On syntactic tense in Mandarin Chinese

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Whether Mandarin Chinese has tense has been the subject of much debate. In this paper, I offer novel observations on the distribution and syntactic properties on a less-studied future-marking particle, jiang. I argue that these properties of jiang show that Mandarin Chinese has syntactic tense: jiang is syntactically a future tense morpheme, and not a modal auxiliary, nor a time adverb or an irrealis marker. Mandarin Chinese clauses are thus minimally T(ense)Ps, like clauses in languages with overt tense morphology. In addition, I show that empirical evidence supports two predictions consistent with this analysis: first, jiang is incompatible with bare nominal predicates, as expected if tense-marking requires an overt verbal host for syntactic well-formedness (as argued by Lin (2010)); second, jiang is infelicitous in clausal complements of control verbs, suggesting that Chinese has a finite/non-finite distinction (pace Hu, Pan, and Xu (2001)). Lastly, I discuss how this syntactic proposal might relate to existing semantic analyses of jiang and accounts of temporal interpretation in Mandarin Chinese.

0. Introduction

Although Mandarin Chinese lacks tense morphology, it is less clear whether it lacks tense altogether: it is conceivable, for example, that Mandarin Chinese has unpronounced tense morphemes. Because of the absence of tense morphology, arguments for and against a tensed analysis of Mandarin have been built on indirect evidence. For example, proponents of a tensed analysis (Huang (1982), Li (1985), C.-C. J. Tang (1990), T.-C. Tang (2000), Sybesma (2007), T.-H. J. Lin (2012), among others) have cited evidence from control constructions, the distribution of modal auxiliaries and aspect markers, and the distribution of adverbs. Likewise, researchers proposing a tenseless analysis (e.g. Hu, Pan, and Xu (2001), Smith and Erbaugh (2005), J.-W. Lin (2006; 2010)) have used distributional evidence and typological and theoretical arguments to support their claim.

In this paper, I offer new observations from the distribution and syntactic properties of the future-marking particle jiang that support the analysis of Mandarin as a language with syntactic tense. I propose that Mandarin makes a future vs. non-future distinction,

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1 Special thanks to the audience and organizers of NACCL-27, and Audrey Li and Haiyong Liu for their comments. I am also grateful for the help and feedback from Valentine Hacquard, Howard Lasnik, Colin Phillips, Omer Preminger, Alexander Williams, and other members of the UMD S-Lab community. All errors are mine alone.
with jiang as a future tense morpheme alternating with an unpronounced non-future morpheme. I will further argue that this analysis of Mandarin Chinese supports a theory of clause structure in which clauses are projections of a syntactic tense morpheme.

Section 1 sets out a definition of tense, and reviews existing analyses of jiang. The distributional evidence in favor of a tense analysis is described in Section 2, and a proposal about clause structure is presented in Section 3. I then discuss two predictions in Section 4: namely, that jiang cannot appear with bare nominal predicates, because tense morphemes require an overt verbal host (as argued by Lin (2010)); and that jiang is infelicitous in clausal complements of control verbs, supporting the claim that there is a finite/non-finite distinction in Chinese (pace Hu, Pan, and Xu (2001)). Section 5 discusses several issues regarding a tense analysis of jiang, and Section 6 concludes.

1. Preliminaries

1.1. Syntactic vs. semantic tense

The term “tense” is often used to refer to two related but distinct concepts: syntactic tense and semantic tense. I take that syntactic tense refers to a particular syntactic category, which largely, but not perfectly, corresponds to semantic tense, which refers to a semantic relation between the time of an event or a reference time relative to the time of speech (after e.g. Reichenbach 1947, Comrie 1985, Klein 1994). For example, in English, the past tense morpheme can be used in what appears to be non-past contexts (1a-b). Likewise, the present tense morpheme is not incompatible with describing events that have happened in the past (1c-d). These examples show that the presence of a past (or present) tense morpheme in a sentence alone does not entail that the proposition is to be given a past (or present) interpretation.

(1) a. If Mary was the president, she would abolish the death penalty. But unfortunately, she isn't. (Past tense morpheme in counterfactuals, although standard varieties of English prefer were)  
   b. I wanted to ask you about your car. (Past tense morpheme; but the desire to ask exists at the moment of speech)  
   c. John has left. (Present tense morpheme; but John left before speech time)  
   d. In *De Interpretatione*, Aristotle carefully constructs an argument for the law of the excluded middle. (Present tense; but Aristotle, being dead, is not carefully constructing any argument at the time of speech)

The topic of this paper is whether jiang has properties similar to what we would expect of a syntactic tense morpheme. I will not discuss the semantic properties of jiang; the reader is directed to Wu and Kuo 2010 for a discussion of the semantics of jiang.
1.2. Existing analyses of *jiang*

As observed by Wu and Kuo (2010), the literature on Mandarin Chinese tense and/or modality has mostly been silent about the syntax and semantics of *jiang*. Existing discussions have tended to be centered on the other future-marking particles *hui* and *yao*. For this paper, I will assume *hui* and *yao* to be modal auxiliaries, following Smith and Erbaugh 2005, Lin 2006, Ren 2008.

