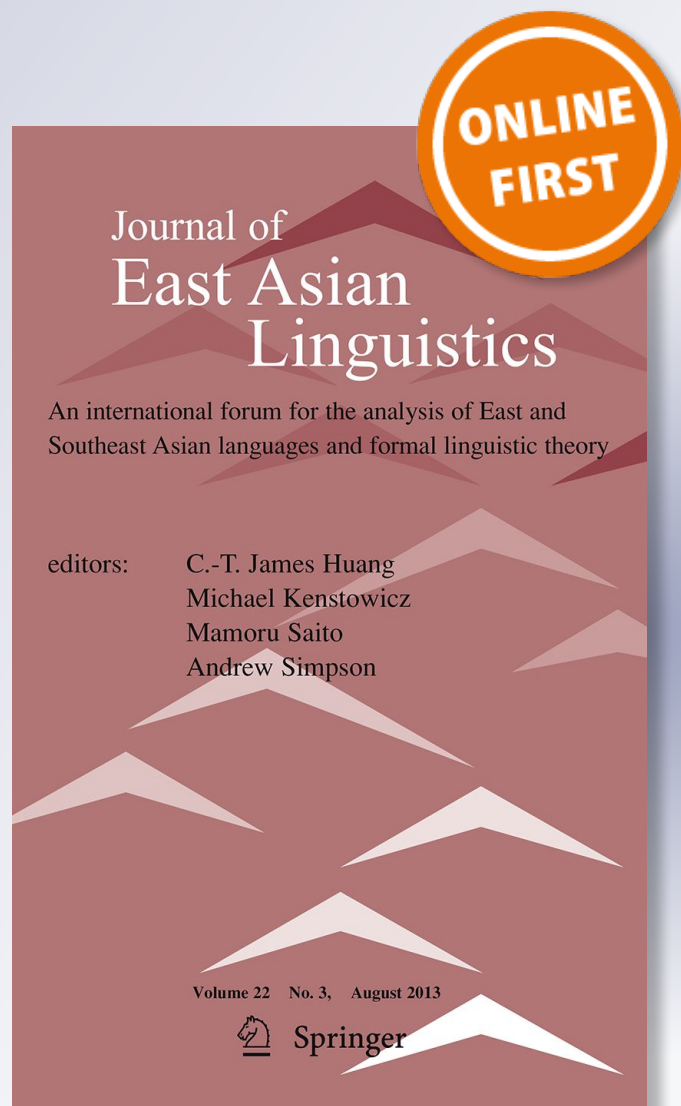
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Control complements in Mandarin Chinese: implications for restructuring and the Chinese finiteness debate

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Abstract Many proposals on restructuring suggest that restructuring phenomena are only observed when a control predicate takes as a complement a functional projection smaller than a clause. In this paper, I present novel Mandarin data against recent proposals that restructuring control predicates cannot take clausal complements and the related generalization that clausal complements always block restructuring phenomena. An alternative account of the Mandarin data is presented. The data also bear on the question of whether a finiteness distinction exists in Chinese. In particular, they provide clearer evidence that control predicates can take clausal complements that differ syntactically from those of non-control attitude predicates. This difference parallels the cross-linguistic correlation between control predicates and non-finite clausal complements and lends new support for the claim that Chinese makes a finiteness distinction.

Keywords Restructuring · Control · Finiteness · Mandarin Chinese · Clause structure

1 Introduction

Control constructions are typically analyzed as biclausal: control predicates select for non-finite clausal CP complements. At the same time, cross-linguistically, certain control predicates allow dependencies that are otherwise clause-bound to cross them, as if the control construction has “restructured” to become monoclausal (Rizzi 1982; also Aissen and Perlmutter 1976, among many others); for ease of reference, I will call

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these control predicates “restructuring control predicates”. To account for this fact, many recent proposals suggest that in these contexts, restructuring control predicates take complements smaller than a full CP (Wurmbrand 2001, 2004, 2014a, b, 2015; Cardinaletti and Shlonsky 2004; Cinque 2006; Grano 2012, 2015, among others). In particular, Cinque and Grano advocate a strong position, proposing that these control predicates *always* take complements that are smaller than clauses.

In this paper, I discuss restructuring phenomena in Mandarin Chinese, which provide interesting counterexamples for some of these proposals. First, I argue that restructuring control predicates can take clausal complements, *pace* Cinque and Grano. Second, I note that the Mandarin data are not entirely consistent with the generalization that restructuring phenomena are incompatible with biclausal constructions. I argue that a theory of restructuring that allows relatively flexible subcategorization restrictions, e.g. Wurmbrand’s, is a better fit for the Mandarin restructuring facts.

The restructuring data also have implications for the debate on whether Mandarin Chinese makes a finiteness distinction. They provide clearer evidence for the claim that control predicates and non-control attitude predicates take syntactically different clausal complements (see Zhang 2016 for a similar claim, with evidence related to the subjects of these complements). This difference parallels the finiteness distinction observed in languages with overt morphology, lending further credence to the idea that Mandarin Chinese makes the same distinction (see, among many others, C.-T. J. Huang 1982, 1989; Y.-H. A. Li 1985, 1990; T.-H. J. Lin 2012, 2015; N. Huang 2015; *pace* Hu et al. 2001; J.-W. Lin 2010; Grano 2012, 2015; see also Zhang 2016 and Grano 2017).

This paper is organized as follows. Section 2 reviews recent proposals about restructuring and control. Section 3 assesses the predictions of these proposals; I show that there are restructuring phenomena compatible with unambiguously clausal complements and adapt existing proposals to account for them. Section 4 discusses implications for the debate on whether Mandarin Chinese makes a finiteness distinction. Section 5 concludes.

2 Restructuring and biclausal structures

As mentioned, many accounts of restructuring suggest that restructuring control predicates subcategorize for functional projections smaller than a full clause. In this section, I briefly review two recent approaches that address why these predicates might have such a subcategorization restriction and what kind of complements they may or may not take.

2.1 A functional head approach (Cinque 2006; Grano 2012, 2015)

Building on research on cartographic syntax (Cinque 1999, etc.), Cinque (2006) and Grano (2012, 2015) propose that restructuring control predicates are modal and aspectual functional heads. As functional heads, these control predicates subcategorize for even smaller modal and aspectual projections, not clauses; for ease of

reference, I will call these complements “vP-like”. Since functional heads are raising predicates, this proposal also derives the fact that these predicates tend to have exhaustive control semantics (1a) while other control predicates have partial control semantics (1b).

(1) a. *Exhaustive control (EC)*

A control predicate where the entity denoted by the controller NP is identical to that denoted by the silent controllee NP. When the embedded predicate requires a semantically plural subject, the controller NP must also be plural. *To try*, for example, is an EC verb, as exemplified by **Mary tried to get lunch together*. The predicate *to get lunch together* needs a semantically plural subject.

b. *Partial control (PC)*

A control predicate where the entity denoted by the controller NP can be a proper subset of the one denoted by the unpronounced controllee NP. Because of the proper subset relation, even when the embedded predicate requires a semantically plural subject, the controller can be singular. *To hope*, for example, is a PC verb, as exemplified by *Mary hopes to get lunch together*.

Drawing evidence from Mandarin Chinese, Greek, and other languages, Grano proposes a one-to-one correspondence between the semantics of a control predicate and the syntactic category of its complement: EC predicates only take vP-like complements and appear in monoclausal configurations, while PC predicates take clausal complements and appear in biclausal configurations. Grano further proposes a rule that obligatorily converts EC predicates, but not PC predicates, into functional heads.

2.2 Size restructuring (Wurmbrand 2015)

The functional head approach can be contrasted with “size restructuring,” which allows more flexibility in complement sizes. For concreteness, I will review Wurmbrand (2015) in this section. Following Grohmann (2003), Wurmbrand divides a clause into three structural domains: operator, inflectional, and thematic domains; these can be thought of as the functional projections associated with CP, TP (IP), and vP respectively. In one (or more) of these domains are functional projections responsible for restructuring phenomena. Adopting Wurmbrand’s notation, I will call such a functional projection Σ P.

An embedded clause typically contains all three domains and Σ P. However, the complements of restructuring control predicates are distinguished in the sense that only some of these domains are projected, depending on the predicates’ semantics (Wurmbrand 2015, p. 233). For instance, predicates with “plan” and “decide” semantics have complements that have a relative future interpretation. This fact is taken to mean that, in restructuring configurations, the complements project up to the inflectional domain, which contains heads encoding modal/temporal

information. In contrast, predicates with e.g. “try” semantics have complements that can lack a future interpretation. In restructuring configurations, these complements do not need to project the inflectional domain; they can project as little as the thematic domain, without tense or modal projections.

