

Wanting the future: the case of desire and future *yao*

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NACCL 2020

Cross-linguistically, desire verbs tend to acquire non-desire future meanings.

- English *will* < Old English *willan* “want,” also Brazilian Portuguese, Dutch, Danish, Georgian, Inuit, Malay/Indonesian, Buli (Niger-Congo), Nimboran (Papuan), Bongu (Papuan) and Dakota (Siouan) (Bybee et al. 1994; Harris & Campbell 1995; van Dooren et al. 2019).

This process is also attested in Mandarin (and other varieties of Chinese). Mandarin *yao* can mean “want” or express an immediate future (“going to,” “about to”; Li & Thompson 1981).

- (1) Lisi yao shuìjiào.
Lisi want sleep
Desire reading: ‘Lisi wants to sleep.’
Future reading: ‘Lisi will/is going to/is about to sleep.’

Our goals:

1. Use Mandarin 要 *yao* as a case study to address questions about this change.
2. In the process, clarify questions about future *yao*’s syntax and semantics.

1. How are the two uses related?

- Standard approach in diachronic research: deduce semantic and syntactic properties at various stages through corpora.
- Here, we take a synchronic approach (also Bybee et al. 1994).
- We strengthen existing arguments that *yao* is not a case of semantic generality, but *ambiguity* (Li & Thompson 1981).

2. What kind of future is *yao*?

Recent research shows that languages encode future in diverse ways: tense, modal, aspect (Cinque 1999; see Bochnak 2019 for a review).

*Special thanks to NACCL organizers and reviewers. We are deeply grateful to Valentine Hacquard and would also like to acknowledge the helpful discussions we had at various stages of this project with Ailís Cournane, Maxime Tulling, Yuhang Zhang, Daniel Goodhue, Alexey Kozlov, Thomas Grano, Igor Yanovich, Paul Portner, and Peter Klecha. All errors are ours alone. NH is supported by a NUS Overseas Postdoctoral Fellowship, AvD by NSF Grant #BCS-1551628, and GM by CAPES 0652-14-8. Email: znhuang@nus.edu.sg (NH); avdooren@umd.edu (AvD); gesoelmendesjr@gmail.com (GM).

Future *yao* itself is the subject of some disagreement.

- Wu & Kuo (2010); Santana LaBarge (2016): epistemic modal, structurally high
- Lin (2012): aspect, structurally low

Our claim: *yao* is syntactically low and aspect-like, supporting Lin (2012).

We follow Cinque 1999 (and Hacquard 2006; Grano 2015) in that root modals and aspect are in functional projections just above the VP (2).

- (2)
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- a. Epistemic modals: *keneng*, *huoxu* “maybe, might,” *kending* “necessary, must”
- b. Root modals: *bixu* “is obliged to,” *keyi* “is able / allowed to”
- c. Aspect: progressive *zai*, durative *zhe*, perfective *le* ...

3. How does a desire verb change into a future marker?

Our suggestion: speakers can easily reanalyze *yao* as a functional head (3) (Lightfoot 1979; Roberts & Roussou 2003; also see literature on restructuring, e.g. Cinque 2006; Grano 2015; Huang 2018).

- (3) Lisi yao shuijiao.
Lisi want sleep
‘Lisi wants to sleep’ / ‘Lisi will sleep.’

- (4)
-

The resulting *yao* initially aligns with root modals / aspect markers (but not epistemic modals) because of shared syntactic and temporal properties (following Hacquard & Cournane 2016).

0.1 Outline

- An ambiguity in *yaos*
- Future *yao* as an aspect/root modal
- A reanalysis approach
- Semantic properties
- Discussion and conclusion

- (7) a. Lisi bu yao he kafei.
Lisi NEG want drink coffee
'Lisi does not want to drink coffee.'
- b. *Shengmi bu yao zhu cheng shufan le.
uncooked.rice NEG want cook become cooked.rice LE
'The rice is not going to be done.' ('It is false that there will be an undesirable, irreversible change.')
- c. Shengmi bu hui zhu cheng shufan de.
uncooked.rice NEG will cook become cooked.rice PRT
'The rice will not be done.' (same intended reading as (7b))

2 Future *yao* as a root modal / aspect marker

2.1 Copulas

Generalization: Epistemic modals (what is possible or necessary, given knowledge about facts) can freely co-occur with the copula *shi*.