To the best of my knowledge, Wu and Kuo 2010 is the first published detailed discussion of *jiang*, focusing on its semantics; *jiang*, *hui*, and *yao* are analyzed as modals denoting future time, each with a different conversational background. The only other recent publication about *jiang* that I have been able to locate was a comment in Smith and Erbaugh 2005:731-732, where it was claimed that *jiang* is a “modal verb” (i.e. an auxiliary like *hui* and *yao*), used for “scheduled, planned situations.” In Section 2, we see evidence against such a claim.

It is perhaps not surprising that *jiang* has received less attention than *hui* and *yao>; *jiang* is typically encountered in formal registers, e.g. news broadcasts, and less often in casual speech. Within corpora, *jiang* occurs less frequently than *hui* and *yao* do; in the Academia Sinica treebank (61,087 trees), there were 825 instances of potential, “epistemic,” and “deontic”

2 *hui*, 942 instances of “deontic” *yao*, and only 559 instances of *jiang*. However, it should also be clear from these figures that *jiang* is used frequently and productively, and deserves closer study. The fact that *jiang* is used productively also means that native speakers have reliable intuitions about how it is used. In the following section, I discuss several facts about the distribution of *jiang*, which are then used to motivate an analysis of *jiang* as syntactic tense.

2. Four reasons to analyze *jiang* as syntactic tense

2.1. *Jiang* appears in a syntactically high position and marks future time

The first property we observe of *jiang* is that it always precedes an auxiliary like *hui* and *yao* (2a), but not the other way round (2b). Since phrases in Mandarin Chinese are usually head-initial, I assume that linear precedence reflects structural height. That *jiang* must precede auxiliaries suggests that *jiang* is structurally higher than auxiliaries.

(2) a. Lisi *jiang hui* qu Beijing.
    L *JIANG HUI* go Beijing
    Lisi will go to Beijing.

2 “Epistemic” and “deontic” as defined by the Academia Sinica. Figures are as of June 2015.

3 Abbreviations used in glosses: CL = classifier; EXP = experiential aspect; IMP = imperative; MOD = modifier (for de); NEG = negation; PERF = perfective aspect; PL = plural suffix; POL = polite register; PRT = sentence-final particle. *Jiang, hui*, and *yao* are not glossed.
Second, *jiang* is compatible with a large range of future time (3). Note that (3b) contradicts Smith and Erbaugh’s claim that *jiang* is used for scheduled events: while predictable, the sun becoming a red giant is typically not perceived as a scheduled event.

(3)  
a. Zhadan yi fenzhong hou jiang baozha.  
   bomb one minute after JIANG explode  
The bomb will explode in a minute.  
b. Taiyang wushi-yi nian hou jiang chengwei hongjuxing.  
   sun five billion year after JIANG become red giant  
The sun will become a red giant after five billion years.

In addition to a tense analysis of *jiang*, there are several alternative hypotheses about *jiang*’s syntactic category that are consistent with the above set of facts, namely: *jiang* is an auxiliary like *hui* and *yao*, or a time adverb, or an irrealis mood. In the following sections, I offer distributional evidence against these alternative hypotheses.

### 2.2. *Jiang* is not an auxiliary

In this section, we consider and rule out an analysis of *jiang* as an auxiliary. *Jiang* is syntactically different from future-marking auxiliaries *hui* and *yao*, contra Smith and Erbaugh 2005. Here, I use Ren’s criteria for distinguishing auxiliaries from verbs and adverbs (Ren 2008:50), which were in turn adopted from diagnostics previously proposed by Chao (1968), Li and Thompson (1981), and R. Li (2004). Ren does not use verb phrase (VP) ellipsis-licensing (4f) as a diagnostic; it is included here because future-marking *hui* and *yao* license VP ellipsis (pace Li and Thompson with respect to *yao*).

