

Neg-to-Q: The Historical origin and development of question particles in Chinese¹

Edith Aldridge
University of Washington

This paper proposes a diachronic analysis of the grammaticalization of a marker of negation into a *yes/no* question particle in Chinese. I propose that the input to the reanalysis was a *vP-neg-vP* disjunctive question in which the second *vP* was projected by a negative auxiliary. Head movement of this auxiliary to the head of an immediately dominating disjunction phrase allowed the negator to enter into an Agree relation with interrogative *C* and check the [Q] feature there. In time, the negator acquired the [*u*Q] feature originally on the disjunction. This allowed the negator to subsequently be base merged in *C* and function as a Q particle.

1. Introduction

Holmberg (2000), Biberauer et al. (2008), and Biberauer et al. (2009) have argued for a universal word order constraint which prohibits a head-final phrase from immediately dominating a head-initial phrase, what they term the Final-Over-Final Constraint (FOFC). Holmberg (2000: 128) offers interesting evidence from word order restrictions between auxiliaries and VPs in Finnish. Aux-V-O and Aux-O-V are both possible, with the initial auxiliary dominating either a head-initial or head-final VP, as in (1).

- (1) a. *Milloin Jussi olisi [kirjoittanut romaanin]?*
when Jussi would.have written novel.DEF
'When would Jussi have written a novel?'
- b. *Milloin Jussi olisi [romaanin kirjoittanut]?*
when Jussi would.have novel.DEF written
'When would Jussi have written a novel?'

However, when the auxiliary follows the VP, then only the harmonic OV order is permitted within the VP.

- (2) a. *Milloin Jussi [romaanin kirjoittanut] olisi?*
when Jussi novel.DEF written would.have
'When would Jussi have written a novel?'
- b. **Milloin Jussi [kirjoittanut romaanin] olisi?*
when Jussi written novel.DEF would.have
'When would Jussi have written a novel?'

Another prediction made by the FOFC is the lack of final complementizers in VO languages. However, this prediction is falsified by languages like Mandarin Chinese which clearly have clause-final particles like question particles.

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Modern Mandarin

- (3) [CP [TP *Ni* [T' *yao*[_{VP} *kan zhe-ben shu*]]] *ma*]?
 2SG want read this-CLF book Q
 ‘Do you want to read this book?’

Biberauer et al. (2008) note that clause-final particles occur in a number of VO languages. They suggest that this disharmonic word order type may be permitted in cases involving categorial distinctness. Specifically, if the clause-final particle is of a category distinct from those categories typically occupying the head position of TP, e.g. tense or a verbal category, then the FOFC does not apply. Biberauer et al. (2009) go one step further and speculate that clause-final particles may be entirely categorially deficient and therefore not subject to the FOFC in the first place. The categorial status of clause-final particles is ultimately an empirical question, and one which may have a different answer in different languages. The current paper proposes to make a minor contribution to addressing this question by investigating one type of clause-final particle in Chinese.

This paper traces the historical origin of the modern Mandarin *yes/no* question particle and proposes that the Q particle derives from a marker of negation in an alternative question. The negator which was ultimately reanalyzed as the Q particle was historically a negative existential verb. This fact poses a potential problem for the FOFC, since a verbal functional category should not be categorially distinct from T. However, this potential problem dissolves, when we see that the input structure to the reanalysis did not involve a head-final, but rather a head-initial, disjunction structure in an alternative question.

- (4) [CP [&P TP1 & [TP2]]]

2. Sketch of the proposal

The modern Mandarin question particle *ma* derives historically from the negative existential verb *wu* ‘not have’/‘not.exist’. *Wu* had an /m-/ initial until early Mandarin (10th-11th centuries) (Ohta 1958), which is retained in the Q particle. Numerous examples can be found in texts of the Tang Dynasty (8th-10th centuries) in which *wu* occurs in clause-final position marking *yes/no* questions.

- (5) a. 秋 寒 有 酒 無? (Bai Juyi, 9th century)
Qiu han you jiu wu?
 autumn cold have liquor not.have
 ‘In the autumn cold, is there any liquor?’
- b. 今日 池 邊 識 我 無? (Bai Juyi, 9th century)
Jinri chi bian shi wo wu?
 today lake by know me not.have
 ‘Do (you) know me today by the lake?’

Beginning in the 9th century, *wu* was often written as 麼 /mua/ when marking questions. When it was used in clause-final position to mark a question, the syllable was unstressed and the glide was lost. This induced a split between negative existential *wu* and Q particle *ma*. The glide following the initial consonant induced lenition of the initial consonant in the negator: /m-/ > /v-/ > /w-/ (Wang 1958). However, since the glide was lost when the syllable was unstressed in clause-final position, the /m-/ was retained on the Q particle. In time, the character for the Q particle *ma* was replaced with 嗎, which is used in modern Mandarin solely to write the Q particle *ma* (Wang 1958; Zhong 1997).

It is reasonable to assume that questions of the type in (5) are related to alternative questions involving positive and negative versions of the main predicate (Ohta 1958; Sun

1995; Jiang 2005; Harris and Campbell 1995; Bencini 2003). Modern Mandarin does in fact have alternative questions in which identical VPs are separated by a marker of negation.

- (6) *Ta* [zai jia] bu [zai jia] ?
 3SG at home not at home
 ‘Is he/she at home?’
 (Li & Thompson 1984: 52-4)

What is not obvious, however, is how negation in an alternative question came to be reanalyzed as a Q particle. Typical accounts of how the grammaticalization process took place hypothesize that the input structure was not VP-neg-VP but rather simply VP-neg, as in (5). Because the negator was stranded in clause-final position, it became semantically bleached, i.e. lost its original function of negation (Liu 1998; F. Wu 1997; H. Wu 1987), and was reanalyzed as a question particle via analogy with existing clause-final interrogative particles² like *hu* (H. Wu 1987; F. Wu 1997). *Hu* was the most commonly used Q particle in late Archaic Chinese of the 5th to 3rd centuries BCE. Its function was ultimately taken over by *wu*, which was reanalyzed as the Q particle *ma*.

