

# A future for desire verbs: Language change from a synchronic perspective

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**Abstract** Cross-linguistically, desire verbs often develop into future markers. In this article, we study this phenomenon through the lens of Brazilian Portuguese, Mandarin Chinese, and Dutch, where a desire verb has independently acquired a future reading lacking the desire component. We investigate how the two uses are represented synchronically in the grammars of native speakers, and we find convergence in the three languages. In each language, (a) the two uses are a case of ambiguity, rather than semantic generality, and (b) the innovative future “want” has distributional properties typical of root modals (deontic, ability, etc.), but not of epistemic modals or tense markers. We explain this convergence by appealing to the fact that the desire verb in each language already shares certain syntactic and semantic properties with root modals, facilitating the reanalysis of WANT as a future marker with root modal properties (adding to various current proposals). Our analysis of future WANT in turn strengthens the case for the importance of formal linguistic properties in grammaticalization.

**Keywords:** want; tense; modality; diachronic change; synchronic grammar

Desire verbs often change into future markers over time (Bybee et al. 1994, Traugott 1989, among others). This change has been reported for Danish, Georgian, Inuit, Malay/Indonesian, Buli (a Niger-Congo language), Nimboran (Papuan), Bongu (Papuan) and Dakota (Siouan) (Bybee et al. 1994; Harris & Campbell 1995, etc). An often-cited example is Modern English *will*, descended from Old English *willan* ‘want, wish’ (Lightfoot 1979; Mitchell 1985; Traugott 1989; Denison 1993; Bybee et al. 1994; Roberts & Roussou 2003, among many others).

- (1) hwile þe God **wille** ðæt ðeara ænig sie þe londes weorðe sie  
while the God will that there any is who land-GEN worth is  
‘while God wants that there is someone who is worthy of the land.’  
(c. 850; Robertson 1956 [1939])

In this paper, we examine three languages — Brazilian Portuguese (BP), Mandarin Chinese (MC), and Dutch (D) — where a desire interpretation of a desire verb, typically glossed as “want,” coexists with a non-desire interpretation that typically points to a future event (henceforth: “future WANT”):<sup>1</sup>

- (2) a. O João está querendo ficar doente.  
John is wanting to.get sick  
‘John wants to get sick./ ‘John is about to get sick.’ [BP]

<sup>1</sup> Future WANT often co-occurs with particles, like D *nog* ‘still’ or MC change-of-state *le*, whose functions we do not fully understand. However, these particles are not necessary for the future reading. Consequently, our discussion will be mostly focused on WANT instead of these particles.

- b. Yuēhàn yào shēngbìng le.  
John want get.sick LE  
'Now John wants to fall sick.'/'John is going to fall sick.' [MC]
- c. Jantje wil nog wel ziek worden.  
Jan.DIM wants still WEL ill become.INF  
'Little Johnny still wants to become ill.'/'Little Johnny will probably become ill.' [D]

The translations provided specify both readings available for these examples. The examples in (2) are constructed in a way to make the non-desire reading salient, under the assumption that people prefer to be healthy. These examples can be felicitously stated in this context where no desire is implicated. The desire reading can still be accessed, in a context where the subject desires to get sick (for example, if a student hopes to get out of school).

The coexistence of both interpretations in these languages provides a unique opportunity to understand how certain stages of this diachronic process might be represented in a speaker's mental grammar. Our access to our native speaker intuitions lets us probe grammatical representations with greater precision, complementing standard diachronic approaches that use corpora and translations. In particular, we use this approach to address the following three questions about future WANT in these three languages:

- (3) a. How are desire and future WANT represented in these languages?
- b. What kind of future does future WANT encode?
- c. Why might desire WANT evolve to produce this particular future reading?

To preview the rest of the paper, we find that the status of future WANT is remarkably similar across these three languages, even though the desire-to-future change occurred independently. First, in all three languages, the desire and future readings of WANT in (2) reflect *ambiguity*: they are associated with distinct LFs, as opposed to a scenario where future WANT is merely a metaphorical extension of desire WANT or where there is a single WANT that is semantically general.

Second, having established that future WANT and desire WANT are distinct, we show that future WANT in these three languages converge in exhibiting the distribution of a root modal,<sup>2</sup> rather than an epistemic modal or tense marker. Indeed, further investigation into the semantics of these future WANTS reveals that despite subtle cross-linguistic differences, these elements converge in having a modal component, and not a purely temporal interpretation.

To clarify, for the scope of this article, we propose to define modals and subclasses of modals in both syntactic and semantic terms. Syntactically, we take modals to be a distinct category of lexical items in a language. In many languages, modals show a distributional pattern that sets them apart from other syntactic categories (notably, verbs). As an example, in Dutch, modals as a class lack the *-t* ending that other verbs have in their inflection for third person singular. In BP, they typically appear between a non-thematic subject and a verb bearing infinitive morphology, a property also shared with various other auxiliaries. As for MC, modals occur clause-medially, between the subject and the main verb, and are typically absent when the clause is the complement of a control verb like *shěfǎ* "try" (Huang 1989; Li 1990; Lin 2012, among many others). Subclasses of modals can likewise be differentiated through distribution, as we will illustrate in later

<sup>2</sup> Or potentially a combination of a root modal analysis of MC future WANT, see section 5.2. See Lin 2012 for a recent analysis where MC future WANT is claimed to be an aspect marker.

sections of this paper. Semantically, we take modals to be existential or universal quantifiers over possible worlds (Kratzer 1981). In the Kratzerian framework, a modal's domain of quantification is determined by two conversational backgrounds, a modal base (MB), and an ordering source (OS): the modal quantifies over the worlds of the MB that most closely approach the ideal set by the OS.

- (4) a.  $\llbracket \text{can} \rrbracket^{w, \text{MB}, \text{OS}} = \lambda q \langle s, t \rangle \exists w' \in \text{OS}(w) (w' \in \text{MB}(w): q(w'))$   
 b.  $\llbracket \text{must} \rrbracket^{w, \text{MB}, \text{OS}} = \lambda q \langle s, t \rangle \forall w' \in \text{OS}(w) (w' \in \text{MB}(w): q(w'))$

In this system, root modals contrast with epistemic modals in taking a different MB. Root modals, which include ability, circumstantial, deontic, bouletic, and teleological modals, take a circumstantial MB, which picks out worlds compatible with relevant circumstances.<sup>3</sup> Epistemics take an epistemic MB, which picks out worlds compatible with the available evidence. A typical example of an epistemic and a root modal are in (5).

- (5) a. Sam might be sick. (epistemic modal)  
 b. Sam has to stay in bed. (root modal)

Beyond adding to our understanding of the three languages in question, our findings about future WANTS are also directly relevant to the literature on how the future is realized linguistically. More specifically, our work adds to a body of research showing that the future can be encoded grammatically in a variety of ways: tense, modals, and aspect markers (see (6) for a non-exhaustive list of analyses, and Bochnak 2019 for a review). We thus add to the list below three languages for which the future is encoded as a modal.

- (6) a. Tense: English *will* (Kissine 2008), MC *jiāng* (Huang 2015), *huì*, *yào* (Tsang 1981).  
 b. Modal (epistemic, root, etc.): English *will* (Palmer 1987; Copley 2009; Giannakidou & Mari 2018; Klecha 2013); Greek *tha* and the Italian future morpheme (Giannakidou & Mari 2018); St'át'imcets *kelh* (Matthewson 2006); Indonesian *akan* (Copley 2009); MC *jiāng*, *huì*, *yào* (e.g. Li 2004; Lin 2006; Ren 2008; Wu & Kuo 2010; Santana LaBarge 2016; Xie 2022),  
 c. Aspect: Indonesian *mau* (Copley 2009; Jeoung 2020), English *be going to* (Copley 2009), Gitksan *dim* (Matthewson 2013), MC *yào* (Lin 2012).

To illustrate the three hypothesized options more clearly, we return to English *will* as an example. *Will* has been analyzed as a tense marker that shifts the time of evaluation of the sentence forward with respect to the utterance time (Kissine 2008). Alternatively, some have proposed a modal analysis, in which *will* quantifies over possible worlds, since the future, unlike the past, is uncertain (Palmer 1987, Klecha 2013, among many others). English *going to* has been analyzed yet differently, as a combination of a modal and an aspect (a progressive) (Copley 2009). Our discussion of the properties of future WANT contributes directly to this area of research.