(4)  

<table>
<thead>
<tr>
<th>Diagnostic for auxiliaries (after Ren 2008)</th>
<th>Is it true for <em>jiang</em>?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Occur only with a main verb</td>
<td>Yes</td>
</tr>
<tr>
<td>b. Cannot take a direct object</td>
<td>Yes</td>
</tr>
<tr>
<td>c. Cannot take aspect markers</td>
<td>Yes</td>
</tr>
<tr>
<td>d. Can form A-not-A questions</td>
<td>No</td>
</tr>
<tr>
<td>e. Can be negated with <em>bu</em> “not”</td>
<td>No</td>
</tr>
<tr>
<td>f. License VP ellipsis</td>
<td>No</td>
</tr>
</tbody>
</table>

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4 Ren does not use ellipsis-licensing as a diagnostic. Instead she considers and rules out a related diagnostic: whether a morpheme can appear alone as an answer (p. 47). This includes instances of VP ellipsis and non-ellipsis; e.g. to respond affirmatively to a yes-no question, it is possible to repeat only the main verb of the question.
First, observe that jiang occurs with a verbal predicate (5). In this respect it is similar to hui and yao (except in VP ellipsis contexts). This diagnostic shows that jiang (as well as hui and yao) is not an intransitive verb.

(5) Lisi {jiang / hui / yao} *(qu Beijing).
  JIANG HUI YAO go Beijing
  Lisi will go to Beijing.

Second, jiang does not take a direct object, nor do hui and yao (6). This diagnostic shows that jiang, like hui and yao, is not a transitive verb.

(6) * Lisi {jiang / hui / yao} Beijing.
  JIANG HUI YAO Beijing
  No meaningful translation available

Third, jiang cannot be marked with an aspect marker (7a), unlike some control verbs (7b). Similarly, hui and yao cannot be marked with an aspect marker (7a).

(7) a. Lisi {jiang-le / hui-le / yao-le} qu Beijing.
    JIANG-PERF HUI-PERF YAO-PERF go Beijing
    Lisi would be going to Beijing.
  b. Wo qing-guo ta chi fan.
    I invite-EXP her eat meal
    I had invited her to a meal.

The three diagnostics above show that jiang, hui, and yao pattern alike, and are therefore consistent with the hypothesis that jiang is an auxiliary. However, the following diagnostics show that jiang is syntactically distinct from hui, yao, and other auxiliaries.

First, auxiliaries can form A-not-A questions (8a-b). In contrast, jiang does not (8c). (Li and Thompson (1981, ch. 5) and Ren (2008) also note that future-marking yao does not participate in the A-not-A operation, and therefore is an exception for this diagnostic. Yao can appear in an A-not-A question, but only with the “to want” reading.)

(8) a. Lisi hui-bu-hui changge?
    HUI-NEG-HUI sing
    Will Lisi sing?
  b. Lisi neng-bu-neng changge?
    can-NEG-can sing
    Can Lisi sing?
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c. * Lisi jiang-bu-jiang changge?
   L JIANG-NEG-JIANG sing
   Will Lisi sing?

   Second, and related to the A-not-A diagnostic, auxiliaries can be immediately preceded by *bu “not” to produce a reading where negation scopes over the auxiliary (9a). However, this property does not extend to jiang (9b).\(^5\)

(9) a. Lisi mingtian bu hui changge.
   L tomorrow NEG HUI sing
   Lisi won’t sing tomorrow.

b.* Lisi mingtian bu jiang changge.
   L tomorrow NEG JIANG sing
   Lisi won’t sing tomorrow.

Lastly, auxiliaries license VP ellipsis (10a). In contrast, jiang does not (10b).

(10) a. Lisi mingtian \{ hui / yao \} qu Beijing, wo ye \{ hui / ?yao \}.
   L tomorrow HUI YAO go Beijing I also HUI YAO
   Lisi will go to Beijing tomorrow; I will, too.

b.* Lisi mingtian jiang qu Beijing, wo ye jiang.
   L tomorrow JIANG go Beijing I also JIANG
   Lisi will go to Beijing tomorrow; I will, too.

2.3. Jiang is not an adverb

A second hypothesis about the syntactic category of jiang is that it is a time adverb, with similar semantics and syntax as the time adverb jianglai “in the future.” Adverbs in general do not undergo the A-not-A operation nor license VP ellipsis, so an adverbial analysis would be consistent with the facts observed above.

Adverbs in Mandarin Chinese can be sorted into two classes depending on whether they must appear in a position following the subject or are also “movable” to the front of a sentence (Li and Thompson 1981). Time-related adverbs can be found in both classes. The generalization appears to be that adverbs that denote points in time, such as jianglai “in the future”, mingtian “tomorrow,” are movable adverbs, and so can appear sentence-initially. Non-movable adverbs include adverbs that encode some kind of presupposition or aspectual relation, like hai “still/yet,” yijing “already,” zai “again,” you “again” etc; these adverbs can only appear after the subject.