- (8) Lisi keneng / kending shi xiongshou.
 Lisi might must be murderer
 ‘(Given what we know,) Lisi might / must be the murderer.’ [Epistemic modal]

Generalization: There are restrictions on root modals (what is possible or necessary, given one’s goals or circumstances – but not knowledge) and aspect markers occurring with the copula.¹

- (9) a. *Lisi keyi / nenggou shi gongmin.
 Lisi can can be citizen
 Intended: ‘Lisi is allowed to be a citizen.’ (scenario: Lisi has met the legal requirements for naturalization) [Root modal]
- b. ??Lisi xuyao / bixu shi gongmin.
 Lisi must must be citizen
 Intended: ‘Lisi is required to be a citizen.’ (scenario: Lisi is a non-citizen but wants to run for election.) [Root modal]
- c. *Lisi zai shi gongmin.
 Lisi PROG be citizen
 Intended: ‘Lisi is currently a citizen.’ [Aspect]

Similar restrictions with *yao*.²

- (10) *Lisi yao shi gongmin (le).
 Lisi want be citizen LE
 Intended: ‘Lisi is going to become a citizen.’ (right before Lisi takes the oath of allegiance)

¹For root modals, this restriction is lifted if the subject is generic:

- (i) Houxuanren bixu shi sanshiwu-sui yishang de gongmin.
 candidate must be 35-years.old above MOD citizen
 ‘Candidates must be citizens above 35 years of age.’

²This is very similar to Lin’s (2012) that *yao* cannot co-occur with “stative” complements, but epistemic modals can. Lin’s claim might be too strong. Some arguably stative verbs can appear with *yao* (i). Chinese generally does not allow coercion (Lin & Liu 2005), so it is unlikely that *you* ‘have’ has an eventive use in (i).

- (i) Zhe bu dianying yao you xuji le.
 this CL movie want have sequel LE
 ‘This movie is going to have a sequel.’

2.2 Change of state *le*

Sentence-final, change of state (COS) particle *le*: ‘It is now the case that ...’.

Generalization: Epistemic modals scope above *le* (11a), while root modals and aspect scope under it (11b), (11c) (Santana LaBarge 2016, see more nuanced discussion in Lin 2012; examples adapted from Lin 2012 exx. 75, 77).

- (11) a. Zhangsan *keneng* qu Taipei *le*.
 Zhangsan might go Taipei LE
 ‘It is possible [= *keneng*] that it is now the case [=COS *le*] that Zhangsan went to Taipei.’
 [Epistemic modal > *le*]
- b. Zhangsan *nenggou* qu Taipei *le*.
 Zhangsan able go Taipei LE
 ‘It is now the case [=COS *le*] that Zhangsan is able [= *nenggou*] to go to Taipei.’
 [*le* > Root modal]
- c. Zhangsan *dao-le* Taipei *le*.
 Zhangsan arrive-PFV Taipei LE
 ‘It is now the case [=COS *le*] that Zhangsan has arrived [=perfective *le*] in Taipei.’
 [*le* > Aspect]

We argue that *yao* scopes under *le*, contra Santana LaBarge (2016).

This argument is based on the observation that *yao* marks immediate future (12) (Li & Thompson 1981:175).

- (12) Taiyang {*mashang* *jiu* / #*wushi* *yi nian* *hou*} *yao* *biancheng* *hong juxing* *le*!
 sun immediately PART five.billion year after want become red giant LE
 ‘The sun is going to turn into a red giant right now / in five billion years.’

Scenario: assume that Zhangsan had made plans last month to go to Taipei tomorrow.

- (13) Zhangsan (*mingtian*) *yao* qu Taipei *le*.
 Zhangsan tomorrow want go Taipei LE
 ‘Zhangsan is going to go to Taipei tomorrow.’
 ‘It is now the case [= *le*] that there is an immediate-future event [= *yao*] of Zhangsan going to Taipei.’
 [*le* > Future *yao*]

Previously, Zhangsan’s trip was too far in the future. Now, the trip is only a day away.

As a result, there has been a change of state: the trip can now be described as imminent (*yao*).

2.3 Position of time adverbs

Evidence for a stronger claim: *yao* behaves more like an aspect marker, compared to epistemic and root modals (following Lin 2012).

Generalization: Modals can precede time adverbs.

- (14) a. Zongtong keneng mingtian jiejian dashi.
 president might tomorrow meet ambassador
 ‘The president might meet the ambassador tomorrow.’ [Epis. - Adverb]
- b. Zongtong keyi mingtian jiejian dashi.
 president can tomorrow meet ambassador
 ‘The president can (is able to) meet the ambassador tomorrow.’ [Root - Adverb]

Generalization: Progressive aspect *zai* cannot precede a time adverb. (In Mandarin, only one aspect marker – *zai* – precedes the verb.)

- (15) a. *Zongtong zai {xianzai / zhe shihou} jiejian dashi.
 president PROG now this time meet ambassador
 Intended: ‘The president is meeting the ambassador now.’ [*Prog. asp. - Adverb]
- b. Zongtong {xianzai / zhe shihou} zai jiejian dashi. [Adverb - Prog. asp.]