Finally, our findings regarding the synchronic properties of future WANT also let us sharpen the third question, about the grammaticalization of WANT (3c): why do the desire WANTS converge in developing both the syntax and semantics of a (root) modal-like element? Since WANT grammaticalized independently in these three languages, one might expect the future WANTS to vary: perhaps there could have been an epistemic WANT in one language and a purely aspectual WANT in another. We offer some consid-

<sup>3</sup> Root modals are further differentiated via OS, which provide different orderings: deontic, teleological, bouletic.

erations, noting structural and semantic properties shared by desire WANT and the class of root modals within each of the three languages. These shared properties could have caused desire WANT to be reanalyzed in similar ways, opening the door to convergence (following [Hacquard & Cournane 2016](#)).<sup>4</sup> We further notice that classic functionalist proposals on grammaticalization of desire verbs into future markers more generally have no principled way to handle this the specific pattern found in our three languages ([Hopper & Traugott 1983](#); [Bybee & Pagliuca 1987](#); [Bybee et al. 1994](#); [Sweetser 1987; 1990](#); [Traugott 1989](#); [Bybee 1998](#)). These proposals typically emphasize the conceptual overlap between a desired or intended action and the action happening in the future and the tendency for verbs to be metaphorically extended, but do not explicitly discuss or predict accompanying syntactic changes, which we find in MC and BP. Importantly, our findings also suggest that semantic facts such as scope and temporal orientation intervene in grammaticalization processes (following [Hacquard & Cournane 2016](#)), in tandem with purely morphosyntactic patters, already hypothesized to be critical in this domain ([Roberts & Roussou 2003](#)).

The article is organized as follows: In section 1, we will provide a brief background on the historical data that is available for future WANT in all three languages. In section 2, we will make our first claim, namely, that desire and future WANTS are a case of ambiguity, not generality or polysemy. Sections 3 and 4 address the questions of whether future WANT is temporal, modal, or aspectual and why the future WANTS might converge on being a root modal future. Section 5 discusses the semantic properties of the three WANTS: across the three languages, we find variation within limits, which can be accounted for by our analysis. We conclude in section 6.

## 1 How old is future WANT in the three languages?

Because the future WANTS in Dutch (D), Mandarin Chinese (MC) and Brazilian Portuguese (BP) are not necessarily as well-known as English *will/willan*, we will first provide our initial findings on the emergence of these WANTS, which happened independently in the three languages, before discussing their synchronic properties. A note of caution: As mentioned in the introduction, our focus is on the synchronic status of WANT and therefore we will not review historical data in detail. The source of our findings is clearly indicated for all three languages.

D future WANT has been attested since the 13th century, even though it is marked as ‘infrequent’ for this period of time (Early Middle Dutch Dictionary, [Pijnenburg & Schoonheim 1996](#)). From the 16th century onwards, unambiguous future readings like *De geheeley dijcxpoort wil omvallen ende storten*, lit. ‘the whole dyke-gate *wants* to fall and collapse’ appear (Middle Dutch Dictionary, [Verwijs 1912](#)).<sup>5</sup> Another argument for D future *want* being relatively old is that *wil* in Afrikaans, which split from D in the 17th century ([Smith 1952](#)), also has a future reading ([Conradie 2016](#)).

MC future *want* can be dated reliably to as early as the 15th century. A search of the classic novel *Shuihu Zhuan* ‘Outlaws of the Marsh,’ written in a variety of Mandarin in

<sup>4</sup> A comment on MC *yào* is in order. While there are claims that future WANT has developed directly from desire WANT (e.g. [Bybee & Dahl 1989](#); [Lu 1997](#)), [Santana LaBarge \(2016\)](#) argues that it proceeded through an intermediate stage where it acquired a deontic/teleological use. We will abstract away from this issue because (a) we are focusing on the general pattern that arose independently in all three languages, which is that a verb expressing desire changed into an expression of futurity; (b) an intermediate deontic meaning does not go against the grammaticalization process we lay out in sections 3 and 4.

<sup>5</sup> It is interesting that this specific example sounds infelicitous without the particles *nog wel* ‘still’ in Modern Dutch.

that era, yields tokens like *xiōngdì ruò xián, biàn yào shēng bìng*, lit. ‘If I have nothing to do, I want to fall sick’ (Liu 1996; see also Santana LaBarge 2016 for further discussion of the history of *yào*), while *Notitia linguæ sinicæ*, a 1736 grammar by a Jesuit missionary, mentions that *yào* is often used for future expressions (Prémare 1736/1831:45).

Finally, BP future *want* seems to be the most recent innovation. Since the 1980s, it has been reported, though without in-depth investigation, in several places by linguists from different theoretical orientations and even in descriptive grammars of Portuguese (Vital 1987; Vilela & Koch 2001; Ribeiro & Coelho 2007; Kato & Duarte 2014, among others). Our informants come mainly from the city of Curitiba, in the south of Brazil, but we were able to confirm several data that we will present in the next sections with speakers from the Southeast and Central-West parts of Brazil.<sup>6</sup>

## 2 Bouletic WANT and future WANT are different

We first show that the different uses of WANT are not a case of polysemy and actually implicate two different syntactic structures. Specifically, WANT passes tests of ambiguity, and desire and future WANTS impose different restrictions on their subjects (echoing previous discussion by Li & Thompson (1981) and Tsang (1981) on differences between desire and future *yào*).

### 2.1 Distribution over conjuncts (Zwicky & Sadock 1973)

We submitted the two uses of WANT to several ambiguity tests (Zwicky & Sadock 1973; Gillon 1990). Here, we discuss the *distribution over conjuncts test*: for an ambiguous expression X with two readings  $X_1$  and  $X_2$ , *A and B X* should not be able to mean  $X_1(A) \wedge X_2(B)$ . Consider the ambiguous English *pen*, which means either ‘animal enclosure’ or ‘writing instrument.’ The sentence *John and Mary bought pens* cannot mean that John bought animal enclosures while Mary bought writing instruments, or vice-versa. In other words, ‘mixed’ readings are blocked; only uniform readings are possible.

In contrast, if X is compatible with multiple readings because it is semantically general, sentences containing X should allow mixed readings. For instance, *teacher* can refer to math teachers, music teachers, some combination thereof, etc. *John and Mary are teachers* can describe a situation where John is a music teacher and Mary is a math teacher.

If WANT is ambiguous, then it should pattern like *pen*, and not like *teacher*. Native speaker intuitions confirm this prediction; WANT sentences in all three languages only have uniform readings.

- (7) a. João e Maria estão **querendo** dormir. [BP]  
John and Mary are wanting sleep.INF  
b. Yuēhàn hé Mǎlì **yào** shuìjiào (le). [MC]  
John and Mary want sleep LE  
c. Jan en Marie **willen** nog wel slapen. [D]  
John and Mary want still WEL sleep.  
Readings:  
(i) ‘John and Mary want to sleep.’ Uniform

<sup>6</sup> In European Portuguese, the non-bouletic use seems to be limited to certain collocations *Está a querer chover* (lit. It wants to rain). Other examples of BP future *want* were mostly rejected by speakers of European Portuguese we consulted. It is not our goal here to account for grammaticalization across different varieties of Portuguese. This would be an independent and important project that is outside of the scope of this paper.

|   |         |
|---|---------|
| (ii) ‘John and Mary will (probably) sleep.’       | Uniform |
| (iii) #‘John wants to sleep and Mary will sleep.’ | #Mixed  |
| (iv) #‘John will sleep and Mary wants to sleep.’  | #Mixed  |

## 2.2 No sentience requirement for a subject for future WANT

If WANT-sentences are ambiguous, then desire and future WANT might impose different requirements on their arguments. This prediction is borne out: desire WANT-sentences must have a sentient subject. In contrast, future WANT-sentences do not (8) (see Tsang 1981).

- (8)
- |    |   |      |
|----|---|------|
| a. | O café está <b>querendo</b> acabar.<br>the coffee is wanting end.INF<br>‘The coffee is about to run out.’   | [BP] |
| b. | Kāfēi yào hē-wán le.<br>coffee want drink-finish LE<br>‘The coffee is about to run out.’                    | [MC] |
| c. | De koffie wil nog wel opraken.<br>the coffee wants still WEL run.out<br>‘The coffee will probably run out.’ | [D]  |

An unacceptable reading in all three languages is: #‘The coffee has a desire to run out.’

The same point can also be made using clausal idioms. Here, the subjects are not sentient, but future WANT can still be used felicitously (9).

- (9)
- |    |   |      |
|----|---|------|
| a. | A casa está <b>querendo</b> cair.<br>the house is wanting fall.INF<br>Lit. ‘The house wants to fall.’<br>(An undesirable event is about to happen.)                                   | [BP] |
| b. | Shēngmǐ yào zhǔ chéng shúfàn le.<br>uncooked.rice want cook become cooked.rice LE<br>Lit. ‘The rice is going to be done.’<br>(An undesirable irreversible change is about to happen.) | [MC] |
| c. | Het kwartje wil nog wel vallen.<br>the quarter wants still WEL fall<br>Lit. ‘The quarter wants to fall.’<br>(Something is going to become clear for someone.)                         | [D]  |

## 3 Future WANT in the synchronic grammar

Having argued that there are two distinct WANTS, we examine the categorial status of future WANT in this section. Distributional evidence suggests that future WANT is not a tense marker or an epistemic modal. In fact, it patterns more like a root modal in each of the three languages. For MC and BP, for which we will argue that future WANT is a new functional head, this suggests that they occupy a position low in the functional hierarchy, in the spirit of Cinque 1999. For D, it is plausible that future WANT is a verb, just like the verb-like modals in this language (Den Dikken & Hoekstra 1997; Aelbrecht 2010; Broekhuis & Corver 2015; van Dooren 2020, but see Haeseryn et al. 1997; Ijbema 2001; van Riemsdijk 2002 for the claim that Dutch modals are auxiliaries). Across all three languages, the convergence is remarkable, since the change in WANT occurred



independently, and the languages are relatively unrelated. One could have imagined easily that the desire verb would have developed into a tense morpheme, an epistemic modal, or an aspect marker in some of the languages.

### 3.1 Future WANT is not a tense

We make the standard assumption that every clause has at most one tense morpheme. If WANT is a tense morpheme, it should be in complementary distribution with other tense morphemes within a clause. It is easy to show that this is not the case for BP and D. As with desire WANT, future WANT in these languages bear tense morphology (see [Klecha 2013](#), among many others, for similar arguments against English *will/would* as a future tense).

- (10) O café **quis** acabar, (mas a gente comprou mais).  
 the coffee wanted end.INF but we bought more  
 ‘The coffee was about to run out, but we bought more.’ [BP]
- (11) De koffie **wilde** nog wel een dagje mee (maar nu het hele voetbalelftal  
 The coffee wanted yet WEL a day.DIM with but now the whole soccer.team  
 er is niet meer).  
 there is not anymore  
 ‘The coffee was likely to last another day (but now that the soccer team is all  
 here, not any longer.)’ [D]

Note that when BP and D future WANT is in the past tense, it receives a counterfactual, future-in-past reading. This fact is not predicted if WANT were an absolute future tense. (For a similar argument showing Gitksan *dim* is not a future tense, see [Matthewson 2011:434](#).)

One limitation with this line of reasoning is that it does not easily apply to MC, which does not mark tense morphologically, so distributional evidence for or against a tense analysis is much harder to come by. However, future WANT can occur with a future marker *jiāng* (12), which has been argued elsewhere to head a tense projection ([Huang 2015](#)). On this assumption, the co-occurrence of *jiāng* and future WANT shows that future WANT is not a tense in MC.

- (12) Fēijī jiāng yào qǐfēi.  
 plane FUT want take.off  
 ‘The plane is going to take off.’ [MC]

### 3.2 Future WANT as a root modal, but not an epistemic modal

In this section, we present language-specific arguments that future WANT in BP, MC, and D has the distribution typical of a root modal. This is remarkable, since these changes in WANT happened independently: As we saw in section 1, the changes happened at different times in unrelated languages. How come future WANT ends up patterning with a root modal, and not, for instance, with an epistemic modal in certain languages?

Two caveats need to be added to this common pattern. First, there is a syntactic difference among the three languages: for MC and BP but not for D, future WANT exhibits properties of a functional head, while desire WANT is a full verb. For D, both desire and future WANT pattern syntactically like a verb. That said, this is not a problem for our claim, since root modals in D are also syntactically verbs ([Den Dikken & Hoekstra 1997](#);

Aelbrecht 2010; Broekhuis & Corver 2015; van Dooren 2020). The second caveat is over whether these root modals have aspectual properties; we note that it has been proposed that MC future WANT is an aspect marker (e.g. T.-H. J. Lin 2012). While we would like to have been able to draw a more precise conclusion about the categorial status of WANT, the language-specific diagnostics available to us are not fine-grained enough. We come back to the interplay between aspect and modality in Section 5.

Nonetheless, taken as a whole, the diagnostics presented here provide clear evidence for future WANT converging in a particular direction across the three languages.

### 3.2.1 Brazilian Portuguese

We present three arguments that BP future WANT is a functional head that patterns with root modals. First, by hypothesis, a functional head in a clause takes VP-like complements, not full clausal complements with overt subjects. (13a) illustrates this point with a root modal, while (13b) shows that the same parallels obtain for BP future WANT.

- (13) BP
- a. Root (deontic) modal *dever* “must”
    - (i) As armas **devem** ser guardadas num lugar seguro.  
the firearms must be.INF stored in.a place safe
    - (ii) \***Deve** [que as armas {ser /sejam} guardadas num lugar seguro].  
must that the firearms be.INF /be.SUBJ stored in.a place safe  
‘The firearms must be stored safely.’
  - b. Future WANT
    - (i) O café está **querendo** acabar.  
the coffee is wanting end.INF  
‘The coffee is about to run out.’
    - (ii) \*Está querendo [que o café acabe hoje].  
is wanting that the coffee end.SUBJ today

A second diagnostic comes from co-occurrence with aspect: BP future WANT does not appear with VPs with a perfect or a progressive aspect (14).

- (14) a. \*O telhado **quis** ter **caído** (às três da tarde).  
the roof wanted have.INF fallen at three of.the afternoon  
‘The roof will collapse at 3 in the afternoon.’  
b. \*O telhado **quis** estar **caindo** (quando a Maria chegou).  
the roof wanted be.INF falling when the Mary arrived  
‘The roof was about to collapse when Mary arrived.’ [BP]

This restriction is consistent with an analysis where future WANT is positioned low in the functional hierarchy, for instance, below projections for progressive and perfect aspect. Such a restriction does not obtain with bouletic WANT, whose complements can bear progressive or perfect aspect:

- (15) a. Eu **quero** estar saindo, quando você chegar.  
I want be.INF leaving, when you arrive.INF  
‘I want to be leaving, when you arrive.’



- b. Eu **quero** ter saído, quando você chegar.  
 I want have.INF left, when you arrive.INF  
 ‘I want to have left, when you arrive.’ [BP]

The previous argument already distinguishes future WANT from epistemic modals, which are generally claimed to be in a position above aspect (Cinque 1999). Our final argument also clearly distinguishes future WANT from epistemic modals. In BP, epistemic modals cannot bear progressive morphology, while root modals can.

- (16) a. \*?O João está **podendo** ser o assassino.  
 the John is can.PROG be.INF the murderer  
 Intended: ‘John might be the murderer.’ Epistemic modal
- b. Root modals
- (i) O João está **podendo** sair de casa.  
 the John is can.PROG leave.INF of home  
 ‘John can go out.’ Deontic
- (ii) O João está **tendo** que ficar em casa.  
 the John is having that stay.INF in home.  
 ‘John has to stay home.’ Deontic
- (iii) O João está **conseguindo** andar.  
 the John is being.able walk.INF  
 ‘John is able to walk.’ Ability [BP]

Future WANT can bear progressive morphology, like root modals.

- (17) O café está **querendo** acabar.  
 the coffee is wanting end.INF  
 ‘The coffee is about to run out.’ [BP]

### 3.2.2 Mandarin Chinese

Like BP, Mandarin root modals and future WANT only takes VP-like complements, but not full clausal complements with overt subjects (18).

- (18) a. Root modal *děi* and *bìxū* ‘must’
- (i) Qiāngxìe **děi**/ **bìxū** cúnfàng hǎo.  
 firearms must/ must store well
- (ii) \***Děi**/ **bìxū** [qiāngxìe cúnfàng hǎo].  
 must/ must firearms store well
- b. Future WANT
- (i) Kāfēi **yào** hē-wán le.  
 coffee want drink-finish LE
- (ii) \***Yào** [kāfēi hē-wán] (le).  
 want coffee drink-finish LE  
 Intended: ‘The coffee is about to run out.’ [MC]

A second argument for analyzing MC WANT as a root modal (or aspect marker) involves the copula; we note that this is a variant of an argument of T.-H. J. Lin’s (2012:178): Epistemic modals can take complements with the copula, as can the future markers *jiāng* and *huì*. In contrast, root modals and aspect markers impose restrictions against the

copula in their complements; appropriate paraphrases must be used instead, as illustrated in (20) for root modals.<sup>7</sup>

- (19) a. Lǐsì {**kěnéng/ kěndìng**} shì zǒngtǒng.  
Lisi might must be president  
'Lisi might / must be the president.' Epistemic modal
- b. Lǐsì {**jiāng/ huì**} shì zǒngtǒng.  
Lisi FUT will be president  
'Lisi will be the president.' Future markers
- c. ??Lǐsì {**kěyǐ/ děi**} shì zǒngtǒng.  
Lisi can must be president  
'Lisi is allowed to be the president.' (e.g. after Lisi is certified as a candidate)  
or 'Lisi has to be the president.' (e.g. discussing who is the most suitable for this appointment.) Root modal
- d. \*Lǐsì **zài** shì zǒngtǒng.  
Lisi PROG be president  
Intended: '\*Lisi is being the president.'  
or 'Lisi is currently the president.' Progressive aspect [MC]
- (20) Lǐsì {**kěyǐ/ děi**} chéngwéi zǒngtǒng  
Lisi can must become president  
'Lisi can/must become president.'

*Yào* cannot take complements with the copula, patterning with root modals and aspect markers.<sup>8</sup>

- (21) a. Lǐsì **yào** {*\*shì/ <sup>OK</sup>chéngwéi*} zǒngtǒng le.  
Lisi want be become president LE  
Intended: 'Lisi is going to be the president.' (e.g. spoken right before Lisi's inauguration as president) Future WANT [MC]

An additional argument involves the change of state particle *le*, which we translate approximately as "it is now the case that ...". Of particular interest here is a claim by [Santana LaBarge \(2016\)](#) that future *yào* scopes over *le*, as epistemic modals do (22). [Santana LaBarge](#) argues that in the scenario in (23), *le* scoping over *yào* produces an inappropriate reading that incorrectly implies that Zhangsan did not have plans to go to Chengdu until around the time of utterance.

<sup>7</sup> This restriction with root modals appears to be relaxed, e.g. when the subject is generic. We leave a more precise characterization of this restriction to future research.

- (i) a. #Lǐsì **děi** shì gōngmín.  
Lisi must be citizen  
'Lisi needs to be a citizen.' (e.g. if he wishes to run for elected office) (Non-generic subject)
- b. Hòuxuǎnren **děi** shì gōngmín.  
candidate must be citizen  
'[Based on the law,] candidates [for election] must be citizens.' (Generic subject) [MC]

<sup>8</sup> T.-H. J. Lin (2012) argument is stated in terms of stativity: *yào* is incompatible with stative complements. We avoid adopting this characterization here, because there are arguably stative predicates like *yoǔ* 'exist, have' that can appear in *yào*'s complement.

- (i) Zhè bù diànyǐng **yào** yoǔ xùjí le.  
this CL movie want have sequel LE  
'There is going to be a sequel for this movie.'

- (22) a. Zhāngsān **kěnéng** qù Chéngdū le.  
Zhangsan might go Chengdu LE  
'It is possible (= *kěnéng*) that it is now the case (= *le*) that Zhangsan has gone to Chengdu.'
- b. Zhāngsān **néng** qù Chéngdū le.  
Zhangsan able go Chengdu LE  
'It is now the case (= *le*) that Zhangsan is able (= *néng*) to go to Chengdu.'
- [MC]
- (23) Zhāngsān míngtiān **yào** qù Chéngdū le.  
Zhangsan tomorrow want go Chengdu LE  
Scenario: Zhangsan made plans a long time ago to go to Chengdu. Finally, his trip is just a day away.
- a. *le* > *yào*: '#It is now the case (= *le*) that tomorrow, Zhangsan will (= *yào*) go to Chengdu.'
- b. *yào* > *le*: 'Tomorrow, it will (= *yào*) be the case (= *le*) that Zhangsan goes to Chengdu.'
- (adapted from Santana LaBarge 2016, p. 413 ex. 33) [MC]

While the logic of Santana LaBarge's argument is sound, we note that the *le* scoping over *yào* reading is actually viable when one assumes that *yào* marks an immediate future, following Li & Thompson (1981, p. 175). For instance, (24) shows that an adverb like *míngnián* 'next year', which does not refer to a time interval in the immediate future, reduces the acceptability of a sentence containing *yào*.

- (24) {Mǎshàng/ #Míngnián} **yào** rìshí le.  
right.away next.year want solar.eclipse LE  
Intended: 'There will be a solar eclipse right now / next year.'
- [MC]

To the extent that *yào* marks an immediate future, (23) can be felicitously paraphrased as 'It is now the case (*le*) that there is an immediate future (= *yào*) event tomorrow of Zhangsan going to Chengdu,' where *le* scopes over *yào*. The intuition behind this reading is as follows: previously, Zhangsan's trip was too far in the future to be appropriately described with *yào*. However, at utterance time, enough time has since passed so that there is now a change of state: the trip is now happening in the immediate future. *Yào* is therefore licensed.

In sum, distributional and interpretational facts suggest that MC WANT is not an epistemic modal, contrary to recent analyses like Ren 2008, Wu & Kuo 2010, and Santana LaBarge 2016. Instead, *yào*'s behavior points toward a few other possibilities: an aspect marker (T.-H. J. Lin 2012), a root modal, or even a hybrid element with both modal and aspectual properties. In the absence of clearer diagnostics for teasing apart these possibilities, we will tentatively treat *yào* as a root modal, which would be consistent with the fact that desire WANT has bouletic modal semantics and the fact that *yào*'s counterparts in BP and D have root modal properties.

### 3.2.3 Dutch

In D, future WANT can take a complement without an overt verb (25).

- (25) a. Die koffie **wil** nog wel op vandaag.  
that coffee wants still WEL out today  
'The coffee will probably run out today.'
- b. Deze bank **wil** nog wel een rondje mee.  
this couch wants still WEL a round with  
'This couch will probably last for a while longer.'<sup>9</sup> [D]

In this respect, it resembles root modals and not epistemic modals; Barbiers (1995) observes that potentially-ambiguous modals can only get a root reading, not an epistemic reading, when their complement lacks an overt verb.

- (26) Mijn grootouders **moeten** een hek. [D]  
my grandparents must.PL a fence

- a. 'My grandparents are obliged to have/need a fence.' Root modal  
b. #'It is highly likely that my grandparents have a fence.' Epistemic modal

A second resemblance between root modals and future WANT concerns the combination with full clauses. At least for some D speakers, D future WANT can appear with a complement clause, again without an overt verb linking the two (27a). Note that in this regard, D future WANT is distinct from its BP and MC counterparts. More importantly for us, however, is that D root modals can also appear in the same configuration (27b), providing further evidence for an alignment.

- (27) a. %Het **wil** nog wel [dat de aarde vandaag vergaat].  
it wants still WEL that the earth today collapses  
'The earth will probably collapse today.'
- b. Het **kan** [dat de aarde vandaag vergaat].  
it can that the earth today collapses  
'It is possible that the earth collapses today.' [D]

"Verbless" complements as in (26a) and (27b) raise questions about the syntactic category of these D future WANT and root modals. If these modals are functional heads, they should appear with VP complements, as functional heads do cross-linguistically. To that end, as pointed out in van Riemsdijk 2002, one might posit the presence of a covert verb (also see McCawley 1973 and Grano 2015 for *want NP*). For instance, to the extent that (27a) means 'it may HAPPEN that the earth will collapse today', there could be a silent *happen* between *willen* and the complement clause (van Dooren 2017a).

However, it is worth noting some evidence by Barbiers (2005:7) supporting the claim that root modals are verbal. This argument is based on the fact that D deontic modals can introduce an argument denoting the source of the obligation inside a PP (28a). This PP is not licensed by the main verb under the modal, as (28b) shows. Nor can the PP function as an adjunct to any type of sentence expressing an obligation, given that this same PP cannot be licensed inside an imperative (28c). We note that, to the extent that root modals (including future WANT) are verbs, the case of Dutch presents complications for theories in which grammaticalization entails the change from a lexical category to a functional category (e.g. from verb to auxiliary).

<sup>9</sup> From <https://www.contactzuid.nl/marktplein/758/deze-bank-wil-nog-een-rondje-mee>

- (28) a. Jan {moet/ mag} van zijn vader naar huis gaan.  
 Jan must may of his father to home go  
 ‘His father forces/allows Jan to go home.’ (Barbiers 1995:7)
- b. Jan gaat (\*van zijn vader) naar huis.  
 Jan goes of his father to home  
 ‘John is going home.’
- c. Ga (\*van mij) maar naar huis.  
 go of me just to home  
 ‘Just go home.’

### 3.3 Summary

In this section, we have argued that future WANT in all three languages is not a tense marker nor an epistemic modal. Instead, future WANT in one of the three languages has the distributional properties not unlike a root modal in the same language. In the next section, we will discuss this finding in light of recent developments in the modal change literature and hypothesize where the initial alignment with roots might come from.

## 4 The properties of future WANT in the grammaticalization path

Proposals trying to explain the change from desire to future in English as well as other languages roughly fall within two categories. The first category is a set of “meaning-based” proposals, which analyzes semantic change as the result of *metaphorical expansion* (Sweetser 1987; 1990, also Traugott 1989) or *pragmatic inferences* (Bybee 1998; Bybee et al. 1994; Bybee & Pagliuca 1987; see Eckardt 2006, Condoravdi 2013 for a formal approach using different case studies). A desire predicate, especially when co-occurring with a first person subject, is an expression of *intent*, which implicates that something will probably happen in the future: If I *want* to do something, it is likely to happen. This yields a future interpretation for the desire predicate (Bybee & Pagliuca 1987).<sup>10</sup>

A second set of proposals takes structural patterns as a window to grammaticalization. These approaches typically focus on two changes that happen regularly in languages, namely, (i) lexical categories (e.g. verbs, adjectives) change into functional categories (e.g. auxiliaries, determiners), and (ii) items with a root meaning change into an epistemic meaning (see Roberts & Roussou 2003, van Gelderen 2004, Hacquard & Cournane 2016, for recent proposals). Roberts & Roussou (2003) single out morphological change as a trigger for the change of main verbs into modals in English and Greek. According to Roberts & Roussou, English pre-modals lost non-finite forms and thus were grammaticalized into a T element. This process, coupled with the loss of infinitive morphology on verbs, led to a reanalysis where modals and their embedded verbs are articulated in a monoclausal structure, with modals being functional heads, ordered in a Cinquean hierarchy (Cinque 1999) on top of a verbal head (e.g. ModEpistemic > T > MoodIrrealis > ModRoot > Asp > V). This ordering consequently imposes restrictions on the semantics of the modals: their semantics must be consistent with their position in the hierarchy.

<sup>10</sup> We might also consider a variant of these approaches where *want* verbs undergo a process of “semantic bleaching,” losing the bouletic flavor while retaining the future orientation. This approach follows naturally from a particular theory of bouletic *want* and other desire predicates, which treats them as future-oriented (either implicitly, Stalnaker 1984; Heim 1992, or explicitly, Wurmbrand 2014; Rullmann & Matthewson 2018; Stowell 1982, through Condoravdi 2002, Grano 2017), with the future component located in the semantics of the predicate itself.

Further outlining the semantic aspects of this structural approach, [Hacquard & Cournane \(2016\)](#) suggest that there are similarities between verbs and functional items in the 'lower' regions of the Cinquean hierarchy that can explain the initial alignment within the grammaticalization process. In what follows, we will argue that the case of future WANT fits in with [Hacquard & Cournane \(2016\)](#)'s approach as desire WANT already has properties that align with root modals, as opposed to epistemic modals or tenses. Following [Hacquard & Cournane 2016](#), we assume that in the process of acquisition, symmetric distribution favors a limited amount of confusion by the learner, opening the door for positing two distinct WANT's in the lexicon.

#### 4.1 Argument 1. Alignment in morphosyntax and/or subcategorization

One alignment between desire WANT and root modals is in morphosyntax: desire WANT shares certain morphosyntactic properties with root modals but not with epistemic modals. We argue that these similarities facilitate the reanalysis of WANT as a root modal-like future marker.

To take a straightforward example, BP desire WANT can bear progressive morphology (29). As noted earlier, root modals also can bear progressive morphology, but epistemic modals cannot (30).

- (29) João está **querendo** dormir.  
 John is wanting sleep.INF  
 'John wants to sleep.'
- (30) a. Root modal  
 (i) O João está **podendo** sair de casa.  
 the John is can.PROG leave.INF of home  
 'John already can (is allowed to) go out.'  
 (ii) O João está **tendo** que ficar em casa.  
 the John is having *that* stay.INF in home.  
 'John has to stay home.'  
 (iii) O João está **conseguindo** andar.  
 the John is able walk.INF  
 'John is being.able to walk.'
- b. \*O João está **podendo** ser o assassino.  
 the John is can be.INF the murderer  
 Intended: 'John (already) might be the murderer.' Epistemic modal

Making the same point for D and MC is much harder, since the development of WANT to future happened far longer ago. Ideally, we would show that desire WANT has morphosyntactic properties of root modals in *earlier* varieties of D and MC that predate this development, but demonstrating this is, of course, not trivial. Instead, what we will do in the rest of this section is to consider the properties of *modern* D and MC, showing that desire WANT in these modern varieties have root modal-like properties. To the extent that these properties were also present in desire WANT in earlier varieties of D and MC, this would explain why future WANT came to possess root modal qualities.

Turning to modern D first, we note that desire WANT can take a non-finite complement, like the root modal *moeten* 'must' or *proberen* 'try' (31). In addition, D desire WANT can take a complement without an overt verb, like its future counterpart. Both properties are found in D root modals, but not epistemic modals (32) ([Barbiers 1995](#)).



- (31) Jantje {**wil** / **moet** / **probeerde te**} slapen.  
 Jan.DIM wants must tried to sleep.INF  
 ‘Little Johnny {wants / needs / tried to} sleep.’
- (32) a. Ik {**wil** / **moet**} naar Amsterdam.  
 I want must to Amsterdam  
 ‘I want / must go to Amsterdam.’  
 b. Mijn grootouders {**willen** / **moeten**} een hek.  
 my grandparents want must.PL a fence  
 ‘My grandparents want / must have a fence.’ (Deontic *must*, not epistemic *must*)

As for modern MC, we find that desire WANT, like its future counterpart, does not allow the copula *shì* in its complement (T.-H. J. Lin 2012). As discussed in Section 3.2.2, this restriction contrasts with epistemic modals, which allow the copula in their complements (33b), and recalls the restrictions that root modals and aspect markers impose on the copula (33c).

- (33) a. \*Lǐsì yào shì zǒngtǒng.  
 Lisi want be president  
 Intended: ‘Lisi wants to be the president.’  
 b. Lǐsì kěnéng shì zǒngtǒng.  
 Lisi might be president  
 ‘Lisi might be the president.’  
 c. \*Lǐsì {**děi** / **zài**} shì zǒngtǒng.  
 Lisi must PROG be president  
 Intended: ‘Lisi must be the president (discussing who is most suitable)’ /  
 ‘\*Lisi is being the president.’

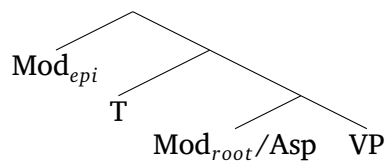
We next turn to two other similarities between desire WANT and root modals. These similarities are attested across a wide variety of languages, including BP, MC, and D. The cross-linguistic distribution further strongly suggests that these similarities would be found in desire verbs and root in earlier varieties of D and MC, even though we obviously cannot access native speaker intuitions for these varieties.

## 4.2 Argument 2. Alignment in scope (Hacquard & Cournane 2016)

The second similarity is an alignment of scope between desire verbs and root modals, as pointed out by Hacquard & Cournane (2016) (following Cinque 1999). Hacquard & Cournane observe that across languages, root modals, aspect markers, and verbs are hierarchically lower than tense, and scope under it (34). For instance, in both (35) and (36a), John’s desire and obligation is in the past; (37) illustrates the same fact for BP and D.<sup>11</sup>

<sup>11</sup> Making the same point about scope interpretations is harder for Mandarin, which does not have overt tense morphology. For one, even within recent proposals that argue that tense is syntactically represented in Mandarin Chinese, there is not a consensus on what tense distinctions the language makes, which makes it difficult to determine how tense interacts with modals. That said, these proposals generally agree that tense is structurally higher than (root) modals and verbs; see Lin 2012; Sun 2014; Huang 2015; He 2020 for details.

(34)

(35) John **wanted** to be in Ohio.

‘In the past, John had a desire to be in Ohio.’

(36) John **had to** be in Ohio last night.a. Root: Given the obligations *in some past time*, it was necessary that John be in Ohio.b. Epistemic: Given what we know *now*, it is necessary that John *was* in Ohio.(37) a. O João *devia* estar em Ohio.

the John had to.be in Ohio [BP]

b. Jan *moest* dus wel in Ohio zijn.

Jan must.PST thus WEL in Ohio be [D]

In contrast, epistemic modals are hypothesized to be higher than tense, and so scope above it (Groenendijk & Stokhof 1975; Iatridou 1990 a.o.). In (36b), the evaluation of the evidence is now, while the event of *being in Ohio* is in the past. The same pattern holds for Brazilian Portuguese. For Dutch, the picture is more nuanced: Rullmann & Matthewson (2018) claim that epistemics scope under tense, just like root modals. However, a study by van Dooren (2020) following up on this claim shows that there are actually two interpretation possibilities available in Dutch: Dutch epistemics can scope over tense, similar to English, but they can also scope under tense. van Dooren takes this as evidence for a biclausal structure for Dutch epistemic modals in which the modals themselves are verbs. This makes it possible for the verb to scope under the tense of their own clause, and over the tense of their (TP-)complement. Importantly for the current study, the pattern shows that D epistemic modals distribute differently from root modals and desire verbs.

In other words, because desire verbs are structurally more similar to root modals than epistemic modals, it is not unexpected that a future marker that developed out of a desire verb should also behave like a root modal.

### 4.3 Argument 3. Alignment in temporal orientation

We further propose a third similarity based on temporal orientation (TO): the time of the event under the modal relative to the evaluation time of the modal itself. As a number of researchers have observed, desire WANT generally has a **future** TO (38): the time of the event must **follow** the time at which WANT is evaluated (Giorgi & Pianesi 1997; Remberger 2010 a.o., see Wurmbrand 2014 for a syntax-centered approach).

(38) Mary **wants** to leave. →a. Mary has a desire at time *t*.b. Mary’s leaving occurs **after** *t*.

In fact, in Brazilian Portuguese (39a) and Mandarin Chinese (39b), desire WANT cannot take a complement with a past or present orientation. We observe a similar restriction in some Dutch (39c) and English (40) speakers.

- (39) a. \*Eu **quero** ser presidente agora.  
I want be.INF president now  
Intended: ‘I want to be president now.’ #Present TO
- b. \*Wǒ **yào** (xiànzài) shì zǒngtǒng.  
I want now be president  
Intended: ‘I want to be president (now).’ #Present TO
- c. %Ik **wil** nu president zijn.  
I want now president be  
‘I want to be president now.’ %Present TO
- (40) I {%want / wish} to be president right now.

Cross-linguistically, root modals tend to have a future temporal orientation (Condoravdi 2002; Rullmann & Matthewson 2018):

- (41) a. She **needs** to eat vegetables.  
‘She is obliged (now) to eat vegetables (in the future).’ Future TO
- b. Ela **precisa** comer vegetais.  
she must eat vegetables
- c. Tā **děi** chī shūcài.  
3SG must eat vegetable
- d. Ze **moet** groenten eten.  
she must vegetables eat

Epistemics, on the other hand, are free to have a non-future temporal orientation. In (42), the state of *Mary being the murderer* is simultaneous to the evaluation time of the epistemic modal, i.e., the temporal orientation is **present**.

- (42) a. Mary **might/must** be the murderer.  
‘It is possible / necessary that Mary committed the murder.’ Past TO
- b. A Maria {%pode/ deve} ser a assassina.  
the Mary can must be.INF the murderer
- c. Mǎlì {%kěnéng/ yīdìng} shì xiōngshǒu.  
Mary might must be murderer
- d. Marie {%kan/ moet} de moordenaar zijn.  
Mary can must the murderer be

#### 4.4 Further remarks on the development of future WANT

To be clear, the above proposal is not intended to suggest that desire WANT can *only* evolve into a future marker with properties typical of root modals. Rather, what we wish to suggest is that the above-mentioned alignments — in morphosyntax, scope relations with tense, and temporal orientation — help ensure that desire verbs develop in this direction. Given the right linguistic circumstances, this lexical item could develop further into, say, an epistemic modal or a tense morpheme (see Bybee & Dahl 1989; Bybee & Pagliuca 1987; Bybee et al. 1994; Traugott 1989; Santana LaBarge 2016; van Gelderen 2004, among many others).

In this regard, one might wonder how the above proposal might apply for English *will*, which also developed from a desire verb (Old English *willan*) but has since acquired uses that are clearly epistemic in contemporary English (43).

- (43) a. That will be the postman. (Context: hearing footsteps approaching the door)

- b. This kind of oil will float on water.

It turns out that it is hard to say for sure. The above proposal does predict that at some stage in the historical development of *will*, the future modal *will* should have patterned distributionally like a root modal. Crucially, though, this prediction is conditional on the desire verb *willan* sharing syntactic and semantic properties with root modals in Old English. It is not immediately clear whether it is possible to confirm these assumptions or the prediction using extant corpora of Old English or its pre-modern descendants.

## 4.5 Summary

In this section, we discussed three distributional and semantic properties shared by desire WANT and root modals, but not with epistemic modals in our three languages. We hypothesized that the closer alignment between root modals and desire WANT means that the change from desire WANT into a future-expressing root modal is much smaller and therefore more likely.

## 5 Further probing the semantics of future WANT

What we have demonstrated so far is that future WANT and desire WANT pattern distributionally with root modals in BP, MC & D, which fits in with certain current ideas on grammaticalization. In this section we further examine the semantics of future WANT in these three languages. We provide positive evidence that these future WANTS have a modal component, i.e., they quantify over possible worlds, by drawing arguments from Klecha 2013 and Giannakidou & Mari 2018. However, we also find subtle semantic differences; most notably, future WANT in BP and perhaps MC (but not D) impose restrictions on the onset of the event under the modal, which point towards an aspectual component. This kind of semantic variation is not unexpected in the broader context: In the previous section, we hypothesized that the development of future WANT stems from confusion with similar categories, but that does not mean there can be (limited) variation in the three future WANTS we study. This variation has clear parallels in other languages, such as Georgian and Tucano, where desire WANT has acquired a non-future, deontic modal use (Harris & Campbell 1995; Bybee et al. 1994). Notably, deontic modals fall under the category of 'root' modals and as such, the reasoning from section 3 applies.

### 5.1 Indications for modal semantics

#### 5.1.1 Counterfactual readings

Klecha (2013) argues that a morpheme has modal semantics if some of its morphological variants is associated with a non-veridical (specifically, counterfactual) reading; for example, the past tense form of English *was going to* / *gonna* is non-veridical (44), and therefore *be going to* / *gonna* can be classified as a modal.

- (44) Julia **was gonna** finish her paper (but she got distracted/if she hadn't gotten distracted). (Klecha 2013:450, ex. 15a)

According to this diagnostic, Brazilian Portuguese and Dutch future WANTS are both modals (45)-(46), as they can occur with past tense morphology and have non-veridical

interpretations.<sup>12</sup> A purely temporal analysis of (45) and (46) cannot account for the counterfactual readings.

- (45) O café **quis** acabar, (mas a gente comprou mais).  
 the coffee wanted end.INF but we bought more  
 ‘The coffee was about to run out, but we bought more.’ [BP]
- (46) De koffie **wilde** nog wel een dagje mee (maar nu het hele voetbalelftal  
 The coffee wanted yet still a day.DIM with but now the whole soccer.team  
 er is niet meer).  
 there is not anymore  
 ‘The coffee was likely to last another day (but now that the soccer team is all  
 here, not any longer.)’ [D]

While MC *yào* has impoverished verbal morphology, there are syntactic environments (e.g. with appropriate adverbs) that make salient a counterfactual reading (47). The same reasoning thus applies: A temporal analysis cannot account for a counterfactual inference and as such, a modal analysis is favored.

- (47) Kāfēi **běnlái** shì **yào** hē-wán de (kěshì zuìhòu què méi hē-wán).  
 coffee originally be want drink-finish PRT but in.the.end but NEG drink-finish  
 ‘At first, the coffee was about to run out (but in the end it did not).’ [MC]

### 5.1.2 Modal subordination

Modal subordination refers to the possibility of a modal implicitly introducing a salient conditional that restricts the modal’s domain (Roberts 1989). Klecha (2013) uses this behavior of modals to diagnose modal semantics: If a morpheme is associated with domain restriction, it can be reasonably analyzed as having a modal meaning component. This domain restriction effect is shown in (48a) with the modal *might*. Replacing the modal with the plain past tense fails to trigger the effect (48b).

- (48) If Mary went to New York, she took the train. ...  
 a. ... She might have visited Times Square. (roughly, “If she went to New York, she might have visited Times Square.”)  
 b. ... \*She visited Times Square. (intended reading: “If she went to New York, she visited Times Square.”)

Example (49a) shows modal subordination effects for Mandarin *huì* “will” and (49b) for *yào*. Note that judgments might be delicate here: the intended concept is most felicitously conveyed with the modal *yīnggāi* ‘should’, although there are native speakers we consulted who readily accept these sequences of sentences without *yīnggāi*.

- (49) Rúguǒ Lǐsì díquè shì jīn-zǎo qù Niuyuē, tā yīdìng shì zuò zhè-bān  
 if Lǐsì indeed be this-morning go New.York 3s must be sit this-CL  
 huǒchē qù de. ...  
 train go PRT  
 ‘If it is the case that Lǐsì left for New York this morning, she must have left by  
 taking this train.’

<sup>12</sup> One potential problem with this diagnostic is that it assumes that non-veridicality can reliably diagnose modality, although, as Klecha acknowledges, non-veridicality is not exclusively a property of modals.

- a. ... Tā (yīnggāi) duō jǐ fēnzhōng hòu jiù **huì** dào.  
 3SG should more few minute after PRT will arrive  
 ‘[If she took this train,] she would (should) arrive [in New York] in just a few more minutes.’
- b. ... Tā (yīnggāi) duō jǐ fēnzhōng hòu jiù **yào** dào le.  
 3SG should more few minute after PRT want arrive LE  
 ‘[If she took this train,] she should arrive [in New York] in just a few more minutes.’

Brazilian Portuguese and Dutch WANT do not show modal subordination effects, as the interpretation in (50) and (51) is non-conditional: in these examples, the roof would collapse whether one walks on it or not. However, as Klecha also notes, not all morphemes with modal semantics produce modal subordination effects equally. An example is the English epistemic modal *might* in (52) (Klecha 2011; 2013). Therefore, modal subordination as a diagnostic is relatively weak. Its absence does not mean that future WANT in these languages lacks modal semantics.

- (50) BP
- a. Não ande no telhado, ele está **querendo** cair.  
 not walk.IMP in.the roof, it is wanting fall.INF  
 ‘Don’t walk on the roof! It’s probably going to/is going to collapse.’ Non-conditional
- b. Não ande no telhado, ele **vai** cair.  
 not walk.IMP in.the roof, it will fall  
 ‘Don’t walk on the roof! It will collapse.’ Conditional
- (51) D
- a. Loop niet op het dak! Die **wil** nog wel (gaan)instorten.  
 walk not on the roof it wants still WEL (go) collapse  
 ‘Don’t walk on the roof! It’s probably going to collapse.’ Non-conditional
- b. Loop niet op het dak! Het **zal** instorten.  
 walk not on the roof it will collapse  
 ‘Don’t walk on the roof! It will collapse.’ Conditional
- (52) Martina might be smiling. #She had fun. (intended reading: ‘If she is smiling, she had fun.’) (Klecha 2013:448)

### 5.1.3 Further modal meanings

A third argument in favor of modal semantics in at least MC and D future WANT is the fact that WANT in these two languages can have non-desire modal meanings. As Giannakidou & Mari (2018) observe, this multiplicity in meanings is a hallmark of modals (Kratzer 1991).

For instance, MC *yào* can have a teleological/deontic use (53a) and a circumstantial use (53b), as well as what has been argued to be an epistemic use in comparative constructions (Xie 2022).

- (53) MC
- a. Qiāngxìe **yào** cúnfàng hǎo.  
 firearm want store good  
 ‘Firearms need to be stored well.’ (if one wishes to avoid accidents, to abide



- by regulations, ...)  
[teleological, deontic]
- b. Dōngtiān guòqù, xuě rén zǒngshì yào róng huà de.  
winter pass snowman always want melt PRT  
‘When winter ends, it is necessary that snowmen melt.’ [circumstantial]
- c. Dàiyù yào bǐ Bāochāi piàoliang.  
Daiyu want than Baochai beautiful  
‘Daiyu should be more beautiful than Baochai.’ [epistemic comparative]  
(Xie 2022, ex. 1)

Dutch *willen* can have a habitual use (54), as recorded by Barbiers (1995) and Rooryck (2017). This use frequently occurs with particles like *wel eens* ‘now and then’ or *geregeld* ‘regularly’, which help bring out a meaning of repetitiveness. (See Rooryck 2017 for proposals regarding the development of this use of *willen*.)

- (54) D
- a. Jan wil {wel eens/ geregeld} helpen.  
Jan wants WEL sometimes/ regularly help.INF  
i. ‘John wants to help.’  
ii. ‘John tends to help.’
- b. Ziekenhuiskosten willen wel eens uit de hand lopen.  
hospital.costs want WEL sometimes out the hand walk  
‘Hospital costs tend to spin out of control.’

## 5.2 Fine-grained semantic variation: an ‘ongoingness requirement’ in BP and MC, but not in D

The previous section presented evidence for modal semantics in future WANT in all three languages. However, we do not wish to suggest that the three WANTS are semantically identical. In fact, there is reason to think that they vary in subtle ways that a general theory of modal change will need to be amenable to. One point of variation can be seen in our translations: MC *yào* and BP *querer* are often translated as ‘be about to, going to’, while D *willen* might be more felicitously translated as ‘will probably’. However, for scope reasons, we will leave a discussion of this kind of fine-grained differences for future research on the individual languages.

Here, we will only highlight a particular point of variation relating to aspectual semantics. Specifically, Brazilian Portuguese *querer* and Mandarin *yào* (for at least some speakers) show an aspectual restriction on the type of context in which it can be felicitously uttered: While (56a) can be felicitously uttered when there is some evidence of the wall collapsing (Context 1), it cannot be uttered when workers are merely in the process of demolishing the wall (Context 2). This restriction, which is absent for Dutch and some speakers of Mandarin Chinese (56b)-(56c), seems to indicate aspectual semantics as it involves the relation between the utterance time and the start time of the event under future *want*, reminiscent of the aspectual meaning component of the inchoative (Lyons 1977).

- (55) a. Context 1: We see that the wall has cracks, which might be indicative of an imminent collapse.  
b. Context 2: The workmen have started hitting the wall, which will presumably collapse in the near future but has not yet shown signs of collapsing.

- (56) a. Esse muro está **querendo** cair.  
           this wall is wanting fall.INF
- b. %Qiáng (méiduōjiǔ) jiù **yào** tā        le.  
           wall soon               PRT want collapse LE  
           ‘The wall is going to fall soon.’  
           BP and MC: OK in context 1; not OK in context 2 for BP and some MC speakers
- c. Deze muur **wil**   nog wel omvallen.  
           this wall wants yet WEL collapse  
           ‘This wall will likely collapse.’  
           OK in context 1 & 2 for D.

This variation is of interest because it is still broadly consistent with the analysis proposed in Sections 3 and 4, where BP and MC future WANTS are analyzed as low functional heads. In light of this analysis, it is not unexpected for BP and MC future WANTS to have aspectual qualities, since aspect markers, just like root modals, are thought to be located in the lower part of the clausal spine. These observations about BP and MC – as well as the appearance of progressive morphology on *querer*, in the case of BP – further recall Copley (2001)’s analysis of English *going to*, which is treated as a combination of modality and aspect.

Relatedly, the restriction on *querer* and *yào*, which we will call an ‘ongoingness requirement,’ resembles the notion of ‘imminence’ discussed in Eckardt 2006 and Condoravdi 2013; 2019 in relation to the semantic change in English *going to* (see also Li & Thompson’s (1981) suggestion that *yào* describes an immediate future). The diachronic change from movement to future in *going to* might have come about by a default inference that arises from the literal meaning of sentences with *go* in the movement use, such as *Horatio is going to visit a friend*, namely, that the planned visit was ‘imminent’ (Eckardt 2006:118).

However, the aspectual component of ‘imminence’ and ‘ongoingness’ cannot be the same, as an event needs to already be happening for it to be ongoing but not for it to be imminent. Moreover, closer inspection indicates that the morphological similarity between contemporary English *go(ing) to* and BP future *querer* is relatively weak. Unlike *go(ing) to*, future *querer* can appear without progressive morphology and still allow a future reading (57).<sup>13</sup>

- (57) O café **quis** acabar.  
           the coffee wanted end.INF  
           ‘The coffee was about to run out.’ / ‘The coffee almost ran out.’

Briefly looking at the situation of Modern-Day English, *going to* has yet again diverged from older stages of English. In contemporary English, *going to* no longer must describe an imminent event, as shown by a sentence like *The universe is going to end in a few billion years* (Condoravdi 2013). Nor does this event have to be ongoing, given that *The wall is going to collapse* is completely felicitous in context 2 in (55). While we do not have more to say about why English *go(ing) to* has diverged, a more careful comparison of earlier and later stages of *go(ing) to* would be helpful and could shed light on potential semantic changes in future WANTS.

<sup>13</sup> However, the future reading for the simple present might be more difficult to get. This might be related to the fact that the progressive is used very liberally in BP. For one, the progressive can combine with statives in BP, unlike in European Portuguese.

### 5.3 Interim summary

This section presented arguments that future WANT in all three languages are likely to have modal semantics. However, the WANTS also vary in subtler ways: BP *querer*, and to a lesser extent, MC *yào*, seem to have a notion of ‘ongoingness’ that D *willen* lacks. One question raised by this ‘ongoingness requirement’ is whether it can serve as evidence that BP *querer* and MC *yào* are actually aspectual markers, in contrast to D *willen*. This is a difficult question to answer, since modality and aspect are not mutually exclusive (Bochnak 2019; Copley 2009, among many others). For some aspect markers, such as the English progressive, modality might in fact be an inherent part of their denotation (Dowty 1977; Portner 1998; Copley 2009, a.o.). For these reasons, we will not be able to give a definitive answer to this question about the status of *querer* and *yào*. That said, this ‘ongoingness requirement’ provides some evidence for an aspectual component in the semantic denotation of BP and MC future WANT.

## 6 Discussion and conclusion

In this article, we took a synchronic approach to a classic diachronic puzzle: How and why does a verb with a desire meaning change into a future marker? We examined three typologically different languages where both uses are still available, leveraging native speaker intuitions to compare desire and future WANTS. What stands out from our study are the similarities: In Mandarin Chinese, Brazilian Portuguese and Dutch, WANT is currently ambiguous between a desire and a future meaning. Future WANT furthermore aligns syntactically with root modals or aspect, while showing indications of modal semantics.

These findings raise questions about *why* the development of desire WANT might have converged in these languages. Adopting the proposal of Hacquard & Cournane 2016, we noted that desire WANT in these languages has syntactic and semantic properties in common with root modals and aspect markers, but not with epistemic modals. Given this initial alignment, the subsequent development of WANT into a future-expressing root modal is not unexpected.

Besides similarities, we observed fine-grained semantic differences between the three languages: BP and MC seem to have an extra aspectual ingredient that D lacks. In BP and MC, the event must have been set in motion, or be ‘ongoing’, for future WANT to be felicitous. Although such variation might seem problematic for the kind of theory advocated for in this paper, we think that this variation is not an issue. Our proposal predicts that WANT should develop into a future-expressing root modal/aspect marker because they are similar in their distribution, as compared to for instance epistemic modals, but there is no expectation that these root modals/aspect markers should have exactly the same semantics. Our falsifiable hypothesis is that there are constraints to the variation.

We will conclude by sketching opportunities for future research. We have drawn upon existing research in syntax, semantics, and cross-linguistic variation to study the grammaticalization of desire verbs to future markers, but we think our project is in turn also relevant for research within each of these areas.

First, for syntax, one area of interest might be restructuring (Rizzi 1982; Wurmbrand 1998; 2015; Cinque 2006; Grano 2015; Huang 2018, among many others), in which otherwise clause-bound dependencies appear in control constructions, as if the control construction was monoclausal, i.e. the control predicate behaves syntactically as if it were a functional head and less like a verb. Superficially, restructuring strongly resembles the

diachronic change discussed above, to the extent that a desire verb gets reanalyzed as a root modal or a functional head. However, unifying these two phenomena is challenging, because the desire-to-future change by definition involves a semantic change, which existing proposals on restructuring are silent about. Exploring how to extend restructuring theories to accommodate this kind of semantic change could be an interesting area of research.

Second, the various future WANTS differ subtly semantically in ways that are not fully understood. For instance, *yào* and *willen* have other non-desire, non-future modal uses, as observed in Section 5. Moreover, what exactly is the semantic contribution of the MC particle *le* and the Dutch particles *nog wel*, which are overwhelmingly present when the future use of *yào* and *willen* is intended? In Section 7, we also highlighted an ‘ongoingness requirement’, which resembles the concept of ‘imminence’ discussed in prior work on English ‘going to’. However, how exactly these concepts are related and to what extent similar semantic properties are found in future markers (whether related to WANT or *go*) in other languages are currently open questions, available for future investigation.

A third area that deserves greater attention is cross-linguistic variation. We have only investigated three languages, but as mentioned in the introduction, there are many languages where desire WANT seems to have undergone the same kind of change. These include Georgian (Harris & Campbell 1995; van Dooren 2017b), Malay/Indonesian (Copley 2009; Jeoung 2020), and Taiwanese Min (Cheng 1985). Our proposal predicts that there should be a similar convergence for WANT. A careful investigation of these languages would let us test our predictions about the limits of variation.

Finally, we would like to suggest that our synchronic approach could be useful to the study of diachronic change in language. First, this approach complements conventional practices, which relies heavily on historical corpora. Adopting a synchronic perspective helps to compensate for the lack of suitable corpora, as we saw in the case for BP *querer*, which is the most recent innovation and has received relatively little attention in the literature. Similarly, our approach yields a finer-grained understanding of future WANTS in these three languages, complementing large-scale typological studies that identify broad-based generalizations or tendencies (e.g. Bybee et al. 1994). Of course, it is not the case that such distinctions are only found in the grammaticalization of WANT. For this reason, we believe that the same methodology can be applied to other domains of grammaticalization, to help uncover additional fine-grained distinctions that could inform our theories of diachronic change.

## Abbreviations

CL = classifier, DIM = diminutive, INF = infinitive, IMP = imperative, PRT = particle, PL = plural, PROG = progressive, SUBJ = subjunctive, SG = singular

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