\(^5\) A property of jiang that might be related to this negation fact was observed by Wu and Kuo (2010): jiang cannot be modified by degree adverbs like (bu) yiding “(not) necessarily,” while hui and yao can be.
Since *jiang* denotes future time, it seems reasonable to hypothesize that it is a movable adverb like *mingnian* “next year.” However, as it turns out, *jiang* does not appear sentence-initially (11c).

(11) a. Mingnian Lisi qu Beijing. (Movable adverb)
    next year L go Beijing
    Lisi goes to Beijing next year.

    b. * Zai Lisi qu Beijing. (Non-movable adverb)
    again L go Beijing
    Lisi goes to Beijing again.

    c. * Jjiang Lisi qu Beijing. Jjiang L go Beijing
    Lisi will go to Beijing.

(11c) shows that *jiang* behaves like a non-movable adverb in that it cannot appear before the subject position. However, unlike both non-movable adverbs (12a) and movable adverbs (12b), *jiang* cannot appear in imperatives (12c).

(12) a. Bie zai qu Meiguo le. (Non-movable adverb)
    NEG.IMP again go America PRT
    Don’t go to America again.

    b. Mingtian bie qu Meiguo. (Movable adverb)
    tomorrow NEG.IMP go America
    Don’t go to America tomorrow.

    c. * Bie jjiang qu Meiguo le. NEG.IMP Jjiang go America PRT
    Don’t go to America (in the future).

There are several alternative explanations of (12) that would allow us to analyze *jiang* as a non-movable adverb.⁶ The first is a register mismatch: *jiang* tends to be used in formal settings, and imperatives like the ones in (12) might be too casual for the registers in which *jiang* is felicitously used. A second explanation is that *jiang* is a non-movable adverb with a unique requirement for an overt subject, whether in an embedded or non-embedded context, as the minimal pair in (13) shows. If *jiang* does require an overt subject, then the unacceptability of (12c) can be attributed to the fact that there is no such subject in (12c), and not because *jiang* is not a non-movable adverb.

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⁶ I am grateful to Audrey Li for a discussion of these issues.
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(13) a. (Zhangsan shuo)(Lisi) ye qu Beijing. (Non-movable adverb)
    Z say L also go Beijing
    (Zhangsan said that) (Lisi) also goes to Beijing. (e.g. as an answer to the question
    “John goes to Beijing. Where is Lisi going?”)
b. ??Zhangsan shuo jiang qu Beijing.
    Z say JIANG go Beijing
    Zhangsan said that [Lisi] will go to Beijing. (e.g. as an answer to the question
    “John will go to Taipei. Where is Lisi going?”)
c. ??Jiang qu Beijing.
    JIANG go Beijing [Lisi] will go to Beijing. (as a response
    to the question in in (13b))

However, there are weaknesses with the “overt subject requirement” hypothesis. First, overt second person subjects can appear in imperatives; in (14) we ensure that the subjects cannot be parsed as vocatives, by explicitly including vocatives in the examples. The presence of the subject does not improve the acceptability of an imperative in which jiang appears (14b). Likewise, it is possible to construct more formal or polite imperatives with an overt subject (14c). However, despite the increased formality and the overt subject, (14c) is rendered unacceptable by the presence of jiang. Hence, it is also unlikely that (12c) is explained by a register mismatch between the imperative and jiang.

(14) a. Lisi, ni bie zai qu Meiguo le. (Non-movable adverb)
    L you NEG.IMP again go America PRT
    Lisi, don’t go to America again.
b. Lisi, ni bie (*jiang) qu Meiguo le.
    L you NEG.IMP JIANG go America PRT
    Lisi, don’t go to America (in the future).
c. Zunjing-de kehu-men, ge-wei qing bu yao (*jiang) xiazai
    respect-MOD customer-PL every-CL.POL please NEG.IMP JIANG download
    zaoqian ji-chu de wenjian.
    earlier send-out MOD document
    Dear customers, [everyone] please do not download the document that was sent
    out earlier. (e.g. in an email warning recipients about a previous email that was
    sent out with an infected document)

Second, while (13) suggests that jiang must appear with an overt subject, there are acceptable naturally-occurring counter-examples, a few of which are presented in (15). In these examples, the position of the non-overt subject is indicated with an underscore. (15a) and (15b) show that there are contexts where jiang allows null subjects, while (15c) shows that a subject noun phrase can be relativized, resulting in a relative clause where the subject does not precede jiang. Together, (13)-(15) suggest that an overt subject is not a syntactic
requirement for *jiang*; it is at most a preference, perhaps due to reasons related to style or register. Having ruled out the register mismatch and overt subject requirement hypotheses, it seems unlikely that we can account for *jiang*’s properties by analyzing it as a non-movable adverb.