Yao patterns largely with *zai*.³

- (16) a. ??Zhadan yao wu fenzhong hou baozha (le).
 bomb want five minute later explode LE
 ‘The bomb will explode in five minutes.’ [??*yao* - Adverb]
- b. Zhadan wu fenzhong hou yao baozha le. [Adverb - *yao*]
- (17) a. *Zongtong yao {xianzai / wu fenzhong hou} jiejian dashi (le).
 president want now five minute later meet ambassador LE
 Intended: ‘The president is going to meet the ambassador now / five minutes later.’
- b. Zongtong {xianzai / wu fenzhong hou} jiu yao jiejian dashi (le).
 president now five minute later PRT want meet ambassador LE

3 The development of future *yao*

We saw distributional evidence that as a future marker, *yao* behaves more like an aspect marker or a root modal.

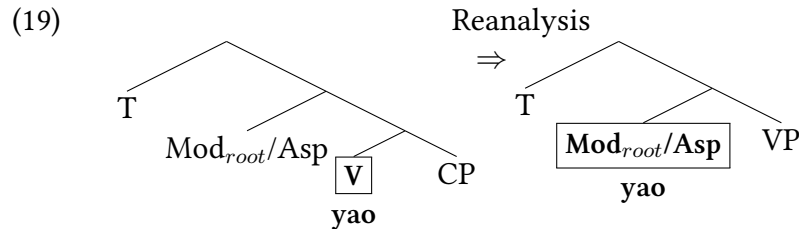
1. Why does the desire verb develop in this direction?
2. Why didn’t the desire verb become an epistemic modal?

³We know of only two time adverbs that can exceptionally follow *yao*: *suishi* ‘anytime’ and *mashang* ‘right away’. Both are distinguished by their “immediately” semantics, suggesting that the restriction might ultimately be semantic in nature.

3.1 A reanalysis in *want*

Starting point: Syntactic ambiguity (Roberts & Roussou 2003).

- (18) Lisi yao shuijiao.
Lisi want sleep



Why would there be an initial alignment between *yao* and root modals or aspect?

☞ Because the syntax and semantics of desire yao is already more similar to root modals (or aspect), compared to epistemic modals (following Hacquard & Cournane 2016).

3.2 Copulas again

Desire *yao* cannot co-occur with the copula *shi*.

- (20) *Lisi yao shi zongtong.
Lisi want be president
Intended: ‘Lisi wants to be president.’

Previously:

- Root modals and aspect markers also impose restrictions with the copula.
- Epistemic modals do not.

3.3 Alignment in temporal orientation

Desire *yao* and root modals are generally incompatible with a present temporal orientation (TO): the time of the complement (prejacent) event cannot be simultaneous with “want” or the modal.

- For discussion of modals and temporal orientation, see Giorgi & Pianesi 1997; Remberger 2010; Condoravdi 2002; Rullmann & Matthewson 2018 a.o.

- (21) ??Lisi {yao / keyi} xianzai zai jia.
Lisi want can now be home
Intended: ‘Lisi wants be at home now.’ / ‘Lisi is allowed to be at home now.’
- Lisi has a desire / permission at time *t*.
 - Lisi being at home is also at time *t*.

Epistemics: can have a non-future TO.

- (22) Lisi keneng xianzai zai jia.
Lisi might now be home
'(Given what we know,) Lisi might be at home now.'

3.4 Interim summary

Our proposal here is fundamentally a “formal” approach toward grammaticalization.

- Building on Lightfoot 1979; Roberts & Roussou 2003; Hacquard & Cournane 2016.

Contrast with meaning-based approaches: a path from Volition > Intention > Future (Bybee et al. 1994, see also Sweetser 1987, 1990; Traugott 1989).

- This approach does not make fine-grained syntactic predictions for *yao*.
- Hard to see why *yao* did not develop into an epistemic modal.
- This is not exclusive to Mandarin: similar problems for Brazilian Portuguese and Dutch, where *want* has also become a root modal-like future marker (van Dooren et al. in prep.).

4 Probing the semantics of future *yao*

Initial suggestion: *yao* has aspect semantics, specifically prospective aspect.

- Reference time > Event time (in Reichenbachian terms).

We argue below that *yao* shows indications of a modal component.

- Modality and aspect are not mutually exclusive (Bochnak 2019; Copley 2009, among many others; cf. Dowty 1977; Portner 1998 on the English progressive).

4.1 Counterfactual readings

Klecha (2013): A lexical item has modal semantics if some morphological variant is associated with a counterfactual, nonveridical reading.

- Example: English *be going to* / *gonna*.

- (23) Julia was gonna finish her paper (but she did not). (adapted from Klecha 2013:450, ex. 15a)

MC *yao*: compatible with counterfactual, nonveridical readings (24).

- (24) Kafei benlai shi yao he-wan de (keshi zuihou que mei he-wan).
coffee originally be want drink-finish PART but in.the.end but NEG drink-finish
'The coffee was about to run out (but in the end it did not).'

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Appendix

How old is future *yao*?

16th century, if not earlier (cf. Santana LaBarge 2016 for observations about desire *yao*)

- Present in the classic Yuan/Ming Mandarin novel *Water Margin*: 兄弟若闲，便要生病 *xiongdi ruo xian, bian yao sheng bing*, roughly, “If I have nothing to do, I want to (= will/am going to) fall sick” (chapter 67)
- Described in the grammar *Notitia linguae sinicae* (Prémare 1736/1831).

Ambiguity tests

Alternative hypothesis: *yao*’s semantics is general, compatible with both desire and future readings.

- *Teacher* / *laoshi*, semantically general, compatible with any subject of instruction.
- Cf. *pen*, ambiguous between ‘animal enclosure’ or ‘writing tool.’

A standard test of generality and ambiguity is via coordination (Zwicky & Sadock 1973): is there a “mixed reading” available?

- (27) Lisi he Zhangsan dang-guo laoshi.
 Lisi and Zhangsan be-EXP teacher
 a. ‘Lisi has been a math teacher, Zhangsan has also been a math teacher.’ [Uniform]
 b. ‘Lisi has been a math teacher, Zhangsan has been a physics teacher.’ [Mixed]
- (28) Lisi he Zhangsan yao shuijiao (le).
 Lisi and Zhangsan want sleep LE
 a. ‘Lisi and Zhangsan want to sleep.’ [Uniform]
 b. ‘Lisi and Zhangsan will sleep.’ [Uniform]
 c. # ‘Lisi wants to sleep and Zhangsan will sleep.’ [#Mixed]
 d. # ‘Lisi will sleep and Zhangsan wants to sleep.’ [#Mixed]

More on *yao* and change of state *le*

Santana LaBarge (2016): *yao* scopes above change of state *le* (29a).

- We do not dispute the logic of the argument, but note that it requires the assumption that *yao* is just a “simple” future.

- (29) Santana LaBarge’s readings for (13)
 a. ‘There will (= *yao*) be a change of state (= *le*) that tomorrow, Zhangsan goes to Taipei.’
 [*yao* > *le*] (cf. Santana LaBarge 2016:413 ex. 33)
 b. # ‘It is now the case (= *le*) that tomorrow, Zhangsan will (= *yao*) go to Taipei.’ [#*le* > *yao*]

5.1 More data consistent with an aspectual analysis

Suppose that Lin (2012) is right about *yao* being an aspect.

Progressive aspect *zai* can be prefixed with the adverb *zheng* “at that moment,” which highlights simultaneity with some salient time point (Lü 2008).

- (30) Tamen zheng zai shuijiao.
 they right.then PROG sleep
 ‘They were sleeping at that moment.’

So can *yao*. But not future markers *hui* or *jiang*.

- (31) Daqiao zheng {yao / *hui / *jiang} daota.
 bridge right.then want will FUT collapse
 Intended: ‘This bridge was going to collapse at that moment.’

Arguments against a future tense analysis

First, Huang (2015): MC has a syntactic tense morpheme, *jiang*.

Standard assumption: a clause has only one tense morpheme.

If *jiang* and *yao* are both future tenses, then they should not co-occur in a clause.

This prediction is not borne out.

- (32) Feiji *jiang yao* qifei.
 plane FUT want take.off
 ‘The plane is going to take off.’

Second, if *yao* is a future tense, it should only refer to a time in the future of speech time, especially in main clauses.

But *yao* can have a “future-in-past” reading, especially in counterfactual contexts.

Scenario: The weather report predicted rain in the morning, but there was no rain at all.

- (33) Zaoshang benlai *yao* xia yu de, zenme mei xia?
 morning originally want fall rain PRT why NEG.PFV fall
 ‘It was going to rain this morning. Why didn’t it rain?’

Desire *yao* scopes under tense

Epistemic modals scope over tense, but aspect and root modals scope under tense (Groenendijk & Stokhof 1975; Iatridou 1990 a.o., but see Rullmann & Matthewson 2018).

- We will abstract away from the question of how tense is represented. What is more relevant is the generalization.

- (34) a. John had to be home last night.
 b. Yuehan zuowan yinggai zai jia (de).
 Yuehan last.night should be home PRT
 (i) Epistemic: Given what we know, it is now *necessary* that *last night*, John was at home. [Epistemic modal > Past]
 (ii) Root: Given the circumstances *last night*, it was *required* that John was at home. (e.g. it was his child’s birthday) [Past > Root modal]

Desire *yao* scopes under tense.

- (35) Lisi zuowan *yao* hui jia.
 Lisi last.night want go home
 ‘Last night, Lisi wanted to go home.’ (≈ According to Lisi’s circumstances *last night*, it was *desirable* for Lisi to go home.) [Past > Desire]