- (7) a. 管仲 知 禮 乎 ? (Analects 3)
Guan Zhong zhi li hu?
 Guan Zhong know Rites Q
 ‘Did Guan Zhong know the Rites?’
 b. 賢 者 亦 樂 此 乎 ? (Mencius 1)
Xian zhe yi le ci hu?
 wise DET also enjoy DEM Q
 ‘Does a wise man also enjoy this?’

However, this scenario in turn begs the question of how the negator came to occupy clause-final position in the first place, since negation typically precedes the predicate or complement that it negates in Chinese. The negative existential in (8a) precedes its complement NP, and the clausal negator in (8b) precedes the VP.

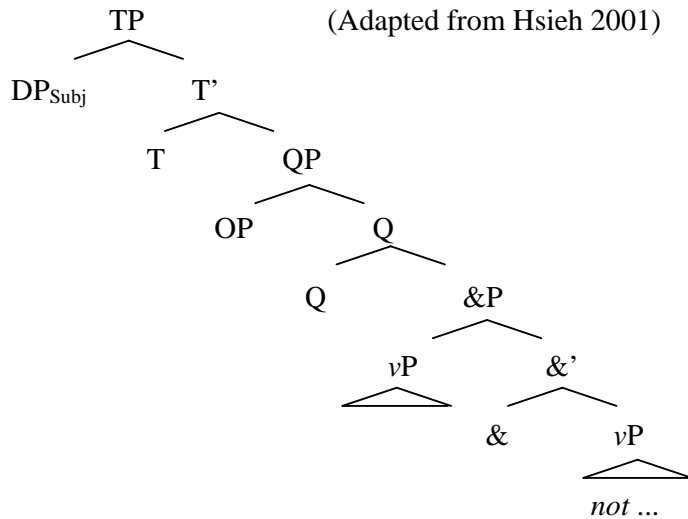
- (8) a. 今 主 非 堯、舜， 何 能 無 過 ?
Jin zhu fei Yao Shun, he neng wu guo?
 now ruler not.be Yao Shun how can not.have fault
 ‘The present ruler is neither Yao nor Shun, so how can he be without faults?’
 (Shishuo Xinyu 5.31)
 b. 惟 求 作 佛， 不 求 餘 物。
Wei qiu zuo fo, bu qiu yu wu.
 only ask become buddha not ask other thing
 ‘I only seek enlightenment; I do not ask for anything else.’ (Liuzu Tanjing 1)

My proposal takes as its point of departure the analysis of VP-neg-VP alternative questions in modern Mandarin. It is fairly uncontroversial that modern Mandarin VP-neg-VP alternative questions involve a clause-medial interrogative functional category immediately dominating a VP or vP disjunction structure (Huang 1982, 1991b; McCawley 1994; Ernst 1994; Hsieh 2001; Gasde 2004; among others). Huang (1991b) associates this feature with Infl. Gasde (2004) claims that Chinese has an IP-internal force position. Ernst (1994) proposes that the interrogative feature is merged with the verb. The verb launches an operator which moves to

² The fact that Chinese historically had clause-final Q particles poses its own question for the FOFC, one which is beyond the scope of this paper.

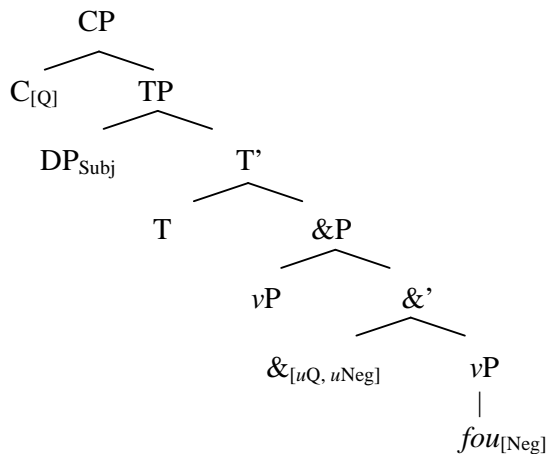
C. Hsieh (2001), following Aoun and Li (1993), proposes a clause-internal QP which selects an operator which moves to [Spec, CP].

(9) (Adapted from Hsieh 2001)



In the current paper, I propose that the disjunction operator itself played a crucial role in the reanalysis of negation as a question particle. In the structure in (10), the disjunction head is merged with a [*u*Q] feature which enters into an Agree relation with interrogative C. Such a significant role for disjunction in an alternative or *yes/no* question is unsurprising if we consider the semantic approaches of Hamblin (1973) and Karttunen (1977), in which the semantic values of *yes/no* questions are claimed to consist of propositions which could answer that question, i.e. the positive and negative values of the core proposition. Regarding the grammaticalization of the negator, I propose that the interrogative interpretation is integrally related to the fact that the second conjunct is negated³. To account for this, I further posit that & has a [*u*Neg] feature.

(10)



In what follows, I argue that grammaticalization of negator to Q particle took place in two waves in Chinese. The crucial factor leading to the grammaticalization was whether the negator could be base merged in or move to *v*. The negator which grammaticalized first was the negative auxiliary *fou* 'not be', which itself projected a vP. (11a) shows an example of this

³ See McCawley (1994) for convincing argumentation that the first VP must be positive and the second negative.

auxiliary marking a question⁴. (11b) shows *fou* in declarative contexts functioning in isolation as a predicate.

- (11) a. 子 去 寡人 之 楚， 亦 思 寡人 不？
Zi qu guaren zhi Chu, yi si guaren fou?
 you leave me go Chu, still think me not.be
 ‘You left me and went to Chu; do you still think (fondly) of me?’ (*Shiji* 70)
- b. 順 則 進， 否 則 退。
Shun ze jin, fou ze tui.
 accept then proceed not.be then hold.back
 ‘If (your opinion) is accepted, then proceed; if that is not the case, then hold back.’