If the complement does not project to a domain that contains ΣP , a restructuring dependency must cross the control predicate. To see why, consider a language with clitic movement, where ΣP provides the landing site for the clitic. If ΣP is absent in the complement, it follows that the clitic cannot move to a position inside the complement.

This approach also derives the generalization that restructuring dependencies cannot cross the control predicate when a complementizer is present: a complementizer indicates the presence of the operator domain, and therefore the presence of the inflectional and thematic domains. By hypothesis, ΣP must be present in such a clause.

3 Restructuring in Mandarin Chinese data

In this section, I examine the relationship between biclausal structures and restructuring from the perspective of Mandarin Chinese. I will restrict the discussion and examples to three sets of robust restructuring phenomena and a subset of restructuring control predicates in Mandarin, namely, three predicates with “try” semantics (*changshi*, *shefa*, and *qitu*), *dasuan* “to plan” and *zhunbei* “to get ready/prepare to”. These predicates are relatively well-studied in the Mandarin control and restructuring literature [for instance, see Grano (2012, 2015) and references therein, and also Zhang (2016)].

3.1 Identifying restructuring and clausehood in Mandarin

3.1.1 Three restructuring phenomena

I refer to the first phenomenon with the descriptive label “experiential lowering,” which Grano (2014) calls the “Control-Aspect Correlation” or “Aspect under Control”. As observed by Grano and in earlier work, e.g. Y.-H. A. Li (1990) and C.-T. J. Huang (1989), in non-control contexts, an embedded experiential aspect *guo* can only be associated with the embedded predicate (2): it indicates that the situation in the embedded clause is in the past of an evaluation time (J.-W. Lin 2006). In contrast, in the context of restructuring control predicates, the experiential aspect appears low but receives a “high” matrix interpretation (3); what is in the past of the evaluation time is the matrix clause situation.

- (2) Lisi xiangxin [wo mai-guo zhe zhong baoxian].¹
 Lisi believe I buy-EXP this type insurance
 ‘Lisi believes that I have previously bought this kind of insurance.’
 (Not ‘Lisi had believed that I buy this kind of insurance.’)
- (3) a. Lisi shefa [xiuli-guo zhe -tai jiqi].
 Lisi try repair-EXP this-CL machine
 ‘Lisi had previously tried to repair this machine.’ (Not ‘#Lisi tries to have (previously) repaired this machine.’)
- b. Lisi mei {dasuan /zhunbei} [xie-guo zhe-yang de shu].
 Lisi NEG.PFV plan get ready write-EXP this-kind MOD book
 ‘Lisi has never {planned / gotten ready} to write this kind of book.’
 (Not ‘#Lisi did not plan / get ready to have written this kind of book.’²)

The second phenomenon is inner topicalization. Inner topicalization (also “object preposing/fronting,” see T.-H. J. Lin 2015; Paul 2002, 2005, 2015; Shyu 1995; Ernst and Wang 1995; Fu 1994, etc.) involves the preposing of a non-subject phrase (e.g. the object) to a position following the subject and before the predicate, often with the effect of introducing some kind of contrast. Inner topics should be distinguished from regular topics, which occur in a position before the subject. (4) shows that an inner topic (in square brackets and bearing an index) is clause-bound: it has to be in the same clause as the predicate that assigns it a thematic role.

- (4) a. Wo xiangxin [Lisi [zhe-pian baogao]₁ xie-wan-le t₁].
 I believe Lisi this-CL report write-finish-PFV
 ‘I believe that Lisi has already written this report.’
- b. *Wo [zhe-pian baogao]₁ xiangxin [Lisi xie-wan-le t₁].

In contrast, in control constructions, the inner topic can appear between the matrix subject and the control predicate, as if there were no clause boundary between the control predicate and the embedded predicate (5, 6).

- (5) Wo [zhe-pian baogao]₁ hui shefa [jinkuai xie-wan t₁].
 I this-CL report will try as soon as possible write-finish
 ‘I will try to finish this report as soon as possible.’
- (6) Lisi [jinzhan baogao]₁ dasuan [zai zhe zhou nei tijiao t₁].
 Lisi progress report plan at this week in submit
 ‘Lisi plans to submit the progress report this week.’

¹ Abbreviations used in glosses: CL = classifier; COMP = complementizer; EXP = (perfective) experiential aspect; FUT = future morpheme; MOD = modifier (e.g. for *de*); NEG = negation; PFV = perfective aspect; PL = plural; PROG = progressive aspect; Q = question morpheme.

² I thank an anonymous reviewer for suggesting this example.

The third phenomenon is what I call “focus fronting”. This phenomenon includes the fronting of a wh-phrase to yield a universal quantifier interpretation (7) (e.g. Y.-H. A. Li 1992; Cheng and Giannakidou 2013) and the fronting of a phrase in a *lian* ... context for an “even ...” interpretation (8) (e.g. Paul 2002, 2005, 2015; Shyu 1995; Ernst and Wang 1995). Although such phrases can appear before or after the subject, here I will use “focus fronting” and “focused phrase” to only refer to focused phrases in a post-subject position. Focus fronting is also usually clause-bound, as (7) and (8) show.

- (7) a. Lisi xiangxin [Zhangsan [shenme shi]₁ dou ziji chuli t₁].
 Lisi believe Zhangsan what matter all self handle
 ‘Lisi believes that Zhangsan handles everything himself.’
 b. *Lisi [shenme shi]₁ dou xiangxin [Zhangsan ziji chuli t₁].
- (8) a. Lisi xiangxin [Zhangsan [lian zhe zhong xiao shi]₁ dou
 Lisi believe Zhangsan eventhis type small matter all
 ziji chuli t₁].
 self handle
 ‘Lisi believes that Zhangsan handles even trivial matters like these himself.’
 b. *Lisi [lian zhe zhong xiao shi]₁ dou xiangxin Zhangsan [ziji chuli t₁].

In control constructions (9, 10), a focused phrase can be fronted to a position before the control predicate, as if the complement of the control predicate were not a clause.

- (9) Lisi [shenme shi]₁ dou {shefa / dasuan} [ziji chuli t₁].
 Lisi what matter all try plan self handle
 ‘Lisi tries/plans to handle everything himself.’
- (10) Lisi [lian zhe zhong xiao shi]₁ dou {shefa / dasuan} [ziji chuli t₁].
 Lisi even this type small matter all try plan self handle
 ‘Lisi tries/plans to handle even trivial matters like these himself.’

As far as I can tell, the literature agrees that inner topicalization and focus fronting can cross a control predicate. However, there is less clarity about whether a post-subject inner topic (if it can be distinguished at all from a regular pre-subject topic) or a focused phrase can appear after the control predicate; I return to this issue in Sect. 3.7.

3.1.2 Diagnostics of clausehood

In this section, I present two diagnostics to determine if restructuring control predicates take clausal complements.

The first diagnostic is the adverb *ye* “also”. *Ye* is a useful diagnostic of clausal structure because it appears in a position after the subject and before functional heads like the future morpheme *jiang*, modal auxiliaries, and aspect markers (11). Assuming that linear position largely correlates with structural position, the linear position of *ye* suggests that *ye* c-commands these functional heads.

- (11) a. Lisi mingtian jiang hui qu Riben. (*Ye) Zhangsan mingtian (ye)
 Lisi tomorrow FUT will go Japan also Zhangsan tomorrow also
 jiang (??ye) hui (*ye) qu Riben.
 FUT also will also go Japan
 ‘Lisi will go to Japan tomorrow. Zhangsan will also go to Japan tomorrow.’
- b. Lisi mingtian zhe-ge shihou hui zai paobu. (*Ye)
 Lisi tomorrow this-CL time will PROG run also
 Zhangsan (ye) hui (*ye) zai (*ye) paobu.
 Zhangsan also will also PROG also run
 ‘Lisi will be running this time tomorrow. Zhangsan will also be running.’

I assume that *jiang* and modal auxiliaries are T and Modal heads respectively (N. Huang 2015), and that the projections of these heads are clauses, as conventionally assumed. The linear position of *ye* thus suggests that *ye* is part of a clausal projection that contains a ModalP or TP, i.e. the inflectional domain.

The second diagnostic is the morpheme *shuo*, which appears optionally in a position typical of complementizers, before a subject (12a) or a topic (12b). *Shuo* is rarely observed in writing, but it is more frequent in casual speech, especially in non-standard varieties (see Chappell 2008; S. Huang 2003, among others). While *shuo* is conventionally analyzed as a complementizer, there are questions over whether such an analysis is appropriate (e.g. see Paul 2014 for a dissenting view and distributional evidence; an anonymous reviewer raises similar concerns). For the purpose of this discussion, though, it is not vital that *shuo* is a complementizer. Rather, what is important is that *shuo* appears high and so reliably diagnoses clausal structure (I discuss possible analyses of *shuo* in the “Appendix”).