(15) a. Yahu xuanbu _jiang guanbi Beijing quanqiu yanfa zhongxin. 
    Yahoo! Inc. announce *jiang* close Beijing global R&D center
    Yahoo! announced that it will close (its) Beijing global R&D center.7

b. (Zhengfu) fayanren … biaoshi, … guoding jiari ruoyu zhouver huo 
   government spokesman say public holiday if meet Tuesday or 
   zhousi, _jiang yilü shishi tanxing fangjia, yi xingcheng si 
   Thursday *jiang* uniformly implement flexible holiday to form four 
   tian lian jia …
   day consecutive holiday
   The (government) spokesperson said, for public holidays falling on a Tuesday or 
   Thursday, the government will implement (a system of) flexible holidays, so that 
   there will be four consecutive days off.8

c. Fenxishi yuji, [__ *jiang* yu zhousi chulu] de … baogao, jiang 
   analyst predict *jiang* on Thursday be.released MOD report *jiang* 
   xianshi, 2014/15 (nian) … dadou kucun wei 3.7 yi pushier …
   show 2014/15 year soybean stocks be 370 million bushel
   Analysts predict that the report that will be released on Thursday will show that 
   soybean stocks are at 370 million bushels for 2014/15.9 ([…] = Relative clause)

2.4. *Jiang* is not irrealis mood

A third hypothesis is that *jiang* is an irrealis mood marker, used for describing events that have not happened. In this analysis, *jiang* alternates with a phonologically-null realis morpheme that is used for events that have happened or are ongoing. Because the future by definition has not happened, an irrealis marker like *jiang* can be used to describe scenarios set in the future. At the same time, this hypothesis also predicts that *jiang* can appear in non-future irrealis contexts. To test this prediction, diagnostics for irrealis mood proposed by Matthewson (2006:683-686) are adopted; wherever feasible, example sentences will be explicitly set in the past to force a non-future irrealis reading. The diagnostics show that *jiang* is not an irrealis mood marker.

(16) Diagnostics for irrealis (after Matthewson 2006) Is it true for *jiang*?
    a. Can appear in negation No
    b. Can appear in yes-no questions No

c. Can occur in conditionals           No
   d. Can occur in imperatives           No

First, complementing the earlier observation that negation cannot immediately precede *jiang* in a sentence about the future, (17) shows that negation cannot co-occur with *jiang* in sentences about the past.

(17) a. Lisi yiqian (*jiang) bu (*jiang) xihuan chi shucai.
   L in the past JIANG NEG JIANG like eat vegetable
   Lisi didn’t like to eat vegetables in the past.

   b. Lisi zuotian (*jiang) mei (*jiang) qu paobu.
   L yesterday JIANG NEG JIANG go run
   Lisi didn’t go / hadn’t gone running yesterday.

Second, *jiang* cannot appear in yes-no questions about past situations.

(18) a. Lisi yiqian (*jiang) xihuan chi shucai ma?
   L in the past JIANG like eat vegetable Q
   Did Lisi like to eat vegetables in the past?

   b. Lisi zuotian (*jiang) qu paobu ma?
   L yesterday JIANG go run Q
   Did Lisi go running yesterday?

Third, *jiang* cannot appear in conditionals about past events.

(19) Ruguo Neima’er zuotian (*jiang) nenggou can-sai, Baxi-dui huoxu
   if Neymar yesterday JIANG can participate Brazil-team perhaps
   jiu bu hui shu gei Deguo-dui le.
   then NEG HUI lose to Germany-team PRT
   If Neymar were able to play yesterday, perhaps Brazil wouldn’t have lost to
   Germany.’ (e.g. said the day after Germany beat Brazil in the 2014 FIFA World
   Cup. The Brazil player Neymar was unable to play due to an injury.)

Lastly, *jiang* cannot occur in imperatives, as discussed previously. A relevant example is repeated below for convenience.

(20) * Bie jiang qu Meiguo le.
    NEG.IMP JIANG go America PRT
    Don’t go to America (in the future). (=12c)
3. Proposal

In Section 2, it was shown that jiang indicates some kind of future time reference and occurs in a syntactically high position. Distributional evidence also shows that jiang is not an auxiliary, nor an adverb, nor irrealis mood. To account for these facts, I propose that jiang is syntactically a tense morpheme. In clauses where jiang is absent, I assume that there is an unpronounced non-future tense morpheme in the same position. I note that typologically speaking, a binary future vs. non-future tense distinction appears to be uncommon; Comrie (1985), citing Haiman 1980, reports only Hua, a Papuan language, as having such a distinction. That such a distinction also exists in Mandarin Chinese is therefore of typological interest.

In addition, I propose the following syntactic architecture for Mandarin Chinese clauses (21), where jiang (or the unpronounced non-future tense) appears in the position of T. (21) allows the acceptable sentence in (22) to be generated.

(21)  C [… T [… Neg1 [… Auxiliary [… Neg2 [… Aspect […VP

(22)  Lisi jiang bu hui bu guanxin wo.

L JIANG NEG HUI NEG care about I

It won’t be the case that Lisi won’t care about me. (i.e. Lisi will care about me.)

The ordering of syntactic heads in (21) is consistent in part or in whole with the clausal structure for Mandarin in e.g. Soh 2007, Sybesma 2007, Liu 2010, and T.-H. J. Lin 2012, pace Hu, Pan, and Xu (2001), Smith and Erbaugh (2005), Ren (2008), and J.-W. Lin (2006, 2010) and others who argue that Mandarin has no syntactic tense.

The clausal structure in (21), where T c-commands Auxiliary and Aspect, is not unique to this account; similar analyses have been developed for other languages with overt tense paradigms, such as English, French, Malagasy (see van Gelderen 2013, Adger 2003, Pollock 1989, Pearson 2001, a.o.). It is also syntactically similar to Matthewson’s proposal (2006) for St’át’imcets, which she analyzes as a “superficially tenseless” language. That the clausal structure of Mandarin Chinese is similar to that of unrelated languages thus provides support for the existence of a universal clause structure, derived from a set of syntactic categories that are made available by the human language faculty.

Combining the proposal that jiang is tense with the clause structure in (21) enable a straightforward explanation of the distributional facts observed in Section 2. First, they are consistent with the future time semantics of jiang and its position in a clause. Jiang precedes the auxiliaries hui and yao because it is structurally higher than they are, and the structural relation is reflected in linear precedence. Second, the fact that negation cannot immediately precede jiang receives a similar analysis: jiang is higher than negation, so a Neg-jiang linear order is not available. Note that a semantic account for the restriction on a Neg-jiang linear order is unlikely: (22) shows that negation and jiang can co-exist; i.e. it is not semantically incoherent to negate a proposition that is temporally set in the future. Third, if we assume (after Law 2001 and Liu 2010) that A-not-A questions are formed by
an operation involving a Neg morpheme and a predicate in the c-command domain of Neg, a clausal structure like (21), where jiang c-commands negation, also explains why jiang does not participate in A-not-A question formation.

4. Predictions

The proposal that jiang is syntactic tense leads to at least two predictions. The first prediction is that, like tense morphemes in many other languages, jiang requires the presence of a verb for well-formedness reasons. Such a requirement might be consistent with the fact that jiang does not license VP ellipsis. The second prediction is that if Mandarin Chinese has syntactic tense, there is also a finiteness distinction (tensed vs. non-tensed) in Mandarin Chinese clauses. In the following sections, I show that both predictions are borne out empirically, thus lending additional support to the proposal.

4.1. Jiang requires an overt verbal host

As observed by Lin (2010), Mandarin Chinese allows bare nominal predicates (pp. 317-318), without the copula shi or the existential verb you (23). He points out that in equivalent sentences in English, the copula is obligatorily present, as shown in the English translations in (23). He argues that the copula in these constructions is semantically vacuous, as the predicate can be predicated directly from the subject.

(23) a. Jintian xingqitian.
    today Sunday
    Today *(is) Sunday. (Lin 2010 ex. 30a)

b. Wode yue gongzi 320 yuan.
    my monthly salary 320 dollar
    My monthly salary *(is) 320 dollars. (ibid. ex. 30c)

c. Women quan cun cai liang-qian ren.
    we whole village only two-thousand people
    There *(are) only two thousand people in our village. (ibid. ex. 30d)

In Lin’s analysis, this difference in whether a copula is needed comes about because English has syntactic tense and Mandarin Chinese does not. Specifically, the presence of the semantically vacuous copula in a language like English is attributed to the fact that English has tense, and tense needs to be expressed on a verb. Hence, even though the copula is not needed for semantic well-formedness, it is present so that the tense morpheme can be expressed. The logic here is identical to the one used to motivate the syntactic operation of do-support in question-formation and VP ellipsis in English (Chomsky 1957; Lasnik 1995). For example, VP ellipsis, as the name suggests, would leave the tense morpheme without a verb, resulting in ill-formedness (24a); a semantically vacuous do is therefore inserted (24b).
The absence of a semantically vacuous verb in Chinese suggests that there is no requirement for a verb in the sentences in (23). Lin argues that the absence of this requirement is because Chinese does not have any tense morphemes in the first place. However, consider similar sentences set in the future with jiang (25). As (25) shows, when jiang is present, a semantically vacuous verb (e.g. the copula or the existential you) also must be present. Adopting Lin’s reasoning thus leads us to conclude that these semantically vacuous verbs appear because jiang, as a tense morpheme, needs some kind of verbal host for syntactic well-formedness reasons.10

   tomorrow JIANG be Monday
   Tomorrow will be Monday.

   b. Wode yue gongzi jiang *(shi) 320 yuan.
      my monthly salary JIANG be 320 dollar
      My monthly salary will be 320 dollars.

   c. Women quan cun jiang *(you) liang-qian ren.
      we whole village JIANG exist two-thousand people
      There will be two thousand people in our village.

4.2. Evidence for a finite vs. non-finite distinction in Mandarin Chinese

The second prediction that might arise from the analysis of Mandarin as a language with syntactic tense is that Mandarin has non-finite (non-tensed) clauses. Adopting the analysis of jiang as future tense makes it possible to directly test, using jiang, whether a clause is finite or not. (26) shows that not all embedded clauses can contain jiang: specifically, the ones that do not do so appear to be the clausal complements of control verbs, such as yao “to want,” jiao “to tell,” quan “to urge,” or guli “to encourage” (26b). The minimal pairs in (26) are thus novel evidence supporting the claim that Mandarin Chinese has a finite vs. non-finite distinction, pace Hu, Pan, and Xu (2001), Smith and Erbaugh (2005), Ren (2008), and Lin (2006, 2010). If this analysis is on the right track, that control verbs in Mandarin and other unrelated languages take non-finite clausal complements (i.e. jiang cannot appear in these clauses) is also suggestive of a principled relationship between certain syntactic properties (e.g. finiteness) of these clauses and the semantics of these verbs (Hacquard 2014, a.o.).

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10 This requirement for a verbal host is not exclusive to jiang; it is also a requirement of auxiliaries like hui or yao.
5. Some issues related to a tense analysis of *jiang*

In this section, I discuss two sets of potential counter-examples to the proposal about *jiang* and tense, and argue that they do not weaken the core claim of this paper that *jiang* is syntactic tense.

5.1. Incompatibility with certain predicates

Analyzing *jiang* as future tense predicts *jiang* to be compatible with all predicates. As (27) shows, this does not seem to be the case.

(27) a. Mei-ge bingren dou jiang si.
    every-CL patient all JIANG die
    Every patient will die.

b. Women xia-xingqi jiang hui.
    we next-week JIANG go back
    We will go back next week.

However, there is a marked improvement in acceptability when there is additional material appearing after the verb (28), e.g. an adjunct or a direct object. In terms of semantics and syntax, (27) is largely similar to (28). If (27) is unacceptable due to syntactic and semantic factors associated with *jiang*, the same factors should also cause (28) to be unacceptable. Since the sentences in (28) are fine, it is unlikely that the analysis of *jiang* as future tense explains the unacceptability in (27).

(28) a. Mei-ge bingren dou jiang si yu aizheng.
    every-CL patient all JIANG die of cancer
    Every patient will die of cancer.

b. Women xia-xingqi jiang hui Hanguo.
    we next-week JIANG go back Korea
    We will go back to Korea next week.

Several hypotheses might explain the contrast between (27) and (28). The first hypothesis is a pragmatics account along the lines of Goldberg and Ackerman 2001, proposed to explain an adjunct requirement in English (29). Observe the parallels between (29a) and (27) and between (29b) and (28). Goldberg and Ackerman argue that, because it is a given that houses are built, (29a) has too little new information for discourse purposes.
The same argument can be adapted for (27a): it is understood that all people die, so there is not enough new information in (27a). However, this analysis fails to account for (27b): the act of going back is not a truism for individuals. There should have been enough new information in (27b) for it to be pragmatically felicitous.

(29) a. #This house was built.
   b. This house was built {in 1819 / in ten days / with straw}.

The second hypothesis is that jiang imposes a phonological or prosodic requirement on the structures immediately following it (Omer Preminger, p.c.); in this analysis, the sentences in (27) contain too little overt material to satisfy this requirement.

A third hypothesis regarding the constraint on “light” (whether in terms of information or prosody) predicates is that it is stylistic in nature (Audrey Li, p.c.). Jiang is typically used in a formal register, where it is conceivable that elided adjuncts or objects are dispreferred, or monosyllabic predicates (as in (27)) are judged as too informal to be used together with jiang.12

5.2. Jiang is not obligatory on all sentences set in the future

A second counter-argument against the analysis of jiang as syntactic tense is based on the fact that jiang is not obligatorily present on all sentences set in the future. For example, (30) is a perfectly acceptable sentence about the future, without jiang.

(30) Lisi mingtian hui qu Beijing.
    L tomorrow HUI go Beijing
    Lisi will go to Beijing tomorrow.

This argument is built on the assumption that there has to be an exclusive one-to-one correspondence between temporal interpretation and morphosyntactic form. However, there is no a priori reason to expect such a correspondence. It is not the case that temporal relations are exclusively encoded on syntactic tense morphemes: temporal information is present in the semantics of temporal adverbs, aspect, and modals. This means that speakers of Mandarin, like speakers of many other languages, have several lexical options available when they wish to make an assertion about the time of an event; (30) is one such example of how one might do so. Nor it is necessary that a tense morpheme exclusively determine

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11 Nor does the pragmatics account explain why replacing jiang with the future-marking auxiliary hui in (27a) immediately improves acceptability (Mei-ge bingren dou hui si), or why the semantically similar sentence in English Every patient will die is also acceptable.

12 This preference for prosodically heavier constituents in a formal register might be conditioned by the relative scarcity of monosyllabic verbs and the prevalence of disyllabic verbs related to politics, law and economics (Duanmu 2007 ch. 7). Due to their content, heavy predicates presumably occur frequently in a formal context, which is also where jiang appears.
the temporal interpretation of a given sentence. The English sentences in (1) show that temporal interpretation is dependent on several other factors, e.g. the semantic contribution of other morphemes, register, or even context.

5.3. Comments on the semantics of jiang and tense in Mandarin

If there is a need to separate semantic tense and syntactic tense, how then does this analysis of jiang as syntactic tense relate to previous analyses of its semantics or the semantics of tense in Mandarin Chinese?

I note that previous research (Wu and Kuo 2010, Smith and Erbaugh 2005) has treated jiang as a modal, but not necessarily as a modal with future tense semantics. For example, Wu and Kuo encode future time in their analysis of jiang (and hui and yao), but do not comment on whether jiang should be thought of as tense or aspect (or both). In principle, adopting wholesale their semantic analysis of jiang as a modal is not incompatible with the syntactic tense analysis presented above. In fact, such an analytical approach has a precedent elsewhere: modal auxiliaries in English, e.g. might and must, are in complementary distribution with tense morphemes, have similar syntactic properties, e.g. participate in subject-auxiliary inversion. Consequently they are often analyzed as being syntactic tense (most influentially in Chomsky 1957).

Given that jiang also encodes some kind of futurity, how jiang fits into a broader theory of tense in Mandarin is less clear. Recent comprehensive accounts of temporal semantics in Chinese (Smith and Erbaugh 2005, Lin 2006) have claimed that there is no syntactic tense morpheme; instead, in these analyses, aspect markers like le and guo, and modals like hui, in conjunction with certain pragmatic or semantic principles, play a major role in determining the temporal interpretation of a sentence. If the proposal in this paper – that there is a future tense jiang and an unpronounced non-future morpheme – is on the right track, then there is a need to reconcile jiang and its non-future counterpart with the insights in these accounts. I leave this task for future research.

6. Conclusion

In preceding sections, I made several observations about the distribution of the future-marking particle jiang. By comparing jiang with auxiliaries, adverbs, and irrealis mood markers, I developed an account of Mandarin as a language with syntactic tense and a future vs. non-future tense distinction. Additional evidence based on the acceptability of jiang in clausal complements was also offered to support the claim that Mandarin has a finite vs. non-finite distinction.

Note, however, that in more recent syntactic research in the generative tradition, modals are often thought of as verb-like morphemes that move to adjoin to a tense node (e.g. in Lasnik 1995), instead of being of the same category as a tense morpheme.
As discussed above, these arguments have implications for theories of tense and clause structure. From a typological perspective, a binary future vs. non-future tense distinction is uncommon (Comrie 1985), suggesting that there might be some kind of universal bias against such a distinction or against a future tense (see Matthewson 2006 for a discussion). That Mandarin has such a distinction raises interesting questions about how this distinction might have arisen in the first place. From a syntactic perspective, this proposal – that Mandarin has syntactic tense, a clause structure similar to what has been proposed for unrelated languages, and possibly a finiteness distinction, while being “superficially tenseless” (to borrow a term from Matthewson 2006) – provides additional support for a theory of universal clause structure in which tense is a core component.

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