

Antonyms? Presuppositions? On the Semantics of Two Evaluative Modals Jingran and Guoran in Mandarin¹

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Abstract

Jingran indicates that the (non)occurrence of a situation it presents contradicts the speaker's expectation, while guoran expresses the (non)occurrence of a situation presented by it converges with the speaker's expectation. Arguing against Hsieh's (2005, 2006a, 2006b) proposal that evaluative modals in Mandarin do not have model-theoretic semantics, I propose that, given that the speaker's expectation is a proposition, i.e. a set of possible worlds, based on Kratzer (1981), jingran presents a proposition which is incompatible with the set of possible worlds, whereas guoran presents a situation which is compatible with the set of possible worlds. Contra Hsieh's claim that modality in Mandarin has a language-specific property, i.e. the semantics of some modals in Mandarin cannot be captured in terms of possibility and necessity, I try to fit modality in Mandarin into the bigger picture of modality in general and show that it is possible to achieve a universally valid notional category of modality, similar to what Kratzer (1981) does, though different languages may have language-specific choice of modal bases, which results in different types of modality in languages.

Keywords

jingran, guoran, evaluative modals, semantics, modality, Mandarin Chinese

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1. Introduction

This paper discusses the semantics of two evaluative modals *jingran* and *guoran* in Mandarin. These two modals express whether or not the (non)occurrence of a situation they present and speaker's expectation converge. Please see the two examples below.

1. a. zhangsan guoran lai le
Zhangsan guoran come Prc²
'Zhangsan came (as expected by the speaker)!'
 - b. zhangsan jingran lai le
Zhangsan jingran come Prc
'Zhangsan came (contrary to the expectation of the speaker)!'³

It is not easy to translate these two modals into English because English does not have exact equivalences to them.⁴ However, the paraphrases above should make the meanings of the two modals clear. (1a) means that the speaker expects Zhangsan to come and Zhangsan did come, i.e. whether the situation occurs matches the speaker's expectation. On the other hand, (1b) means that the speaker does not expect Zhangsan to come but Zhangsan did come, i.e. whether the situation occurs contradicts the speaker's expectation.

Little, if any, attention has been paid to the semantics of evaluative modals, much less their formal semantics. Hsieh (2005, 2006a, 2006b) provides a descriptive semantics for them and proposes that evaluative modals express a presupposition. She further suggests that the semantics of evaluative modals cannot be stated in terms of necessity and possibility and therefore cannot have a model-theoretic semantics.

This paper argues against Hsieh's (2005, 2006a, 2006b) idea that evaluative modals cannot have model-theoretic semantics, and proposes model-theoretic semantics for two evaluative modals *jingran* and *guoran* in terms of possibility and necessity.

Besides, this paper also provides support on the grammatical status of *jingran* and *guoran*. Previous studies on the semantics of modals, such as Kratzer (1977, 1981), successfully capture the essence of the semantics of modals, i.e. all modals express necessity and possibility and their different readings lie in different kinds of modal bases.

² The abbreviations used in this paper include: DE for the modifier-modifiee marker, Exp for the experiential marker, Pfv for the perfective marker, Prg for the progressive marker, and Prc for a sentence particle.

³ Hsieh (2005a: 50) translates *guoran* as 'just as expected' and *jingran* as 'unexpectedly'. However, the native speakers of English I consulted pointed out that the source of evaluation for the English adverbial *unexpectedly* and the phrase *just as expected* can be someone other than the speaker. Since in Mandarin the source of evaluation for *jingran* and *guoran* must be uniquely the speaker, the longer translations in (1a) and (1b) are used in this paper to accurately identify the source of evaluation.

⁴ English may use *should* in (1b) to indicate the speaker's surprise resulted from the contrary expectation (of the speaker), c.f. Palmer (1986: 120).

Hsieh (2005, 2006a, 2006b) intends to provide semantic criteria for the categorization of modals in Mandarin. She proposes two features to identify modals as a semantic natural class: source and possible worlds. Hsieh (2006a: 16) specifically claims that the semantics of evaluative modals is very subtle and cannot be modeled in terms of possibility and necessity, based on which she suggests that Mandarin needs language-specific criteria to identify modals.

Contra Hsieh's series of works, this paper tries to fit Chinese modality into the bigger semantic picture of modality in general by arguing for model-theoretic semantics for two evaluative modals *jingran* and *guoran*, and shows that it is possible to achieve a universally valid notional category of modality, similar to what Kratzer (1981) does, even though different languages may have language-specific choice of modal bases, which results in different types of modality in languages.

This paper is organized as follows. Section 2 reviews related literature on the semantics and classification of evaluative modals. Section 3 discusses relevant examples. Section 4 provides semantics for the two evaluative modals *jingran* and *guoran*. Section 5 concludes this paper.

2. Literature Review

Little research, if any, has been devoted to the semantics of evaluative modals. The major types of modality most commonly discussed in the literature, such as Perkins (1983), Palmer (2001), etc., include epistemic modality, deontic modality and dynamic modality. Perkins (1983: 12) even rules out evaluative modality, such as *good*, *know*, *amazing*, etc., as a type of modality because these words express viewpoints on the real world and presuppose that the propositions they present are true.

In Mandarin, there is no agreement on the grammatical status of words that express evaluation. For example, what are categorized as evaluative modals in Hsieh (2005, 2006a, 2006b) are identified as adverbs in Liu et al. (1996: 123-124), Li and Thompson (1981: 321-322), Zhang (1994: 212-214), etc.

Hsieh (2006a) proposes that source of opinion or attitude and possible world are the two key ingredients in the definition of modality. *Jingran* and *guoran* are both [+source] because they both indicate the speaker's expectation. They are also both [+possible world] because Hsieh (2006a: 16) states that "Once the speaker evaluates a proposition, the proposition is not longer a description of pure fact. Therefore, evaluative modality deals with non-real worlds, i.e. possible worlds [translation mine]", following Chung and Timberlake (1985), and Asher and Simpson (1994). Since *jingran* and *guoran* both have the

speaker's expectation as their source⁵ of evaluation and they both talk about situations in possible worlds, Hsieh concludes that they are modals.

Hsieh (2006a, 2006b) proposes that evaluative modals such as *jingran* and *guoran* evaluate the speaker's presupposition and they differ in terms of convergence and divergence.⁶ By convergence, she means that the (non)existence or (non)occurrence of a presented situation matches the speaker's presupposition about the situation, and by divergence she means that the (non)existence or (non)occurrence of a presented situation contradicts the speaker's presupposition about the situation. See the examples below.

2. a. lisi guoran chenggong le
 Lisi guoran succeed Prc
 'Lisi succeeded (as expected by the speaker)!'

 b. lisi jingran chenggong le
 Lisi jingran succeed Prc
 'Lisi succeeded (contradictory to the speaker's expectation)!'

In (2a), the speaker presupposes that Lisi would succeed. *Guoran* is used to express that the occurrence of the situation *Lisi succeed* matches the speaker's presupposition. In (2b), the speaker presupposes that Lisi would not succeed. *Jingran* is used to denote that the occurrence of the situation *Lisi succeed* contradicts the speaker's presupposition.

To sum up, in addition to establishing that evaluative adverbials such as *jingran*, *guoran*, etc., are modals, Hsieh (2005, 2006a, 2006b) raises the following four points about the two evaluative modals *jingran* and *guoran*: First, they express the speaker's presupposition, second, they predicate on known facts, which has happened, third, they are antonyms, and fourth, their semantics cannot be captured in terms of possibility and necessity, unlike the modals discussed in Kratzer (1977, 1981).

However, Hsieh's generalizations about *jingran* and *guoran* are not accurate.⁷ First, what these two modals evaluate is not a presupposition. It is well-accepted that a presupposition

⁵ For Hsieh, all modals need a source of opinion, attitude or evaluation. Those whose source is encoded in the semantics of modals, e.g. the source of evaluation for *jingran* and *guoran* is the speaker's expectation, is [+source]. Those whose source is not encoded in the semantics of modals is [-source]. For the latter, the source is usually the subject.

⁶ Hsieh identifies another type of evaluative modals that expresses wish. This type of evaluative modals is not discussed in this paper.

⁷ Since this paper deals with only two evaluative modals, I will not commit myself to the (in)accuracy of Hsieh's generalizations on the other evaluative modals, though I suspect that the discussions on Hsieh's generalizations in this section apply to the other evaluative modals. But, I will leave this issue for future studies.

cannot be affected by negation, e.g. Fodor (1979), Wilson and Sperber (1979), etc.⁸ However, negation does change so-called presuppositions in the examples with *jingran* and *guoran*. See the examples below.

3. a. John's brother lives here.
b. John's brother does not live here.
4. a. zhangsan jingran lai le
Zhangsan jingran come Prc
'Zhangsan came (contradictory to the speaker's expectation).'
- b. zhangsan jingran mei lai
Zhangsan jingran not come
'Zhangsan did not come (contradictory to the speaker's expectation).'
5. a. zhangsan guoran lai le
Zhangsan guoran come Prc
'Zhangsan came (as expected by the speaker).'
- b. zhangsan guoran mei lai
Zhangsan guoran not come
'Zhangsan did not come (as expected by the speaker).'

In (3a), the presupposition is that John has a brother. (3b) is the negation of (3a), but the presupposition is not affected. *Jingran* and *guoran* does not behave like this. In (4), the speaker's expectation in (4a) is that Zhangsan would not come, but in (4b) it is Zhangsan would come. Similarly, the speaker's expectation in (5a) is that Zhangsan would come, but in (5b) it is Zhangsan would not come. As these two sets of examples show, negation makes a difference. Therefore, the speaker's expectation expressed by *jingran* and *guoran* is not a presupposition.

Second, these two evaluative modals do not necessarily predicate on a known facts, which have happened. In the examples above, *jingran* and *guoran* both present a situation that has taken place, that is, they both predicate on facts that have happened. However, they can also predicate on a situation that has not occurred yet. See the examples below.

6. a. zhangsan jingran hui canjia mintian de huiyi
Zhangsan jingran will participate tomorrow DE meeting
'Zhangsan will come to tomorrow's meeting (contradictory to the speaker's expectation)!'
 - b. zhangsan guoran hui canjia mintian de huiyi

⁸ There are contexts where presupposition is canceled or fails, as discussed in McCulloch (1989), Fodor (1979), etc. However, in the examples above, *jingran* and *guoran* do not appear in one of the contexts. Therefore, no presupposition failure can be observed even if there is any presupposition.

Zhangsan guoran will participate tomorrow DE meeting

‘Zhangsan will come to tomorrow’s meeting (as expected by the speaker)!’

In (6a) and (6b), *jingran* and *guoran* predicate on a future event, not an event that has been realized. That is, it is not accurate to claim that evaluative modals predicate on known facts that have taken place.

One might argue that, although a future event has not happened, it can always be a known fact. For example, it is always possible that *Zhangsan will come to tomorrow’s meeting* is a fact known to everyone. There are examples where these two modals predicate on a situation that is not a fact at all. Suppose that due to some miscommunication, Lisi thought that Zhangsan liked Xiaomei, even though that is not true. Lisi can still utter (7a) to express that Zhangsan’s having liked Xiaomei matches his expectation and (7b) to express that Zhangsan’s having liked Xiaomei is not expected by him.

7. a. zhangsan guoran xihuan xiaomei

Zhangsan guoran like Xiaomei

‘Zhangsan liked Xiaomei (as expected by the speaker)!’

b. zhangsan jingran xihuan xiaomei

Zhangsan jingran like Xiaomei

‘Zhangsan liked Xiaomei (contradictory to the speaker’s expectation)!’

Thirdly, *jingran* and *guoran* are not typically antonyms if they are really antonyms. Antonyms make sentences contradictory, as (8) shows. However, *jingran* and *guoran* do not seem to cause contradiction as in (8).

8. a. zhangsan zai shangmian shujiao

Zhangsan Prg top sleep

‘Zhangsan was/is sleeping up there.’

b. zhangsan zai xiamian shujiao

Zhangsan Prg bottom sleep

‘Zhangsan was/is sleeping down there.’

9. a. zhangsan jingran lai guo zheli

Zhangsan jingran come Exp here

‘Zhansan has been here (contradictory to the speaker’s expectation)!’

b. zhangsan guoran lai guo zheli

Zhangsan guoran come Exp here

‘Zhansan has been here (as expected)!’

In (8), *shangmian* ‘top, up there’ and *xiamian* ‘bottom, down there’ are antonyms. They make (8a) and (8b) contradictory. That is, if (8a) is true, then (8b) is false and vice versa. However, it is not clear how to determine the truth values of (9a) and (9b) if the semantics

of *jingran* and *guoran* are not decided. That is, Hsieh's intuition needs to be verified.

Given the discussions that Hsieh's first two generalizations about *jingran* and *guoran* are not accurate and her third generalization awaits verification, I re-examine the data of these two evaluative modals in next section, show that Hsieh's fourth generalization is inaccurate as well, i.e. it is possible to capture the semantics of *jingran* and *guoran* in terms of necessity and possibility, and verify whether *jingran* and *guoran* are antonyms.

3. Semantics of *Jingran* and *Guoran*

In Section 2, I argue that *jingran* and *guoran* do not express a presupposition and neither do they predicate on a fact that has happened. I would like to argue that the convergence and divergence of a situation with respect to the speaker's expectation are the only key issues relevant to the semantics of these two evaluative modals. Let's look at more examples.

10. a. ta jingran xihuan lanqiu
 he jingran like basketball
 'He likes basketball (contradictory to the speaker's expectation)!'
 The predicated situation: He likes basketball
 The speaker's expectation: He does not like basketball
- b. ta jingran shuo le na zhong hua
 he jingran say Pfv that kind words
 'He said that kind of words (contradictory to the speaker's expectation)!'
 The predicated situation: He said that kind of words
 The speaker's expectation: He would not say that kind of words
- c. ta jingran hui canjia nide hunli
 he jingran will participate your wedding
 'He will come to your wedding (contradictory to the speaker's expectation)!'
 The predicated situation: He will come to your wedding
 The speaker's expectation: He will not come to your wedding
11. a. ta jingran bu xihuan lanqiu
 he jingran not like basketball
 'He does not like basketball (contradictory to the speaker's expectation)!'
 The predicated situation: He does not like basketball
 The speaker's expectation: He likes basketball
- b. ta jingran mei shuo zhen hua
 he jingran not say true words
 'He did not tell the truth (contradictory to the speaker's expectation)!'

The predicated situation: He did not tell the truth

The speaker's expectation: He would tell the truth

c. ta jingran bu hui canjia nide hunli

he jingran not will participate your wedding

'He will not come to your wedding (contradictory to the speaker's expectation)!'

The predicated situation: He will not come to your wedding

The speaker's expectation: He will come to your wedding

The examples in (10) and (11) show that *jingran* can predicate on a present tense sentence, such as (10a) and (11a), a past tense sentence,⁹ such as (10b) and (11b), and a future tense sentence, such as (10c) and (11c). From the six examples above, we can clearly see that the speaker's expectation is always contradictory to the predicated situation: When the speaker's expectation is positive, the predicated situation is negative; when the speaker's expectation is negative, the predicated situation is positive. That is, the proposition that describe the situation *jingran* presents always has the opposite truth value with respect to the speaker's expectation.

Bearing the generalization on *jingran* in mind, let's look at the examples of *guoran* below.

12. a. ta guoran xihuan lanqiu

he guoran like basketball

'He likes basketball (as expected by the speaker)!'

The predicated situation: He likes basketball

The speaker's expectation: He likes basketball

b. ta guogran shuo le na zhong hua

he guoran say Pfv that kind words

'He said that kind of words (as expected by the speaker)!'

The predicated situation: He said that kind of words

The speaker's expectation: He said that kind of words

c. ta guoran hui canjia nide hunli

he guoran will participate your wedding

'He will come to your wedding (as expected by the speaker)!'

⁹ Though Mandarin is a tenseless language, e.g. Li and Thompson (1981), there have been a few studies that try to determine the temporal reference of a Mandarin sentence, such as Smith and Erbaugh (2005), Lin (2003, 2006), etc. For the temporal location of a Mandarin bare sentence, such as (10a), please refer to these three papers. For the temporal location of a Mandarin sentence with an aspect marker, such as (10b), please refer to Lin (2006). (10c) is future because it contains a future modal *hui*.

- The predicated situation: He will come to your wedding
 The speaker's expectation: He will come to your wedding
13. a. ta guoran bu xihuan lanqiu
 he guoran not like basketball
 'He does not like basketball (as expected)!'
 The predicated situation: He does not like basketball
 The speaker's expectation: He does not like basketball
- b. ta guoran mei shuo zhen hua
 he guoran not say true words
 'He did not tell the truth (as expected by the speaker)!'
 The predicated situation: He did not tell the truth
 The speaker's expectation: He did not tell the truth
- c. ta guoran bu hui canjia nide hunli
 he guoran not will participate your wedding
 'He will not come to your wedding (as expected by the speaker)!'
 The predicated situation: He will not come to your wedding
 The speaker's expectation: He will not come to your wedding

Just like *jingran*, *guoran* can also predicate on a present tense sentence, such as (12a), and (13a), a past tense sentence, such as (12b) and (13b), and a future tense sentence, such as (12c) and (13c). But, unlike *jingran*, which expresses divergence, we can see clearly, from the six examples in (12) and (13), that the speaker's expectation always converges with the situation *guoran* predicates on. That is, the proposition that describes the situation *guoran* presents always has the same truth value with respect to the speaker's expectation.

To sum up, the discussion above shows that it is possible to decide the truth value of a proposition containing *jingran* and *guoran* by examining the truth value of the proposition *jingran* or *guoran* present with respect to the speaker's expectation. The proposition that describe the situation *jingran* presents always has the opposite truth value with respect to the speaker's expectation, while the proposition that describes the situation *guoran* presents always has the same truth value with respect to the speaker's expectation.

4 Formalizing the Generalization

Contra Hsieh's (2006a, 2006b) proposal that the semantics of evaluative modals cannot be captured in terms of possibility and necessity, I would like to demonstrate that Hsieh is not correct in this respect and that the semantics of *jingran* and *guoran* can be captured in terms of possibility and necessity.

In the previous section, I show that the truth value of *jingran*(P) or *guoran*(P), where *P* is a proposition, can be determined by examining the truth value of *P* with respect to the speaker's expectation. This is a first step toward the semantics of *jingran* and *guoran*. Next question is what the speaker's expectation is and how to examine the truth value of a proposition with respect to the speaker's expectation.

The speaker's expectation is a proposition. Kratzer (1981) proposes that a proposition is a subset of possible worlds. With these two ideas combined together, it can be proposed that the speaker's expectation is a subset of possible worlds. Divergence and convergence can be formalized as logical (in)compatibility. Kratzer (1981) defines logical compatibility as below.

14. Let *W* be the set of all possible worlds.
 - a. Logical Compatibility

A proposition *p* is compatible with a set of propositions *A* if and only if $A \cup \{p\}$ is a consistent set of propositions.
 - b. Consistency

A set of propositions *A* is consistent if and only if there is a world in *W* where all propositions of *A* are true.

Following Kratzer's (1981) ideas of Logical Compatibility and Consistency, I define Logical Incompatibility and Inconsistency as below:

15. a. Logical Incompatibility

A proposition *p* is incompatible with a set of propositions *A* if and only if $A \cup \{p\}$ is an inconsistent set of propositions.
- b. Inconsistency

A set of propositions *A* is inconsistent if and only if there is a world in *W* where not all propositions of *A* are true.

Given that the speaker's expectation is a set of possible worlds, evaluating a proposition with respect to the speaker's expectation equals to evaluating the proposition with respect to the set of possible worlds representing the speaker's expectation. A proposition being true with respect to the speaker's expectation means that the proposition is true in all the worlds of the set of possible worlds representing the speaker's expectation. A proposition being false with respect to the speaker's expectation means that the proposition is false in all the worlds of the set of possible worlds signifying the speaker's expectation. That is, whether a proposition is true or false with respect to the speaker's expectation refers to compatibility or incompatibility of the proposition with the set of possible worlds representing the speaker's expectation. Therefore, the semantics of *jingran* and *guoran* can

be defined as follows.

16. Let W be the set of possible worlds which represent the speaker's expectation,
i.e. the modal base for *jingran* and *guoran*.
- a. *Jingran* presents a proposition that is incompatible with W .
 - b. *Guoran* presents a proposition that is compatible with W .

Since (in)compatibility of a proposition with a set of possible worlds is involved with evaluating the proposition in all of the worlds in the set of possible worlds, it is clear that the semantics of *jingran* and *guoran* involve necessity, which requires to evaluate a proposition in all of the possible worlds. With the idea of the ordering source incorporated, the semantics of *jingran* and *guoran* can be defined formally as in (17):

17. Let $B(w)$ be the set of possible worlds that represent the speaker's expectation,
i.e. the modal base for *jingran* and *guoran*.
- a. $[jingran(p)]^{B, \leq, w} = 1$
iff for all $w' \in B(w)$ there is a $w'' \in B(w)$ with $w'' \leq_w w'$ and $[p]^{w''} = 0$.
 - b. $[guoran(p)]^{B, \leq, w} = 1$
iff for all $w' \in B(w)$ there is a $w'' \in B(w)$ with $w'' \leq_w w'$ and $[p]^{w''} = 1$.

In plain English, (17a) says that *jingran*(P) is true with respect to a modal base B , an ordering source \leq and a possible world w if and only if for all possible worlds w' that are members of the modal base $B(w)$ there is a possible world w'' such that w'' is at least as close to w as w' and p is false in w'' . This semantics instantiates the incompatibility of the proposition *jingran* presents with the set of possible worlds that represent the speaker's expectation.

(17b) says that *guoran*(P) is true with respect to a modal base B , an ordering source \leq and a possible world w if and only if for all possible worlds w' that are members of the modal base $B(w)$ there is a possible world w'' such that w'' is at least as close to w as w' and p is true in w'' . This semantics instantiates the compatibility of the proposition *guoran* presents with the set of possible worlds that represent the speaker's expectation.

In Section 2, I argue that Hsieh's (2005, 2006a, 2006b) generalizations about *jingran* and *guoran* are not accurate. She proposes four points about these two evaluative modals (and the other evaluative modals). First, *jingran* and *guoran* express the speaker's presupposition. Second, they predicate on known facts that have happened. Third, they are antonyms. Last, their semantics cannot be captured in terms of necessity and possibility.

(17) clearly show that the semantics of *jingran* and *guoran* can be defined in terms of necessity. The semantics in (17) show that at least for two of the evaluative modals, i.e. *jingran* and *guoran* discussed in this paper, Hsieh's (2005, 2006a, 2006b) generalizations that the semantics of evaluative modals cannot be captured in terms of necessity and

possibility are not accurate. The semantics argued in this section can avoid the problems of presupposition failure because *jingran* and *guoran* are not related to presuppositions. The semantics in (17) also support native speaker's intuition that *jingran* and *guoran* are antonyms. With the semantics in (17), we can easily demonstrate how *jingran* and *guoran* cause contradiction. Under the same scenario, i.e. for all possible worlds w' that are members of the modal base $B(w)$ there is a possible world w'' such that w'' is at least as close to w as w' and p is true in w'' , *jingran*(P) is false, but *guoran*(P) is true. The correct reflection of native speaker's intuition about the two evaluative modals being antonyms, in turn, verifies the accuracy of the semantics proposed in this section. Finally, the semantics in (17) do not require that these two modals predicate on known facts that have happened. To sum up, the semantics of *jingran* and *guoran* argued in this paper do not have the problems of Hsieh's generalizations and verify the intuition that *jingran* and *guoran* are antonyms.

5. Conclusion

In this paper, I argue against Hsieh's (2005, 2006a, 2006b) proposal about the semantics of evaluative modals. I argue that the two evaluative modals *jingran* and *guoran* do not express presuppositions. I further argue for model-theoretic semantics for *jingran* and *guoran*, contra Hsieh's (2006a, 2006b) proposal that the semantics of evaluative modals cannot be captured in terms of necessity and possibility. I propose that *jingran*(P) is true with respect to a modal base B , an ordering source \leq and a possible world w if and only if for all possible worlds w' that are members of the modal base $B(w)$ there is a possible world w'' such that w'' is at least as close to w as w' and p is false in w'' and that *guoran*(P) is true with respect to a modal base B , an ordering source \leq and a possible world w if and only if for all possible worlds w' that are members of the modal base $B(w)$ there is a possible world w'' such that w'' is at least as close to w as w' and p is true in w'' .

I also try to fit modality in Mandarin into the bigger picture of modality in general. I show that, at least for two of the evaluative modals *jingran* and *guoran*, it is possible to achieve a universally valid notional category of modality, similar to what Kratzer (1981) does, and that the differences in the inventories of modality in different languages are due to language-specific choice of modal bases.

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