- (12) a. Lisi juede (shuo) Zhangsan ye bu hui lai.
 Lisi feel SHUO Zhangsan also NEG will come
 ‘Lisi feels that Zhangsan also will not come.’ (Not ‘Lisi felt like saying that Zhangsan also will not come.’)
- b. Lisi zhidao (shuo) zhe-bu dianying, Zhangsan kan-guo le.
 Lisi know SHUO this-CL movie Zhangsan see-EXP PRT
 ‘Lisi knows that this movie, Zhangsan has seen it.’ (Not e.g. ‘Lisi knows to say that this movie, Zhangsan has seen it’)

Although diachronically derived from the homophonous verb “to say,” *shuo* in (12) is not a verb. For one, it does not have a “to say” interpretation, as the translations in (12) show (see e.g. S. Huang’s and Chappell’s papers for discussion on its semantics and use). Second, as observed by Hwang (2000, p. 153), *shuo* with the “to say” interpretation can be suffixed with aspect markers, e.g. the experiential aspect morpheme *guo* (13a) or perfective *le*. However, when the aspect marker appears in the context of a verb, *shuo*, and a clausal complement, it is suffixed onto the verb and not onto *shuo* (13b). The distribution of the aspect marker in (13b) is unexpected if *shuo* had been a verb.

- (13) a. Lisi shuo-guo yao zai sanshi sui zhiqian yingde
 Lisi say-EXP want at thirty years-old before win
 Nuobeier jiang.
 Nobel prize
 ‘Lisi had said that (he) wanted to win a Nobel Prize before
 he turned thirty.’
- b. Lisi congmei {xiang-guo shuo / *xiang shuo-guo} ta
 Lisi never think-EXP SHUO think SHUO-EXP he
 hui yingde Nuobeier jiang.
 will win Nobel prize
 ‘Lisi never thought that he would win the Nobel prize.’

3.2 Restructuring control predicates can take clausal complements

As shown above, “try”-like predicates, *dasuan* “to plan,” and *zhunbei* “to prepare, get ready” co-occur with restructuring phenomena. A Cinque and Grano-style approach predicts that these predicates cannot appear with complements with *ye* or *shuo*, since these predicates are modal or aspectual heads that only take vP-like complements, which do not contain *ye* or *shuo*. This prediction is not borne out, as (14, 15) show.

- (14) a. Lisi hui zai zhe zhou nei wancheng ziliao souji gongzuo.
 Lisi will at this week in finish data collection work
 Ta hui shefa [ye zai zhe zhou nei tijiao jinzhan
 he will try also at this week in submit progress
 baogao].
 report

'Lisi will finish data collection this week. He will try to also submit a progress report this week.'

- b. Lisi xiang changshi [shuo huan yixia biede xifalu].
Lisi want try SHUO change a bit another shampoo
'Lisi wants to try switching to another shampoo.'
- (15) a. Zhangsan mingtian hui qu Faguo. Lisi {dasuan / zhunbei}
Zhangsan tomorrow will go France Lisi plan get ready
[mingtian ye qu Faguo].
tomorrow also go France
'Zhangsan will go to France tomorrow. Lisi is {planning / getting ready} to also go to France tomorrow.'
- b. Lisi dasuan [shuo nian-di dao Ouzhou dujia].
Lisi plan SHUO year-end to Europe go on vacation
'Lisi plans to take a vacation in Europe at the end of the year.'

It is important to not take (14) and (15) as evidence for a claim that all restructuring control predicates can take clausal complements, as diagnosed by the presence of *ye* or *shuo*. Rather, these examples show that, *pace* Cinque and Grano, it is *not* the case that all restructuring control predicates must take vP-like complements.

Similar data have been observed in other languages. Some restructuring control predicates in Italian, Spanish, and Dutch can occur with overt complementizers (Terzi 1994; Kayne 1989; Wurmbrand 2001). To preserve the claim that these control constructions are always monoclausal, Cinque (2006) argues that the morphemes in question are actually prepositions. However, if so, these morphemes should allow restructuring phenomena like clitic climbing, a prediction that is not always borne out.

3.3 Implications for exhaustive control and restructuring

The data and arguments in the previous section also bear on Grano's (2012, 2015) hypothesis that there are one-to-one correspondences between exhaustive control (EC) predicates and vP-like complements, and between partial control (PC) predicates and clausal complements. I argue that this hypothesis is too strong and offer an alternative that better accounts for the data.

First, I use the following test, described in Grano (2012, p. 4), to determine whether a predicate has EC or PC semantics. A PC predicate, when inserted in the position of X in (16), should produce an acceptable sentence. In contrast, an EC predicate will "fail" the test, yielding an unacceptable sentence.

- (16) Zhangsan gaosu Wangwu Lisi X jiu dian jihe.
 Zhangsan tell Wangwu Lisi X nine o'clock gather
 'Zhangsan told Wangwu that Lisi X-ed to meet up at 9 o'clock.'

This test can be applied to the set of restructuring control predicates mentioned above: the “try”-like predicates (*changshi*, *shefa*, and *qitu*), *dasuan* “to plan,” and *zhunbei* “to prepare, get ready”. The test shows that the “try”-like predicates are EC (17a), like their counterparts in many other languages. However, it is less conclusive as to whether *dasuan* “to plan” and *zhunbei* “to prepare, get ready” are PC or EC (17b). There appears to be variation across native speakers; for instance, Zhang (2016) rates as acceptable the example in (17c), which is similar to (17b), which would suggest that at least *dasuan* is PC. I find both (17b) and (17c) somewhat marked. In any case, Grano’s proposal predicts that the “try”-like predicates should never appear with complements containing *ye* and *shuo*. The prediction is not borne out, as the examples in Sect. 3.2 showed.

- (17) a. *Zhangsan gaosu Wangwu Lisi {shefa / changshi / qitu} jiu
 Zhangsan tell Wangwu Lisi try nine
 dian jihe.
 o'clock gather
 '*Zhangsan told Wangwu that Lisi tried to meet up at 9 o'clock.'
- b. ??Zhangsan gaosu Wangwu Lisi {dasuan / zhunbei}
 Zhangsan tell Wangwu Lisi plan get ready
 jiu dian jihe.
 nine o'clock gather
 '*Zhangsan told Wangwu that Lisi planned / got ready to meet up at 9 o'clock.'
- c. Wo dasuan tian hei yihou zai huoche-zhan jihe.
 I plan sky dark after at train-station gather
 'I've made the plan that [we] meet up at the train station after it gets dark.'
 (Zhang 2016, p. 288, ex. 30, her judgment)

That said, there is a strong cross-linguistic correlation between exhaustive control and restructuring (and hence monoclausal structures) that deserves a principled explanation. I consider Grano’s hypothesis to be in the right direction, but to the extent that EC predicates can take clausal complements cross-linguistically, it is too strong. Instead, following e.g. Wurmbrand (2015, 2014a, etc.), Landau (2000), I suggest that while control predicates as a class take clausal complements, EC predicates are distinguished in having relatively flexible subcategorization requirements. More specifically, EC predicates allow clausal and smaller non-clausal complements, as long as the complements satisfy s-selectional/semantic requirements: e.g. they describe “actions” (Jackendoff and Culicover 2003; Lasnik and Fiengo 1974) or “irrealis” situations (Bošković 1997).

As an anonymous reviewer noted, such a proposal diverges from Cinque and Grano's, which derive the EC semantics of certain control predicates from their syntactic properties, namely, that they are functional heads and thus raising predicates. Under the current proposal, the syntax of these control predicates depends on their semantics.

Alternatively, one could pursue an account not unlike Cardinaletti and Shlonsky's proposal (2004, pp. 524–525) or a hypothesis sketched by Cinque (2006, p. 12), although these accounts might strike one as more stipulative. In such an account, some principle of the grammar allows EC predicates to be inserted as functional heads, in which case the predicates take vP-like functional projections as complements. Otherwise, the predicate appears with a clausal complement, as required by its subcategorization. A similar intuition is formalized as an obligatory rule in Grano (2012, 2015), which converts an EC verb into a functional head under certain semantic conditions.

3.4 Restructuring phenomena and biclausal structures

As mentioned in Sect. 2, a generalization often seen in the restructuring literature states that restructuring phenomena only obtain in monoclausal configurations. This generalization predicts that control constructions with complements containing the clausal diagnostics *ye* and *shuo* are incompatible with restructuring phenomena.

(18a) and (19a) show that *ye* blocks experiential lowering, using *shefa* “to try” and *dasuan* “to plan” as examples. (20a) and (21a) show that *shuo* has the same effect. In these examples, the (b) sentences show that the acceptability contrast is not due to the presence of *ye* or *shuo* alone. These blocking effects are thus consistent with the generalization that restructuring phenomena are not available in biclausal structures.

- (18) a. Lisi cengjing shefa (*ye) zuo-guo zhe-dao cai,
 Lisi previously try also make-EXP this-CL dish
 (keshi mei zuo chenggong).
 but NEG.PFV make successful
 ‘Lisi had tried to (also) make this dish (but he wasn’t successful
 in making it).’
 b. Lisi cengjing shefa (ye) zuo zhe-dao cai,
 Lisi previously try also make this-CL dish
 (keshi mei ...).
 but NEG.PFV
 ‘Lisi had tried to (also) make this dish ...’
- (19) a. Lisi mei dasuan (*ye) xie-guo zhe-yang de shu.
 Lisi NEG.PFV plan also write-EXP this-kind MOD book
 ‘Lisi did not plan to (also) write this kind of book.’
 b. Lisi mei dasuan (ye) xie zhe-yang de shu.
 Lisi NEG.PFV plan also write this-kind MOD book

- 'Lisi did not plan to (also) write this kind of book.'
- (20) a. Lisi cengjing shefa (*shuo) zuo-guo zhe-dao cai, (keshi
Lisi previously try SHUO make-EXP this-CL dish but
mei ...).
NEG.PFV
'Lisi had tried to make this dish...'
- b. Lisi cengjing shefa (shuo) zuo zhe-dao cai, (keshi mei ...).
Lisi previously try SHUO make this-CL dish but NEG.PFV
'Lisi had tried to make this dish...'
- (21) a. Lisi mei dasuan (*shuo) xie-guo zhe-yang de shu.
Lisi NEG.PFV plan SHUO write-EXP this-kind MOD book
'Lisi did not plan to write this kind of book.'
- b. Lisi mei dasuan (shuo) xie zhe-yang de shu.
Lisi NEG.PFV plan SHUO write this-kind MOD book
'Lisi did not plan to write this kind of book.'

Consider now inner topicalization and focus fronting. Again, *ye* degrades the acceptability of inner topicalization (22a); the acceptable (22b) shows that the presence of *ye* itself is not the cause of the acceptability contrast in (22a). *Ye* also blocks focus fronting (23) (because a focused phrase is obligatorily fronted, it is not possible to contrast (23) with non-fronting examples with *ye* as a baseline).

- (22) a. Lisi zhe-pian baogao hui shefa (?ye) zai zhe zhou nei xie-wan.
Lisi this-CL report will try also at this week in write-finish
'Lisi will try to (also) finish writing this report this week.'
- b. Lisi hui shefa (ye) zai zhe zhou nei xie-wan zhe-pian
Lisi will try also at this week in write-finish this-CL
baogao.
report
'Lisi will try to (also) finish writing this report this week.'
- (23) a. Lisi shenme shi dou shefa (*ye) ziji chuli.
Lisi what matter all try also self handle
'Lisi tries to (also) handle everything himself.'
- b. Lisi lian zhe-jian bowuguan dou dasuan (*ye) cangan yixia.
Lisi even this-CL museum all plan also visit a bit
'Lisi plans to (also) even check out this museum.'

In contrast, *shuo* does not block inner topicalization (24a, b) or focus fronting (24c, d).

- (24) a. Lisi zhe-pian baogao hui shefa (shuo) zai zhe zhou nei
 Lisi this-CL report will try SHUO at this week in
 xie-wan.
 write-finish
 'Lisi will try to finish writing this report this week.'
- b. Lisi zhe-pian baogao dasuan (shuo) zai zhe zhou nei tijiao.
 Lisi this-CL report plan SHUO at this week in submit
 'Lisi plans to submit this report this week.'
- c. Lisi shenme shi dou shefa (shuo) ziji chuli.
 Lisi what matter all try SHUO self handle
 'Lisi tries to handle everything himself.'
- d. Lisi lian zhe-jian bowuguan dou dasuan (shuo) cangan yixia.
 Lisi even this-CL museum all plan SHUO visit a bit
 'Lisi plans to even check out this museum.'

The examples above show that despite being clausal diagnostics, *ye* and *shuo* pattern differently with respect to restructuring phenomena. In the following sections, I take a closer look at how the data can be modeled with standard assumptions on locality and size restructuring, which allows restructuring with clausal complements smaller than CP. By way of preview, part of the analysis depends on our assumptions about *shuo*. Treating *shuo* as a complementizer allows us to preserve the robust cross-linguistic generalization that verbs of speaking grammaticalize to become complementizers (cf. Chappell 2008 etc.), and easily derive the fact that *shuo* appears in a relatively high position. However, it also means losing another robust cross-linguistic generalization, namely, that complementizers block restructuring, thus complicating a size restructuring analysis. To preserve the second generalization for Mandarin, one needs to assume that *shuo* is not a complementizer (cf. Paul 2014) but a functional head that originates in a lower domain, e.g. the inflectional domain.³ For these reasons, I will not try to argue in favor of one analysis over the other here. Instead, taking a more neutral stance, I will present two analyses of the restructuring data, one for each assumption about *shuo*. I leave the task of determining *shuo*'s syntactic category for future research.

3.5 Accounting for experiential lowering

I adopt standard assumptions on locality (25) and Grano's (2014) analysis for experiential lowering (26). In canonical cases of experiential lowering, the complements are "bare," in that there is no overt evidence of clausal structure in the complement. As discussed in Sect. 3.3, I assume that this indicates that the complement is smaller than a CP. Agree between Asp and the embedded *guo*-suffixed verb, necessary for experiential lowering, is allowed by the PIC (26d, e).

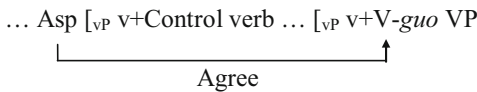
³ I thank an anonymous reviewer for this suggestion. Note, though, that this hypothesis seems to present a word order problem: when a regular topic is present, *shuo* must precede it (see (12b)). If topics are found in the operator domain, so is *shuo*. The word order facts can be accommodated with the additional assumption that *shuo* always moves to the operator domain when this domain is present and stays in situ in its absence.

(25) *Assumptions about locality*

- a. Cs and little vs are phase heads.
- b. *Phase Impenetrability Condition* (PIC; Chomsky 2001 exs (8), (11))
For any two phases, ZP and HP, where ZP dominates HP (illustrated below): the complement of H (= YP) is inaccessible to syntactic operations (such as Move, Agree) at ZP and beyond, e.g. X. Only H and its edge (= α) are.
X [_{ZP} Z ... [_{HP} α [H YP

(26) *Assumptions about experiential lowering*

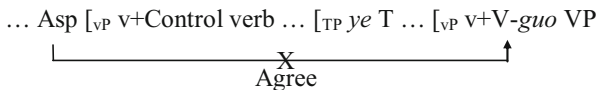
- a. An aspect morpheme Asp takes a vP complement, v takes a VP complement.
- b. In Mandarin, main verbs (heads of VPs) move to v.
- c. The suffix *guo* is base-generated on the verb, and is not e.g. an Asp morpheme that lowers onto the verb (see also Huang et al. 2009, pp. 101–106).
- d. Experiential lowering is modeled syntactically as an Agree operation between an unpronounced matrix aspect morpheme Asp and a *guo*-suffixed main verb in the embedded predicate, to value an aspectual feature on Asp.
- e. *Canonical experiential lowering*



3.5.1 *The blocking effect of ye “also”*

Ye’s blocking experiential lowering can be modeled in intervention terms.⁴ I assume that *ye* adjoins to TP. T’s presence in turn induces an intervention effect, blocking Agree between Asp and a *guo*-suffixed verb (27), assuming Asp, T, and a *guo*-suffixed verb all share some temporal (tense/aspect) feature.

(27) *Embedded T induces intervention effects, blocking Agree*



According to the size restructuring approach, control predicates with e.g. “plan” and “decide” semantics require that their complements have a future interpretation and therefore project at least the inflectional domain. If these complements always contain a TP, then experiential lowering should not occur with a verb like *dasuan* “to plan”: the TP would block experiential lowering, whether *ye* is present or not. The above analysis thus requires the assumption that TP is not obligatory in the inflectional domain of these control complements. This assumption is not without

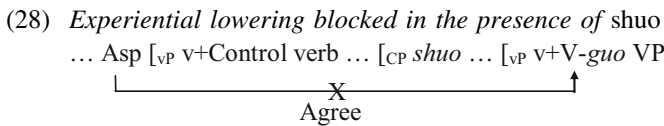
⁴ I am grateful to an anonymous reviewer for suggesting this intervention-based approach.

precedent: Wurmbrand (2014a) argues that these complements have a future interpretation because they contain the modal *woll* (and not a future tense). *Woll* heads a Mod(al)P, which is assumed to not contain a TP.

3.5.2 The blocking effect of *shuo*

As mentioned above, suppose that *shuo* is not a complementizer but a lower functional head in the inflectional domain, as required under the size restructuring approach. Like *ye*, then, *shuo* can be thought to diagnose the presence of a TP; I note that *shuo* must precede subjects and tense/modal morphemes. T's presence induces an intervention effect for experiential lowering.

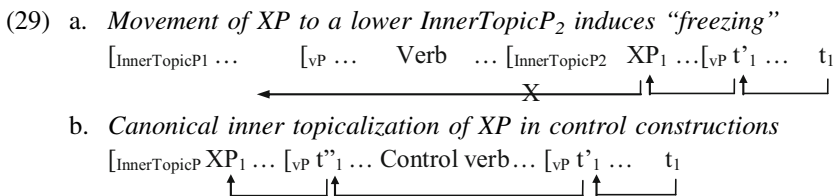
For completeness, let us also consider the more conventional assumption that *shuo* is a complementizer and therefore a phase head. If so, the PIC would independently block experiential lowering. To see why, consider (28), where *shuo* heads an embedded CP. The matrix Asp morpheme has to agree with the *guo*-suffixed verb. However, the verb is in the complement of *shuo* and is thus inaccessible for Asp, by the PIC.



3.6 Accounting for inner topicalization and focus fronting

I adopt Paul's (2002, 2005, 2015) proposal that there are dedicated structural positions for inner topics and focused phrases within the left periphery of a clause, namely, the specifiers of InnerTopicP and InnerFocusP. Adapting Wurmbrand's domain-based proposal (2015), I will assume that InnerTopicP is in the operator domain (as is InnerFocusP, but see Sect. 3.7). Inner topics and the head of InnerTopicP both bear semantic/criterial features that must be valued by overt movement of the inner topic to the specifier of InnerTopicP. Upon feature valuation, the inner topic freezes (29a). This "freezing" proposal can be adapted for focus fronting with the necessary modifications.

Following Wurmbrand, I will assume that in canonical restructuring configurations, the operator domain is not projected in the complement of the control verb. Consequently, an inner topic must move to the matrix clause's InnerTopicP for feature valuation (29b) (the same reasoning applies to focus fronting).



A note on movement: since vP is assumed to be a phase (25a), when a constituent XP undergoes inner topicalization or focus fronting from inside a vP into the matrix clause, it must move to the vP's edge (29b) to avoid violating the PIC; note that this reasoning is identical to what has been proposed for wh-movement. Following the wh-movement literature, I assume that intermediate movement to the edge of vP is obligatory.

3.6.1 *The blocking effect of ye*

In the unacceptable inner topicalization and focus fronting examples, an inner topic or focused phrase moves across *ye* into the matrix clause. Given that topicalization, focus, and *ye* are all associated with information structure, I assume that these information structure properties have syntactic reflexes, i.e. *ye* and the functional heads responsible for these movement operations have some syntactic feature(s) in common. If so, one predicts, correctly, that inner topicalization and focus fronting across *ye* elicit intervention effects, resulting in unacceptability.

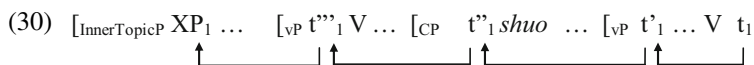
3.6.2 *Why shuo does not block either phenomenon*

In control constructions, inner topics and focused phrases can appear outside of a clausal complement with *shuo*. I suggest that in these clauses with *shuo* (henceforth “*shuo*-complements” or “*shuo*-clauses”), at least some projections associated with the operator domain, including InnerTopicP and InnerFocusP, are absent. Note that since *shuo* does not have any focus semantics or related information structure properties, there is no a priori reason to think *shuo* induces intervention effects.

This scenario follows straightforwardly from a size restructuring approach, where the entire operator domain is absent by hypothesis, and the assumption that *shuo* originates in the inflectional domain. An inner topic or focused phrase must thus move to the matrix clause for feature valuation. Since *shuo* is not a complementizer, it is not a phase head. In phasal terms, then, movement of an inner topic or focused phrase from a *shuo*-clause is identical to movement in canonical restructuring configurations without *shuo*, as in (29b).

Alternatively, suppose that *shuo* is a complementizer and thus a phase head. Note that this analysis of *shuo* runs counter to the above-mentioned generalization that complementizers block restructuring dependencies; formally speaking, it requires the assumption that the presence of a CP does not always entail the presence of InnerTopicP or InnerFocusP, contrary to size restructuring proposals like Wurmbrand's. With these caveats in mind, I note that inner topicalization and focus fronting across a CP boundary can still satisfy the PIC if they involve successive cyclic A-bar movement to the specifier of CP,⁵ in addition to intermediate movement to the edge of vP (30).

⁵ That said, inner topicalization and focus fronting do not seem to be straightforward cases of A-bar movement. Shyu (1995, pp. 82–84, 104–107) points out that they do not show reconstruction effects. The absence of reconstruction effects is typical of A-movement but not A-bar movement.



I note that this analysis is consistent with Wurmbrand’s (2015) proposal, which claims that Mandarin Chinese is a language where restructuring phenomena like inner topicalization and focused fronting involve A-bar dependencies. (31) provides support for this claim, by showing that they license parasitic gaps (marked as “pg”).

- (31) a. Lisi zhe-fen baogao₁ [zai du-guo pg₁ zhihou] jiu
 Lisi this-CL report at read-EXP after then
 diudiao-le t₁.
 discard -PFV
 ‘This report, Lisi discarded right after reading it.’
- b. Lisi lian zhe-fen baogao₁ [zai du-guo pg₁ zhihou] dou
 Lisi even this-CL report at read-EXP after all
 diudiao t₁.
 discard
 ‘Lisi discarded even this report after reading it.’
- c. *Lisi [zai du-guo pg₁ zhihou] jiu diudiao-le shenme baogao₁?
 Lisi at read-EXP after then discard-PFV what report
 Intended: ‘Which report did Lisi discard after reading it?’ (adapted from Lin 2005, p. 299, ex. 2b)

Regardless of whether *shuo* in these constructions should be taken to be a complementizer or a lower functional head in the inflectional domain, the analyses above entail that Mandarin has two kinds of embedded clauses (although perhaps of different sizes), distinguished by the presence/absence of InnerTopicP and InnerFocusP (but see Sect. 3.7). While this might seem ad hoc, I argue that this reflects a systematic subcategorization/c-selection difference. To preview the discussion in Sect. 4, I propose that clauses that lack InnerTopicP and InnerFocusP can appear as complements of control predicates, while those with InnerTopicP and InnerFocusP are complements of non-control attitude predicates. I will also offer the distribution of overt subjects and tense/modal morphemes as independent evidence for this distinction. The distributional facts have cross-linguistic parallels and strongly resemble the finite/non-finite distinction in languages with richer verbal morphology.

3.7 Topicalization and focus fronting inside a control complement

While there is a consensus that inner topics can appear outside of complements of control predicates, the literature reports divergent judgments regarding (inner) topics and focused phrases inside these complements, as two anonymous reviewers noted. T.-H. J. Lin (2015), Paul (2005, 2002), Ernst and Wang (1995), Fu (1994), etc., claim that they cannot be found inside a control complement, a point disputed by Hu et al. (2001) and Zhang (2016), who offer examples with *dasuan* “plan” and

zhunbei “to get ready” like (32a–c) as evidence. As far as I know, there are no similar sentences with “try”-like control predicates in the literature, although I was able to locate naturally-occurring examples, such as (32d), via the Internet.⁶

- (32) a. A-Bao he Dali dasuan [[naxie ren]₁ tamen liang-ge bu
A-Bao and Dali plan those people they two-CL NEG
jian t₁].
see
‘A-Bao and Dali planned to both not see those people.’ (Zhang 2016,
p. 291, ex. 39b, her judgment)
- b. Wo dasuan [[shenme ren]₁ dou bu qing t₁].
I plan what person all NEG invite
‘I plan to invite no one.’ (Hu et al. 2001, p. 1142, ex. 58a, their
judgment and translation)
- c. Wo zhunbei [jinhou [zhe-lei shu]₁ duo kan t₁ yidian].
I get ready from-now this-kind book more see some
‘I plan to read more of this kind of book from now on.’ (ibid. ex. 58b,
their judgment and translation)
- d. Buyao qitu [[shenme shi]₁ dou yi shou zhua t₁].
don’t try what matter all one hand grab
‘Don’t try to do everything.’ (lit. ‘... grab everything with one hand.’)

In this section, I offer some speculations on how a domain-based approach to restructuring, assumed above and in Wurmbrand’s work, can inform our understanding of this divergence in judgments, which I take to be inter-speaker variation. I assume that these control complements can project up to the inflectional domain, following Wurmbrand (2015). In the previous section, it was assumed that InnerTopicP and InnerFocusP are part of the operator domain and thus absent in these complements. As a result, inner topics and focused phrases must move out of the complement into the matrix clause. That said, it is not inconceivable that for some speakers, InnerTopicP and InnerFocusP can also appear in the inflectional domain, generating sentences like (32) (as Grano (2017, p. 282, fn. 24) points out, this implies that any overt subject in the complement is in a lower position).

This analysis has an analogue in Wurmbrand’s (2015) analysis of Italian clitic climbing. In Italian, object clitics can appear either preceding the predicate (33a) or attached to the right edge of the verb (33b). Assuming that linear order reflects structural height, Wurmbrand suggests that the functional projection that the clitic moves to can be found either in the inflectional domain in (33a) or in the lower thematic domain (33b).

⁶ From a Google Books preview of *Ershiji sui, bie ba shijie kan cuo le* (“Don’t misjudge the world in your twenties”, by Lan Yixun, 2017, New Taipei City: Songbo Chuban) (<https://books.google.com/books?id=fW9ADwAAQBAJ>, last accessed June 21, 2018). This example does not have a diacritic; I have left it unjudged.

- (33) a. Me lo sta dicendo.
 me.clitic it.clitic is saying
 'He is saying it to me.'
- b. Sta dicendo-me-lo.
 is saying-me.clitic-it.clitic
 'He is saying it to me.'
- (Examples from Wurmbrand 2015, p. 233, ex. 13; Cinque 2006, p. 31, ex. 74)

4 Implications for the finiteness debate

One of the main points made in Sect. 3 is that restructuring control predicates in Mandarin Chinese can take complements that are unambiguously clausal. In this section, I discuss the implications of this observation for the question of whether Mandarin makes a finiteness distinction, and the syntax of control predicates.

In many languages, control predicates take non-finite clausal complements, while non-control predicates take finite ones.⁷ However, whether this is true for Mandarin has been a matter of debate, given Mandarin's impoverished verbal morphology. Grano's (2012, 2015) claim that exhaustive control (EC) predicates take only vP-like complements provides an intriguing solution (but see also Grano 2017). Consider a stronger version of his claim: all control predicates take only vP-like complements, while non-control attitude predicates take clausal ones. If so, what is often argued to be a finiteness distinction can be instead modeled as a vP versus clause distinction.

I would like to revisit this argument in light of the fact that both control predicates and non-control attitude predicates can take *shuo*-clauses as complements. If Mandarin does make a finiteness distinction, one predicts, by analogy with other languages with this distinction, that there are two types of *shuo*-clauses, one appearing as the complement of control predicates, and the other as the complement of non-control attitude predicates.⁸ Again, I would like to point out that the prediction does not depend on a particular analysis of *shuo*; it holds as long as *shuo* is taken to diagnose clausal structure.

⁷ Of course, there are also languages where control predicates take finite complements where predicates are inflected, e.g. Greek (e.g. Grano 2012, 2015), Hebrew (e.g. Landau 2004), Salentino (Terzi 1994), Serbo-Croatian (Todorović and Wurmbrand, to appear); the Grano, Terzi, and Todorović and Wurmbrand works also discuss restructuring effects in these languages.

⁸ Chappell (2008, p. 74, fn. 26) mentions a similar idea from one of her reviewers that Taiwanese Southern Min *kong*, also derived from a verb of saying and often analyzed as a complementizer, can take non-finite complements. However, she argues that her data does not necessarily support such an analysis. I will leave the Min data for future research.

4.1 Syntactic evidence for two types of *shuo*-clauses

The distribution of subjects and auxiliaries shows that the *shuo*-complement of a control predicate is syntactically different from that of a non-control attitude predicate. In general, overt subjects⁹ and auxiliaries are acceptable in the *shuo*-complements of non-control attitude predicates like *xiangxin* “to believe” (34a, 35a). They are not acceptable in those of control predicates (34b, 35b).

- (34) a. Lisi xiangxin [shuo ta hui jie-yan].
 Lisi believe SHUO he will quit-smoking
 ‘Lisi believes that he will quit smoking.’
 b. Lisi ceng {changshi / dasuan} [shuo (*ta) jie-yan].
 Lisi once try plan SHUO he quit-smoking
 ‘Lisi once tried / planned to quit smoking.’
- (35) a. Lisi xiangxin [shuo ta {hui / jiang} qu Bali dujia].
 Lisi believe SHUO he will FUT go Paris go on vacation
 ‘Lisi believes that he will go to Paris for his vacation.’
 b. Lisi ceng {shefa / dasuan} [shuo (*hui / *jiang) qu Bali
 Lisi once try plan SHUO will FUT go Paris
 dujia].
 go on vacation
 ‘Lisi once tried / planned to go to Paris for his vacation.’

It should be noted that similar arguments have been presented in the literature using examples involving clause-like complements without *shuo*, e.g. (36). However, because such examples typically lack positive evidence for clausehood, it is difficult to tell if the complements are clauses or smaller functional projections.

- (36) Lisi {shefa / changshi / dasuan / zhunbei} [(*)ta) (*hui) xiuli
 Lisi try try plan get ready he will repair
 zhe-tai jiqi].
 this-CL machine
 ‘Lisi tried / planned / got ready to repair this machine.’

The distribution of subjects and auxiliaries therefore correlates nicely with the distribution of inner topics and focus fronting. As previously mentioned in Sect. 3, inner topics and focus-fronted phrases must be found inside the *shuo*-complement of a non-control attitude predicate like *xiangxin* “to believe” (37a, b), but are found outside of the complement of a restructuring control predicate (37c, d).

⁹ But see Hu et al. (2001) and Zhang (2016), among others, for examples in which overt subjects appear in complements of control predicates. Zhang presents a detailed discussion of the conditions under which overt subjects are licensed.

- (37) a. *Wo [zhe-pian baogao]₁ xiangxin [shuo Lisi xie-wan-le t₁].
 I this-CL report believe SHUO Lisi write-finish-PFV
 Intended: 'I believe that Lisi has written this report.'
- b. Wo xiangxin [shuo Lisi [zhe-pian baogao]₁ xie-wan-le t₁].
- c. Wo [zhe-pian baogao]₁ hui shefa [shuo jinkuai
 I this-CL report will try SHUO as soon as possible
 xie-wan t₁].
 write-finish
 'I will try to finish writing this report as soon as possible.'
- d. Zhe ci qu Bali, Lisi [mei-jian bowuguan]₁ dou dasuan [shuo
 this time go Paris L every-CL museum all plan SHUO
 cangan yixia t₁].
 visit a bit
 'On this trip to Paris, Lisi plans to stop by every museum.'

4.2 Finiteness in Mandarin Chinese

The *shuo* data presented in Sect. 4.1 recall the distribution of finite and non-finite clauses in many languages with richer verbal morphology. In particular, the restrictions against overt subjects, tense, and modal morphemes in the *shuo*-clause complements of control predicates have clear parallels with non-finite clauses in other languages.

We thus have new language-internal evidence necessary for the claim that Mandarin clauses show a finiteness distinction (*pace* Grano 2012, 2015; Hu et al. 2001), as previously argued by C.-T. J. Huang (1982, 1989), Y.-H. A. Li (1985, 1990), T.-H. J. Lin (2012, 2015) and Paul (2002, 2005), among many others. Setting aside questions about the nature of finiteness (e.g. see discussion in Grano 2017), the data is consistent with the hypothesis that in Mandarin, only non-control attitude predicates subcategorize for finite clauses, while control predicates subcategorize for vP-like complements and/or non-finite clausal complements, both of which lack functional projections for inner topics and focused phrases. This state of affairs again has parallels in many languages with richer morphology, suggesting a close connection between finiteness and control. I further note that this proposal is consistent with an intuition in the Chinese syntax literature that non-finite clauses are incomplete relative to finite ones, cf. Paul's suggestion that "non-finite clauses lack the functional architecture postulated for finite clauses" (2002, p. 705) and Zhang's (2016) notion that control complements are "dependent".

Although *shuo* provides evidence of clausehood, it also poses a distributional puzzle. The examples above show that *shuo* can c-command a finite clausal constituent containing overt subjects, inner topics, focused phrases, and tense and modal morphemes, although this constituent cannot co-occur with a control verb. Given the assumption that subcategorization is local, the control verb would be structurally too distant to enforce this restriction—*shuo*'s functional projection would intervene between the verb and the clausal constituent. As far as I can tell, the simplest way to account for this fact is to posit that *shuo*, like the clausal constituent with which it appears, comes in two varieties: finite and non-finite. Finite *shuo* co-

occurs with a constituent that can host these overt subjects, inner topics, etc., likely via subcategorization. In contrast, non-finite *shuo* does not.¹⁰

5 Conclusion

This paper had two goals. The first goal was to investigate the syntax of restructuring through the lens of Mandarin Chinese. I presented novel data involving the focus adverb *ye* “also” and the morpheme *shuo* to show that restructuring control predicates/exhaustive control predicates can take clausal complements. I also gave a specific proposal about how restructuring phenomena in Mandarin interact with biclausal control constructions, adapting existing proposals by Wurmbrand, Cinque, Grano, and others.

The second goal was to defend the claim that, even though Mandarin Chinese has no overt tense or mood morphology, it still makes a distinction that parallels the finiteness distinction seen in languages with richer morphology. Although many researchers have argued that the complements of control predicates are “non-finite” clauses, examples previously presented in the Chinese syntax literature were not necessarily conclusive: the complements in these examples can be analyzed as either clauses or structures smaller than a clause. This paper provided novel evidence that Mandarin control predicates can take clausal complements that are syntactically distinct from the clausal complements of non-control attitude predicates, and connected the differences to the concept of finiteness.

Acknowledgements I would like to thank the editors and three anonymous reviewers, whose feedback have helped to substantially improve the paper. I am also grateful to Howard Lasnik, Tom Grano, Waltraud Paul, and the audience at ECO5 2017 for their comments on previous versions of the paper, and to Chia-Hsuan Liao and Wang Heyu for sharing their judgments for some of the examples. All errors remain mine. This material is based upon work supported by the National Science Foundation under Grant No. 1449815.

Appendix: Remarks on the syntax of *shuo*

While there is a tradition of analyzing *shuo* as a complementizer, there are empirical reasons to take a more critical look at such an analysis. In this section, for reference, I present existing and novel arguments for and against this analysis. For comprehensiveness, I also give evidence against several alternative analyses of *shuo*.

¹⁰ A similar lexical ambiguity analysis seems to be necessary to account for the distribution of indicative and subjunctive CPs in other languages. In English, certain verbs, e.g. *to think*, take *that*-headed CP complements where the predicate must be in the indicative (where the verb is inflected) (1), not the subjunctive (2) (cf. *Mary requires that John be on time*). Like the Mandarin examples, structurally speaking, *to think* is too distant from the embedded predicate to enforce this morphological requirement. One solution is to assume that there are indicative and subjunctive versions of *that*, which in turn subcategorize for indicative and subjunctive functional projections respectively.

(1) Mary thinks [that John is on time]. (2) *Mary thinks [that John be on time].

Similar facts also hold for Romance languages. In Spanish, for example, the verbs *pensar* “to think” and *querer* “to want” both take *que*-headed clausal complements, but *pensar*, when e.g. not negated, requires the predicate inside the clause to be in the indicative mood, while *querer* requires the predicate to be in the subjunctive.

Appendix 1: Arguments against a complementizer analysis

An anonymous reviewer points out that if *shuo* were a complementizer, the fact that it does not block inner topicalization and focus fronting would pose a counterexample to the cross-linguistic generalization that restructuring phenomena are incompatible with complementizers.

In addition, both finite and non-finite *shuos* do not behave like a prototypical complementizer. Paul (2014, p. 98, fn. 27) observes that, first, to the extent that afterthought constructions are formed by fronting an embedded clause, *shuo* cannot appear in the fronted clause (38a); in fact, *shuo* cannot be stranded either (38b). Second, there is often an intonational break right after *shuo* (38c, d), which suggests that *shuo* fails to form a unit with the rest of the clause (cf. Chappell 2008). Third, *shuo* cannot appear in clausal subjects (38e, f). I note that *shuo* cannot appear in the clausal complement of a noun (39) either.

- (38) a. *Shuo shenghuo li que-le dian shenme, wo zongshi juede.
SHUO life in lack-PFV a bit what I always feel
'That something is missing in life, I have always thought so.'
- b. *Shenghuo li que-le dian shenme, wo zongshi juede shuo.
(adapted from Paul 2014, p. 98, fn. 27 ex. ii, also Fang 2006, p. 109)
- c. Wo zongshi juede shuo // shenghuo li que-le dian shenme.
I always feel SHUO life in lack-PFV a bit what
'I have always had the feeling that something is missing in life.' (// = intonational break, *ibid.* ex. i)
- d. Lisi dasuan shuo // nian-di dao Ouzhou dujia.
Lisi plan SHUO year-end to Europe go on vacation
'Lisi plans to take a vacation in Europe at the end of the year.'
- e. [(*Shuo) Lisi bu hui chuxi ta haizi-de
SHUO Lisi NEG will attend his child's
biye dianli] shi dajia gandao hen jingya.
graduate ceremony make everyone feel very surprised
'That Lisi won't be attending his child's graduation surprised everyone.'
- f. Fang-jia name gao, [(*shuo) bu mai fang]
house-price so high SHUO NEG buy house
shi heli de.
be reasonable PRT
'[Since] house prices are so high, not buying a house is reasonable.'
- (39) Zongcai founen-le [(*shuo) gongsi jiang caiyuan] de yaoyan.
CEO deny-PFV SHUO company FUT layoff MOD rumor
'The CEO denied rumors that the company will lay off workers.'

That said, as observed in Sect. 3.1.2, *shuo* appears in the left periphery of a clausal complement of a verb. One analysis that can accommodate this fact and the above arguments, suggested by the anonymous reviewer, is to treat *shuo* as a non-complementizer functional head in the left periphery, e.g. in the inflectional domain.

As noted in Sect. 3, this analysis is not without its own issues. Cross-linguistically, verbs with “say” semantics, like *shuo*, are known to grammaticalize to become complementizers (see e.g. Hwang 2000; Simpson and Wu 2002; Chappell 2008 and references therein for discussion on Mandarin and other varieties of Chinese). Treating *shuo* as another functional head would make Mandarin an exception to this grammaticalization process. One also predicts that there are other languages where a “say”-like verb grammaticalizes to become a non-complementizer functional head. It is not clear if this prediction is borne out.

Second, if *shuo* is in a relatively low position in the left periphery, one predicts that there should be contexts where a fronted constituent can appear after the matrix verb and before *shuo*. This prediction is not borne out: the verb and *shuo* cannot be separated by a topic (40a) or adverb (40b, c) (cf. Footnote 4). The functional head analysis also provides no way to derive *shuo*'s distribution (38, 39) without additional assumptions.

- (40) a. *Lisi renwei [zhe-ben shu shuo Zhangsan bu xihuan].
 Lisi think this-CL book SHUO Zhangsan NEG like
 Intended: ‘Lisi thinks that this book, Zhangsan doesn’t like it.’
- b. *Lisi xiangxin [mingtian shuo Zhangsan hui lai].
 Lisi believe tomorrow SHUO Zhangsan will come
 Intended: ‘Lisi thinks that tomorrow, Zhangsan will be here.’
- c. *Lisi dasuan [niandi shuo dao Ouzhou dujia].
 Lisi plan year-end SHUO to Europe go on vacation
 Intended: ‘Lisi plans to take a vacation in Europe at the end of the year.’

Third, it is difficult to positively identify what non-complementizer functional head *shuo* might be. Heads in the left periphery often have information structure properties, but this does not seem to be true for *shuo*, which appears in a wide range of contexts and is semantically bleached.

Appendix 2: A new argument for a complementizer analysis

While *shuo*'s distribution is atypical of complementizers, I note that it resembles that of the null complementizer in English finite declarative clauses, which cannot appear in clausal subjects or in clausal complements of nouns. Bošković and Lasnik (2003) analyze the English null complementizer as a PF verbal suffix: when syntactic structures are linearized at PF, the complementizer must immediately follow a verb so that it can attach to the verb (in contrast, English *that* has no such requirement). For the sake of argument, let us adapt Bošković and Lasnik's analysis: *shuo* is a complementizer that must suffix onto a verb at PF, alternating with a null

complementizer that lacks this PF property (it should be pointed out, of course, that this analysis entails that *shuo* is a counterexample to the generalization that complementizers are incompatible with restructuring).

This analysis pays off empirically. First, clauses in sentence-initial positions (38a, e, f) cannot contain *shuo* because there is no verb that immediately precedes it. Stranding *shuo* (38b) is not an option either; cross-linguistically, there appears to be a general constraint against stranding complementizers (Abels 2003).

Second, it explains why an attitude verb and *shuo* seem to form a prosodic unit, so that an intonational break can come between *shuo* and the rest of the clause (38c, d). This prosody is actually expected when *shuo* is suffixed to the verb at PF, which in turn feeds phonological and prosodic representations.

One could argue that the PF suffix account incorrectly predicts the acceptability of *shuo* in a complex NP complement (39), since in such an environment, a verb seems to immediately precede *shuo*. However, this argument follows only if there is no intervening unpronounced material at PF (recall that by hypothesis PF is a level of representation distinct from phonological ones). Given the rich functional structure of nominals (for Chinese, see Zhang 2013; Cheng and Sybesma 1999, etc.) and the fact that Chinese is mostly head-initial, it is likely that in an example like (39), some unpronounced functional element(s) F prevents *shuo* from suffixing onto the verb at PF (41a). Likewise, when *shuo* is inside an embedded clausal subject, the resulting string is unacceptable even when the clausal subject seems to be immediately preceded by a verb like *zhidao* “to know” (41b). In such a sentence, at least the null complementizer intervenes at PF, blocking *shuo* from suffixing onto the verb (41c)¹¹ [as an anonymous reviewer points out, the string in (41b) becomes acceptable when *shuo* is interpreted outside of the clausal subject, as the complementizer of *zhidao*'s complement (41d)].

- (41) a. ... Verb [_{NP} ... F ... [_{CP} *shuo* ...
 b. Wo *zhidao* [_{Subject} (**shuo*) Lisi bu hui chuxi biye
 I know SHUO Lisi NEG will attend graduate
 dianli] shi dajia gandao hen jingya.
 ceremony make everyone feel very surprised
 ‘I know that that Lisi won’t be attending the graduation ceremony
 surprised everyone.’
 c. * ... *zhidao* [_{CP} COMP [_{Subject} *shuo* Lisi ...
 d. ... *zhidao* [_{CP} *shuo* [_{Subject} COMP Lisi ...

¹¹ Other phenomena that have been argued to be blocked by unpronounced material include *wanna*-contraction and auxiliary reduction in English: the former is blocked when a wh-trace comes between a verb like *want* and the infinitive *to*, and the latter is blocked if the auxiliary is immediately followed by a wh-trace or an ellipsis site (see e.g. Bresnan 1978).

Appendix 3: *Shuo* is not an adverb

One can also show that *shuo* is not an adverb. First, adverbs in Chinese can appear in a post-subject position (Li and Thompson 1981), but *shuo* cannot (42a). Second, a subset of adverbs (Li and Thompson's "movable adverbs") can also appear in a clause-initial position. For the sake of argument, one could stipulate that *shuo* is an adverb with a special property so that it only appears clause-initially. Such an analysis of *shuo* still overgenerates. In the clausal complement of a noun or a clausal subject, a movable adverb can appear in a clause-initial position but *shuo* does not (42b, c).

- (42) a. Lisi juede [Zhangsan {mingtian / *shuo} bu hui lai].
Lisi feel Zhangsan tomorrow SHUO NEG will come
'Lisi feels that Zhangsan will not come (tomorrow).'
- b. Zongcai fouden-le [{mingtian / *shuo} gongsi jiang caiyuan]
CEO deny-PFV tomorrow SHUO company FUT layoff
de yaoyan.
MOD rumor
'The CEO denied rumors that the company will lay off workers (tomorrow).'
- c. [{Mingtian / *Shuo} Lisi bu hui chuxi ta haizi-de biye
tomorrow SHUO Lisi NEG will attend his child's graduate
dianli] shi dajia gandao hen jingya.
ceremony make everyone feel very surprised
'That Lisi won't be attending his child's graduation (tomorrow) surprised everyone.'

Appendix 4: *Shuo* is not a particle

In this section, I rule out the alternative hypothesis that *shuo* is a particle in a close syntactic relationship with the verb, as in Germanic verb-particle constructions.¹² For the sake of argument, assume that *shuo* is a particle. I observe that a verb-*shuo* complex takes only clause-like complements, not nominal ones (43).

- (43) a. Wo renwei shuo {*na-jian shi / ta hen congming}.
I think SHUO that-CL matter he very clever
Intended: 'I thought {about that matter / he is very clever}.'
- b. Wo shefa shuo {*na-bei cha / mei-tian yundong yi xiaoshi}.
I try SHUO that-cup tea every-day exercise one hour
Intended: 'I tried {(drinking) that cup of tea / to exercise an hour a day}.'
- c. Wo dasuan shuo {*zhe-xiang huodong / dao Ouzhou dujia}.
I plan SHUO this-CL activity to Europe go on vacation
Intended: 'I plan {(to organize) this activity / to take a vacation in Europe}.'

¹² I thank an anonymous reviewer for pointing out this alternative hypothesis.

Y.-H. A. Li (2013, p. 214) points out the following generalization: if a verb takes only a clausal complement (as opposed to e.g. a nominal complement), when the clausal complement is absent, *zheme(yang)* “so” must appear before the verb. (44) illustrates this for the verb *renwei* “to think”.

- (44) a. Wo renwei {*na-jian shi / ta hen congming}.
 I think that-CL matter he very clever
 Intended: ‘I thought {about that matter / he is very clever}.’
- b. Wo renwei ta hen congming; tamen ye *(zhemeyang) renwei.
 I think he very clever they also so think
 ‘I think he’s very clever; they also thought *(so).’
 (both examples adapted from Y.-H. A. Li 2013, p. 214, ex. 22)

Assume that Li’s generalization is correct and extends to verb-*shuo* complexes. If so, the generalization predicts that the verb-*shuo* complex can appear without a clausal complement if *zhemeyang* is present. This prediction is not borne out (45); in fact, omitting *zhemeyang* does not improve acceptability either.

- (45) a. Wo renwei shuo ta hen congming; * tamen ye
 I think SHUO he very clever they also
 (zhemeyang) renwei shuo.
 so think SHUO
 Intended: ‘I think he is very clever; they also think so.’
- b. Wo shefa shuo mei-tian yundong yi xiaoshi,
 I try SHUO every-day exercise one hour
 *Lisi ye (zhemeyang) shefa shuo.
 Lisi also so try SHUO
 Intended: ‘I try to exercise for an hour every day, Lisi also tries to do so.’
- c. Wo dasuan shuo dao Ouzhou dujia, *Lisi
 I plan SHUO to Europe go on vacation L
 ye (zhemeyang) dasuan shuo.
 also so plan SHUO
 Intended: ‘I plan to take a vacation in Europe. Lisi also plans to do so.’

Appendix 5: *Shuo* is not a preposition

In proposing that restructuring predicates only take complements smaller than a clause, Cinque (2006, p. 45) argues that complementizer-like elements appearing after restructuring control predicates in Italian are actually prepositions that “[introduce] smaller portions of the extended projection of the lexical VP”. I first note that this preposition hypothesis is conceptually problematic for Cinque’s proposal: it entails that potentially restructuring predicates subcategorize for PPs, which are not commonly thought to be functional projections. It is thus inconsistent

with the intuition behind his proposal, namely, control predicates take functional projection complements.

There is also language-internal evidence against this hypothesis. In Mandarin, PPs can generally appear before the main verb (46) (see e.g. Huang et al. 2009; Paul 2015). This is true even if the PP can be analyzed as an argument of the main verb, e.g. *fang* “to put” (46a) or *zaiyi* “be bothered” (46b). However, a constituent headed by *shuo* cannot appear in such a fronted position (46c–e).

- (46) a. Lisi [_{PP} *zai zhuozi-shang*] *fang-le yi-zhan deng*.
Lisi at table-top put-PFV one-CL lamp
'Lisi put a lamp on the table.'
- b. Lisi [_{PP} *dui Zhangsan zuo-guo lao*] *hen zaiyi*.
Lisi to Zhangsan sit-EXP prison very be.bothered
'Lisi is very bothered (by the fact) that Zhangsan had gone to prison.'
- c. *Lisi [*shuo Zhangsan zuo-guo lao*] *xiangxin*.
Lisi SHUO Zhangsan sit-EXP prison believe
Intended: 'Lisi believes that Zhangsan has gone to prison.'
- d. *Lisi *ceng [shuo huan yixia biede xifalu] changshi*.
Lisi once SHUO change a bit another shampoo try
Intended: 'Lisi once tried switching to another shampoo.'
- e. *Lisi [*shuo nian-di dao Ouzhou dujia*] *dasuan*.
Lisi SHUO year-end to Europe go on vacation plan
Intended: 'Lisi plans to take a vacation in Europe at the end of the year.'

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