As the head of the complement of &, the auxiliary could undergo head movement to &. Movement to & was accompanied by semantic bleaching commonly observed in grammaticalization⁵. Specifically, the negator lost some of its earlier selectional restrictions and could co-occur with a wider variety of predicates. This semantic bleaching in turn helped facilitate the acquirers’ reanalysis of the negator as a Q particle in C.

The movement analysis additionally accounts for restrictions on the type of negator which could participate in the grammaticalization. As mentioned above, *fou* ‘not be’ was the first negator to be reanalyzed as a Q particle. The predecessor of the modern Mandarin Q particle *ma*, the negative existential verb *wu* ‘not have’, did not participate in VP-neg(-VP) questions until Middle Chinese (from approximately the 5th century). I argue that this is because *wu* ‘not have’ was a lexical verb in Archaic Chinese and was not able to move out of VP.

The analysis based on a disjunction structure further suggests a crucial historical connection between question particles and markers of disjunction, as has been proposed elsewhere by Jayaseelan (2008). Synchronically, an integral relationship has been proposed to exist between *yes/no* questions and disjunction (Jayaseelan 2001; Amritavalli 2003). Amritavalli (2003), in particular, shows that clausal disjunction in Malayalam always results in an interrogative interpretation, which she accounts for by claiming that the head of the disjunction must adjoin to interrogative C. The same relationship is established in my analysis in (10) by Agree between the [Q] feature on C and &.

Regarding the FOFC, the proposal based on *vP* coordination asserts that the input structure for the reanalysis of negation to Q particle was head-initial, thus conforming to the FOFC. The surface appearance of the negator in clause-final position was, at least initially, due to the fact that the negator itself projected the second *vP* conjunct.

In the next section, I set the scene for the analysis of the grammaticalization by tracing the history of VP-neg questions backward through Middle Chinese. I show that clause-final *wu* ‘not have’ had already been reanalyzed as a Q particle and was therefore base merged in C by late Middle Chinese. Likewise, *fou* ‘not be’ underwent this reanalysis by early Middle Chinese. In section 4, I argue for an embedded source for VP-neg-VP questions in late Archaic Chinese. Section 5 discusses how this embedded structure came to be used in matrix clauses. Sections 6 and 7 trace the grammaticalizations of *fou* ‘not be’ and then *wu* ‘not have’ to Q particles.

⁴ The graph used for the negator in (11a) is 不 *bu* ‘not’ rather than 否 *fou* ‘not be’. As Liu (1998) points out, the old Chinese pronunciations of *fou* and *bu* were almost identical, differing only in tone, and the two are very likely cognate with each other. I simply note here that the two graphs were interchangeable in clause-final position in middle Chinese, but it is common practice in Chinese historical linguistics to pronounce clause-final 不 and 否 both as *fou* (Barbara Meisterernst, personal communication).

⁵ This proposal borrows heavily from Roberts and Roussou’s (2003) proposal that head movement plays a key role in grammaticalization. In similar fashion to the loss of argument structure which took place in the reanalysis of English modal auxiliaries from lexical verbs, Chinese negators lost agreement restrictions on the types of predicates or complements they could occur with.

3. Negation marking *yes/no* questions in Middle Chinese

In this section, I discuss *yes/no* questions in Middle Chinese (with particular attention given to the 5th – 10th centuries) involving clause-final negation. I show first that *wu* ‘not have’, the precursor of the modern Mandarin Q particle, had already grammaticalized into a C element by late Middle Chinese, so these instances of VP-*wu* questions do not provide much evidence as to how the reanalysis took place. The earlier, 5th century, data are compatible with an analysis in which clause-final *wu* is located in or base merged in V. However, there is no clear evidence as to how the negator came to be located in clause-final position.

In Middle Chinese of the 5th century, a different negator *fou* ‘not be’ was used as a Q particle in VP-neg *yes/no* questions. However, *fou* had also already undergone the grammaticalization by the 5th century, so this data similarly do not offer many clues as to the reanalysis process.

3.1. NOT.HAVE in VP-neg questions

One key piece of evidence that a marker of negation has grammaticalized into a question particle is the negator’s ability to co-occur with a predicate that it does not typically negate. This is strong evidence that the negator is not base merged in the position where it would serve as a negator, since selectional restrictions would prevent merging the predicate as its complement. Cheng et al. (1996, 1997) use similar facts to argue that the negator in VP-neg questions in some modern Chinese varieties is base merged in C.

In modern Chinese varieties where agreement between the negator and the predicate is required, Cheng et al. (1996) propose that the negator is base merged in Neg, where it selects the main predicate. Subsequently, the negator undergoes long head movement to C, where it functions as a Q particle.

- (12) *Ta* [t_{bu} *chang qu*] *bu*?
 he often go not
 ‘Does he go often?’

Although I agree with them that negators which had already grammaticalized as C elements are base merged in C, I do not adopt the Neg-to-C movement analysis for the negators which retain their selectional restrictions. I present specific evidence against their long head movement hypothesis in Section 4.

Cheng et al. (1997) refine their earlier analysis by proposing that the underlying structure is a disjunction projected by *haishi* ‘or’. The negator is stranded in clause-final position after deletion of *haishi* and the VP. The negator subsequently moves to C in order to function as the Q particle.

- (13) [_{CP} *Ni* [[_{VP} *lai*] *haishi* [_{VP} t_{bu} [_{VP} ~~*lai*~~]]] *bu*]?
 you come or come not
 ‘Are you coming?’

I do not adopt this analysis, either, since movement of the negator appears to violate the coordinate structure constraint. For the purposes of the discussion in this section, I merely adopt Cheng et al.’s (1996, 1997) diagnostic for base generation of the negator in C. Specifically, in this subsection, I examine clause-final *wu* ‘not have’ in *yes/no* questions in the Tang Dynasty (7th – 10th centuries) and show that it could, indeed, follow a predicate other than an existential predicate. I further show that the predicate preceding *wu* could be negated. The position for negation being occupied by the other negator, this position would not have

been available for clause-final *wu* ‘not have’, indicating that it must have been base merged in C.

Wu ‘not have’ in *yes/no* questions can be found following a variety of predicates in late Middle Chinese. (14a) shows an example in which the clause-final *wu* is paired with a predicate headed by the positive existential verb *you*. This is a case of agreement between the clause-final negator and the preceding predicate. However, agreement was by no means required. *Wu* ‘not have’ could also mark a question in which the main verb was not the existential verb, as shown in (14b, c). This indicates that the clause-final negator is not functioning as a negator but rather has grammaticalized into a Q particle and is therefore base merged in C.

- (14) a. 秋 寒 有 酒 無? (Bai Juyi, 9th century)
Qiu han you jiu wu?
 autumn cold have liquor not.have
 ‘In the autumn cold, is there any liquor?’
- b. 幕下郎君 安隱 無? (Du Fu, from Wu 1997)
Muxialangjun anyin wu?
 Muxialangjun safe not.have
 ‘Is Muxialangjun safe?’
- c. 今日 池 邊 識 我 無? (Bai Juyi)
Jinri chi bian shi wo wu?
 today lake by know me not.have
 ‘Do (you) know me today by the lake?’

(15) shows additional examples in which *wu* ‘not have’ marks a question in a non-existential clause. Another characteristic illustrated in (15) is the appearance of the particle *ye*, which F. Wu (1996, 1997) traces historically to the Archaic Chinese disjunction marker *yu* ‘or’.

- (15) a. 你 應 到 西天 也 無? (Zutangji, Shitou)
Ni ying dao Xitian ye wu?
 you perhaps go Western Paradise or not.have
 ‘Have you perhaps been to the Western Paradise?’
- b. 實 也 無? (Zutangji, Shitou)
Shi ye wu?
 true or not.have
 ‘Is (it) true?’

The examples in (16) further serve to show that *wu* ‘not have’ has grammaticalized into a Q particle and is not functioning as a negator. This is because the predicate occurs with its own negator, which occupies the Neg position.

- (16) a. 還 不 喪 身 失 命 也 無?
Hai bu [sang shen shi ming] ye wu?
 ADV not lose body lose life or not.have
 ‘Will one not lose life and limb?’ (Zutangji, from Wu 1997)
- b. 莫 是 本來 人 也 無?
Mo shi benlai ren ye wu?
 not COP original man or not.have
 ‘Is (it) not an original man?’

The preceding discussion has shown that clause-final *wu* ‘not have’ in matrix *yes/no* questions had already been grammaticalized as a Q particle by the Tang Dynasty. If, on the other hand, we consider embedded questions, *wu* ‘not have’ does agree with the predicate it follows. We also find no examples in which a second negator precedes this predicate. The embedded verb in (17) is the existential verb *you*.

- (17) 帝 喚 司馬遷 向前 想 陵 母妻子
Di huan Sima Qian xiangqian xiang [Ling mu.qi.zi]
 emperor call Sima Qian advance divine Li Ling family
 面 上 有 死 色 無。 (Dunhuang Bianwenji, Li Ling)
mian shang [you si se] wu.
 face on have death color not.have
 ‘The emperor called Sima Qian to come forward and determine whether Li Ling’s family had the look of death on their faces.’

An important point to note is that embedded *yes/no* questions in Chinese are historically more restricted than matrix questions. This is undoubtedly due to the fact that there is no position for a Q particle in embedded *yes/no* questions, the alternative question strategy being obligatory in embedded contexts. This continues to be the case in modern Mandarin, as shown by the contrast in (18).

- (18) a. *Wo bu zhidao [ta zai-bu-zai].*
 1SG not know 3SG be.in-not-be.in
 ‘I don’t know whether he/she is here.’
 b. **Wo bu zhidao [ta zai ma].*
 1SG not know 3SG be.in Q
 ‘I don’t know whether he/she is here.’

There being no position for a Q particle in embedded questions, we can conclude that the negator in (17) was base merged in Neg and moved to & in the embedded clause. This in turn accounts for the strict agreement between clause-final negation and the preceding predicate, as well as the lack of other negators in the clause.

In contrast to late Middle Chinese, in earlier Middle Chinese of the 5th century, we do find obligatory agreement between the predicate and clause-final *wu* ‘not have’ in matrix *yes/no* questions. The main verbs in (19) are both existential verbs.

- (19) a. 有 劇 我 者 無？ (Xianyujing, from Wu 1997)
You ju wo zhe wu?
 have play me DET not.have
 ‘Is someone toying with me?’
 b. 有 過 我 者 無？ (Xianyujing 1)
You guo wo zhe wu?
 have surpass me DET not.have
 ‘Is there one who surpasses me?’

The restriction to agreeing contexts and the impossibility of a second negator indicate that *wu* ‘not have’ in the 5th century had not yet grammaticalized into a Q particle. Thus, the 5th century VP-*wu* question could be the input structure for the reanalysis of *wu* as a Q particle. However, VP-*wu* questions still do not provide very direct evidence as to how the reanalysis took place. Specifically, there is no clear indication as to how the negator *wu* came to occupy clause-final position. I will propose in Section 7 that this was the result of movement of the

negator to &, followed by deletion of the remnant VP. However, evidence in Middle Chinese is not sufficient to support this claim.

3.2. NOT.BE in VP-neg questions

5th century Middle Chinese *yes/no* questions marked with *fou* ‘not be’ mirror those marked with *wu* ‘not have’ in the 9th and 10th centuries. (21) shows that agreement did sometimes take place between clause-final *fou* and the predicate. The predicates are verbal predicates of the type typically occurring with the clausal negator.

- (21) a. 尊 者 能 食 粗 惡 食 不?
Zun zhe neng shi cu e shi fou?
 respect DET can eat coarse bad food not.be
 ‘Oh great one, can you eat inferior food?’ (Zabao Zangjing 50)
- b. 卿 數 省 王、 和 不?
Qing shu xing Wang, He fou?
 you often visit Wang He not.be
 ‘Do you often go to check up on Mr. Wang and Mr. He?’ (Shishuo Xinyu 1.17)

Mei (1978) dates the origin of VP-neg questions to the 5th century and proposes that the surface form was derived through deletion of the second VP in an alternative question. The current proposal agrees that VP ellipsis could take place in Middle Chinese VP-neg questions. However, VP deletion is unlikely to be at work in examples like (22), due to the fact that another negator could precede the predicate. Note further that there is disagreement between the clause-final negator and the preceding negated predicate. In (22a), *fou* is paired with the negative existential; (22b) shows *fou* with the aspectual negator. Therefore, it is clear that *fou* could not have been base merged in the position for the negator in a VP-neg-VP question.

- (22) a. 無 諸 惡 不?
Wu zhu e fou?
 not.have DET.PL evil not.be
 ‘Are (you) free of the various irritations?’ (Zabao Zangjing 73)
- b. 眼 耳 未 覺 惡 不?
Yan er wei jue e fou?
 eye ear not.yet feel weak not.be
 ‘(Your) eyes and ears are not yet feeling weak, right?’ (Shishuo Xinyu 19.31)

Once again, however, we see that embedded alternative questions are more conservative. In (23), embedded VPs are conjoined to form an embedded *yes/no* question. Note that when overt material follows the negator, it surfaces as *bu* ‘not’. I discuss the differences between *bu* ‘not’ and *fou* ‘not be’ in Section 5.1.

- (23) 觀 人 顏色， 知
Guan ren yanse, zhi
 observe person face know
 作 慾 相 不 作 慾 相。
 [zuo yu xiang] *bu* [zuo yu xiang].
 make desire appearance not make desire appearance
 ‘By observing someone’s face, we learn whether he has the appearance of desire or not.’ (Zabao Zangjing 28)

To sum up the discussion of Middle Chinese, we have seen that both *wu* ‘not have’ (in late Middle Chinese) and *fou* ‘not be’ (in the 5th century) had already been grammaticalized as C elements in matrix *yes/no* questions. In embedded questions, however, both were still base merged in their positions as negators and could participate in alternative questions involving full conjoined VPs. However, VP-neg-VP matrix questions were virtually nonexistent in Middle Chinese. It is commonly believed that full VP-neg-VP matrix questions like (24) did not emerge until the 10th century (Zhu 1991; Liu 1994; and others).

- (24) a. 酬 你 所 問 不 酬 你 所 問?
 [Chou [ni suo wen]] **bu** [chou [ni suo wen]] ?
 answer you REL ask not answer you REL ask
 ‘Did I answer what you asked or not?’ (Zutangji, from Zhang 2003: 194)
- b. 你 道 這 個 與 那 個 別 不 別?
 Ni dao zhe ge yu na ge [bie **bu** bie] ?
 you say this CLF and that CLF different not different
 ‘Tell me, are this one and that one different or not?’
 (Zutangji, from Zhang 2003: 194)

Liu (2008) has identified a few VP-neg-VP matrix questions in pre-10th century Buddhist texts. The existence of such examples is unsurprising, given that similar examples can be found in late Archaic Chinese of the 2nd century BCE. In the following sections, I trace the source of matrix alternative questions to Archaic Chinese embedded questions. I then show how the embedded structure came to be used in root clauses. Additionally, I propose an account for the grammaticalization of negation to Q particle in VP-neg questions by movement of the negator to &. I further suggest an explanation for the relative paucity of matrix VP-neg-VP questions in Middle Chinese, in contrast to the VP-neg variety.

4. Origin of VP-neg-VP questions

In this section, I identify the source of VP-neg-VP alternative questions in Chinese. I propose that this was late Archaic Chinese embedded questions, as they display all of the structural characteristics expected of VP-neg-VP questions. As I mentioned repeatedly in Section 3, embedded alternative questions required strict agreement between the predicate and the negator, suggesting a low position for the negator. Furthermore, embedded alternative questions often have an overt disjunction marker, providing additional support for the disjunction structure proposed in Section 2.

4.1. Archaic Chinese matrix questions

As mentioned in Section 2, matrix questions in late Archaic Chinese of the Warring States period (5th-3rd centuries BCE) employed a clause-final question particle.

- (25) a. 管仲 知 禮 乎?
 Guan Zhong zhi li **hu**? (Analects 3)
 Guan Zhong know Rites Q
 ‘Did Guan Zhong know the Rites?’
- b. 賢 者 亦 樂 此 乎?
 Xian zhe yi le ci **hu**? (Mencius 1)
 wise DET also enjoy DEM Q
 ‘Does a wise man also enjoy this?’

There are a handful of examples which appear at first blush to be VP-neg matrix questions. In the examples in (26), the negator *fou* ‘not be’ follows a VP in a *yes/no* question.

- (26) a. 如 此 則 動 心 否 乎? (Mencius 3)
Ru ci ze [dong xin] fou hu?
 like this then move heart not.be Q
 ‘If this happened, would you be tempted?’
- b. 子 之 持 戟 之 士 一 日 而
 [Zi zhi chi ji zhi shi] yi ri er
 sir GEN hold halberd GEN soldier one day and
 三 失 伍 則 去 之 否 乎?
san shi wu ze [qu zhi] fou hu?
 three lose formation then discharge 3.OBJ not.be Q
 ‘If a halberd bearer of yours fell out of formation three times in one day, would you discharge him?’ (Mencius 4)

It is frequently assumed that Archaic Chinese matrix questions like these are the precursors of later VP-neg questions (Mei 1978; Cheng et al. 1996, 1997; Liu 1998; among many others). However, there is reason to believe that the examples in (26) involve more structure than the first VP and the negator *fou*. First, *fou* follows a transitive predicate in these examples. I show in the next subsection that *fou* was never paired with transitive predicates in embedded alternative questions in this period. Therefore, it is unlikely that *fou* is participating in a *vP* coordination structure here. We also do not want to assume that *fou* is base merged as the negator selecting the preceding VP, as per Cheng et al.’s (1996) analysis of VP-neg questions in modern Mandarin. This is because *fou* never selected a complement in Archaic Chinese. Instead, it stood alone as a predicate. While *bu* ‘not’ had to be followed by overt predicative material, as in (27a), *fou* always occurred by itself as the predicate, as in (27b).

- (27) a. 當 天 意 而 不 可 不 順。 (Mozi 26)
Dang tian yi er bu ke bu shun.
 face heaven will and not can not follow
 ‘In the face of the will of heaven, (one) cannot not follow.’
- b. 順 則 進， 否 則 退。 (Yanzi Chunqiu 3.14)
Shun ze jin, fou ze tui.
 accept then proceed not.be then hold.back
 ‘If (your opinion) is accepted, then proceed; if that is not the case, then hold back.’

Another possibility along the lines of Cheng et al. (1996) is that *fou* had already grammaticalized into a Q particle and is base merged in C. However, this is also unlikely, since *fou* in (26), is followed by the Q particle *hu*, which itself would be located in C. Nor is it likely that *fou* and the Q particle have undergone incorporation, a final possibility suggested by Cheng et al. (1996). If the negator had in fact already grammaticalized and could be base merged in C, then it is not clear why the Q particle had to be present at all.

Considering the fact that *fou* never selected a VP complement but rather itself formed the predicate, the analysis I propose for the questions in (26) is as follows. *Fou hu* ‘not.be Q’ constitutes an independent clause in which *fou* functions as the main predicate and *hu* supplies the interrogative force..

- (28) 動 心 否 乎? (Mencius 3)
 [_{CP} *dong xin*] [_{CP} ... [_{VP} *fou*] *hu*]?
 move heart not.be Q
 ‘Does this tempt you? Or does it not?’

In sum, Archaic Chinese matrix questions in which a negator preceded a Q particle are not VP-neg questions. The origin of matrix VP-neg-VP questions is embedded questions with a vP disjunction structure.

4.2. Archaic Chinese embedded VP-not-VP questions

In contrast to matrix questions in Archaic Chinese (5th – 3rd centuries BCE), embedded *yes/no* questions were VP-not-VP type alternative questions. (29) shows examples in which *fou* functions as the second predicate. Note that *fou* is paired with intransitive predicates.

- (29) a. 未 知 母 之 存 否。 (Zuozhuan, Xuan 2)
 Wei zhi [mu zhi [vP cun] [vP fou]].
 not.yet know mother GEN be.alive not.be
 ‘(I) do not yet know whether my mother is alive.’
- b. 少， 未 知 可 否。 (Zuozhuan, Xiang 31)
 Shao, wei zhi [[vP ke] [vP fou]].
 young not.yet know be.capable not.be
 ‘(He) is young; (I) do not yet know whether he is capable.’

Particularly relevant to the proposal in this paper is the fact that these embedded questions could have an overt marker of disjunction between the two VPs. Additionally, the passive potential auxiliary *ke* can be seen in this example. This provides further evidence that *fou* was paired with intransitive predicates.

- (30) 晉人 侵 鄭 以 觀
 Jinren qin Zheng yi guan
 Jin invade Zheng COMP observe
 其 可 攻 與 否。 (Zuozhuan, Xi 30)
 [qi [ke gong] yu fou].
 3.GEN can attack or not.be
 ‘The Jin invaded the Zheng to see whether a prolonged attacked was possible.’

(31) shows independent evidence that *yu* ‘or’ was a marker of disjunction in the archaic period. As mentioned in Section 3, F. Wu (1997) argues that the archaic period disjunction marker *yu* ‘or’ is the historical origin of particles like *ye*, which occurred in Middle Chinese VP-neg questions like (15) and (16) above.

- (31) 女 與 回 也 孰 愈？ (Analects 5)
 Ru yu Hui ye, shu yu?
 you or Hui TOP which better
 ‘You or Hui, which is better?’

Fou ‘not be’ and *bu* ‘not’ were clearly distinguished in function and distribution in this period. *Fou* occurred in clause-final position in embedded alternative questions and was always paired with an intransitive predicate, which in turn was often headed by an auxiliary. On the other hand, when *bu* ‘not’ participated in alternative questions, it was paired with full (possibly transitive) VPs, as in (32).

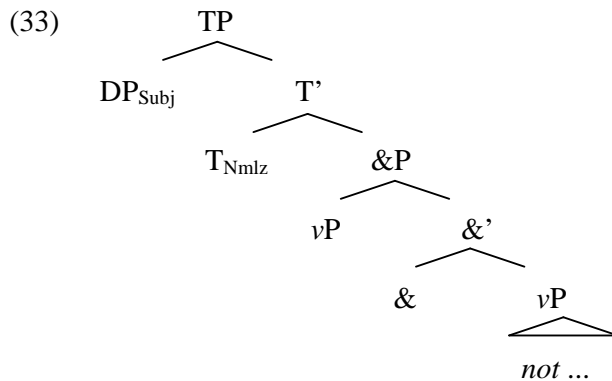
- (32) a. 桓 公 不 知 臣 欺 主
 Huan gong bu zhi chen [qi zhu]
 Huan lord not know minister deceive lord

與 不 欺 主 已 明 矣。 (Hanfeizi 37)
 yu **bu** [qi zhu] yi ming yi.
 or not deceive lord already clear PFV

‘It is already clear that the lord Huan did not know whether his minister was deceiving him or not.’

- b. 聽 與 不 聽， 未 可 必 知。 (Hanfeizi 33)
 [Ting] yu **bu** [ting], wei ke bi zhi.
 listen or not listen not.yet can necessarily know
 ‘Whether or not (he) will listen, (you) can not yet know for sure.’

The analysis I propose is as follows. Archaic Chinese embedded *yes/no* questions were required to be alternative questions rather than employing a Q particle, because embedded clauses in this period were nominalized and did not project a CP layer. Evidence for the nominalization can be seen in the genitive marking on the embedded subjects in (29a) and (30). Interestingly, the embedded subject in (32a) is not genitive. I assume this is because the example comes from a text written at the end of the archaic period, by which time the use of genitive case was in decline. Genitive marking on embedded subjects was completely lost in Middle Chinese. Returning to the analysis of archaic period embedded questions, given that there was no CP layer, I assume that the interrogative semantics was supplied solely by the disjunction. When the second disjunct *vP* contained overt material in addition to the negator, as in (32), it was negated by *bu*, which I assume with Ernst (1995), Hsieh (2001), and others to be an adjunct and not the head of NegP. I assume that *bu* is adjoined to *vP*. The second disjunct in embedded alternative questions could also be a *vP* consisting only of the negative auxiliary *fou*.



In the next section, I propose that *&* in matrix disjunctive questions additionally had a [*uNeg*] feature, which will require the presence of a negated second *vP* conjunct in order to derive the interrogative interpretation. This requirement did not hold, however, in embedded questions. An interrogative interpretation was possible in embedded disjunctive structures not involving negation, as shown in (34a). Interestingly, matrix questions involving this type of disjunction were required to have a Q particle, as in (34b).

- (34) a. 內之 不 知 國 之 治 亂，
 Neizhi bu zhi [guo zhi zhi luan],
 inside not know nation GEN governed chaotic
 外之 不 知 諸侯 強 弱。
 waizhi bu zhi [zhuhou qiang ruo].
 outside not know lord strong weak

‘At home, (you) will not know whether the nation is properly governed or in chaos; in the provinces, (you) will not know whether feudal lords are strong or weak.’

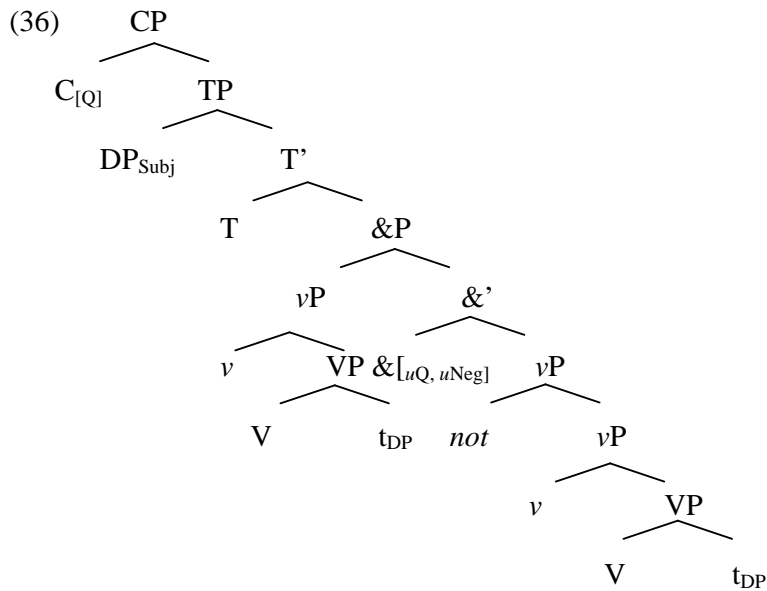
- b. 事 齊 乎? 事 楚 乎? (Mencius 2)
Shi Qi hu? Shi Chu hu?
 serve Qi Q serve Chu Q
 ‘Shall (I) serve Qi or shall (I) serve Chu?’

5. Early matrix VP-neg-VP questions

From the Qin period in the 2nd century BCE, VP-neg-VP structures came to be used in root contexts. The following examples, taken from the unearthed Qin legal documents (3rd century BCE), provide strong evidence for the existence of VP-neg-VP matrix questions. Feng (1987) identifies three types of alternative questions in this document: disjunction of V(P)s, stranding of an auxiliary verb, and stranding of a lexical verb. Each of these cases is exemplified, respectively, in (35a), (35b), and (35c).

- (35) a. 藏 者 論 不 論?
Cang zhe [lun bu lun]?
 hide DET indict not indict
 ‘Is the one who hid (the money) indictable or not?’
- b. 甲 當 購 不 當?
Jia [dang gou] bu dang?
 party.A should pay not should
 ‘Should party A pay or not?’
- c. 越 里 中 之 與 它 里 界 者，
Yue li zhong zhi yu ta li jie zhe,
 over block inside GEN to other block border DET
 垣 為 院 不 為?
yuan [wei yuan] bu wei?
 fence be courtyard not be
 ‘The space extending from one block to the border of another block, if it is fenced, is it a courtyard or not?’

I propose that all of these cases can be subsumed under an analysis of disjunctive *v*Ps with possible deletion of the complement of *v*. The basic case is (35a), as it involves no deletion. The disjuncts are unaccusative or passive *v*Ps in which the internal argument *cang zhe* ‘one who hid’ has undergone ATB movement to subject position from both of the conjuncts. Since this is a root level question and not an embedded nominalization, I assume that the interrogative force is determined by a [Q] feature on C. I propose that the role of the disjunction in the interpretation is established by merging a [*u*Q] feature on & which must be checked off by the [Q] on C. I also assume that matrix disjunctive questions require a negated second *v*P disjunct. To account for this, & also has a [*u*Neg] feature, which it checks with the negator in its complement.



In my own examination of the text, I have discovered that all of the examples of stranding, as in (35b, c), involve an auxiliary or other functional category residing outside VP. Stranding of the auxiliary in (35b) can be derived by deleting the VP. The auxiliary is presumably located in a functional category above VP, possibly v itself. Incidentally, this type of VP-neg-VP question is very common in modern Mandarin. Alongside full VP-neg-VP type questions like (37a), modern Mandarin also allows the verb in the second disjunct to be stranded after the negator, as in (37b).

- (37) a. *Ta* [*xihuan zheben shu*] [*bu xihuan zheben shu*]?
 3SG like this book not like this book
 ‘Does he like this book or doesn’t (he) like this book?’
- b. *Ta* [*xihuan zheben shu*] [*bu xihuan*]?
 3SG like this book not like
 ‘Does he like this book or doesn’t (he) like (it)?’
 (Huang 1991:306)

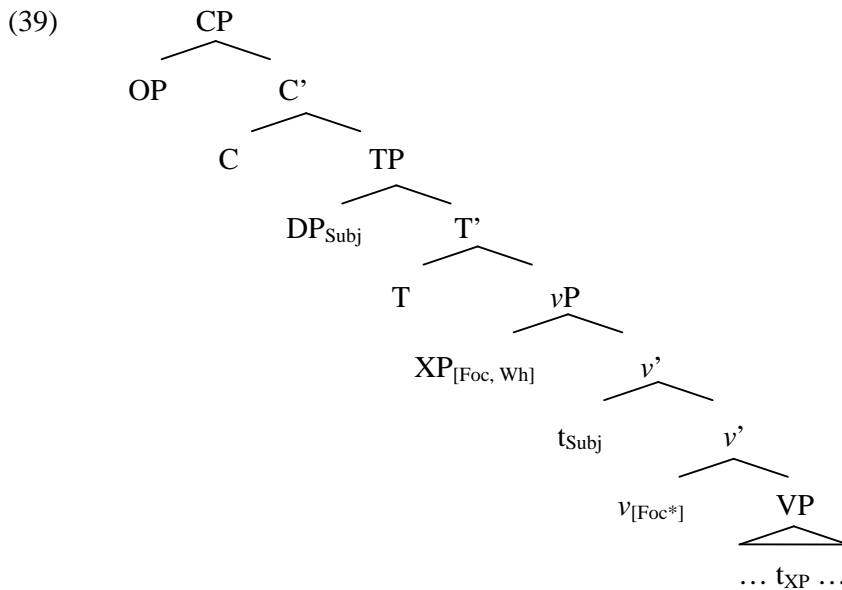
Huang (1991b) and Hsieh (2001) propose that surface representations of cases like (37b) are the result of ellipsis. For Hsieh (2001), this is VP ellipsis. If we assume that the movement out of VP is what allows the verb to be stranded, we then predict that only material external to VP can be stranded. Significantly, lexical verbs could not be stranded in Archaic Chinese, as I discuss in Section 7, because the language did not yet permit verb movement from V to v .

I assume that the same type of deletion takes place in (35c). The stranded verb in this example is a copula, not a lexical verb. I assume with Adger and Ramchand (2003), den Dikken (2006), Citko (2008), and many others that the copula heads a small clause, which is a functional category selecting the nominal predicate. I follow Bowers (1993) in labeling this projection PrP, but I assume that its function is essentially parallel to v P in the case of verbal predicates. What is deleted in (35c) is the NP or DP sister of Pr.

In this way, the Qin period evidence fully supports the disjunction analysis of VP-neg-VP questions proposed in this paper. At this point, I turn to the question of how it was that an embedded v P coordination structure came to be used as a matrix question. I propose that this was related to the presence of a clause-medial interrogative position in late Archaic Chinese. This is illustrated by a peculiar type of *wh*-fronting in late Archaic Chinese, which moved VP-internal *wh*-phrases to a position between the VP and the subject.

- (38) a. 天下 之 父 歸 之 ,
Tianxia zhi fu gui zhi
 world GEN father settle here
 其 子 焉 往 ? (Mencius 7)
qi zi yan [VP wang t_{yan}]?
 3.GEN son where go
 ‘If the fathers of the world settled here, where would their sons go?’
- b. 吾 誰 欺 ? 欺 天 乎 ?
Wu shei [VP qi t_{shei}]? Qi tian hu?
 I who deceive deceive Heaven Q
 ‘Who do I deceive? Do I deceive Heaven?’ (Analects 9)

Aldridge (2010) proposes that this *wh*-movement targeted a focus position in the edge of vP ⁶. The movement was driven by a strong focus feature on *v*. The interrogative interpretation was obtained via unselective binding between interrogative C and the *wh*-word.



What I propose for alternative questions is that it was precisely the existence of this clause-medial interrogative position which allowed the disjunction structure to be used as a matrix question, since alternative questions crucially make use of a clause-medial interrogative position, as proposed by Huang (1982, 1991b), McCawley (1994), Ernst (1994), Hsieh (2001), Gasde (2004), and others. There is a key difference, however, between *wh*-questions and alternative questions. Aldridge (2010) argues that *wh*-words in Archaic Chinese were indefinites, as is the case in modern Chinese. Crucially, they could be separated from their scope position by island boundaries. She proposes, then, that *wh*-words were licensed by unselective binding, as proposed for modern Chinese by Tsai (1994) and others. On the other hand, McCawley (1994), Hsieh (2001), and others have argued convincingly that VP-neg-VP questions must be in a local relation with interrogative C. I assume, therefore, that the [*u*Q] feature on & had to enter into an Agree relation with the [Q] feature on C, as shown in (36).

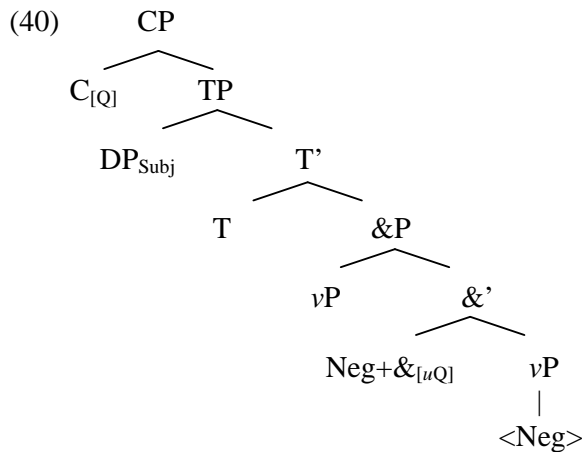
One final question which I address at this point is how an embedded structure provides the input for an innovation in root contexts, contra the well-accepted proposal of Lightfoot (1979, 1991) and others that only material in root clauses is available to acquirers for the purposes of

⁶ See Belletti (2004), Paul (2005), and others for arguments for an expanded vP edge which mirrors the split CP domain first proposed by Rizzi (1997).

parameter setting. I can only say that the empirical data in so far as they are textually attested point to an embedded source for alternative questions, since the embedded structures are robustly attested in late archaic period, while there is no evidence of matrix-level alternative questions until after this period. So this particular phenomenon may need to be treated as a counterexample to the Degree-0 Learnability hypothesis.

6. