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Negation in Mandarin Chinese and the specialness of states

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Despite numerous studies of negation in Mandarin Chinese over the last 50 years and a wealth of important observations, there has been no consensus so far on how to capture in a systematic way the differences between *bù* 'not' and *méi (yǒu)* 'not have'. The present article argues that the same dichotomy 'state *vs* non-state predicates' that is crucial for finiteness in Mandarin Chinese (cf. Ramchand 2020, *to appear*; Paul & Ramchand 2023) also provides the key to an encompassing analysis of these two negation markers. This is in line with the well-known relation established for languages with overt tense morphology between negation and tense as the locus of finiteness (cf. Zanuttini 1997).
Bù 'not' realizes the head of the functional category Negation Phrase. It negates states (including habituals) in the present and past tense. When negating non-states, there is a covert future/volitional modal 'will/would not; do/did not want to'. *Méi (yǒu)* 'not have' is an auxiliary. It negates non-states in the past as well as 'derived states' in the past and present, i.e. predicates marked with the progressive aspect *zài* ('*zài* V') or the durative aspect *-zhe* ('V-*zhe*'). Crucially, neither *bù* 'not' nor *méi (yǒu)* 'not have' can be associated with a fixed temporal value.

KEYWORDS: Mandarin Chinese, negation, *bù* 'not', *méi* (*yǒu*) 'not have', double negation, finiteness, state *vs* non-state.

1. Introduction

Despite numerous studies of negation in Mandarin Chinese and a wealth of important observations over the last 50 years, there has been no consensus so far on how to capture in a systematic way the differences between the two forms of negation, viz. *bù* 'not' and *méi (yǒu)* 'not have'. The present article

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demonstrates in great detail that the same dichotomy 'state *vs* non-state predicates' that is crucial for finiteness in Mandarin Chinese (cf. Ramchand 2020, *to appear*; Paul & Ramchand 2023) also provides the key to an encompassing analysis of negation. *Bù* 'not' negates states (adjectives and stative verbs), including habituals, both in the present and past tense. When negating non-states, *bù* 'not' introduces an underlying, i.e. covert future/volitional modal 'will/would not, do/did not want to', in the present, past or future. While these interpretational possibilities are well-known and motivated the postulation of a covert modal associated with *bù* 'not' (cf. C.-T. James Huang 1988), they have so far not been linked to the non-stative nature of the predicate at hand.[1] *Méi (yǒu)* 'not have' negates non-states in the past. By contrast, when negating 'derived states', i.e. predicates marked with the progressive aspect *zài* ('*zài* V') or the durative aspect suffix *-zhe* ('V-*zhe*'), it yields a past or present tense interpretation. *Méi(yǒu)* 'not have' is an auxiliary and as such allows VP-ellipsis, whereas *bù* 'not' realizes the head of the functional category Negation.

While a systematic overview of the rich literature on negation (the majority of which is written in Chinese) would lead us too far and is not intended here, one point should be mentioned right away, viz. the recurrent observation in the Chinese literature over the last decades concerning the 'subjective' nature of *bù* 'not' *vs* the 'objective' nature of *méi (yǒu)* 'not have' (cf. among others Lü Shuxiang 2000: 383 [first edition 1980]; Zhu Dexi 1982: 200-201; See Gebauer 1980; Lü Shuxiang 1985). More precisely, *bù* 'not' in (1a) is said to express a subjective wish, while *méi (yǒu)* 'not have' in (1b) is said to convey an objective report and to negate that the event occurred:

(1) a. *Qiántiān* *qǐng -le* *tā,* *kěshì* *tā* *bù* *lái.*
day.before.yesterday invite-PERF 3SG but 3SG NEG come
'I invited him the day before yesterday, but he didn't want to come / but he wouldn't come.' (Lü Shuxiang 2000: 383, slightly changed)

b. *Jīntiān* *tā* *méi* *yǒu* *lái.*
today 3SG NEG have come
'He didn't come / hasn't come today.'

This distinction is referred to by for example Bai Quan (2000: 22 top) when explaining the contrast in (2a-b):

(2) a. *Tā* *bù* *qù* *Guǎngzhōu.* (Bai Quan 2000: 22)
3SG NEG go Guangzhou
'He doesn't want to / will not go to Guangzhou.'
'He didn't want to / wouldn't go to Guangzhou.'

b. *Tā* *méi* *qù* *Guǎngzhōu.*
3SG NEG go Guangzhou
'He didn't go / hasn't gone to Guangzhou.'

In our analysis, the 'subjective' nature of *bù* in (1a) and (2a) will be captured by postulating an underlying, covert future/volitional modal when *bù* combines with non-stative predicates, thus accounting for the observed interpretation 'will/would not', 'doesn't/didn't want to'. With stative predicates, by contrast, *bù* is a plain negation without any covert modal. This explanation crucially depends on recognizing the important role of the state *vs* non-state dichotomy as underlying the distribution of *bù* 'not' and *méi (yǒu)* 'not have' in Mandarin Chinese and the associated interpretational differences.

In the remainder of this article, we provide a new analysis of the two negation forms *bù* 'not' and *méi (yǒu)* 'not have' in Mandarin Chinese. We show that the observations from the literature all fall into place when examined in the light of the state *vs* non-state dichotomy. Our comprehensive analysis of the two negation forms *bù* 'not' and *méi (yǒu)* 'not have' in Mandarin Chinese is also important for cross-linguistic studies of negation. Foremost, it confirms the relation between negation and finiteness, stated for languages with overt tense morphology as a relation between negation and tense (cf. Zanuttini 1997), which is the locus of finiteness in these languages.

Looking at the different properties of negation in Chinese in detail, we show that they partly add support to already established generalizations and partly offer new observations. In many languages with more than one clausal negation, the distribution depends on the aspectual marking and/or tense (cf. among others Ramchand 2004; De Clercq 2020; De Clercq & Vanden Wyngaerd 2024). In Chinese, however, the distribution of *bù* 'not' and *méi (yǒu)* 'not have' is determined by the aktionsart difference state *vs* non-state. Neither *bù* 'not' nor *méi (yǒu)* 'not have' can be associated with a fixed temporal value. The high productivity of double negation with auxiliaries (resulting in an affirmative statement) '*bù* 'not' auxiliary *bù* 'not' verb' relativizes Zeijlstra's (2004: 59) observation about the cross-linguistic rarity of this possibility. At the same time, his generalization that double negation and negative concord exclude each other in the same language is borne out by Chinese. Furthermore, Chinese with a single position for Negation Phrase, viz. below the subject and preceding the verbal projection places it among the languages with a fixed position rather than multiple positions (cf. the discussion in Zanuttini 1997 and Zeijlstra 2004, 2022 and references therein).

The article is organized as follows. Section 2 introduces the special status of states in Mandarin Chinese. States are special among the aktionsarten, because only states can be true at a moment (cf. Taylor 1977 and Hallman 2009). Section 3 turns to the negation marker *bù* 'not' and shows that states (including habituals and auxiliaries) are negated by *bù* 'not', both in the present and past tense. When negating non-states, *bù* 'not' introduces a covert future/volitional modal 'will/would not, do/did not want to', in the present, past or future (section 3.1). This covert future/volitional modal 'will/would

not, do/did not want to' associated with *bù* 'not' when negating non-states is further examined in section 3.2. Importantly, there is also independent evidence from affirmative contexts for the presence of a covert modal. Section 3.3 addresses the syntactic status of *bù* 'not' and concludes that it is a functional category Negation. Section 4 turns to the negation *méi (yǒu)* 'not have', analysed as a negative auxiliary (following the consensus in the literature). *Méi (yǒu)* 'not have' negates non-states in the past (section 4.1). By contrast, when negating 'derived states', i.e. verbs marked with the progressive aspect *zài* ('*zài* V') or the durative aspect suffix *-zhe* ('V-*zhe*'), it yields a past or a present tense interpretation (section 4.2). Again, this is a well-known observation from the literature, where, however, the special status of '*zài* V' and 'V-*zhe*' as derived states has not been acknowledged. Section 5 summarizes our analysis, highlights how so far unsolved problems fall into place when the state *vs* non-state dichotomy is taken into account and discusses the implications of our findings for studies on negation in general.

2. The specialness of states

The semantic/mereological properties of states that distinguish them temporally from the other aktionsart categories (i.e. activities, accomplishments and achievements) is the fact that a state can have a moment as its temporal parameter (after Taylor 1977; see also Hallman 2009). If a state is true at an interval, then it is true at every subinterval of that interval, including at each moment. Predicates denoting states can be introduced by adjectives, stative verbs and modal auxiliaries.

Mandarin Chinese reflects the specialness of states, i.e. their ability to be true at a moment: only states are acceptable as BARE predicates in a finite root sentence in Chinese. This is shown below for adjectives (cf. (3)), stative verbs (cf. (4a-b)) and predicates headed by modal auxiliaries (cf. (5a-b)).[2]

(3) *Tā* *fēicháng* {*lèi / gāoxìng / jǔsàng*}.
3SG extremely tired / happy / frustrated
'She is very tired/happy/frustrated.'

(4) a. *Wǒ* *zhīdào* *zhè* *jiàn* *shì* */ rènshí* *Lǐ lǎoshī.*
1SG know this CL matter / know Li teacher
'I know (about) this matter/know teacher Li.'

b. *Tā* *xǐhuān* *shùxué.*
3SG like mathematics
'She likes mathematics.'

(5) a. *Tāmen* *néng* {*yóuyǒng* */ pǎo bù* }.
3SG can swim / run step
'They can swim/run.'

b. *Wǒ* {*děi / xiǎng*} {*zǒu / xiūxi* }.[3]
1SG must / want go / rest
'I must {go / have a rest} / want to {go / have a rest}.'

To our knowledge, the observations concerning the well-formedness of (3-5) illustrating the specialness of states go back to Kong Lingda (1994) and Huang Nansong (1994). These two authors also note the contrast with the sentences (6a-d) below featuring non-stative predicates, i.e. activities (6a,d), accomplishments (6b) and achievements (6c). They all require aspect markers (6a-c) or sentence-final particles (6d) in order to be able to function as matrix predicates with a non-habitual, i.e. episodic reading:[4]

(6) a. *Tā* *(*zài*) {*yóuyǒng / pǎo bù / pào chá / chī fàn / xǐ yīfu*}.
3SG PROGR swim / run step / brew tea / eat food / wash clothes
'He is swimming/running/brewing tea/eating/doing the laundry.'
(based on Sun Hongyuan 2014: 54)
b. *Wǒ sòng*(-guo) tā lǐwù.* (cf. Huang Nansong 1994: 443, 18-20)
1SG give -EXP 3SG gift
'I gave him presents (before).'
c. *Tāmen lí *(-le) hūn.* (cf. Kong Lingda 1994: 437)
3PL separate-PERF marriage
'They divorced.'
d. *Tā fā shāo *(le).*[5]
3SG issue fever SFP
'He has fever.'

If a habitual reading as in (7a-d) is possible (for which the presence of an appropriate adverb is often required), activities and accomplishments (cf. (7a-c)) as well as achievements (cf. (7d)) behave on a par with states and are then acceptable as root predicates WITHOUT any aspect marking:

(7) a. *Tā jīngcháng xǐ yīfu.* (Kong Lingda 1994: 436)
3SG regularly wash clothes
'He regularly does the laundry.'
b. *Tā [yī tiān dào wǎn] kàn diànshì / dǎ yóuxì.*
3SG one day to late watch TV / strike game
'He watches TV / plays video games all day long.'
c. *Tā měi tiān dōu xiě xìn / dǎ diànhuà / jìn chéng / pǎo bù.*
3SG every day all write letter / strike phone / enter city / run step
'She writes letters/phones/goes downtown/runs every day.'
d. *Jīnglǐ měi tiān bā diǎn dào.* (Sun Hongyuan 2014:
manager every day 8 o'clock arrive 169; (12), slightly changed)
'The manager arrives at 8 o'clock every day.'

Furthermore, for states (cf. (8a)), including habituals (cf. (8b-d)), a past temporal adverb is sufficient for a past tense reading, in contrast to non-states which require aspect marking (cf. (6b), (6c) above). For the future tense (cf. (9a-b)), a future auxiliary (e.g. *huì* 'will') is required, both for states (cf. (9a)) and non-states (cf. (9b)) (cf. Sun Hongyuan 2014):[6]

(8) a. *Tā zuótiān fēicháng lèi / gāoxìng / jǔsàng.*
3SG yesterday extremely tired / happy / frustrated
'She was very tired/happy/frustrated yesterday.'

b. *Tā yǐqián xǐhuān shùxué / rènshí hěn duō yǔyánxuéjiā.*
3SG before like maths / know very much linguist
'She liked mathematics / knew many linguists in the past.'

c. *Tā yǐqián chōu yān / hē jiǔ.*
3SG before inhale cigarette/ drink alcohol
'He used to smoke/drink before.'

d. *Nà shíhòu jīnglǐ chángcháng bā diǎn dào.*
that time manager normally 8 o'clock arrive
'At that time, the manager used to arrive at 8 o'clock.'

(9) a. *Tā míngtiān *(huì) fēicháng lèi / gāoxìng / jǔsàng.*
3SG tomorrow will extremely tired / happy / frustrated
'She will be very tired/happy/frustrated tomorrow.'
(Sun Hongyuan 2014: 165, (7a) slightly changed)

b. *Zhōngguó duì míngtiān *(huì) {yíng/shū}.*
China team tomorrow will win/lose
'The Chinese team will win/lose tomorrow.'
(based on Sun Hongyuan 2014: 218, (81))

The different factors determining the temporal interpretation in Chinese shown to be at work in (6-9) above confirm that tense is the relevant factor for finiteness in Chinese, notwithstanding the lack of overt tense morphology (cf. Sybesma 2007; Yen-Hui Audrey Li 2017; He Yuyin 2020; C.-T. James Huang 2022). This is important because Ritter & Wiltschko (2014: 1380) show that languages may associate different types of content with the same universal category Inflection (as the locus of finiteness). In Indo-European languages such as English and French, Inflection is valued by temporal content (in the form of tense morphology). In Halkomelem, a Central Coast Salish language, it is spatial content that is associated with Inflection: proximate *vs* distal locative auxiliaries indicate where the event took place relative to the utterance location. Blackfoot, a Plains Algonquian language, finally associates participant content with Inflection.

To summarize, root clauses with states (including habituals and auxiliaries) as bare predicates (cf. (3-5), (7a-d) above) can be asserted independently, i.e. are finite, and have a default present tense interpretation. This is because in the absence of any overt marking the relation between the eventuality

and the speech moment ('now') is one of identity. Non-states, by contrast, need overt marking (aspect markers or sentence-final particles, cf. (6a-d)). While these facts are known, the dichotomy state *vs* non-state has so far not been acknowledged as the overarching generalization underlying the system of tense and finiteness in Chinese, nor has its importance for the syntax and semantics of negation in Chinese been recognized, a point to be demonstrated in the remainder of this article.

The state *vs* non-state dichotomy at work in Chinese has to be seen against the backdrop of Bohnemeyer & Swift's (2004) typological division of languages into two classes, dynamicity-sensitive systems (state *vs* non-state) *vs* telicity-sensitive systems (telic *vs* atelic). English belongs to the first class and Russian to the second (cf. Ramchand 2018 and Minor *et al.* 2022). This is the basis for the proposal developed in Ramchand (2020; *to appear*) and Paul & Ramchand (2023) that Mandarin Chinese is a dynamicity-sensitive language, on a par with English. The temporal system in both languages is sensitive to the division into states, on the one hand, and non-states, on the other, i.e. activities, accomplishments and achievements. For reasons of space, this core result must suffice here as background for our claim that the [±state] dichotomy is likewise the key for understanding the syntax and semantics of the negation markers *bù* 'not' and *méi (yǒu)* 'not have'.

3. Negation with bù *'not'*

Grammar manuals and the linguistic literature agree that the negation marker *bù* 'not' always requires a verbal projection as its complement. The cases where *bù* occurs on its own (mostly at the beginning of a sentence) are well-known instances of *bù* meaning 'no', not of the negation marker *bù* 'not' (also cf. C.-T. James Huang 1988: 287, footnote 13):

(10) a. *Tā* *zhīdào* *ma?* *Bù,* *tā* *bù* **(zhīdào).* (Lü Shuxiang 2000: 90)
3SG know INTERR no 3SG NEG know
'Does he know about it? No, he doesn't.'

b. *Zhè* *ge* *huì* *gǎi* *zài* *míngtiān* *kāi,*
this CL meeting change at tomorrow hold
ō, *bù,* *hòutiān.*
oh no day.after.tomorrow
'The meeting has changed and will take place tomorrow, oh, no, the day after tomorrow.'

(11) *Tā* *méi* *xiūxī* *ma?* *Bù,* *tā* *xiūxī-le.* (Jin Lixin 2003: 43)
3SG NEG rest INTERR no 3SG rest -PERF
'Didn't he take a rest? No, he did take a rest.'

In (10a) we do not have a double negation, which clearly shows that the sentence-initial *bù* is an instance of 'no' (which does not have scope over the following sentence), different from the negation marker *bù* 'not' preceding the verbal projection. In (10b), *bù* 'no' is inserted into the sentence preceding a correction. In (11), finally, *bù* 'no' precedes a declarative sentence which corrects the wrong assumption in the preceding question. Having made explicit the difference between the negation marker *bù* 'not', on the one hand, and the free-standing word *bù* 'no', on the other, we now turn to the analysis of negation itself.

3.1. Bù *'not': States vs non-states*

There is a large consensus that stative predicates (cf. (12-13)), including habituals (cf. (14)) and modal auxiliaries (cf. (15)) in the present and past tense are to be negated with *bù* 'not', not *méi* (*yǒu*) 'not have' (cf. among others Lü Shuxiang 1985: 245, Zhu Dexi 1982: 200, See Gebauer 1980):[7]

(12) a. *Tā* *(yǐqián)* *bù* *rènshi* *Lǐ lǎoshī* */ bù xǐhuān shùxué.*
3SG before NEG know Li teacher / NEG like mathematics
'She doesn't(/didn't) know Prof. Li (before)/ doesn't(/didn't) like maths (before).'

b. **Tā* *yǐqián* *méi* *rènshi* *Lǐ lǎoshī* */ méi xǐhuān shùxué.*
3SG before NEG know Li teacher / NEG like mathematics

(13) *Tā* *(zuótiān)* *bù* *lèi / gāoxìng / jǔsàng.*
3SG yesterday NEG tired / happy / frustrated
'She is(/was) not tired/happy/frustrated (yesterday).'

(14) *Tā* *(yǐqián)* *bù* *chōu* *yān* */ bù* *hē* *píjiǔ*
3SG before NEG inhale cigarette / NEG drink beer
'She doesn't(/didn't) smoke (before) // doesn't(/didn't) drink beer (before).'

(15) *Tā* *(yǐqián)* *bù* *huì* *shuō* *déwén.*[8]
3SG before NEG can speak German
'She cannot(/couldn't) speak German (before).'

(16) a. *Tāmen* *bù* *shuō* *huà.* (See Gebauer 1980: 187; (18), (19))
3PL NEG talk word
'They do not (intend to) talk. / They will not talk.'

b. *Tāmen* *yǐqián* *bù* *shuō* *huà.*
3PL before NEG talk word
'Before, they did not (want to) talk to each other.'

(17) *Tā* *bù* *hē* *jiǔ.* (Li & Thompson 1981: 423; (40), (42))
3SG NEG drink wine
'S/he doesn't drink wine.'
'S/he refuses/refused to drink wine.'[9]

(18) *Wǒ* *bù* *mài* *nèi* *ge* *píngzi.*
1SG NEG sell that CL vase
'I'm not selling this vase.'
'I won't/wouldn't sell this vase.'

As noted by See Gebauer (1980), (16a) can have three different interpretations: habitual (her "statement of fact": 'They do not talk.'), volitional/intentional ('They do not intend to talk.') and future ('They will not talk.'), the latter being absent from the past tense sentence (16b). As mentioned by Li & Thompson (1981), a habitual reading as in their (17) is not always available, in which case only the refusal interpretation (past and present) obtains (as in their example (18)). Teng Shou-hsin (1974: 89) summarizes this as follows: "*Bù* – negation of action verbs, carries the meaning of 'refusal' (will/would not) or 'generic/habitual'."

Similar examples abound in the literature, confirming the possibility of a present and past tense interpretation with *bù* 'not' and the availability of the habitual reading. However, it is not explicitly stated that the future/volitional interpretation only holds for *bù* with non-stative verbs under the control of the agent. For this latter class, we postulate a covert future/volitional modal associated with *bù* 'not', extending Huang's (1988) initial proposal for *bù* 'not' in conditional clauses (cf. immediately below, section 3.2). When negating habituals, by contrast, *bù* 'not' is a case of 'plain' negation (i.e. without a covert modal), given that habituals pattern with states.

3.2. (More) Cases of covert modality

Negation of non-stative verbs with *bù* 'not' is not the only case involving a covert modal. In fact, as observed by Sun Hongyuan (2014: 161ff; 217-221), a covert modal 'PLAN' (cf. Copley 2002, 2008) is to be assumed for planned, scheduled eventualities under the control of the agent without the future modal *huì* 'will', i.e. for cases of 'futurate' (cf. (19b), (20-21)).[10]

The requirement of a plan explains the contrast between (19a) and (19b), where the verb *yíng* 'win' in (19a) is not under the control of the agent and requires *huì* 'will', in contrast to *bǐsài* 'play' in (19b). Similarly, the activities in (20) and (21) are agent-controlled and the presence of a future-oriented adjunct (*míngtiān* 'tomorrow' and *míngnián* 'next year', respectively) is therefore sufficient.

(19) a. *Zhōngguó* *duì* *míngtiān* **(huì)* *yíng.* (Sun Hongyuan 2014: 218; (81), slightly changed)
China team tomorrow will win
'The Chinese team (will) win/*wins tomorrow.'

b. *Zhōngguó* *duì* *míngtiān* *bǐsài.*
China team tomorrow play
'The Chinese team plays tomorrow.'

(20) *Lǐsì míngtiān dǎ wǎngqiú.* (Sun Hongyuan 2014: 209, (68a), (69a))
Lisi tomorrow strike tennis
'Lisi will play tennis tomorrow.'

(21) *Mǐqílín míngnián jiàn liǎng jiā gōngchǎng.*
Michelin next.year build two CL factory
'Michelin will build two factories next year.'

Assuming a covert modal PLAN in the examples (19b), (20) and (21) above is necessary in order to explain the episodic reading, which is normally unavailable for non-stative verbs in their bare form (cf. section 2 above).

While the data above all involve root clauses, the syntactic context for which C.-T. James Huang (1988) originally postulated a covert future/volitional modal associated with *bù* 'not' are conditional clauses:

(22) *Rúguǒ nǐ bù pǎo de kuài, nǐ jiù dé-bù-dào jiǎngpǐn.*
if you not run DE fast you then can't-get prize
'If you don't run fast, then you won't get the prize.'
(C.-T. James Huang 1988: 289, (43); his glosses and translation)

In addition, he also cites (23) with *bù* 'not' in a root clause (i.e. the first clause). As shown by the continuation in the second clause with an overt modal *xiǎng* 'want' ('he doesn't want to run') this first instance of *bù* 'not' is associated with a covert future/volitional modal. Huang (1988) does, however, not mention that the underlying presence of a future/volitional modal in combination with *bù* 'not' is confined to non-stative verbs:

(23) *Tā bù pǎo de kuài, shì yīnwèi tā bù xiǎng pǎo.*
he not run DE fast be because he not want run
'He won't run fast, because he doesn't want to run.'
(C.-T. James Huang 1988: 290, (45b); his glosses and translation)

Huang (1988: 290, fn. 15) then draws the parallel with conditional clauses in English such as *If it rains tomorrow…* where the future modal must remain covert: **If it will rain tomorrow* […]. In fact, as pointed out by Hsieh Miao-Ling (2002: 8), in Chinese declarative conditional clauses an overt future auxiliary *huì* 'will' is likewise excluded (cf. (24a)). The same holds for negated conditional clauses (cf. (24b)):

(24) a. *Rúguǒ míngtiān (*huì) xià yǔ, wǒ jiù bù (huì) chūqù.*
if tomorrow will fall rain 1SG then NEG will go.out
'If it rains tomorrow, I will not go out.'

b. *Rúguǒ míngtiān bù (*huì) xià yǔ, wǒ yīdìng (huì) chūqù.*
if tomorrow NEG will fall rain 1SG certainly will go.out
'If it doesn't rain tomorrow, I will certainly go out.'

By contrast, *huì* 'will' is acceptable in the main clause of (24a-b). The verb *chūqù* 'go out' being under the control of the agent, a covert modal PLAN is likewise possible, hence the 'optionality' of *huì* 'will'.

Conditional clauses are also the only syntactic context where *bù* 'not' can exceptionally negate telic verbs, which normally require *méi* 'not have' as in (25a) (cf. Lü Shuxiang 1985: 245). Again, this phenomenon can only be accommodated when postulating a covert modal associated with *bù* 'not' in the conditional clause of (25b):

(25) a. *Tā* *méi/*bù* *zhǎodào* *yī* *ge* *hézuò* *de* *rén.*
3SG NEG/NEG find one CL cooperate SUB person
'He didn't find anybody to cooperate with.'
(Lü Shuxiang 1985: 245; examples slightly changed)

b. *Tā* *bù* *zhǎodào* *yī* *ge* *hézuò* *de* *rén,*
3SG NEG find one CL cooperate SUB person
méi yǒu *fǎzi* *kāishǐ* *gōngzuò.*
NEG have way start work
'If he doesn't find anybody to cooperate with, then he has no way to start working.'

Finally, the negation *bié* 'don't', a fusion of *bù yào* 'should not, must not' used in imperatives and prohibitions, as well as the negation *béng* 'need not, better not', a fusion of *bù yòng* 'not need' provide further evidence for modals being able to remain covert in combination with the negation *bù* 'not' in Mandarin Chinese.

(26) a. *Bù yào / bié* *làngfèi* *shuǐ.* (Lü Shuxiang 2000: 592)
NEG must/NEG.must waste water
'Don't waste water.'

b. *Nǐ* *béng /* *bù yòng* *shēng* *qì.* (Lü Shuxiang 2000: 71)
2SG need.not/NEG need emit air
'You don't need to get angry.' → 'You'd better not get angry.'

c. *Rénshǒu* *yǐjīng* *gòu* *le,* *béng /* *bù yòng* *pài* *rén*
manpower already enough SFP need.not/NEG need send person
qù *le.*
go SFP
'The manpower is already sufficient, you don't need to send more people.'

To wrap up this section (and putting aside *bù* 'not' negating habituals here), the cases where *bù* 'not' precedes a non-stative verb in fact all involve a covert future/volitional modal. Modals being stative, *bù* 'not' is the required negation here, as is the case for overt modal auxiliaries: 'NP *bù* Aux VP' (cf. (15), (23), (26a) above). Covert modals are also to be postulated elsewhere than in association with *bù* 'not', as illustrated by the covert modal PLAN (cf. Copley 2002, 2008) for scheduled, planned eventualities in declarative con-

texts giving rise to a future episodic reading for non-stative agentive verbs. Interestingly, in conditional clauses the future auxiliary *huì* 'will' must remain covert, on a par with the corresponding auxiliaries in English.

3.3. The syntactic status of bù *'not'*

For the eminent Chinese linguists pursuing the structuralist tradition, Zhu Dexi (1982) and Lü Shuxiang (1985), the situation is very simple: *bù* 'not' is an adverb, whereas the negation *méi (yǒu)* 'not have' is an auxiliary. While the latter is correct (cf. section 4 below), the precise status of the negation marker *bù* 'not' requires more attention, the more so as both linguists also assign adverb status to the word *bù* 'no'. At first sight, *bù* 'not' as adverb is plausible because it has the same distribution as exclusively sentence-internal adverbs such as *yě* 'also' and *hái* 'still', i.e. *bù* 'not' must occur below the subject and precede the verbal projection (cf. Paul 2017a and references therein). In addition, like adverbs (cf. 27a)), *bù* 'not' cannot occur on its own (cf. (27b)), but requires a following verbal projection:

(27) a. *Wǒ xǐhuān shùxué, tā yě *(xǐhuān).*
1SG like mathematics 3SG also like
'I like mathematics, he does, too.'

b. *Wǒ xǐhuān shùxué, tā bù *(xǐhuān).*
1SG like mathematics 3SG NEG like
'I like mathematics, he doesn't.'

However, the fact that *bù* 'not' negates states only (including habituals) and must be associated with a covert future/volitional modal 'will/would not; do/did not want to' when negating non-states is an unusual constraint for an adverb.

Notwithstanding these facts also reported by herself, Hsieh Miao-Ling (2001: 15; 60-61) without further discussion opts for *bù* 'not' as an adverb adjoined to the extended verbal projection. This is the more surprising as Hsieh Miao-Ling's (2001: 55-56) generalization (cf. below) goes into the right direction and succeeds in capturing most of the observations made in the literature:

> … [the] difference between the two negative markers bù and méi(yǒu) is best characterized as one between different situation types, that is, dynamic vs non-dynamic. In other words, méi(yǒu) is used to deny a dynamic situation, while bù is used for a non-dynamic situation. While a dynamic situation necessarily involves change, a non-dynamic situation is defined to be an unchanged situation as in Comrie (1976). An unchanged situation may result from the unwillingness of the subject to change the situation, or it may also be the result of a repetitive behavior over a period of time. The former gives rise to the voli-

> tional/future interpretation, and the latter gives rise to the habitual/generic interpretation. (Hsieh Miao-Ling 2001: 55-56, emphasis ours).

The distinction between non-dynamic and dynamic situations partly overlaps with the dichotomy state *vs* non-state predicates; habitual/generic interpretations are comprised under non-dynamic situations, on a par with our treating them as states.[11] Elsewhere, though, Hsieh Miao Ling's (2001) dichotomy dynamic *vs* non-dynamic leads to a classification different from ours based on the dichotomy state *vs* non-state; predicates subsumed by her under non-dynamic (i.e. in most cases stative) situations are analysed as non-stative in our analysis. This is the case for *bù* 'not' preceding a non-stative predicate and therefore associated with a covert future/volitional modal 'will/ would not', 'doesn't/didn't want to'. According to Hsieh Miao-Ling (2001), this is a case of a non-dynamic situation via "the unwillingness of the subject to change the situation" (cf. citation above). However, this cannot be correct, because states require an overt auxiliary for future tense (cf. section 2 above), in contrast to non-states where *bù* signals the presence a covert future modal. Concerning *méi (yǒu)* 'not have', it is NOT confined to the negation of dynamic situations, as stated by Hsieh Miao-Ling (2001), but it also negates derived states, i.e. verbs marked with the progressive aspect *zài* ('*zài* V') or the durative aspect suffix *-zhe* ('V-*zhe*'), both in the present and the past (cf. section 4 below).

Ernst (1995) also treats *bù* 'not' as an adverb, with the constraint that it occurs with 'unbounded' aspectual situations only, i.e. with states and activities (cf. Ernst 1995: 698, fn. 25). He is led to this generalization, because he does not seem to see the necessity of postulating an underlying covert future/ volitional modal when *bù* 'not' negates non-states.

Given these problems for an adverbial status of *bù* 'not', we will examine whether *bù* can be analysed as the head of functional category Negation Phrase. The few studies in favour of a functional status of negation in Chinese are not very helpful here, because they rarely provide arguments and instead take the functional status of *bù* 'not' for granted (cf. the brief overview at the end of this section). The diagnostic criteria used to determine the lexical *vs* functional status of negation in e.g. Germanic and Romance languages (cf. among others Zanuttini 1997 and Zeijlstra 2004, 2022) can unfortunately not be transposed to Chinese. For they crucially rely on phenomena absent from Chinese such as the distribution of clitic pronouns and verb movement out of the verbal projection (*v*P) to higher positions in the sentence. (Cf. C.-T. James Huang 1994 for the fact that in Chinese the verb always remains within the *v*P.)

Interestingly, despite his assigning adverbial status to *bù* 'not', Lü Shuxiang (2000: 384) highlights the availability of several positions for *bù*

'not' when negating auxiliaries as a major difference from the negation *méi (yǒu)* 'not have'.[12]

(28) a. *Bù* *néng* *qù.* (Lü Shuxiang 2000: 384)
NEG can go
'[S/he] cannot go.'
b. *Néng* *bù* *qù.*
can NEG go
'[S/he] can/may not go.'
c. *Bù* *néng* *bù* *qù.*
NEG can NEG go
'[S/he] cannot not go.' = 'S/he is not allowed to not go.'
d. *Néng* *bù* *néng* *qù?*
can NEG can go
'Can [s/he] go?'
e. *Néng* *qù* *bù* *néng?*
can go NEG can
'Can [s/he] go?'

(29) *Méi* *néng* *qù.*
NEG can go
'[S/he] cannot go.'

While there is only one position for *méi* 'not have' (cf. (29)), viz. preceding the auxiliary, there are five positions for *bù* 'not'. (28a) presents the simple case where *bù* precedes the entire verbal projection (including the auxiliary), on a par with *méi* 'not have' in (29). As illustrated in (28b), *néng* 'can' (as well as a couple of other auxiliaries) allow for a negated VP complement. By contrast, double negation as in (28c) seems to be generally available for auxiliaries. (28d) features the so-called 'A-not-A' question, i.e. a simplex sentence where negation occurs between two identical instances of a verb or adjective. (Cf. Huang 1982, 1987, 1988, 1991 and Huang *et al.* 2009 for an analysis in terms of a morpho-phonological reduplication rule; for an alternative analysis, cf. Paul 2026). (28e) finally is an alternative question, with a covert disjunction *háishì* 'or' (*Neng qù* [*háishi*] *bù néng?* 'can go [or] not can?' = 'Can s/he go [or not]?')

The case of double negation in (28c) is noteworthy for several reasons. As shown in the translation, the two instances of the negation *bù* 'not' cancel each other out and yield an affirmative reading: 'S/he cannot not go' = 'S/he must go.' While according to Zeijlstra (2004: 58, 60) double negation in the strict sense, i.e. within the same clause, is crosslinguistically "extremely rare" (cf. his examples (30a) from Dutch and (30b) from English), in Chinese double negation seems generally available for auxiliaries (cf. (31a-e)):

(30) a. *Jan heeft niet niemand gebeld.* (Zeijlstra 2004: 3; his glosses
Jan has NEG n-body called and translation)
'Jan didn't call nobody' = 'Jan called somebody.'
b. *Mary will not not show up. = Mary will show up.* (Zeijlstra 2004:58)

(31) a. *Tā bù huì bù huídá.*
3SG NEG will NEG answer
'S/he will not not answer.' = 'S/he will (certainly) answer.'
b. *Tā bù kěyǐ bù lái.*
3SG NEG may NEG come
'S/he is not allowed to not come.' = 'S/he must come.'
c. *Tā bù yīnggāi bù wèn.*
3SG NEG should NEG ask
'S/he should not not ask.' = 'She is allowed to ask.'

d. *Tā bù yuànyì bù jìxù.*
3SG NEG wish NEG continue
'S/he doesn't wish to not continue.' = 'S/he wishes to continue.'
e. *Tā bù xiǎng bù cānjiā bǐsài.*
3SG NEG want NEG attend competition
'S/he doesn't want to not attend the competition.'
= 'S/he (certainly) wants to attend the competition.'

However, another observation made by Zeijlstra (2004: 73) with respect to double negation does hold in Chinese, viz. the complementary distribution of double negation and Negative Concord (NC) as known from Romance languages. Chinese indeed has no cases where two or more negative elements yield one negation in the semantics, as in e.g. Italian (32):

(32) *Gianni non ha telefonato a nessuno.* (Zeijlstra 2004: 3; his glosses
Gianni NEG has called to n-body and translation)
'Gianni didn't call anybody.'

While double negation illustrated in Chinese and Dutch follows the laws of formal logic and is fully compositional in providing an affirmation, in Negative Concord the two negations do not cancel each other, as expected from a logical point of view. Negative Concord thus forms a challenge to compositionality (cf. Zeijlstra 2004: 58).

Importantly for our purpose here, double negation in (31a-e) has no 'adverbial equivalent' where the same adverb would precede the auxiliary as well as its VP complement. In fact, this type of example is hard, if not impossible, to construe, because the relative position (preceding/following) with respect to auxiliaries serves as a diagnostic to further subdivide VP-level adverbs (cf. Paul 2017a and references therein).

(33) a. *Tā* *yě / hái / yǐjīng* *(*hěn* *zhuānxīnde)* *néng*
3SG also/still/already very attentively can
*(*yě / *hái / *yǐjīng)* *hěn* *zhuānxīnde* *gōngzuò.*
also/still/already very attentively work
'She can also/still/already work very attentively.'

b. *Tā* *míngtiān* *(*zài)* *huì* *zài* *lái.*
3SG tomorrow again will again come
'S/he will come again tomorrow.'

In (33a), adverbs such as *yě* 'also', *hái* 'still' and *yǐjīng* 'already' must precede the auxiliary, whereas manner adverbs as well as adverbs such as *zài* 'again' (cf. (33b)) modifying the event itself combine directly with the VP-complement of the auxiliary.

By contrast, adjunct NPs (e.g. *míngtiān* 'tomorrow' in (34a)) and adjunct PPs (e.g. *zài túshūguǎn* 'in the library' in (34b)) can occur to both sides of the auxiliary and additionally can also precede the subject.

(34) a. *(míngtiān)* *Tā* *(míngtiān)* *huì* *(míngtiān)* *huí* *jiā.*
tomorrow 3SG tomorrow will tomorrow return home
'He will go home tomorrow.'

b. *(zài túshūguǎn)* *Nǐ* *(zài túshūguǎn)* *néng* *(zài túshūguǎn)* *fùyìn.*
in library 2SG in library can in library xerox
'You can make photocopies in the library.'

Adjunct phrases are special among adverbial expressions insofar as they can occur in three different positions: (i) in the topic position preceding the subject, (ii) preceding the highest head of the verbal projection or preceding the VP complement below the auxiliary (if present). However, the same adjunct NP or PP can evidently not appear twice, either, i.e. before and after an auxiliary (cf. (35a-b)).

(35) a. **Tā* *míngtiān* *huì* *míngtiān* *huí* *jiā.*
3SG tomorrow will tomorrow return home

b. **Nǐ* *zài* *túshūguǎn* *néng* *zài* *túshūguǎn* *fùyìn.*
2SG in library can in library xerox

Double negation thus strongly challenges an adverbial status of *bù* 'not' and points in favour of *bù* 'not' as a functional category.[13] So do alternative questions of the type illustrated in (28e) (repeated in (36a)). For there is no 'corresponding' sentence where an adverb (irrespective of the adverb class) occupies the same position as *bù* 'not' (cf. (36b)):

(36) a. *Néng* *qù* *bù* *néng?*
can go NEG can
'Can [s/he] go?'

b. **Néng qù {yě / hái } néng?*
can go also / still can

In addition, if *bù* 'not' were analysed as adverb, it is not clear what adverbial class *bù* 'not' should be assigned to in order to derive the correct relative order when co-occurring with (other) adverbs. Instead, it is *bù* 'not' itself that serves as a dividing line and constrains the distribution of adverbs, with adverbs in general preceding negation (cf. (37a-b)).

(37) a. *Tiān hái bù (*hái) lěng.* (Lü Shuxiang 2000: 253)
sky still NEG still cold
'The weather is not cold yet.'
b. *Tā yě / hái bù (* yě / hái) zhīdao zhè jiàn shì.*
3SG also/still NEG also/still know this CL matter
'S/he also/still doesn't know about that matter.'

Manner adverbs, however, are allowed BELOW negation, provided *bù* 'not' can semantically be construed as negating the VP including the manner adverb, as e.g. possible in habitual statements, thus avoiding a contradiction between negating the event and at the same time modifying it by an adverb.

(38) a. *Tā bù tài zǐxìde zuò shì.*
3SG NEG too carefully do matter
'S/he doesn't do things carefully enough.'
b. *Tāmen bù hùxiāng bāng máng.*
3PL NEG reciprocally help activity
'They (usually) don't help each other.'

This fine-grained picture of adverbial distribution is incompatible with an adverbial status of *bù* 'not', where *bù* 'not' is adjoined to the VP. We therefore propose to analyse *bù* 'not' as the head of the functional projection Negation Phrase.

Concerning the few studies invoking functional status for negation, they either assume functional status of *bù* 'not' from the start without further discussion (cf. Cheng *et al.* 1996; Li Boya 2006; Huang *et al.* 2009) or provide observations other than the non-parallel behaviour with adverbs (cf. Xu Ding 1997).[14] This is the case for Xu Ding (1997) who claims head status of *bù* 'not' to account for its ability to phonetically 'fuse' with other heads, i.e. auxiliaries. As discussed in section 3.2 above, *bù yào* 'not must/should' and *bù yòng* 'not need' used in imperatives and prohibitions have the corresponding fused forms *bié* 'don't' and *béng* 'need not, better not'. Though the exact details of this fusion need to be spelt out, this indeed looks like an additional argument in favour of *bù* as the head (Negation°) of the functional projection Negation Phrase.

3.4. Summary

Summarizing the results of section 3 and starting with the last subsection 3.3, we have shown that *bù* 'not' is best analysed as the head of the functional projection Negation Phrase. The at first sight possible parallel between *bù* 'not' and adverbs no longer holds when taking into account a larger array of data. Double negation is a case in point: '*bù* Aux *bù* VP' has no equivalent with identical adverbs in the place of *bù* 'not'. An adverbial analysis is also problematic for the cases where *bù* 'not' precedes a non-stative verb and where a covert future/volitional modal is to be postulated (cf. subsection 3.2). This has to be seen against the backdrop that *bù* 'not' negates stative predicates (including habituals and modal auxliaries) in the present and past (cf. subsection 3.1). Such a constraint would be very unusal for an adverb and thus further challenges an adverbial status of *bù* 'not'. By contrast, an analysis of *bù* 'not' as the head of the functional category Negation Phrase allows us to account for the observed selectional restrictions.

Importantly, the functional status of *bù* 'not' challenges the claim in the generative literature that languages with a functional projection Negation Phrase also display Negative Concord, as is the case in e.g. French or Italian where two or more negative elements yield one negation in the semantics (cf. among others Zeijlstra 2004: 188, (83)). Note, though, that Chinese is not included in the many languages examined by Zeijlstra (2004, 2022). Finally, Negation Phrase in Chinese is base-generated in a fixed position preceding the verb or auxiliary (if present). This has to be seen against the background of the discussion in the literature that languages may differ in having one or more positions for NegPs and in the positioning of this NegP (cf. among others Ouhalla 1990; Zanuttini 1997; Cormack & Smith 2002; Zeijlstra 2004, 2022; De Clercq 2020).

With this summary at hand, we now turn to negation with *méi (yǒu)* 'not have'.

4. Negation with méi (yǒu) *'not have'*

Méi (yǒu) is either the negated transitive verb 'have' selecting an object NP (cf. (39a)) or an auxiliary when preceding and negating a verbal projection as in (39b-c) (cf. already Zhu Dexi 1982 and Lü Shuxiang 1985).[15]

(39) a. *Tāmen (dāngshí) méi (yǒu) háizi / gōngzuò.*
3PL that.time NEG have child / work
'They don't(/didn't) have children/work (at that time).'

b. *Tāmen méi (yǒu) zuò zuòyè / yánjiū zhè ge wèntí.*
3PL NEG have make homework / research this CL problem
'They haven't done their homework. / They didn't do their homework.'
'They haven't researched this problem. / They didn't research this problem.'

c. *Tāmen méi (yǒu) lái / dào Běijīng.*
3PL NEG have come / arrive Beijing
'They haven't come. / They didn't come.'
'They haven't arrived at Beijing. / They didn't arrive at Beijing.'

In both cases, *méi* 'not' is acceptable without *yǒu* 'have', thus directly challenging Ernst's (1995: 700) analysis of the negation *méi* 'not' as a prefix on *yǒu* 'have', which as a bound morpheme should not be able to occur on its own as in (39a).

Given that *méi* itself can correspond to 'not have', we posit an underlying *yǒu* 'have' which may remain covert or be spelt out, as indicated by enclosing it within parentheses.[16] Note that in the spoken language *méi* is strongly preferred (also cf. Lü Shuxiang 2000: 383). However, when the speaker wants to emphasize negation, then *méi yǒu* 'not have' is used:

(40) *Wǒmen zhèng zài zuò wǒmen de qiánrén cónglái*
1PL just PROGR do 1PL SUB predecessor ever
méi yǒu zuò -guo de […] shìyè.
NEG have do -EXP SUB work
'We are just doing the things our predecessors have never done.'
(Zhang Huinü 2002: 64, (43), slightly modified)

Given the presence of the adverb *cónglái* 'ever' here, it is the latter that receives the primary stress, with secondary stress on *méi*.[17]

Like other auxiliaries (e.g. *huì* 'will' in (41a)), the negation *méi (yǒu)* 'not have' likewise allows for ellipsis of the VP, in this case the verb *lái* 'come' (cf. (41b)):

(41) a. *Zhāngsān huì lái, Lǐsì yě huì.*
Zhangsan will come Lisi also will
'Zhangsan will come, Lisi will, too.'
b. *Zhāngsān méi (yǒu) lái, Lǐsì yě méi yǒu.*[18]
Zhangsan NEG have come Lisi also NEG have
'Zhangsan didn't/hasn't come, Lisi didn't/hasn't, either.'

Notwithstanding these observations and the general consensus in the literature concerning the auxiliary status of *méi* (*yǒu*) 'not have', Hsieh Miao-Ling (2001: 15; 60-61) opts for *méi* (*yǒu*) 'not have' as realizing the functional category Negation (in contrast to *bù* 'not' analysed by her as an adverb, cf. preceding section 3).

4.1. Méi (yǒu) *'not have' negating past events*

Recall from section 1 that *méi* (*yǒu*) 'not have' negates non-states in the past (also cf. (42a), (43a) below), and thus contrasts with the present, past or future interpretation of the covert future/volitional modal 'will/would not; do/did not want to' that is associated with *bù* 'not' when negating non-states (cf. (42b), (43b)), as illustrated below in the minimal pairs from Li & Thompson (1981: 425-426; (47), (48); our glosses, their translations):

(42) a. *Tā* *méi* *(yǒu)* *mài* *nèi* *ge* *píngzi.*
3SG NEG have sell that CL vase
'S/he didn't sell that vase.'

b. *Tā* *bù* *mài* *nèi* *ge* *píngzi.*
3SG NEG sell that CL vase
'S/he refused to sell this vase.'
'S/he refuses to sell this vase.' (translation added by us)

(43) a. *Tā* *méi* *(yǒu)* *xiào.*
3SG NEG have smile
'S/he didn't smile.'

b. *Tā* *bù* *xiào.*
3SG NEG smile
'S/he won't smile.'
'S/he wouldn't smile.' (translation added by us)

In fact, in their chapter 12 on negation, Li & Thompson (1981) first seem to be alert to the state *vs* non-state dichotomy and separately treat *bù* 'not' negating stative predicates (stative verbs, adjectives, auxiliaries) from *bù* 'not' negating "activity predicates over which the subject has some control" (p. 423) as in (42-43) above. However, in their concluding remarks, the importance of that difference is blurred:

> Which verbs are negated with bù, which verbs with méi (yǒu), and which with both is, as we have come to expect, entirely a matter of the compatibility between the meanings of these verbs and the specific functions of bù and méi (yǒu). (Li & Thompson 1981: 426).[19]

We now turn to the cases where *méi (yǒu)* 'not have' negates derived states, i.e. predicates marked with the progressive aspect *zài* ('*zài* V') or the durative aspect *-zhe* ('V-*zhe*') in the past and present.

4.2. Méi (yǒu) *'not have' negating derived states*

It is well-known that predicates marked with the progressive aspect *zài* ('*zài* V') or the durative aspect suffix *-zhe* ('V-*zhe*') require the negation *méi* (*yǒu*) 'not have' in both past (cf. (44b), (45b)) AND present tense (cf. (44a),

(45a)), to the exclusion of *bù* 'not' (cf. among others Teng Shou-hsin 1973, 1974; Fan Jiyan 1982):

(44) a. *Nǐmen wèishénme méi / *bù zài zuò zuòyè?*
2PL why NEG / NEG PROGR do homework
'Why aren't you doing your homework?'

b. *Wǒ huí jiā de shíhou, tā méi / *bù zài xǐ*
1SG return home SUB time 3SG NEG / NEG PROGR wash
pánzi, tā zài xiūxi.
plate 3SG PROGR rest
'When I came home, he wasn't doing the dishes, he was resting.'

(45) a. *Hòumén (gāngcái) méi (yǒu) suǒ-zhe.*
back.door a.moment.ago NEG have lock-DUR
'The back door is(/was) not closed (a moment ago).'

b. *(Dāngshí) qiáng shàng méi/*bù guà-zhe huà,*
that.time wall on NEG/NEG hang-DUR picture
zhǐ guà -zhe yī fú guàlì.
only hang-DUR one CL wall.calendar
'There are(/were) no pictures hanging on the wall (then),
there is(/was) just a wall calendar hanging.'

Adding a past temporal adverb such as *gāngcái* 'a moment ago' in (45a), *dāngshí* 'at that time, then' in (45b) or a past tense adjunct clause as in (44b) is sufficient to obtain a past interpretation, using the negated sentence with the default present tense as basis. We thus obtain the same situation as observed for negated 'lexical states', i.e. stative verbs (cf. (46a)) and adjectives (cf. (46b)) where an appropriate adverb is sufficient for a past tense reading, *modulo* the difference that lexical states are negated by *bù* 'not', whereas the derived states '*zài* (progressive aspect) + V' and 'V-*zhe* (durative aspect)' require *méi (yǒu)* 'not have'.

(46) a. *Tā (yǐqián) bù/*méi xǐhuān shùxué.* (= (12a) above)
3SG before NEG/NEG like mathematics
'She doesn't(/didn't) like math (before).'

b. *Tā (zuótiān) bù/*méi jǔsàng.* (= (13) above)
3SG yesterday NEG/NEG frustrated
'She is(/was) not frustrated (yesterday).'

This parallel with respect to the temporal interpretations available confirms Paul & Ramchand's (2023) analysis of '*zài* (progressive) V' and 'V-*zhe* (durative)' as derived states. Their analysis is based on the acceptability of '*zài* V' and 'V-*zhe*' as autonomous predicates in root clauses on a par with lexical states, as demonstrated in the following subsections 4.2.1 and 4.2.2.

4.2.1. The progressive aspect zài: Zài + *verb*

Zài is an aspectual progressive head (Aspect°) in the inflectional domain above the verbal projection (*v*P) that combines with dynamic activities to create a derived state. *Zài* 'progressive' plus verb is always assertable, i.e. gives rise to a finite sentence. It produces an ongoing episodic reading, much like the English progressive, which has been argued to pattern with states in English (cf. Vlach 1981; Mittwoch 1988; Hallman 2009; Ramchand 2018, *to appear*).[20]

(47) a. *Wǒ xiànzài zhèng zài zuò zuòyè.*
1SG now just PROGR do homework
'I'm doing my homework right now.'

b. *Wǎngluò bìngdú zhèng bùduànde zài zēngjiā hé gǎibiàn.*
internet virus just constantly PROGR increase and change
'Internet viruses are constantly increasing and changing right now.'

As illustrated in (44b) above and (48a-c) below, when the anchor point is changed from the default speech moment (i.e. 'now') to a point in the past by means of an appropriate adverbial, then '*zài* V' gets a past progressive interpretation:

(48) a. *Wǒ huí jiā de shíhou, tā zài xǐ pánzi/zài xiūxi.*
1SG return home SUB time 3SG PROGR wash plate/PROGR rest
'When I came home, he was doing the dishes / resting.'

b. *Gāngcái Xiǎo Lǐ zài zhǎo nǐ.*
a.moment.ago Xiao Li PROGR look.for 2SG
'Xiao Li was looking for you a moment ago.'

c. *Zuótiān wǒ zhěng tiān zài kàn shū.*
yesterday 1SG entire day PROGR see book
'Yesterday, I was reading all day.'

The stative nature of '*zài* V' is further evidenced by its occurrence in statements of general truth (cf. (49a)) and in equivalents of the so-called 'universal perfect' (cf. (49b-c)), where the eventuality holds at each instant of the given interval up to the present moment (or another endpoint). Note that the universal perfect holds exclusively for states:

(49) a. *Tàiyáng měi tiān dōu zài shēngqǐ luòxià.*
sun every day all PROGR rise set
'The sun is rising and setting every day.'

b. *Cóng shàngwǔ jiǔ diǎn zhídào wǎnshàng jiǔ diǎn*
from morning 9 o'clock until evening 9 o'clock
tā shǐzhōng zài xiě.
3SG throughout PROGR write
'From 9 am to 9 pm, she was writing all the time.'
(Guo, Fenglan 1998: 37, (5), slighly modified)

c. *Tā* *cóng* *yī* *diǎn* *qǐ* *yìzhí* *dōu* *zài*
3SG from one o'clock on continuously all PROGR
dǎ *zì.*
strike character
'She has been continuously typing from one o'clock on.'

Finally, *zài* as an aspectual head is different from auxiliaries in not allowing ellipsis of its complement (invalidating Ernst 1995 where auxiliaries and aspectual heads are treated alike):

(50) *Wǒ* *zài* *zuò* *zuòyè,* *tā* *yě* *zài* **(zuò* *zuòyè).*
1SG PROGR do homework 3SG also PROGR do homework
'I'm doing my homework, and she is doing her homework, too.' (cf. (47a) above)

For an in-depth discussion of the progressive aspect *zài* and related questions, cf. Paul & Yan (2024).

4.2.2. The durative aspect -zhe*: Verb*-zhe

The durative aspect suffix *-zhe* affects the aktionsart of the verb it attaches to and marks it as homogeneous. Accordingly, V-*zhe* is either a state or an activity, both qualifying as homogeneous. Since only states are acceptable as bare predicates in a finite root sentence (cf. section 2 above), the interpretation of 'V-*zhe*' as a state or as an activity has consequences for the well-formedness of the sentence. (51a-b) represent the core case for 'V-*zhe*' as a derived state: 'V-*zhe*' appears in the inherently stative locative construction and consequently, the sentence is independently assertable, i.e. well-formed as a finite root sentence.

(51) a. *(Zuówǎn)* *Tiān* *shàng* *guà* *-zhe* *yī* *lún* *míng* *yuè.*
last.night sky on hang-DUR one CL bright moon
'In the sky is(/was) hanging a bright moon (last night).'
(Hu Wenze 1995: 106, [34]; slighly changed)
b. *(Zǎoshàng)* *Zhuōzi* *shàng* *fàng-zhe* *sān* *shuāng* *xiézi.*
morning table on put -DUR three pair shoe
'On the table are(/were) lying three pairs of shoes (in the morning).'

In syntactic contexts other than locative constructions, the interpretation of 'V-*zhe*' as a state or as an activity is lexically determined, i.e. it depends on the verb meaning (cf. *chuān* 'wear' *vs mǎi* 'buy' in (52a-b)) and/or on lexical material (e.g. manner adverbs) present in the sentence reinforcing a stative rather than an activity interpretation (cf. (53a-d)):[21]

(52) a. *Tā* *chuān-zhe* *duǎnkù.*
3SG wear -DUR shorts
'He is wearing shorts.'

b. **Tā* *mǎi-zhe* *duǎnkù.*
3SG buy -DUR shorts
(Intended: 'He is buying shorts.')

(53) a. *Dàxuě* *xiàng* *sīsuì-le* *de* *miánxù* *zài* *tiānkōng*
heavy.snow like tear -PERF SUB cotton.wool at sky
piāo-zhe.
float-DUR
'The snow is fluttering in the sky like torn cotton wool.' (Chen Gang 1980: 25)

b. *Xiǎomíng* *xiànggēnmùzhuāngshìde* *zhàn-zhe.*
Xiaoming as.straight.as.a.stilt stand-DUR
'Xiaoming is standing as straight as a stilt.'

c. *Xuéshēngmen* *mùbùzhuǎnjīngde* *kàn-zhe* *hēibǎn.*
students with.fixed.eyes look-DUR blackboard
'The students are looking at the blackboard with utmost concentration.'
Huang Nansong (1994: 445, (54-55))

d. *Wǒ* *yǒngyuǎn* *děng-zhe* *nǐ.* (Djamouri & Paul 2018: 121, (42))
1SG forever wait -DUR 2SG
'I'll be forever waiting for you.'

When a sentence with 'V-*zhe* (durative)' as sole predicate is acceptable, because assertable and hence finite, this indicates that 'V-*zhe*' is building a state (cf. (51a-b) and (52a) as prototypical cases). By contrast, when a state interpretation is not possible as in (52b) above, the sentence is unacceptable because not independently assertable, given that activity predicates require aspect marking for a non-episodic reading (cf. section 2 above). This is the case in (54a-c) below, where the progressive aspect *zài* is obligatory for the well-formedness of the sentence as an independent assertion; it selects 'V-*zhe*' (which is lexically an activity) as its complement:

(54) a. *Tā* *zhèng* **(zài)* *xiě* *-zhe* *xìn /* *huà* *-zhe* *huà.*
3SG just PROGR write-DUR letter / paint-DUR painting
'He is just writing a letter / painting.'

b. *Tāmen* *hái* **(zài)* *kǎolǜ* *-zhe* *zhè* *ge* *wèntí.*
3PL still PROGR ponder-DUR this CL question
'They are still pondering this question.'

c. *Tā* **(zài)* *kū* *-zhe / xiào-zhe.*
3SG PROGR cry-DUR / laugh-DUR
'He is crying / laughing.'

Given the existence of clear boundary cases then, we assume that the assertability condition can be used to adjudicate state *vs* activity interpretations in less clear cases (where e.g. adverbs are needed to allow for a stative interpretation).[22]

Examples (54a-c) also nicely highlight the difference between the progressive aspect *zài* and the durative aspect *-zhe*. The suffix *-zhe* is located in the verbal projection itself and affects the verb's aktionsart, similar to the English progressive *-ing* (cf. Ramchand 2018), whereas the progressive aspect *zài* is located in the aspectual domain above the verbal projection, resulting in the order: '*zài* [V-*zhe*]'. As expected, '*zài* V-*zhe*' is likewise a derived state and therefore negated by *méi* (*yǒu)* 'not have', on a par with *zài* (progressive) V' and 'V-*zhe* (durative)', giving rise to either a present or a past tense interpretation:

Context: Commenting the noise coming out of the meeting room next door, someone says:

(55) *Tāmen* *méi* *zài* *shāngliàng-zhe* *shénme,* *tāmen* *zài*
3PL NEG PROGR negotiate-DUR what 3PL PROGR
chǎo *jià*
shout fight
'They are not negotiating anything, they are quarrelling.'

(56) a. *Nǐ* *huí* *jiā* *de* *shíhou,* *tā* *zài* *huà -zhe*
2SG return home SUB time 3SG PROGR paint-DUR
huà *ma?*
painting INTERR
'When you came home, was he painting?'
b. *Wǒ* *huí* *jiā* *de* *shíhou,* *tā* *méi* *zài*
2SG return home SUB time 3SG NEG PROGR
huà -zhe *huà,* *tā* *zài* *kàn* *diànshì.*
paint-DUR painting 3SG PROGR watch TV
'When I came home, he wasn't painting, he was watching TV.'

Concerning the special status of 'V-*zhe*', Teng Shou-hsin (1973: 21) already made the important observation that 'V-*zhe*' is "time-independent" (allowing for past and present tense interpretation) and requires the negation *méi(yǒu)* 'not have', to the exclusion of *bù* 'not':

(57) a. *Tā* *(méi yǒu / *bù)* *bì* *-zhe* *yǎnjīng.* (Teng Shou-hsin 1973: 21,
3SG NEG have / NEG close-DUR eye (20a-b), (21a-c))
'He is/was (not) having his eyes closed.'
b. *Dàmén* *(méi yǒu / *bù)* *suǒ-zhe.*
gate NEG have / NEG lock-DUR
'The gate is/was (not) locked.'

The parallel with (lexical) states implicit in Teng Shou-hsin's (1973) statement concerning the "time independence" of 'V-*zhe*' was not followed up in the literature. Instead, Lin Jo-wang (2003: 428) classifies the derived states 'V-*zhe* (durative)' and '*zài* (progressive) V' as non-states, i.e. events,

viz. processes constituting "a number of consecutive phases with an ongoing supply of energy", because according to him, *méi (yǒu)* 'not have' exclusively negates events, not states. This contrasts with "a stative situation that requires no input of energy in order to obtain that situation" and is negated by *bù* 'not'.

The stipulation "requires (no) input of energy" added in the definition of stative situations and events is necessary for Lin Jo-wang (2003) in order to be able to correctly predict that '*zài* VP' – an event for him – is negated by *méi* 'not' in (58), to the exclusion of *bù* 'not':

(58) *Tā* *méi / *bù* *zài* *xǐ* *zǎo.* (Lin Jo-wang 2003: 430, (10))
3SG NEG / NEG PROGR wash bath
'He's not taking a bath.'

This stipulation can, however, not account for the interpretational differences observed, viz. past tense only for non-state verbs *vs* past and present tense for derived states.[23] (Note that Lin Jo-wang (2003: 431, (12b)) himself provides examples of the locative construction featuring 'V-*zhe* (durative)' negated by *méi* (*yǒu*) 'not have', as in our (45) above). Furthermore, the handful of auxiliaries that besides the default negation with *bù* 'not' are also compatible with *méi* (*yǒu*) 'not have' (cf. note 9 above) cannot be characterized in terms of presence of energy input when the auxiliary is negated by *méi* (*yǒu*) 'not have' (cf. Paul & Yan 2024 for further discussion).

4.3. Summary

There is a general agreement in the literature that *méi* (*yǒu*) 'not have' has the status of an auxiliary and negates non-stative verbs in the past tense. By contrast, the cases where *méi* (*yǒu*) 'not have' negates '*zài* (progressive) V', 'V-*zhe* (durative)' as well as '*zài* V-*zhe*' both in the past and the present tense have either not been sufficiently taken into account or received diverging analyses. This is due to the failure of recognizing their status as derived states, not events, despite the fact that like lexical states, derived states can be the sole predicate in an assertable, i.e. finite sentence. More precisely, while '*zài* V(-*zhe*)' always yields a derived state and thus gives rise to a finite sentence, for 'V-*zhe*' this is only the case when it can be interpreted as a state (rather than as an activity). The important role played by semantics here has been neglected in the literature, in particular the fact that the durative suffix *-zhe* only imposes a homogeneity condition on the verb it combines with and thus leaves open whether 'V-*zhe*' is to be interpreted as a state or an activity, both qualifying as homogeneous.

5. General discussion and conclusion

This article has provided a new analysis of the two negation markers *bù* 'not' and *méi (yǒu)* 'not have' in Mandarin Chinese, in the light of the dichotomy state *vs* non-state underlying the system of finiteness in Mandarin Chinese (cf. Ramchand 2020, *to appear*; Paul & Ramchand 2023). Neither *bù* 'not' nor *méi (yǒu)* 'not have' themselves can be associated with a fixed temporal value such as present, past or future. Instead, the aktionsart [+state] or [-state] of the predicate must be taken into account in order to obtain the temporal interpretation at hand.

Bù 'not' is a functional head (Negation°) and negates lexical states (adjectives and stative verbs) as well as habituals, both in the present and past tense. When combining with non-states, *bù* 'not' introduces a covert future/volitional modal 'will/would not, do/did not want to', in the present, past or future. Since modals pattern with states and as such are negated by *bù* 'not' when overt, *bù* 'not' can be said to exclusively negate states. *Méi (yǒu)* 'not have' is an auxiliary and negates non-states in the past. By contrast, when negating derived states, i.e. predicates marked with the progressive aspect *zài* ('*zài* V') or the durative aspect suffix *-zhe* ('V-*zhe*'), it yields not only a past, but also a present tense interpretation. It is the failure of taking into account this additional present tense interpretation and of recognizing the existence of derived states which has so far made a satisfactory analysis impossible.

Concerning the position of negation, Chinese belongs to the languages with one fixed position (i.e. preceding the verbal projection), and thus contrasts with languages featuring negation in several different positions (cf. Zanuttini 1997 and Zeijlstra 2004, 2022). Importantly, aspectual distinctions such as bounded *vs* unbounded (cf. Ernst 1995 and Lin Jo-wang 2003) cannot account for the differences between *bù* 'not' and *méi (yǒu)* 'not have'. They are not allomorphs conditioned by aspect or mood, either, as is the case for the languages with more than one negation in De Clercq's (2020) small scale crosslinguistic survey.

The general typological division of languages into Negative Concord (NC) languages and Double Negation (DN) languages (cf. Zeijlstra 2004 and references therein), where each language type is associated with a predictable set of properties, is only partly confirmed by the data from Chinese. It is correct that Chinese has no negative concord and shows double negation. However, our assigning a functional status to *bù* 'not' is at odds with the assumption that only NC languages allow for the functional category Negation. In any case, as argued for in great detail by Weiß (2025), the differences between NC and DN languages are not as neat as predicted. For example, there are NC languages that also show cases of double negation (e.g. Bavarian), and DN languages (such as Standard German) that display instances

of negative concord (cf. Weiß 2025: 3-8, (3a-c), (6a-c); cf. De Swart 2020 for an overview of NC-languages with the possibility of double negation).

Importantly, our analysis of negation in Chinese is in line with Zanuttini's (1997) observation about the relation between negation and tense/finiteness in languages with overt tense morphology, where a tensed clause is finite. In Chinese, which lacks overt tense morphology, this relation is less visible at first sight. It is mediated via the state *vs* non-state dichotomy which determines the temporal interpretation of the negated predicate. In Bohnemeyer & Swift's (2004) classification of languages, the crucial role of this dichotomy places Chinese into the class of dynamicity-based temporal systems alongside with e.g. English, in contrast to telicity-based temporal systems such as Russian.

All the observed data fall into place once the state *vs* non-state dichotomy is recognized as underlying the system of negation in Mandarin Chinese. In fact, this dichotomy presents THE overarching generalization governing both the system of finiteness and negation in Mandarin Chinese.

Abbreviations

CL = classifier; DUR = durative aspect (*-zhe*); EXP = experiential aspect (*-guo*); INTERR = interrogative; NEG = negation; PERF = perfective aspect (*-le*); PL = plural (e.g. 1PL = first person plural); PROGR = progressive aspect (*zài*); SFP = sentence-final particle; SG = singular; SUB = subordinator (*de*).

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Notes

[1] Given the small closed set of Chinese family names, the given name is added in order to facilitate the identification of Chinese authors. For Chinese linguists who have an additional English given name (as is the case for C.-T. James Huang), the order 'given name – family name' is adopted, while elsewhere the Chinese order 'family name – given name' is chosen, as e.g. below for Lü Shuxiang.

[2] Unless noted otherwise, the examples are from Yan Shanshan, a Mandarin Chinese native speaker from the Hebei province (Northern China) and now living in Beijing. They were double-checked with three other native speakers from the same area. The same holds for the examples cited from the literature. Importantly, the homogeneity of observations in the literature over the last decades and the high degree to which native speakers agree with them (and among themselves) indicate that the data used here are reasonably representative and reliable.

[3] It is well-established cross-linguistically that modal constructions are stative (cf. Ramchand 2018, *to appear* and references therein; also cf. Li & Thompson 1981: 422 for the stative nature of auxiliaries in Chinese).

[4] The observations concerning the contrast between states and non-states illustrated in (3-5) *vs* (6a-d) are robust and also figure in the more recent studies on tense and finiteness by Sun Hongyuan (2014), Sybesma (2019) and He Yuyin (2020).

[5] For the important role that sentence-final particles such as *le* play with respect to finiteness, cf. Paul (2017b, 2018), Ramchand (2020), Paul & Ramchand (2023) and references therein.

[6] Except for events that are under the control of the agent and can be scheduled, cf. section 3.2.

[7] Lü Shuxiang (1985: 245) explicitly analyses habituals, i.e. non-episodic eventualities, on a par with states and observes that both are exclusively negated by *bù* 'not' (both in the present and the past): "If a verb expresses a state or a non-episodic activity, it can in general only be negated by *bù*." (our translation).

[8] While *bù* 'not' is the default negation for modal auxiliaries in Chinese, a small handful allow *méi (yǒu)* 'not have' as well, e.g. *néng(gòu)* 'can', *yào* 'want, need', *kěn* 'be willing to', *gǎn* 'dare' (cf. Lü Shuxiang 2000: 384).

[9] For conveying the episodic meaning 'he didn't drink wine', *méi(yǒu)* 'not have' has to be used (cf. section 4):

(i) *Tā* *méi (yǒu)* *hē* *jiǔ.*
3SG NEG have drink wine
'He didn't drink wine / has not drunk wine.'

[10] "A futurate is a sentence with no obvious means of future reference, which conveys that a future oriented eventuality is planned or scheduled." (Copley 2008: 261).

[11] Hsieh Miao-Ling (2001: 51) cites Comrie (1976: 49) as follows: "With a state, unless something happens to change that state, then the state will continue […]. With a dynamic situation, on the other hand, the situation will only continue if it is continually subject to a new input of energy."

[12] Recall from note 8 above that *bù* 'not' is the default negation for all auxiliaries, while the additional option of negation with *méi* (*yǒu*) 'not have' only exists for a small subset.

[13] Thanks to John Whitman (p.c.) for pointing out the importance of double negation for the issue at hand.

[14] Huang *et al.* (2009) only mention negation in connection with so-called Negative Particle Questions (NPQ) (cf. their chapter 7.3.4) where *bù* 'not' and *méi* 'not' occur in sentence-final position and for which they adopt Cheng *et al.*'s (1996) analysis. However, NPQs involve a completely different phenomenon from sentence-internal negation; cf. Li Boya (2006: ch. 5) for a critical appraisal.

[15] There is a third case, viz. the negation of the unaccusative existential verb *yǒu* 'exist' (cf. Paul 2021):

(i) *Jīntiān* *méi yǒu* *{fēng / dàngāo / kè / rén}.*
today NEG exist wind / cake / class / person
'Today, there isn't any {wind/cake/class/person}.'
→ 'Today, there is {no wind/no cake/no class/nobody}.'

[16] Thanks to Gillian Ramchand for urging us to address this issue.

[17] Another case where *méi yǒu* 'not have' is preferred to *méi* 'not (have)' is when *méi yǒu* 'not have' "denies the existence of events" (cf. Teng Shou-hsin 1974: 129, footnote 4), i.e. negates the entire proposition and can be roughly paraphrased as 'it is not the case that…'. In this case, *méi* receives primary stress and *yǒu* secondary stress:

(i) *Dàmén* *méi yǒu* *suǒ-zhe.* (cf. (57b))
gate NEG have lock-DUR
'It is not the case that the gate is/was locked.'

Méi yǒu 'not have' here is different from *bù shì* 'not be' = 'it is not the case that', insofar as *bù shì* 'not be' functions as 'sentence refutation', e.g. correcting a prior incorrect assumption of the co-speaker, hence the strongly preferred continuation with affirmative *shì* 'be' = 'it is the case that…' (cf. Teng Shou-hsin 1974: 229, footnote 4):

(ii) *Wǒ dào de shíhou, dàmén bù shì suǒ -zhe, shì kāi -zhe.*
1SG arrive SUB moment gate NEG be close-DUR be open-DUR
'When I arrived, it was not the case that the gate was closed, it was the case that it was open.'
→ 'When I arrived, the gate was *not* closed, but it was very well open.'

The differences between these two go beyond the scope of our article. To our knowledge, Teng Shou-hsin (1974: 229, footnote 4) is the only one to have addressed this issue explicitly, albeit very briefly.

[18] The attentive reader will have noticed that in (41b), *yǒu* 'have' is not enclosed within parentheses, i.e. it is not optional here. This is due to the well-known constraint reported in all grammar manuals (cf. among others Lü Shuxiang 2000: 383) that in sentence-final position (as in (41b)) and when occurring alone as an answer (cf. (i) below), *yǒu* 'have' needs to be spelt out:

(i) *Nǐ yǒu háizi ma? Méi *(yǒu).*
2SG have child INTERR NEG have
'Do you have children? I don't.'

[19] For Li & Thompson (1981: 423), the 'refusal' interpretation ('won't, wouldn't') when *bù* 'not' negates non-states (cf. (42b), (43b)) is incorrectly treated as an extension of the habitual reading: "The extended idea of 'refusing to' is the natural inference from the fact that if someone does not do something over which s/he has control, s/he is generally unwilling to do it."

[20] Ramchand *to appear*, note 3 (emphasis ours): "The progressive in English, although it combines only with dynamics itself has *the external distribution of states*. Thus, as expected, progressives in English induce overlap in narrative contexts [cf. the English translation of (48a); WP]. But this is because it is a stative construction, not because it is 'imperfective'."

[21] It is important to emphasize that we cannot rely on translations into English to diagnose whether 'V-*zhe*' is a state or an activity. This is because English never allows episodic present tense dynamic verbs in the first place, but it is compelled to turn everything into a state in translation, hence the *-ing* form (cf. Ramchand 2018).

[22] The type of sentences illustrated in (53a-d) above may be subject to speaker variation, unlike the locative construction (cf. (51a-b) and other clear cases where the verb meaning itself induces a stative interpretation when suffixed by the durative-*zhe* (cf. (52a) above and (57a-b) below).

[23] Commenting on the contradiction with his own analysis predicting the negation *bù* 'not' here, Lin Jo-wang (2003: 430) notes: "Fortunately, not every linguist agrees that progressive sentences are stative sentences. Counterarguments have been produced by Smith (1991), Bertinetto (1994), and Glasbey (1998)." Concerning *bù* 'not', Lin Jo-Wang (2003) does not take into account habituals; he follows, however, the large consensus in the literature that stative predicates (adjectives and stative verbs) are negated by *bù* 'not'.

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