Finiteness contrasts without Tense? A view from Mandarin Chinese*

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Debate persists over whether Mandarin Chinese sentences exhibit a syntactically represented albeit phonologically null Tense projection. In a recent paper, Tzong-Hong Jonah Lin [2015. Tense in Mandarin Chinese sentences. *Syntax* 18:320–342] argues for the positive view. The argument is based on the premise that Mandarin clauses exhibit finite/nonfinite contrasts and that finiteness is a property of Tense. In this paper, I argue that the contrasts identified by Lin can all be adequately accounted for without appealing to Tense. The primary conclusion then is that there is no positive evidence for Tense in Mandarin. A secondary conclusion is that Mandarin can nonetheless be said to exhibit a finite/nonfinite distinction, but only if 'finiteness' is construed broadly as a cluster of properties that enable a clause to stand alone as a syntactically unembedded assertion. Phenomena considered in making this argument include both those discussed by Lin (object fronting, wide scope of object-position quantifiers, and a scopal interaction between modals and aspect) as well as the syntax of subject position and the grammar of control.

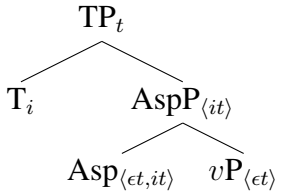
Keywords: Tense, Finiteness, Scope, Modality, Aspect, Control, Mandarin Chinese

1 Introduction

According to an influential view of the syntax-semantics of Tense and Aspect (see e.g. Kratzer 1998), vPs denote properties of eventualities (type $\langle \epsilon t \rangle$), Asp(ect) combines with vP to yield a property of time intervals (type $\langle it \rangle$), and T(ense) combines with AspP, saturating (or quantifying over) the time interval argument introduced by Asp to yield a truth value for the sentence (type t). This is schematized in (1).

*[Acknowledgments will go here.]

(1)



In recent years, scholars have engaged fruitfully with the question of whether the architecture in (1) is universal, of particular interest being languages that lack morphosyntactically contrastive tense marking. (See Tonhauser 2015 for an overview.) One such language is Mandarin Chinese. In a series of papers, Jo-wang Lin (2003; 2006; 2010; 2012a) has argued that in Mandarin, there is no syntactic category Tense: instead, sentences denote properties of time intervals (type $\langle it\rangle$) and interact with the context to determine a type t meaning.[1] (See also Wu 2009; Bittner 2014 for other tenseless analyses of Mandarin. In this paper, for concreteness, I will use Jo-wang Lin's approach to exemplify the tenseless analysis of Mandarin.)

In a recent paper, however, Tzong-Hong Jonah Lin (henceforth Lin) (2015) challenges this view, arguing that Mandarin does indeed have Tense, although it is always phonologically null.[2] At its essence, the logic of Lin's argument for Tense in Mandarin can be summarized as in (2).

(2) *Summary of Lin's (2015) argument for Tense in Mandarin*

a. *Premise 1:* Mandarin exhibits a finite/nonfinite contrast.

b. *Premise 2:* If a language exhibits a finite/nonfinite contrast, then it has Tense.

c. *Conclusion:* Mandarin has Tense.

[1]More specifically, and ignoring some irrelevant details of the proposal, Jo-wang Lin (2006:5) proposes the default rule in (i).

(i) An expression of ϕ of type $\langle it\rangle$ that serves as a translation of a matrix sentence is true iff $[\![\phi]\!]$(s*) = 1, where s* is the speech time.

This "speech time" construal can be overridden by factors such as temporal adverbials or a discourse topic time, which can also serve to fix the unsaturated temporal argument. Although Jo-wang Lin does not discuss in detail the grammatical status of the rule in (i), it seems plausible to view it as a kind of type-shift. Whereas ordinary type-shifting happens when two sister constituents cannot otherwise compose with each other via ordinary compositional rules, (i) might be understood as a kind of discourse-level type-shift: in order to integrate the meaning of a declarative sentence with the context (to add it to the Common Ground, say), it needs to have a type t meaning (or an appropriately intensionalized variant thereof). This is reminiscent of Portner's (2004) theory of clause types wherein the semantic type borne by a matrix clause has consequences for its illocutionary force. Different forces relate to different discourse components such as the Common Ground for assertions or the Addressee's To-Do List for directives, modeled as sets of objects that have the relevant type.

[2]Sybesma (2007) also argues that Mandarin has Tense. See Jo-wang Lin 2010 for a reply.

The starting point for this paper is the contention that although the conclusion in (2c) does follow from the premises in (2a–b), it is not clear that both of the premises are true.

Premise 1 is not necessarily problematic, as long as we are careful about how we define our terms. What IS a finite/nonfinite contrast? Sells (2007) draws a useful distinction between two senses in which linguists use the term 'finite': one as a particular kind of morphological form of a verb and one as a formal grammatical property of a clause. Since verbs in Mandarin do not inflect, only the second sense of 'finite' is of potential relevance to Mandarin. In this vein, Lin identifies a contrast between two kinds of embedded clauses in Mandarin; for concreteness, call them CLASS A and CLASS B (these are my labels, not Lin's). As will be reviewed in greater detail below, what Lin shows is that CLASS A embedded clauses pattern like unembedded clauses in that they generally (1) allow the clause-final particle *le*, (2) allow object fronting, and (3) disallow wide scope of object-position quantifiers. CLASS B embedded clauses, by contrast, are the opposite: they disallow clause-final particle *le*, disallow object fronting, and allow wide scope of object-position quantifiers. Lin proposes that the defining property of CLASS B embedded clauses responsible for these effects is that they are nonfinite.[3] As reviewed by McFadden and Sundaresan (2014), a commonly expressed intuition about nonfiniteness is that it characterizes clauses that lack some of the syntactic and/or semantic properties associated with 'full' independent clauses that can be used as stand-alone assertions. Seen in this light, Lin's use of the label 'nonfinite' for CLASS B embedded clauses seems appropriate.

Premise 2, however, deserves closer scrutiny. Adopting the pronominal analysis of Tense (Partee 1973), Lin proposes that what makes a clause finite is that it has a valued Tense morpheme and what makes a clause nonfinite is that it has an unvalued Tense morpheme. To be sure, finiteness (on any sensible definition) is something that INTERACTS with Tense in an uncontroversially tensed language like English. But a survey of the literature on finiteness reveals that scholars working in this area mostly do not attempt to REDUCE finiteness to a property of Tense.[4] In one vein, Rizzi (1997) (see also Bianchi 2003; Adger 2007), recognizing cross-linguistic variation in the expression of finiteness, proposes that clausal finiteness

[3]Previous scholars who have argued that Mandarin exhibits a finite/nonfinite contrast include Huang 1982, 1989; Li 1985, 1990; Tang 1990; Ernst 1994; Tang 2000. For an opposing viewpoint, see Hu, Pan, and Xu 2001.

[4]A version of Premise 2 is found also in the work of Jo-wang Lin (2010), who cites the possible LACK of a finite/nonfinite distinction in Mandarin as a syntactic argument that Mandarin does not have Tense, saying "Finiteness of a clause is another typical property that is said to be associated with a T head. ... If Chinese does not have a T head, it is predicted that Chinese should have no finite versus nonfinite distinction" (p. 320).

is regulated by a dedicated Fin head in the complementizer layer of the clause. The specification of finiteness on the Fin head interacts with the material in the IP layer, but nothing in the theory would prevent a language from having Fin but not Tense (or, presumably, vice versa). In another vein, Ritter and Wiltschko (2014) conceive of finiteness as a property of what they call INFL, but these authors countenance cross-linguistic variation in the substantive content of INFL, which may realize temporal, spatial, or participant marking depending on the language. On this approach, a finite/nonfinite contrast would be evidence of INFL but not necessarily evidence of Tense. Finally, in yet a third vein, Amritavalli (2014) proposes that finiteness in Dravidian languages is a property of a Mood head.

The primary goal of this paper is NOT to take a stance on what 'finiteness' really is or on how linguists ought to use the term.[5] Rather, the primary goal is to show that the three putative finite/nonfinite contrasts identified by Lin can all be plausibly accounted for without the assumption that Mandarin has Tense. Consequently, if one thinks that the null hypothesis is that Mandarin does not have Tense, then the data do not justify rejecting this hypothesis. Whether or not we still want to call the contrasts 'finite/nonfinite contrasts' then becomes a secondary terminological question of what definition of 'finiteness' makes the most theoretical sense, given the way linguists usually understand the term.

One idea I will be making important use of is that some differences in clausal behavior reduce to differences in clausal size. The idea of reducing Mandarin finiteness contrasts to, or replacing Mandarin finiteness contrasts with, differences in clausal size has been previously proposed by Xue and McFetridge (1996, 1998); Grano (2012, 2015a). More generally, the idea that complement clauses come in different sizes has been a part of generative grammar at least since the seminal work of Aissen and Perlmutter (1976) on Spanish and Rizzi (1978) on Italian. For recent book-length overviews and theoretical approaches, see Wurmbrand 2001; Cinque 2006; Grano 2015a. The potential connection between clause size and clause finiteness is recognized by McFadden and Sundaresan (2014), who entertain the idea that "a clause with more structure is more finite than one with less" (p. 15). And it seems to me that this take on finiteness relates naturally to the aforementioned idea that what makes a clause is nonfinite is that it cannot stand alone syntactically but must be embedded: a reduced structure does not have the functional architecture needed to turn it into something useable as an assertion.

The plan for the rest of this paper, as well as a summary of the main proposals, runs as follows. The heart of the paper is contained in sections 2, 3 and

[5] As Zwicky (1990:1) reminds us: "A major task in theorizing about language (or anything else) is deciding which concepts are significant, and as a result deciding which ones we need terms *for*. This task is not a matter of discovering what existing terms ... *really* mean, though sometimes linguists talk as if it were."

4, which deal in turn with each of Lin's three arguments for a finite/nonfinite contrast in Mandarin. In each section, I summarize the data and Lin's argument, and then offer an alternative proposal. Section 2 is concerned with a scopal interaction between modals and clause-final *le*. Drawing on work by Grano (2012, 2015a); Erlewine (2015), I argue that the facts follow from the well known universal that epistemic modality scopes high in the clause whereas root modality scopes low, and I furthermore show that Hacquard's (2010) account of this universal can be imported into Mandarin without needing to posit Tense. Section 3 is concerned with the distribution of object fronting. Following Paul (2005), I take it that object fronting involves movement to the specifier position of an Inner Topic head that sits below the surface position of the subject. Drawing on suggestions by Xue and McFetridge (1996, 1998); Grano (2012, 2015a), I propose that some clauses disallow object fronting because they have a truncated clausal architecture that does not include an Inner Topic phrase. Section 4 deals with wide scope of object-position quantifiers. I show that the facts can be accounted for via the generalization that QR in Mandarin cannot target any position in the clause higher than vP.

Next, I turn to two other empirical domains not discussed by Lin but which are closely bound up with Tense and finiteness in languages like English: the surface position of the subject in main clauses (section 5) and the distribution of control (section 6). In section 5, reviewing an argument due to Ernst (1994), we will see that in main clauses in Mandarin, the subject sits in the specifier position of some functional head that cannot be conclusively identified with any overtly realized category and which is consequently tempting to analyze as INFL. But crucially, given the cross-linguistic findings of Ritter and Wiltschko (2014), there is no *a priori* reason to suppose that INFL encodes temporal semantics in Mandarin. In section 6, I consider recent work by Zhang (2016) showing that some Mandarin clauses are dependent or nonfinite in the sense that they instantiate obligatory control, needing to be embedded under a higher predicate to resolve the identity of the subject. But, I argue, nothing in control theory demands that the distribution of obligatory control be regulated by Tense. Instead, if we follow Landau (2015), control is mediated by functional heads in the complementizer layer of the clause.

Stepping back, the overall conclusion is that there is no clear positive evidence in favor of Tense in Mandarin. Consequently, whether to posit Tense in Mandarin has to do with what one thinks the null hypothesis should be. I elaborate on this question in the conclusion (section 7).

2 A scopal interaction between modality and aspect

2.1 The phenomenon and Lin's (2011; 2015) account of it

The first phenomenon that Lin (2015) offers as evidence of Tense in Mandarin is drawn from the author's previous work (Lin 2011) and has to do with how different modals interact scopally with the clause-final particle *le*.[6] This particle, illustrated in (3), is analyzed by Lin (2011), following Shen (2004), as a realization of perfect aspect, instantiating the syntactic category Asp(ect).

(3) Zhangsan qu Taibei **le**.
Zhangsan go Taipei LE
'Zhangsan has gone to Taipei.' (Lin 2011:52)

It should be noted that the syntactic position of *le* in the clause is controversial: Paul (2014), for example, analyzes it as a head in the complementizer layer of the clause. Erlewine (2015), however, considers evidence from how *le* interacts scopally with subjects vs. objects and with different kinds of negation to argue that *le* sits in a clause-medial position, above vP but below the surface position of the subject. This is consistent with the analysis of *le* as Asp.

Crucial to Lin's argument is his observation that in sentences with the root modal *neng* 'be able', *le* is obligatorily construed as taking scope ABOVE the modal (4)–(5), whereas in sentences with the epistemic modal *keneng* 'be likely', *le* is obligatorily construed as taking scope BELOW the modal (6)–(7).

(4) Zhangsan [[**neng** qu Taibei] **le**].
Zhangsan be.able go Taibei LE
'It has become the case that Zhangsan is able to go to Taipei.' *le* > *neng*

(5) *Zhangsan **neng** [qu Taibei **le**].
Zhangsan be.able go Taibei LE
Intended: 'Zhangsan is able to have gone to Taipei.' **neng* > *le*

(6) *Zhangsan [[**keneng** [qu Taibei] **le**].
Zhangsan be.likely go Taipei LE
Intended: 'It has become possible that Zhangsan goes to Taipei.' **le* > *keneng*

(7) Zhangsan **keneng** [qu Taibei **le**].
Zhangsan be.likely go Taipei LE
'Zhangsan may have gone to Taipei.' *keneng* > *le*

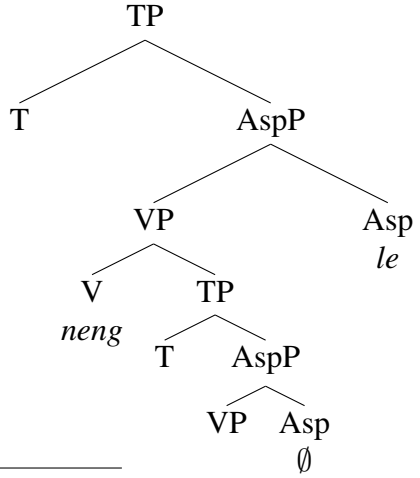
[6] The clause-final particle *le* is not to be confused with the homophonous verb-final suffix *-le*, which is not relevant here. See Jo-wang Lin 2003 for a discussion of the similarities and differences between the two morphemes.

(Lin 2011:51–52)

In a nutshell, Lin's account of the data in (4)–(7) relies on four proposals. First, Lin proposes that *le* heads AspP, and that AspP is the complement to T. Second, Lin proposes that T in Mandarin can either be valued with a reference time, in which case the TP it heads is FINITE, or unvalued, in which case the TP it heads is NONFINITE. Third, Lin proposes that, as an aspectual morpheme, *le* requires a reference time, and consequently can only occur in a finite TP, i.e., a TP whose T is valued and therefore able to supply the required reference time. Fourth, Lin proposes that modals in Mandarin are verbs that take TP complements, and that the crucial difference between the epistemic modal *keneng* 'be likely' and the root modal *neng* 'be able' is that the former combines with a finite TP whereas the latter combines with a nonfinite TP.[7]

Let us now consider how these proposals work together to derive the facts. Consider first (4), schematically represented according to Lin's analysis as in (8). Because *neng* combines with a nonfinite TP, the embedded T is unvalued and so the complement AspP cannot be headed by *le* but rather must be headed by a phonologically null static aspect marker (borrowed from Shen 2004), which does not require a reference time. The matrix clause, on the other hand, is finite, so *le* is free to instantiate matrix Asp. This configuration stands in contrast to the ungrammatical parse in (5), represented schematically in (9). This structure is ruled out because the nonfinite status of the complement to *neng* is incompatible with the use of *le*.

(8)



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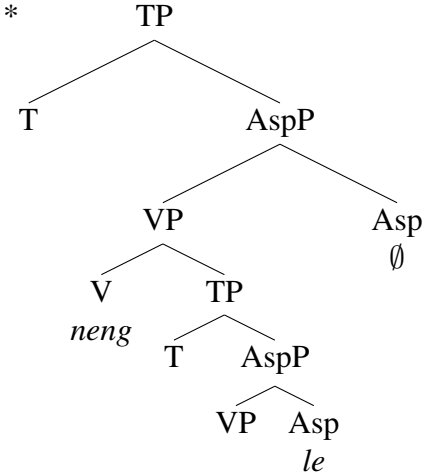
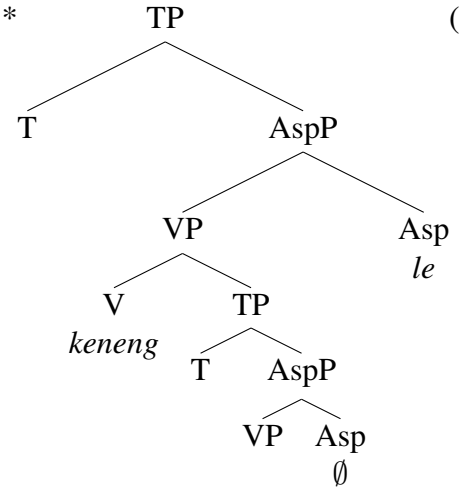


[7]Not everyone would agree that *keneng* as used in sentences like (7) is a verb. Lin (2012b) provides arguments for the verb analysis, but Pan and Paul (2014) argue that it should be analyzed as an adverb. This paper will not take a stance on this question: in my account of the facts to be presented in section 2.4 below, the syntactic category of the modals plays no role; what will matter is their semantic properties.

The sentences in (6)–(7) have the parallel structures in (10)–(11). Since *keneng* combines with a finite TP, *le* is free to instantiate embedded Asp, as in (11). Since the matrix TP is by assumption also finite, nothing in Lin's core proposals as summarized above rules out (10), which represents the ungrammatical sentence (7) wherein *le* instantiates matrix Asp.

(10) *



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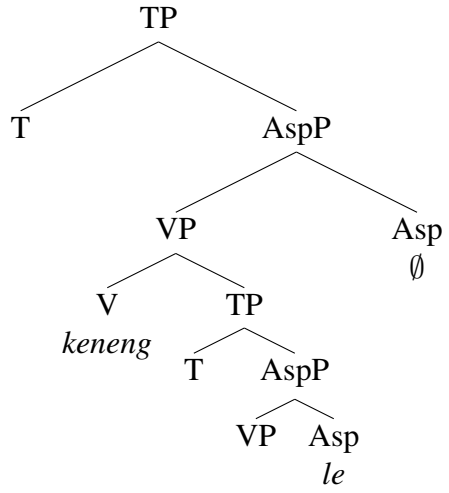


Lin suggests that the ungrammaticality of (6)/(10) follows from a more general principle operative in Mandarin that makes epistemic modals incompatible with *le*. As independent evidence for such a principle, Lin observes that in addition to its use as an auxiliary, *keneng* can also be used as a main predicate (12), but even under this condition cannot occur with *le* (13). So, whatever principle rules out (13) also rules out (6)/(10).

(12) Na-jian shi shi keneng de.
that-CL matter COP be.likely PRT
'That thing is possible.'

(13) *Na-jian shi keneng le.
that-CL matter be.likely LE
Intended: 'That thing has become possible.' (Lin 2011:56)

In summary, insofar as the assumption that Mandarin has Tense forms part of an explanatory account of how *le* interacts with the two modals, the relevant data can be taken as evidence that Mandarin has Tense. But the possibility that I would now like to explore is that the facts can be plausibly accounted for without the assumption that Mandarin has Tense.

2.2 Two observations about Lin's account

2.2.1 Aspect, reference time, and finiteness

I begin with two observations about Lin's analysis that will set the scene for the alternative analysis to be developed. The first observation has to do with Lin's proposal that perfect aspect requires a reference time and that it should therefore be grammatical only if the TP it occurs in is finite. We should ask a conceptual question: Why should perfect aspect require a reference time? And we should ask an empirical question: Is there any independent evidence for or against this?[8]

Turning first to the conceptual question, if aspectual morphemes denote type $\langle \epsilon t, it \rangle$ expressions as I assume for concreteness in this paper, then there is indeed a very weak sense in which they require a reference time: after an aspectual morpheme combines with a vP, the resulting type $\langle it \rangle$ expression requires a reference time in the sense that it needs to combine with a type i expression in order to be saturated and denote a truth value. Lin seems to have something like this in mind as the logic behind the proposal (see Lin 2011:note 4). Crucially, however, Functional Application also allows for another possibility, namely that a type $\langle it \rangle$ expression combines with something of type $\langle it, a \rangle$, where a is an arbitrary type. And indeed, most formal semantic approaches to embedded tenses in complements to attitude predicates incorporate some version of this, not only for nonfinite complement clauses but even for finite complement clauses, where the semantic evidence points toward the conclusion that the embedded tense deletes or abstracts (see e.g. von Stechow 1995).

Turning now to the empirical question, it appears that Lin's proposal makes a faulty cross-linguistic prediction. In English, the perfect auxiliary *have* is grammatical in infinitival complements to some verbs such as *believe*, *claim*, and *need*, as seen in (14).

(14) a. John believes [Bill to **have** robbed a bank].
b. John claims [to **have** seen a ghost].
c. To win the prize, John needs [to **have** collected all five tokens].

This means that either Lin's proposal is wrong, or that there is cross-linguistic vari-

[8] An even more basic question we could ask is whether Lin is correct to analyze clause-final *le* as a marker of perfect aspect in the first place. See for example Soh 2009 for a non-aspectual approach to clause-final *le*. Although I believe that Lin's observations about how *le* interacts with modals is highly suggestive on cross-linguistic grounds of an aspectual analysis of *le* (see section 2.2.2), it may turn out to be the case that *le* is not in fact aspectual in nature. In this scenario, the proper way of reading section 2 of this paper is as showing that EVEN IF we accept Lin's premise (possibly contrary to fact) that *le* is aspectual, the observed facts STILL do not provide a compelling case for Tense in Mandarin.

ation in whether perfect aspect is available in infinitives. Although it is conceivable that this could be a point of cross-linguistic variation, the existence of such variation — as well as the conceptual considerations discussed in the previous paragraph — both undermine the attempt to derive the putative syntactic behavior of the morpheme (it can only occur in finite clauses) from its semantic status as a marker of perfect aspect.

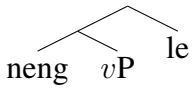
2.2.2 Cross-linguistic generality

The second observation about Lin's account is that, as Lin himself points out, the crucial facts are not Mandarin-specific but rather fit in with a robust cross-linguistic generalization that epistemic modality takes scope over tense and aspect whereas root modals take scope under tense and aspect (Hacquard 2006). Given that this generalization can be cashed out in Cinque's (1999) cartographic model of clause structure, Hacquard (2010) calls the generalization "Cinque's puzzle" and represents it schematically as in (15).

(15) $\text{Mod}_{epis} > \text{Tense} > \text{Aspect} > \text{Mod}_{root}$ (Hacquard 2010:86)

In light of this cross-linguistic fact, Lin suggests that "[b]ecause the modals in [Mandarin] take a clausal complement, this universal manifests itself in the finiteness of the head T of the complement clause" (p. 57). But as observed by Grano (2012, 2015a) (see also Erlewine 2015), if the hierarchical ordering in (15) is really a universal, then it is not clear that we need a finite/nonfinite distinction to explain the facts in Mandarin, provided we abandon the assumption that complements to modals in Mandarin are TP and instead treat the sentences as instantiating monoclausal configurations, as schematized in (16)–(17).

(16)



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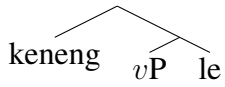


Would such an analytical move still require us to assume that Mandarin has Tense? A strong interpretation of Cinque's (1999) cartography project would indeed require us to assume not only that the functional heads in the inflectional layer of the clause obey a universally rigid hierarchy but also that every language has the same universal inventory. But consider the proposals of Grimshaw (2005). Grimshaw proposes that there is a universally rigid hierarchy of functional projections but that languages can vary in which members it instantiates. Suppose Mandarin has Mod_{epis}, Mod_{root}, as well as Aspect, but not Tense. Then the prediction would be that these heads obey the hierarchy in (18). In other words, from this perspective, there is no need to assume that Mandarin has Tense, let alone that Tense

in Mandarin comes in both valued and unvalued varieties, to explain the facts.

(18) $\text{Mod}_{epis} > \text{Aspect} > \text{Mod}_{root}$

Rather than treating (15)/(18) as an underived syntactic stipulation, though, it would be even better if we could derive it from independent principles. If it turned out that Tense played a crucial role in these principles, then it would mean that the Mandarin facts constitute an argument that Mandarin has Tense after all. In what follows, I first review Hacquard's (2010) account of Cinque's puzzle (section 2.3). Then, I show that the crucial insights of her proposal can be imported into Mandarin without having to assume that Mandarin has Tense (section 2.4).

2.3 Hacquard's (2010) account of Cinque's puzzle

In the tradition of Kratzer (1981), modals are analyzed as combining with a modal base f and a proposition p.[9] A modal base applies to an evaluation world to yield a set of propositions whose intersection determines a set of possible worlds. The choice of the modal base determines the flavor of the modal, e.g., epistemic (19) or circumstantial (20).

(19) $\cap \text{f}_{epis}(\text{w}) = \{\text{w}' : \text{w}' \text{ is compatible with what is known in w}\}$

(20) $\cap \text{f}_{circ}(\text{w}) = \{\text{w}' : \text{w}' \text{ is compatible with certain circumstances in w}\}$

A universal modal like *must* returns true if and only if all those worlds in the set arrived at by taking the intersection of f applied to the evaluation world are worlds in which p is true, as in (21a). An existential modal like *can* is the same except that it expresses existential rather than universal quantification, as in (21b).

(21) a. $[\![\text{must}]\!]^w = \lambda \text{f}_{\langle s,\langle st,t\rangle\rangle} \lambda \text{p}_{\langle st\rangle} . \forall \text{w}' \in \cap \text{f(w)}: \text{p(w}') = 1$
b. $[\![\text{can}]\!]^w = \lambda \text{f}_{\langle s,\langle st,t\rangle\rangle} \lambda \text{p}_{\langle st\rangle} . \exists \text{w}' \in \cap \text{f(w)}: \text{p(w}') = 1$

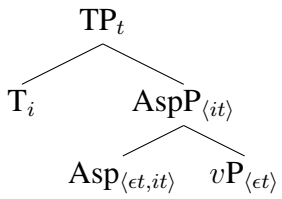
Hacquard's solution to Cinque's puzzle involves making two modifications to this standard approach to modals. The first modification has to do with the fact that something must be done to ensure that modals are type-theoretically equipped to combine both above and below Tense and Aspect.[10] Assuming the syntactico-semantic architecture of Tense and Aspect in (22) and the semantics for modals in

[9] Here and throughout, I ignore ordering sources (another important component of Kratzer's 1981 theory of modality), since they play no role in what follows.

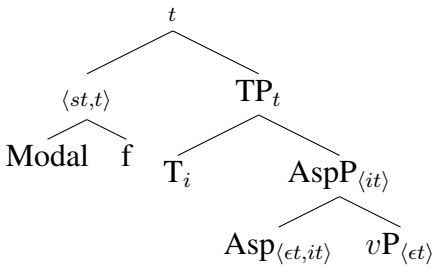
[10] Throughout this section, I will follow Hacquard in assuming the existence of Tense in the clausal spine. Hacquard made this assumption for very good reasons: she was concerned with the analysis of uncontroversially tensed languages like French and English. See section 2.4 below for a discussion of what is at stake in applying Hacquard's core proposals to a language that lacks Tense.

(21), a modal can combine above Tense and Aspect without fuss. As illustrated in (23), the modal first combines with a modal base f to yield a function from propositions to truth values (type $\langle st, t\rangle$). This will then compose with the TP (type t) via Intensional Functional Application (Heim and Kratzer 1998) to yield a truth value.

(22)

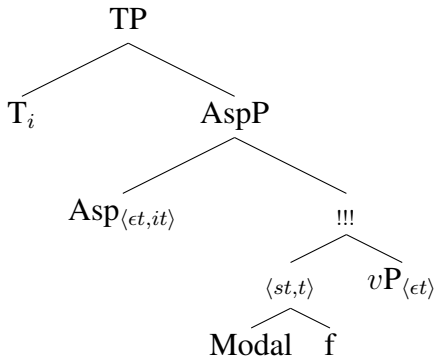


(23)



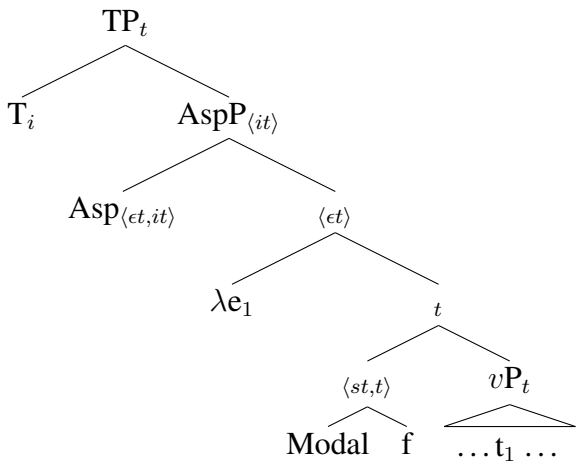
A modal that appears below Tense and Aspect, on the other hand, encounters difficulty: after the modal combines with its modal base, there is a type mismatch between the resulting expression (type $\langle st, t\rangle$) and its sister vP (type $\langle \epsilon t\rangle$).

(24)



There are at least two approaches to solving this type mismatch. The first approach is Aspect Movement. This is the approach that Hacquard (2010) employs and it involves the idea that Aspect is initially merged in as an argument of the verb, but then, having the type of a quantifier ($\langle \epsilon t, it\rangle$), it is forced for type reasons to move to a position just below Tense where it can be interpreted. (And the idea is that this is fully general: the base position of Asp, even in simple non-modalized clauses, is sister to V, and it must always move for type reasons.) Crucially, when Aspect vacates vP, it leaves behind a type ϵ trace that saturates the eventuality argument of the vP, resulting in a type t meaning for the vP and enabling its composition with the modal via Intensional Functional Application. This approach is schematized in (25).

(25)



The second approach to solving the mismatch, which Hacquard mentions in passing but does not pursue, is Type Raising. On this approach, when the modal appears in the low position, it raises its type. Although Hacquard does not spell this approach out, what it would amount to is that a modal like *can*, whose denotation is repeated in (26), can freely shift to the denotation in (27). This is something that could be achieved by assuming the type-shifting rule in (28), where MODAL is a variable over modals like *can*.[11]

(26) $[\![\text{can}]\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}\lambda p_{\langle st\rangle}.\exists w' \in \cap f(w)\text{: } p(w') = 1$

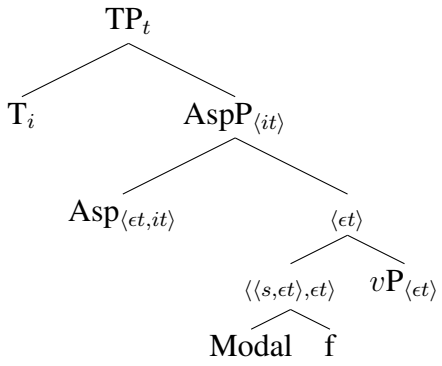
(27) $[\![\text{can}']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}\lambda P_{\langle s,\epsilon t\rangle}\lambda e.\exists w' \in \cap f(w)\text{: } P(e)(w') = 1$

(28) Let $[\![\text{MODAL}']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}\lambda P_{\langle s,\epsilon t\rangle}\lambda e.[\![\text{MODAL}]\!](f)(P(e))$

As illustrated in (29), the type-shifted denotation in (27) enables a modal to combine below Tense and Aspect without having to assume Aspect movement.

[11] (28) is in fact very similar to a familiar and more general kind of type-shifting rule known as the "Geach rule". As described by Jacobson (1999), the Geach rule takes a function g of type $\langle a, b\rangle$ and returns a function of type $\langle\langle c, a\rangle, \langle c, b\rangle\rangle$ with the meaning $\lambda V\lambda C.g(V(C))$ (where a, b, and c are arbitrary types).

(29)



Having reviewed the two approaches for allowing a modal to combine below Tense and Aspect, I now turn to the second and final way in which Hacquard modifies the standard approach to modals to solve Cinque's puzzle. What Hacquard proposes is that modal bases are event-relative rather than world-relative. That is, rather than treating modal bases as functions that apply to an evaluation world, Hacquard treats them as functions that apply to an event (i.e., they instantiate event anchoring; cf. also individual anchoring in the sense of Farkas 1992; Giannakidou 1998). More specifically, Hacquard proposes that epistemic and circumstantial modal bases are as defined in (30)–(31) respectively. Crucially, the epistemic modal base is formulated in such a way that it will be defined only for events that have (propositional) content (events that describe an information state), namely, speech events and attitude events. The circumstantial modal base, by contrast, is defined for events described by ordinary VPs. (In later work, Hacquard (2013) identifies these two kinds of modal bases with Kratzer's (2012) CONTENT-BASED vs. FACTUAL modal bases, respectively.)

(30) $\cap \mathrm{f}_{epis}(\mathrm{e}) = \{\mathrm{w}' : \mathrm{w}' \text{ is compatible with the content of e}\}$

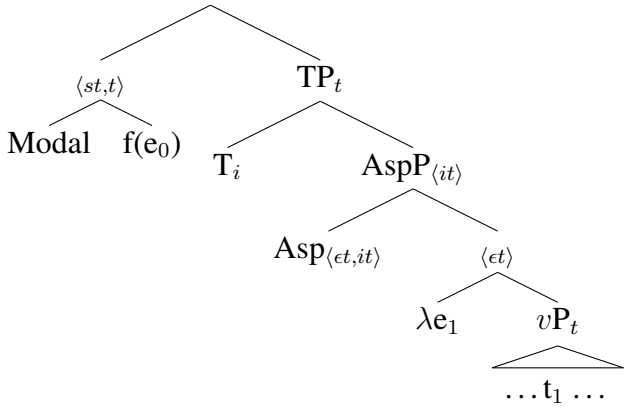
(31) $\cap \mathrm{f}_{circ}(\mathrm{e}) = \{\mathrm{w}' : \mathrm{w}' \text{ is compatible with the circumstances of e}\}$

(adapted from Hacquard's (2013) summary of Hacquard 2010)

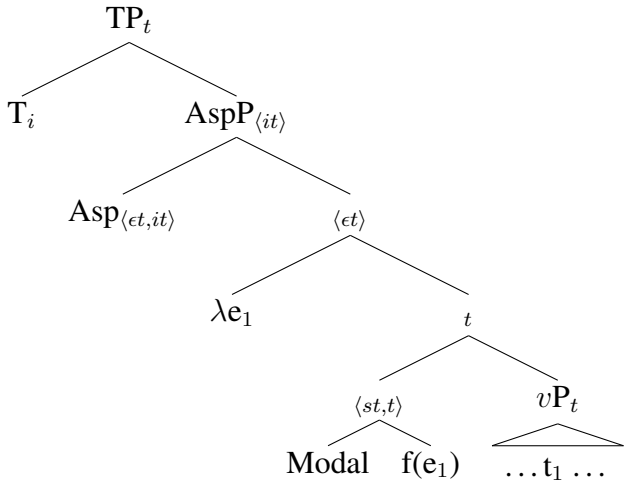
What determines the choice of the event that the modal base will apply to? Hacquard proposes that modals are anaphoric: they are looking for an event from which to build a modal base. As such, they must be locally bound. When a modal appears above Tense and Aspect, the closest available binder will be the speech event (in matrix contexts) or the embedding predicate (in embedded contexts), as in (32), whereas when a modal appears below Tense and Aspect, the closest available binder is Aspect, as in (33). For the reasons described in the previous paragraph, speech and attitude event binders ensure a content-based (epistemic) modal base whereas VP events ensure a factual (circumstantial) modal base. Cinque's puzzle is

thereby solved.

(32)



(33)



2.4 Applying Hacquard's account to Mandarin

A notable difference between English *can* vs. Mandarin *neng* and *keneng* is that the latter are lexically specified for modal flavor, *neng* requiring a circumstantial modal base and *keneng* requiring an epistemic modal base. Suppose furthermore for the sake of argument that Mandarin lacks Tense; i.e., sentences in Mandarin are type $\langle it\rangle$. Then, as a first step toward applying Hacquard's account to Mandarin, we can assign *keneng* the denotation in (34) and *neng* the denotation in (35). (Here, the crucial type difference between the two modals is simply stipulated; in a moment, we will talk about how to derive them.) The modal *keneng* comes with a selectional restriction on its modal base argument EPIS(f) that ensures that it can only combine with an epistemic modal base; once this base is supplied, the modal is a function from properties of times to properties of times. The modal *neng*, on the other hand,

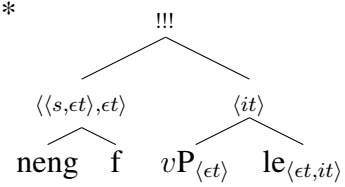
has a selectional restriction CIRC(f) to ensure a circumstantial modal base; once this base is supplied, the modal is a function from properties of eventualities to properties of eventualities.

(34) $[\![\text{keneng}]\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:EPIS(f).$\lambda p_{\langle s,it\rangle}\lambda t.\exists w' \in \cap f(e)$: $p(w')(t) = 1$

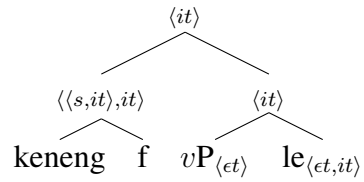
(35) $[\![\text{neng}]\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:CIRC(f).$\lambda P_{\langle s,\epsilon t\rangle}\lambda e.\exists w' \in \cap f(e)$: $P(w')(e) = 1$

As illustrated in (36)–(39), the type signatures associated with these denotations account for Lin's facts, as long as we follow Lin in assuming that *le* has an aspectual semantics (type $\langle \epsilon t, it\rangle$). Combining a vP with *le* yields a property of times, rendering it type-theoretically incompatible with *neng* (36) but compatible with *keneng* (38). By contrast, *neng* can combine directly with vP to yield an appropriate type to combine with *le* (37), but *keneng* cannot do so (39).[12]

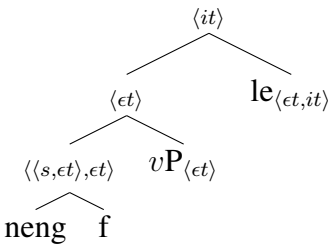
(36) *



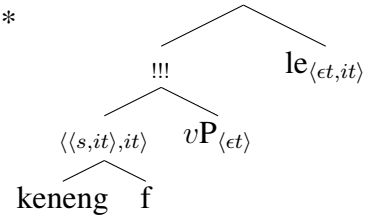
(38)



(37)



(39) *



But although this approach works, it is not (yet) explanatory, because it relies on stipulating that the epistemic modal *keneng* has a type that ensures placement above *le* whereas the circumstantial modal *neng* has a type that ensures placement below *le*. If this were an idiosyncratic fact, then the stipulative nature of the account would be a virtue, since the lexicon is an appropriate place for encoding accidental properties of a language. But as we've already acknowledged, the facts are not arbitrary but rather instantiate a robust cross-linguistic generalization. The solution, then, in line with Hacquard, is to pursue an analysis in which *keneng* and *neng* can

[12]If we follow Jo-wang Lin, as I do here, in assuming that sentences in Mandarin are type $\langle it\rangle$, then something special must be said about sentences without an overt aspectual marker to take them from a type $\langle \epsilon t\rangle$ meaning to a type $\langle it\rangle$ meaning. One option would be to postulate a silent aspect marker that does this (cf. Smith's 1991 neutral viewpoint aspect or Shen's 2004 static aspect). Yet another option would be to assume a type-shift analogous to the rule Jo-wang Lin (2006) proposes for turning type $\langle it\rangle$ expressions into type t expressions (see note 1 above).

IN PRINCIPLE both appear either above or below *le*, but placing *keneng* low gives it an ill-defined modal base.

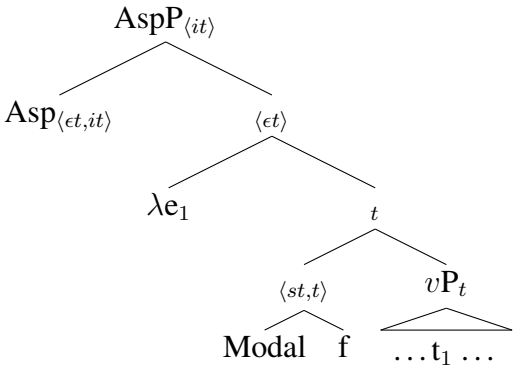
How can we allow *keneng* and *neng* the flexibility to appear, in principle, both above and below *le*? Recall from the previous subsection that there were two options we considered for allowing modals in English to appear both above and below Tense and Aspect: Aspect Movement and Type Raising. Pursuant to these options, suppose modals in Mandarin have types like those indicated in (40)–(41): after they combine with a modal base, they are uniformly type $\langle st, t\rangle$.

(40) $[\![\text{keneng}]\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}\text{:EPIS(f)}.\lambda p_{\langle st\rangle}.\exists w' \in \cap f(e)\text{: } p(w') = 1$

(41) $[\![\text{neng}]\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}\text{:CIRC(f)}.\lambda p_{\langle st\rangle}.\exists w' \in \cap f(e)\text{: } p(w') = 1$

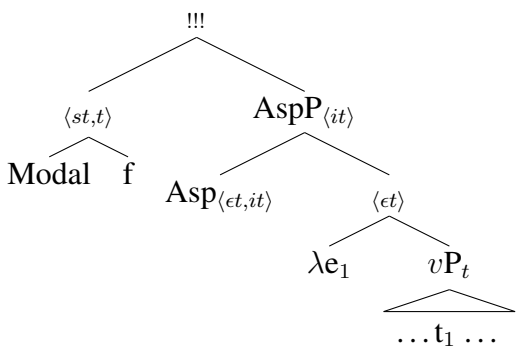
On an Aspect Movement approach, low modal placement would be unproblematic: just like Hacquard proposes for English, Aspect would vacate the vP, giving the vP a type t meaning appropriate for combination with the modal, as in (42). But this approach will not work for high modal placement: as illustrated in (43), high modal placement will result in a configuration wherein the modal cannot combine with its complement, because the complement is type $\langle it\rangle$. Interestingly, postulating a silent Tense node above AspP would solve this. So if we had reason to think that Aspect Movement were the right approach to low modal placement, we would indeed have a kind of theory-internal argument for Tense in Mandarin.[13]

(42)



[13] I am not aware of any compelling arguments in favor of Aspect Movement over Type Raising. Hacquard (2010) is fairly non-committal on this point. She does, in note 15, provide a potential argument in favor of Aspect Movement, but does not flesh the argument out in detail. The observation is that aspectual auxiliary selection in Italian (*avere* 'have' vs. *essere* 'be') is transparent to an intervening modal, which follows straightforwardly if the aspectual auxiliary is base-generated on the verb and then moves to a position above the modal. But it seems to me that this observation is easily accounted for without Aspect Movement via the proposal that the intervening modal inherits the auxiliary selection properties of the verb in its complement.

(43)



However, the Type Raising approach does not require postulating Tense. Suppose that modals in Mandarin underlyingly have the types indicated in (44a) and (45a) but can freely type-raise to the variants in (44b–c) and (45b–c) respectively. The (b) variants enable the modals to be placed above Aspect and the (c) variants enable the modals to be placed below Aspect. The relevant pair of type-shifting rules are given in (46), where MODAL is a variable ranging over *keneng* and *neng*.

(44) a. $[\![\text{keneng}]\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:EPIS(f).$\lambda p_{\langle st\rangle}.\exists w' \in \cap f(e)$: $p(w') = 1$

b. $[\![\text{keneng}']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:EPIS(f).$\lambda p_{\langle s,it\rangle} \lambda t.\exists w' \in \cap f(e)$: $p(w')(t) = 1$

c. $[\![\text{keneng}'']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:EPIS(f).$\lambda P_{\langle s,\epsilon t\rangle} \lambda e.\exists w' \in \cap f(e)$: $P(w')(e) = 1$

(45) a. $[\![\text{neng}]\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:CIRC(f).$\lambda p_{\langle st\rangle}.\exists w' \in \cap f(e)$: $p(w') = 1$

b. $[\![\text{neng}']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:CIRC(f).$\lambda p_{\langle s,it\rangle} \lambda t.\exists w' \in \cap f(e)$: $p(w')(t) = 1$

c. $[\![\text{neng}'']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle}$:CIRC(f).$\lambda P_{\langle s,\epsilon t\rangle} \lambda e.\exists w' \in \cap f(e)$: $P(w')(e) = 1$

(46) a. Let $[\![\text{MODAL}']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle} \lambda p_{\langle s,it\rangle} \lambda t.[\![\text{MODAL}]\!](f)(p(t))$

b. Let $[\![\text{MODAL}'']\!]^w = \lambda f_{\langle s,\langle st,t\rangle\rangle} \lambda P_{\langle s,\epsilon t\rangle} \lambda e.[\![\text{MODAL}]\!](f)(P(e))$

With this setup in place, *keneng* and *neng* can now in principle appear both above and below Aspect, and we can use Hacquard's event-relative approach to explain why epistemic *keneng* must appear in the high position whereas circumstantial *neng* must appear in the low position: using *keneng* in the low position is type-theoretically possible, but results in an ill-defined modal base since, as an epistemic modal, *keneng* needs to be anchored to an event that has propositional content. And a similar problem arises using *neng* in the high position. Crucially, as long as we adopt Type Raising rather than Aspect Movement, the account works without having to posit a Tense node for Mandarin. Based on these considerations, the interim conclusion of this section is that Lin's modal/aspect scope interaction facts do not count as an argument that Mandarin has Tense.

3 Object fronting

The second argument for Tense that Lin (2015) sets forth is also drawn from Lin's previous work (Lin 2011) and has to do with object fronting. Basic word order in Mandarin is SVO, as illustrated in (47a–c) for root clauses, complements to *renwei* 'think', and complements to the object-control verb *jiao* 'ask', respectively. But in a phenomenon known as object fronting, the direct object also has the option of appearing between the subject and the verb, as illustrated in (48a). (48b) shows that a complement to *renwei* 'think' supports object fronting and (48c) shows that a complement to the object-control verb *jiao* 'ask' does not support object fronting.[14] (The data in (47)–(48) are all taken from Lin 2011:60.)

(47) a. Zhangsan chi-le hanbao.
Zhangsan eat-PRF burger
'Zhangsan ate the burger.'

b. Zhangsan renwei [Lisi chi-le hanbao].
Zhangsan think Lisi eat-PRF burger
'Zhangsan thinks that Lisi ate the burger.'

c. Zhangsan jiao Lisi [PRO chi hanbao].
Zhangsan ask Lisi eat burger
'Zhangsan asked Lisi to eat the burger.'

(48) a. Zhangsan hanbao chi-le.
Zhangsan burger eat-PRF
'The burger, Zhangsan ate.'

b. Zhangsan renwei [Lisi hanbao chi-le].
Zhangsan think Lisi burger eat-PRF
'Zhangsan thinks that the burger, Lisi ate.'

c. *Zhangsan jiao Lisi [PRO hanbao chi].
Zhangsan ask Lisi burger eat
Intended: 'Zhangsan asked of Lisi that the burger, she eat.'

Now the question is: what is the crucial difference between root clauses and complements to *renwei* 'believe' on the one hand vs. complements to *jiao* 'ask' on the other hand that gives rise to this asymmetry? Lin (2011, 2015), following Fu

[14] Object fronting in complements to verbs like *jiao* 'ask' instead works in such a way that the object fronts all the way to the matrix clause, as illustrated in (i).

(i) Zhangsan hanbao jiao Lisi [PRO chi].
Zhangsan burger ask Lisi eat
'The burger, Zhangsan asked Lisi to eat.' (Lin 2011:60)

(1994); Paul (2002), proposes that the crucial difference is finiteness: main clauses and complements to *renwei* are finite whereas complements to *jiao* are nonfinite (see also Lu 1994; Ernst and Wang 1995). Then we can describe the pattern by saying that only finite clauses support object fronting.

According to McFadden and Sundaresan (2014:7), finiteness has been observed "to correlate, to a large degree, with the ability of a clause to stand alone or qualify as an independent assertion." Consequently, I do not wish to take issue here with the appropriateness of calling complements to *jiao* 'nonfinite', at least in a pretheoretical sense: complements to *jiao* have a referentially dependent (i.e., obligatorily controlled) subject, and they also lack whatever resource enables object fronting, both of which "deficiencies" might plausibly be viewed as relating to the inability of such clauses to function as syntactically unembedded assertions. (For more on the relationship between finiteness and control, see section 7 below. Here my main focus is object fronting.)

But I do wish to take issue with Lin's (2015) claim that the distribution of object fronting establishes the existence of Tense in Mandarin. As stated in the introduction, there are theories of finiteness in which finite/nonfinite contrasts could be present even if a language did not have Tense: these include the view that finiteness comes from a low CP-layer head Fin (Rizzi 1997; Bianchi 2003; Adger 2007), the view that languages vary in the anchoring category borne by INFL (Ritter and Wiltschko 2014), and the view that finiteness comes from Mood (Amritavalli 2014). Although I do not wish to defend any of these potential alternative conceptions of what regulates the distribution of object fronting in Mandarin, it seems to me that none are any more or less plausible than Lin's Tense valuation approach.

If the distribution of object fronting is not regulated by Tense, nor by any of the other potential bearers of finiteness associated with the theories just mentioned, then what does regulate its distribution? Paul (2002) argues that fronted objects are inner topics derived via movement of the object into the specifier position of a functional head above vP but below the surface position of the subject. In later work, Paul (2005) argues that Mandarin clauses have the functional projections in (49), where — following Belletti's (2004) similar proposal based on Italian — (outer) Topic and Focus positions in the complementizer layer of the clause are mirrored by parallel Inner Topic and Focus positions in the inflectional layer of the clause.[15] (See also Badan 2008 for additional evidence for this approach to Mandarin clause structure.)

(49) ForceP > TopicP > FocusP > IP > InnerTopicP > InnerFocusP > vP

[15] IP can be understood here as a placeholder for whatever functional projection hosts the surface position of the subject in main clauses in Mandarin — for more on this, see section 5 below.

(adapted from Paul 2005:112)

Following Fu's (1994) suggestion that nonfinite clauses in Mandarin disallow object fronting, Paul (2002:9) observes that we can make sense of the distribution of object fronting via the proposal that "non-finite clauses lack the functional architecture postulated for finite ones." My suggestion, following Grano (2012, 2015a), is that we take this idea even further: the sole relevant difference between main clauses and complements to *renwei* on the one hand vs. complements to *jiao* on the other hand is that the latter are truncated in the amount of functional architecture they project. Predicates like *renwei* combine with more articulated clauses (clauses that are more 'main-clause-like') than do predicates like *jiao*. Once this move is made, Tense no longer plays any explanatory role in the distribution of object fronting and so the phenomenon does not in fact count as evidence for Tense.

In order to make this suggestion more concrete, we need to consider Mandarin clausal architecture in a bit more detail. In particular, Paul (2014) proposes that the highest projection in the CP layer in Mandarin is AttitudeP, which is found just above ForceP. AttitudeP is headed by sentence-final particles that relate to the speaker's and hearer's belief in the expressed proposition. ForceP, on the other hand, is headed by sentence-final particles that either encode force (the polar interrogative particle *ma*) or modulate force (such as the use of *ba* to mitigate an imperative).[16] Synthesizing these proposals with (49), we get the overall structure for Mandarin clauses indicated in (50).

(50) AttitudeP $>$ ForceP $>$ TopicP $>$ FocusP $>$ IP $>$ InnerTopicP $>$ InnerFocusP $>$ vP

Paul (2014) furthermore shows that the highest two projections, AttitudeP and ForceP, occur in root contexts only. Consequently, my proposal for making sense of the distribution of object fronting is as indicated in (51). The crucial property of complements to *jiao* responsible for the ban on object fronting is that they only project up to vP.

(51) a. Main clauses: project up to AttitudeP
b. Complements to predicates like *renwei*: project up to TopicP
c. Complements to predicates like *jiao*: project up to vP

[16]Paul also proposes a third phrase in the complementizer layer, namely CLowP, headed by temporo-aspectual particles such as clause-final *le*, *ne* and *laizhe*. Following Erlewine (2015), though, I will assume that these heads are actually lower in the structure, around the vP layer. Because its precise location is unclear and not particularly crucial, I disregard it in what follows.

This proposal makes testable predictions that go beyond the distribution of object fronting. In particular, it predicts that complements to predicates like *jiao* disallow not only object fronting but furthermore disallow any of the material or processes associated with the functional structure above vP. The data in (52) show that this prediction is borne out for 'even' focus fronting: main clauses (52a) and complements to *renwei* (52b) allow such fronting whereas complements to *jiao* (52c) do not. This follows from the fact that complements to *jiao* exclude InnerFocusP.

(52) a. Zhangsan lian hanbao dou chi-le.
Zhangsan even burger all eat-PRF
'Zhangsan even ate a burger.'
b. Zhangsan renwei [Lisi lian hanbao dou chi-le].
Zhangsan think Lisi even burger all eat-PRF
'Zhangsan thinks that Lisi even ate a burger.'
c. *Zhangsan jiao Lisi [PRO lian hanbao dou chi].
Zhangsan asked Lisi even burger all eat
Intended: 'Zhangsan asked Lisi to even a eat a burger.'

Before moving on, three qualifications are in order on the status of this proposal. First, notwithstanding the predictive power just mentioned, it may turn out to be the case that there are additional functional heads in between InnerFocusP and vP. If we were to find that some or all of these heads are available in complements to *jiao*, then the proposal would need to be modified accordingly, but would not be affected in any crucial way. One candidate for such a functional head is Aspect. The distribution of aspect marking in complements to verbs like *jiao* is rather complicated empirical territory. To a first approximation, it appears that the preverbal progressive marker *zai*, the preverbal negative perfective marker *mei(you)*, and clause-final *le* are never allowed in controlled complements, whereas the verb-final aspectual suffixes *-le*, *-zhe* and *-guo* are found in controlled complements under certain conditions. (See Grano 2015b and references therein for details.) One potential interpretation of these facts is that the suffixal aspect markers occupy a lower Aspect position available in controlled complements whereas the preverbal aspectual markers and clause-final *le* occupy a higher Aspect position not available in controlled complements. If this proves to be right, then there are two possibilities. One possibility is that the lower Aspect position is above vP, and the proposal in (51) would need to revised to include this position in complements to predicates like *jiao*. The other possibility is that the lower Aspect position is below vP, in which case no revision to (51) would be necessary. The latter possibility is reminiscent of Travis's (2010) distinction between Inner and Outer Aspect, where Inner Aspect is

inside vP (or what Travis calls VP).[17]

A second qualification is that this proposal takes no stance on the "minimum" size of these three kinds of clauses, only on their "maximum size". For example, it could be the case that main clauses need not project to AttitudeP if no Attitude particle is present. Nothing important hinges on this.

Finally, the third qualification about the proposal is that it makes no pretense of being able to predict from any other properties of a given embedding predicate whether it falls into the class with *renwei* or the class with *jiao*, though of course this is ultimately something that we would want to be able to do. Verbs whose complements have been shown to disallow object fronting in previous literature include *rang* 'make'/'let' and *pai* 'send' (Fu 1994), *bi* 'force' (Ernst and Wang 1995), *jiao* 'ask' (Lin 2011), and *yaoqiu* 'ask' (Lin 2015). These are all object-control verbs, and so it is tempting to hypothesize that the defining property of the *renwei*-class is that they are non-control predicates and the defining property of the *jiao*-class is that they are control predicates. However, Zhang (2016) shows that some control verbs including *daying* 'promise', *dasuan* 'plan', *zhunbei* 'prepare', and *xiang* 'want' combine with complements that do have a topic position, whereas other control verbs including *gan* 'dare' and *kaishi* 'start' do not. (See section 7 below for more on control.) This is consistent with recent work showing that controlled complements are not a uniform class but come in different sizes (see e.g. Wurmbrand 2014; Grano 2015a).

4 Wide scope of object-position quantifiers

The third and final argument that Lin (2015) advances in favor of Tense in Mandarin is based on Lin 2013 and has to do with inverse scope. Ordinarily, doubly quantified sentences in Mandarin can be interpreted only with surface scope (Huang 1982; see also Scontras, Tsai, Mai, and Polinsky 2014 for experimental confirmation of the basic facts). In (53), for example, the only available interpretation is one in which the subject takes scope over the direct object.

[17] It is also worth asking whether complements to predicates like *jiao* might have LESS structure than vP; in particular, could they be bare subjectless VPs? A reason for not pursuing this option is that, as documented by Hu et al. (2001), control verbs like *jiao* can have overt controllees under some conditions, as in (i). (See also Zhang 2016 and section 6 below for more on control.) (i) shows that the complement to *jiao*, under at least some conditions, must have enough structure to host a subject.

(i) wo jiao Zhangsan [jintian xiawu **ta** wulunruhe dou yao lai].
1SG ask Zhangsan today afternoon 3SG in.any.case all will come
'I asked Zhangsan to come this afternoon no matter what.' (Hu et al. 2001:1132)

(53) Zuotian, yi-wei jiaoshou zhidao-le mei-ge xuesheng.
yesterday one-CL professor instruct-PRF every-CL student
'Yesterday, one professor instructed every student.' 'one' $>$ $\forall$; *$\forall$ $>$ 'one'

(Lin 2015:324)

But as Lin (2013) shows, sometimes inverse scope is available in Mandarin, as in the examples in (54). In (54a), an available interpretation is one in which the universal quantifier buried inside the subject PP takes wide scope. In (54b), fashioned after a similar example noted by Aoun and Li (1989, 1993), there is scope ambiguity between the direct object and the dative object. Finally, in (54c), a direct object is allowed to take scope over a quantificational adverb.

(54) a. Zhishao wu-wei mei-yi-zhou yihui de yiyuan hui
at.least five-CL every-one-state congress MOD congressman will
zhichi zhe-ge ti'an.
support this-CL proposal
'At least five of the congressmen of each state congress will support this proposal.' ($\forall >$ 'at least five' available)

b. Zhangsan song yi-ben shu gei mei-yi-ge xiaohai.
Zhangsan send one-CL book to every-one-CL child
'Zhangsan sent a book to every child.' ($\forall > \exists$; $\exists > \forall$)

c. Zhangsan jingchang gen mei-yi-ge xuesheng chi fan.
Zhangsan often with every-one-CL student eat meal
'Zhangsan often dines with every student.' ('often' $>$ $\forall$, $\forall >$ 'often')

(Lin 2013:277–278)

Based on the contrast between (53) and (54), Lin (2013) first proffers the preliminary generalization that QR in Mandarin can target DP (as in (54a)) or vP (as in (54b–c)) but cannot target any higher position in the clause above the surface position of the subject (for Lin, TP), which is what would be needed to yield inverse scope in (53). Call this the Mandarin QR Generalization:

(55) **Mandarin QR Generalization:** QR in Mandarin can target vP or DP only.

But Lin (2013) then goes on to argue that (55) is in fact too strong: according to Lin, inverse scope is available out of nonfinite clauses in Mandarin: in (56), for example, both surface and inverse scope readings are available for the direct object

of the embedded clause. This example stands in contrast with the one in (57), where the embedding verb *gaosu* 'tell' combines with what for Lin is a finite clause, and inverse scope is correspondingly unavailable. (This finding is reminiscent of Farkas and Giannakidou 1996, who show that the availability of extra wide scope in Greek depends in part on the choice of the embedding predicate.)

(56) Zuotian, xiaozhang yaoqiu yi-wei jiaoshou zhidao mei-ge
yesterday principal ask one-CL professor instruct every-CL
xuesheng.
student
'Yesterday, the principal asked one professor to instruct every student.'
'one' $>$ $\forall$; $\forall$ $>$ 'one'

(Lin 2015:324)

(57) Zuotian, xiaozhang gaosu yi-wei jiaoshou ta zhidao-le mei-ge
yesterday principal tell one-CL professor 3SG instruct-PRF every-CL
xuesheng.
student
'Yesterday, the principal told one professor that he instructed every student.'
'one' $>$ $\forall$; *$\forall$ $>$ 'one'

(modeled after Lin 2013:280)

Lin (2013) summarizes all of the facts as in (58)–(59), where the underlined phrases represent the licit landing sites for QR.

(58) In finite contexts:

a. English $[\underline{_{TP}} \ldots [\mathrm{T}_{finite} \ldots [\underline{_{vP}} \ldots \mathrm{QP} \ldots]]$
b. Mandarin $[_{TP} \ldots [\mathrm{T}_{finite} \ldots [\underline{_{vP}} \ldots \mathrm{QP} \ldots]]$

(59) In nonfinite contexts:

a. English $[\underline{_{TP}} \ldots [\underline{_{vP}} \ldots [\underline{_{TP}} \ldots \mathrm{T}_{nonfinite} \ldots [\underline{_{vP}} \ldots \mathrm{QP} \ldots]]$
b. Mandarin $[_{TP} \ldots [\underline{_{vP}} \ldots [\underline{_{TP}} \ldots \mathrm{T}_{nonfinite} \ldots [\underline{_{vP}} \ldots \mathrm{QP} \ldots]]$

(adapted from Lin 2013:282)

To account for the Mandarin facts, Lin proposes that a finite clause — in virtue of having a valued Tense — constitutes a specificity island. Consequently, inverse scope is unavailable in (53) and (57) because it would require the direct object to adjoin to TP and thereby vacate the TP island. By contrast, inverse scope is available in (56) because the complement TP has an unvalued Tense and therefore does not constitute a specificity island. The direct object can adjoin to embedded TP unproblematically. To explain why inverse scope is available in finite clauses in English, Lin suggests that in English, Tense moves to C (Lasnik and Saito 1992), or is base-generated in C (Chomsky 2004), and so a finite clause in English constitutes an island only at the CP level; adjoining to a finite TP is not an island violation.

In summary, Lin's analysis provides an interesting account of why English and Mandarin differ in their scopal properties and also why internally to Mandarin different clauses display different scopal properties. However, Lin's account does have two shortcomings. First, it relies on the assumption that English and Mandarin differ in where tense is interpreted. In particular, it is crucial for Lin that in Mandarin, tense is interpreted in T, whereas in English, it is interpreted in C, either in virtue of having undergone T-to-C movement or in virtue of being base-generated there. But Lin provides no independent evidence for this difference between English and Mandarin.

Second, if TP in Mandarin is an island, then something special must be said about cases where movement out of TP is nonetheless grammatical in Mandarin, namely (covert) wh-movement and (overt) topicalization. To accommodate covert wh-movement, Lin suggests that, since questions denote sets of propositions, they do not presuppose a specific time and consequently do not constitute specificity islands the way their declarative counterparts do. But this suggestion stands at odds with the observation that a question like *Which stove did you turn off?* has the ordinary "pronominal" temporal property of being interpreted relative to a topic time; i.e., this sentence needs be uttered in a context in which there is a salient topic time that the question is targeting. Furthermore, the topic time can be narrowed down by an overt time expression, as in *Which stove did you turn off at 5pm yesterday?*, without affecting the availability of wh-movement.[18] As for topicalization, Lin, fol-

[18] Additionally, if specificity islands are what block inverse scope, and wh-structures do not constitute specificity islands, then the prediction is that inverse scope should be freely available in wh-structures. Acknowledging this, Lin (2013:note 6) provides the minimal pair in (i), saying that inverse scope is "slightly better" in the wh-question in (ib) than it is in the declarative sentence in (ia) (two question marks instead of an asterisk). Lin also observes that when the distributive adverb *fenbie* 'separately' is added, then the contrast becomes sharper, as in (ii).

(i) a. Mou-ge nansheng bangzhu-le mei-ge nüsheng.
some-CL boy help-PRF every-CL girl
'Some boy helped every girl.' ($\exists > *\forall > \exists$)

lowing a proposal by Lasnik and Stowell (1991), suggests that the trace left behind by topicalization is not a variable but rather an empty epithet. Lin shows that in (60), *every company* can QR and bind the epithet *the place* contained in the specific DP *the treatment he receives in the place*. Lin therefore concludes that the binding of epithets is not constrained by specificity islands.

(60) Some employee$_j$ in every company$_i$ complains about the treatment he$_j$ receives in the place$_i$.

But the worry with this line of reasoning is that (60) minimally differs from (61) only in that the epithet is replaced by a pronoun, and binding is still available.

(61) Some employee$_j$ in every company$_i$ complains about the treatment he$_j$ receives in it$_i$.

What this suggests is that the kind of binding involved in (60)–(61) is immune from specificity islands wholesale, independently of the issue of variables vs. epithets. So there is no independent reason for thinking that variables differ from epithets with respect to specificity islands and we are left without an account of why QR out of a specificity island should be blocked whereas topicalization is not.

By way of contrast, consider the facts from the perspective of the proposal from the previous section that some verbs in Mandarin, including *yaoqiu* 'ask', combine with vP complements. Then, what needs to be explained is the pattern in (62) (again following Lin's convention, underlined phrases represent licit landing sites for QR). Main clauses and IP complements to verbs like *gaosu* 'tell' pattern together in that a QP may adjoin only to vP and cannot trespass IP, whereas in the case of a vP complement to a verb like *yaoqiu* 'ask', a QP may adjoin either to the

b. **Weishenme** mou-ge nansheng bangzhu-le mei-ge nüsheng.
why some-CL boy help-PRF every-CL girl
'Why did some boy help every girl?' ($\exists > \forall$, ??$\forall > \exists$)

(ii) a. Mou-ge nansheng **fenbie** bangzhu-le mei-ge nüsheng.
some-CL boy separately help-PRF every-CL girl
'Some boy separately helped every girl.' ($\exists > *\forall > \exists$)

b. Weishenme mou-ge nansheng **fenbie** bangzhu-le mei-ge nüsheng.
why some-CL boy separately help-PRF every-CL girl
'Why did some boy separately help every girl?' ($\exists > \forall$, $\forall > \exists$)

(adapted from Lin 2013:287)

While these data are suggestive, caution is of course in order in interpreting the contrast in (i), given the delicacy of the judgments. Lin leaves to future research the question of why (ib) contrasts with (iib), and unfortunately I must follow suit here.

local vP (yielding surface scope) or to the matrix vP (yielding inverse scope). (As in section 3, IP is used here to indicate the phrase whose Spec hosts the surface position of the subject, to be discussed in more detail in section 5 below. Also, as discussed in section 3 above, main clauses and complements to verbs like *gaosu* at least sometimes project more structure than IP; I ignore the extra structure here because it is not relevant.)

(62) Mandarin

a. $[_{IP} \ldots \text{I} \ldots [_{\underline{vP}} \ldots \text{V} \ldots \text{QP} \ldots]]$ MAIN CLAUSE

b. $[_{IP} \ldots \text{I} \ldots [_{vP} \ldots \text{gaosu } [_{IP} \ldots \text{I} \ldots [_{\underline{vP}} \ldots \text{V} \ldots \text{QP} \ldots]]$ IP-COMP

c. $[_{IP} \ldots [_{\underline{vP}} \ldots \text{yaoqiu } [_{\underline{vP}} \ldots \text{V} \ldots \text{QP} \ldots]]$ vP-COMP

Seen from the perspective of the analysis in (62), the facts fall in line with Lin's preliminary generalization that QR in Mandarin can only target vP (or DP) and cannot trespass IP, and there is no need to invoke specificity islands or Tense to explain the facts.[19]

5 The surface position of the subject

In English, an important syntactic function of Tense is to host the surface position of the subject. If Mandarin does not have Tense, where does the subject sit? X-bar theory demands that it sit in the specifier position of some head. Since Mandarin has overt modal and aspectual morphemes, an initially attractive hypothesis would be that the subject sits in a [Spec,AspP] or a [Spec,ModP] position. Ernst (1994), however, presents an interesting argument against this view. Ernst's argument is based on the following observations. First, Ernst shows that Mandarin has a class of adjuncts that can occur between the subject and the verb but cannot occur to the left of the subject, as illustrated in (63).

(63) (Tamen) **guyi/you/yijing/bai** (*tamen) lai-le.
3PL on-purpose/again/already/in-vain 3PL come-PRF
'They came on purpose/again/already/in vain.' (Ernst 1994:201)

[19] Scontras et al. (2014), reporting on data due to Aoun and Li (1989); Jiang (2012), suggest that inverse scope may be available out of conditional antecedents in Mandarin. If this is correct, it would not be easily accommodated by Lin's approach or my alternative, since conditional clauses are presumably finite in Lin's sense and project through IP. It is interesting to note, however, that according to the proposals of Haegeman (2006), some conditional clauses have a truncated CP structure. Although a full investigation of these facts and their theoretical implications are beyond the scope of this paper, these observations, taken together, are suggestive of the utility of capitalizing on contrasts in clause size in making sense of the distribution of QR.

Second, Ernst shows that these adjuncts can scope over modals, perfective aspect, and clause-final *le*, as illustrated in (64a–c) respectively.

(64) a. Tamen **guyi** **yao** pian wo.
3PL on-purpose will cheat 1SG
'They will cheat me on purpose.'

b. Baoshan **you** **mei-you** tian biaoge.
Baoshan again NEG-PRF fill form
'Baoshan again didn't fill out the form.'

c. Jinrong **you** bu gan **le**.
Jinrong again NEG work LE
'Jinrong again has stopped working.' (≈ 'Again it has become the case that Jinrong does not work.') (Ernst 1994:202)

Third and finally, Ernst shows that these adjuncts also have the option of appearing between the modal and the main verb, as in (65).

(65) Xiaolan **keyi guyi/bai** mai yi-bao tang.
Xiaolan can on-purpose/in-vain buy oneCL candy
'Xiaolan can buy a package of candy on purpose/in vain.' (Ernst 1994:202)

Ernst reasons that if a modal or aspectual head constituted INFL in Mandarin (i.e., hosted the surface position of the subject), then to characterize the facts above one would have to say that these adjuncts can attach to VP (or vP) (as in (65)) or to I′ (as in (64)) but not to IP (as in (63)). This would be an odd state of affairs. If on the other hand there is a dedicated INFL higher in the clause than the modal and aspectual positions, then the facts can be characterized via the generalization that the adjuncts in question uniformly attach at the phrasal level to verbal categories; i.e., they can attach to VP(/vP), AspP, or ModP, but not to IP.[20]

Ernst proceeds to make a similar argument based on the distribution of object fronting. Updating this argument to reflect Paul's (2002; 2005) analysis of object fronting as movement to [Spec,InnerTopP] (see section 3 above), the important observation is that object fronting can target a position to the left of aspectual and modal categories, as seen in (66).

[20]Of course, with the proliferation of functional categories associated with theories such as Cinque 1999, there are any number of other heads aside from INFL that could be entertained as the host for the subject in Mandarin. Given the kind of evidence discussed in section 2 above that epistemic modality is structurally higher than root modality, one could for example entertain the idea that the subject in Mandarin sits in [Spec,Mod$_{epistemic}$P]. But in what follows, I will argue that even if we suspend such a possibility and postulate a dedicated INFL head, there is no compelling reason to identify it with Tense.

(66) a. Ta huoche **mei-you** ganshang.
3SG train NEG-PRF
'He didn't catch the train.' (adapted from Paul 2002:2)
b. Ni mi-fen **keyi** chi-wan.
2SG rice-noodle can eat-finish
'You can eat up the rice noodles.' (Ernst 1994:204)
c. Wo huasheng bu **neng** chi.
1SG peanut NEG can eat
'I can't eat peanuts.' (Ernst and Wang 1995:241)

This means that there must be some head sitting structurally higher than InnerTop that hosts the subject in sentences like (66). In fact, Paul's (2005) proposed clausal architecture for Mandarin, discussed in section 3 above and repeated in (67), contains IP for precisely this reason: the surface position of the subject is what divides the inner topic and focus positions from their outer equivalents, and Paul uses the label IP to demarcate the subject position and signal the boundary between the complementizer layer of the clause and the inflectional layer of the clause.

(67) ForceP $>$ TopicP $>$ FocusP $>$ IP $>$ InnerTopicP $>$ InnerFocusP $>$ vP

Now, a reasonable question to ask is: Is IP in Mandarin associated with semantic content? A proponent of the view that Mandarin has Tense may be tempted to take Ernst's arguments as further support for this view. Given the scant evidence for its existence and lack of clues about its meaning, it would probably even be reasonable on such a view to conclude that Tense is a universal category; otherwise, how would a child learner of Mandarin come to posit INFL, let alone assign it a temporal meaning?

But this possibility should be considered from the perspective of Ritter and Wiltschko's (2009; 2014) Parametric Substantiation Hypothesis. Ritter and Wiltschko propose that there is a universal functional category INFL, but that its substantive content varies from one language to the next. In English, INFL instantiates tense marking, as in (68). According to Ritter and Wiltschko, in Halkomelem (Central Coast Salish), INFL instantiates location marking, using one marker when the location of the main event predication coincides with the utterance location (69a) and another marker when it does not coincide (69b). In still other languages like Blackfoot (Algonquian), INFL instantiates person marking: one marker is used when at least one of the event participants coincides with a participant in the utterance event (70a)–(70b), and not otherwise (70c).

(68) ENGLISH: TENSE marking
a. John **is** happy.

b. John **was** happy.

(69) HALKOMELEM: LOCATION marking

a. **í** qw'eyílex tútl'ò
PROX dance he
'He is/was dancing [here].'

b. **lí** qw'eyílex tútl'ò
DIST dance he
'He is/was dancing [there].' (Ritter and Wiltschko 2014:1341)

(70) BLACKFOOT: PERSON marking

a. Kitsinóó**hp**oaawa
kit-ino-o-**hp**-oaawa
2-see.TA-1:2-LOCAL-2PL
'I saw you (pl.).'

b. Kitsinóóki**hp**oaawa
kit-ino-oki-**hp**-oaawa
2-see.TA-2:1-LOCAL-2PL
'You (pl.) saw me.'

c. Anna pookááwa inoyííwa anni imitááyi
ann-wa pookaa-wa ino-yii-∅-wa ann-yi imitaa-yi
DEM-PROX child-PROX see.TA-3:4-NONLOCAL-PROX DEM-OBV dog-OBV
'The child saw the dog.' (Ritter and Wiltschko 2014:1314)

What all of these markers have in common semantically is that they are deictic and perform an anchoring function, relating the content of the utterance to some property of the utterance event, whether that be the utterance time, the utterance location, or the utterance participants. Based on this commonality, Ritter and Wiltschko propose that universally, INFL performs an anchoring function. Can the head that hosts the surface position of the subject in Mandarin be identified with Ritter and Wiltschko's INFL? Ritter and Wiltschko (2009) suggest five cross-linguistically applicable formal diagnostics for INFL. But unfortunately, four of them are fairly general properties of functional heads (uniqueness, lack of substantive semantic content under certain syntactic conditions, lack of phonetic content, and obligatoriness). And the other — movement to COMP — is not something for which there is positive evidence in Mandarin, as far as I know. But given the strong cross-linguistic association between INFL and subject position, identifying the relevant category in Mandarin as INFL seems like a reasonable working hypothesis.

If this is right, it raises an interesting question. Suppose a child learner of Mandarin posits INFL, either because it is part of Universal Grammar or because

the primary linguistic data compel it. How is the child supposed to figure out what, if any, substantive content to associate with this head? Positing a tense semantics seems no more or less warranted by the data than either of the other two anchoring categories Ritter and Wiltschko consider. One possibility is that Universal Grammar makes available some default anchoring category to be assumed in the absence of evidence to the contrary. If this is right, then additional cross-linguistic research would be needed to determine what the default setting is. Another possibility is that INFL in Mandarin remains a purely formal category with no semantic content. Mandarin would then constitute a counterexample to the claim that INFL always performs an anchoring function. (Given that INFL is also phonologically null in Mandarin, this option would also counterexemplify Wiltschko's 2004 proposal that functional heads cannot be BOTH soundless AND meaningless.) But regardless of which possibility is correct, what we have seen in this section is that the syntax of the subject position presents no compelling evidence for Tense in Mandarin.

6 The distribution of control

A robust generalization that holds in English is that only nonfinite clauses can have controlled ("PRO") subjects. This generalization was built deeply into GB-era theories of control, raising the question of how a language could properly regulate the distribution of PRO if it does not make a finite/nonfinite distinction. Accounting for the distribution of control was in effect one of the reasons Huang (1982), and later Li (1985, 1990), argued that Mandarin makes a finite/nonfinite distinction. Data like (71)–(72) suggest that Mandarin has control, and that its distribution must be somehow regulated.

(71) Zhangsan$_1$ xiangyao [PRO$_{1/*2}$ likai].
Zhangsan wants leave
'Zhangsan wants to leave.' CONTROL

(72) Zhangsan$_1$ shuo [*pro*$_{1/2}$ hen xihuan Lisi].
Zhangsan say very like Lisi
'Zhangsan says s/he/they really like Lisi.' *pro*-DROP

In (71), the unexpressed subject of the complement clause is OBLIGATORILY identified with an argument of the matrix clause, which is the signature property of control. (71) stands in contrast with examples like (72), where the unexpressed subject of the complement clause is OPTIONALLY identified with an argument of the matrix clause, a telltale sign that the clause instantiates *pro*-drop rather than control. Therefore it is tempting to propose that in (71), *xiangyao* 'want' combines with a nonfinite complement, hence giving rise to control, whereas in (72), *shuo*

'say' combines with a finite complement, hence not giving rise to control.

The idea that the distribution of control is syntactically regulated in Mandarin has been attacked by some authors including Xu (1985–1986); Y. Huang (1994); Hu et al. (2001). These authors argue that Mandarin does not make a finite/nonfinite distinction and that the grammar of control is regulated by principles of lexical semantics rather than by syntax. One of the arguments offered for this position is the observation that putative control verbs like *shefa* 'try' and *dasuan* 'plan' can take complements that have overt subjects, provided the subject is at least partly co-referential with the relevant argument of the embedding predicate, as in examples like (73).

(73) a. **ni** zuihao shefa [jintian xiawu san le hui yihou **ni** yi
2SG best try today afternoon end PRF meeting after 2SG one
ge ren lai].
CL person come
'You had better try to come by yourself this afternoon after the meeting is over.'

b. **wo** dasuan [tian hei yihou **women** yiqi qu].
1SG plan sky dark after 1PL together go
'I plan that we go together after it gets dark.' (Hu et al. 2001:1131–1132)

In a recent paper, however, Zhang (2016) argues that the existence of overt subjects under putative control verbs does not undermine the claim that Mandarin has *bona fide* syntactic control. Not only do these sentences bear all the signature properties of control, overt controllees are also well attested in other languages such as Hungarian (Szabolcsi 2009; see Zhang 2016 for other relevant references and languages). Zhang therefore concludes that Mandarin does indeed draw a distinction between 'independent' and 'dependent' clauses; i.e., it does make a finite/nonfinite distinction. As discussed earlier, a popular idea about finiteness is that it has to do with a clause's ability to stand alone as a syntactically unembedded assertion. By definition, an obligatorily controlled clause cannot stand alone as an unembedded assertion, because resolving its subject requires that it be embedded (and this holds true even though a controlled complement with a covert controllee may be surface-string-identical to a syntactically independent *pro*-drop sentence and a controlled complement with an overt controllee may be surface-string-identical to a syntactically independent sentence with an overt subject). In that sense, this is an an appropriate application of the notion of finiteness.

But does this kind of finiteness evidence Tense? It depends on one's theory of control. The theory of control articulated in Landau 2004, for example, holds that

the distribution of control is regulated by T and Agr features on I and C. Simplifying somewhat, control is ruled out when T and Agr are both positively valued, and required otherwise. This proposal has wide cross-linguistic application, and such a theory would indeed seem to require not only that Mandarin have Tense (as a feature on I) but also Agr (as a feature on I).

However, the more recent theory of control set forth in Landau 2015 divorces the distribution of control from Tense altogether (and diminishes the role played by Agr). In a nutshell, what Landau (2015) proposes is that there are two types of control: predicative control (instantiated by non-attitude-denoting control predicates such as modal, aspectual and implicative verbs) and logophoric control (instantiated by attitude-denoting control predicates such as *plan*, *want*, and *claim*). In predicative control, what forces a controlled subject is the fact that the embedding predicate semantically selects for a property-denoting argument. When the subject is a minimal pronoun such as PRO or an overt realization thereof, it abstracts (mediated by a complementizer with a D feature that attracts the closest DP to its Spec), thereby resulting in a derived property *à la* Chierchia 1990. Any subject other than a minimal pronoun would fail to deliver this result, yielding an uninterpretable structure. In logophoric control, what forces a controlled subject is the fact that the embedding predicate selects for a special complementizer which in turn selects for a property-denoting argument; similarly here, any subject other than a minimal pronoun would fail to deliver this result. Although Landau is not explicit about the consequences that his approach has for the relationship between control and finiteness, it seems to me that the approach leaves room for accounting for the correlation between control and morphosyntactic nonfiniteness found in languages like English (by attributing nonfiniteness to the special complementizers involved in predicative and logophoric control respectively) without building the correlation so deeply into the theory that we expect any language that has control to also have Tense (or Agreement). In such a theory, the fact that Mandarin has syntactic control does not constitute an argument that Mandarin has Tense.

It is also worth pointing out that, as alluded to in section 3 above, Zhang (2016) shows that some control verbs in Mandarin can combine with complements that support topicalization, as in (74). What this means is that control complements cannot be conflated with truncated complements, *contra* Grano 2012, 2015a,b.

(74) a. A-Bao dasuan [zhe-ge kaosheng bu luqu].
A-Bao plan this-CL applicant NEG enroll
'A-bao planned not to enroll this applicant.'

b. A-Bao he Dali dasuan [na-xie ren **tamen liang-ge** bu jian].
A-Bao and Dali plan that-CL person 3PL two-CL NEG see
'A-Bao and Dali planned not to see those people.' (Zhang 2016:14)

In (74a), the complement clause instantiates topicalization, but the controlled subject is covert. Consequently we cannot tell whether the topic is an outer topic (higher than the subject) or an inner topic (lower than the subject). But in (74b), the controlled subject is overt (*tamen liang-ge* 'those two'), and the topic sits higher than this overt subject. This means one of two things. One possibility is that the controlled subject sits in the same position that subjects of independent clauses sit (i.e., the [Spec,IP] of section 5 above), and the topic sits in a [Spec,TopP] position in the complementizer layer of the clause. Another possibility is that the clause is partially truncated: the topic sits in [Spec,InnerTopP], but is nonetheless pronounced to the left of the subject because the subject is in a lower position such as [Spec,vP]. Regardless of which possibility proves to be correct, what these data show is that some control complements in Mandarin project higher than vP, to at least as high as InnerTopP. The overall lesson then is that there is more than one way for a clause to be 'dependent' or 'nonfinite' in the broad sense: a clause can fail to project all of the functional material found in root clauses, as in the cases considered in sections 3 and 4 above, or a clause can have a referentially dependent subject (or both). Crucially, though, although there are at least two ways to be 'dependent', it is not required to assume that Tense plays a role in encoding either variety.

7 Conclusion

Adger (2007:23), in his paper on finiteness, writes as follows:

> "It is important, at the outset, to emphasize that there is no guarantee that the traditional notion of finiteness will find any place in a theory of language: it names a possibly open-ended set of phenomena and may very well have no satisfactory definition.... Within generative grammar, the question is not what finiteness is, but whether providing an insightful account of the phenomena requires such a notion in the first place. If it does, then there is no expectation that the notion will be unitary or that it will correspond in any deterministic way to the traditional idea." Adger 2007:23

The central conclusion of this paper is very much in the spirit of this passage. If we understand 'finiteness' in a broad pre-theoretical sense as a set of clausal properties that together allow a clause to stand alone as a syntactically unembedded assertion, then what we have seen in this paper is that there are several ways for a clause to be 'nonfinite' in Mandarin. In section 2, we saw that the root modal *neng* combines with clauses that are nonfinite in the sense that they have not yet combined with Aspect and consequently denote properties of eventualities rather than properties

of time intervals. The epistemic modal *keneng*, by contrast, combines with clauses that are finite in the sense that they have combined with Aspect and consequently do denote properties of time intervals, just like matrix assertions in Jo-wang Lin's (2006) tenseless approach to Mandarin sentences. Similarly, in sections 3 and 4, we saw that complements to some verbs in Mandarin are nonfinite in the sense that they lack the full range of functional architecture associated with full clauses, thereby disallowing object fronting but extending the locality domain for QR. Finally, in section 6, we saw that clauses can also be nonfinite in virtue of having a referentially dependent subject that must be controlled by an embedding clause. As I have emphasized throughout, none of these ways of being nonfinite compel us to posit Tense in Mandarin as a way of cashing out the finite/nonfinite distinction.

In closing, it is worth emphasizing that all of the argumentation in this paper against the existence of Tense in Mandarin has been negative: what I have tried to show is that the putative finiteness contrasts in Mandarin do not provide compelling evidence for Tense. But I have not provided any positive arguments against Tense in Mandarin. Consequently, whether or not to posit Tense in Mandarin has to do with what one thinks the null hypothesis should be.[21] In this connection, Matthewson (2001) draws a useful distinction between two ways of approaching cross-lingusitic variation: on what she calls the 'transparent mapping' hypothesis, "the null hypothesis is that in each language, the semantics transparently reflects the surface syntax" (p. 155), whereas on what she calls the 'no variation' hypothesis, "there is no crosslinguistic variation in the semantics" (p. 156). It is not the purpose of this paper to make a recommendation on which hypothesis should be pursued in this case; in fact, it is likely that the most productive route would be to pursue both hypotheses and see where they lead. But what I do hope to have made a strong case for in this paper is that from the perspective of finiteness contrasts, positing Tense in Mandarin is indeed a 'no variation' hypothesis and not a 'transparent mapping' hypothesis: Tense is not forthcoming from the data.

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[21] That being said, a positive argument against Tense is in principle possible, but would go beyond the scope of this paper. As an example of where one might look for a positive argument, consider Jo-wang Lin's tenseless analysis of Mandarin, wherein what takes an unembedded sentence from a type $\langle it \rangle$ meaning to a type t meaning is not a Tense morpheme as in English but rather a rule of the grammar (see note 1 above). Possibly, one could embed this analysis into a theory that makes testable predictions regarding whether a morpheme or a rule is involved.

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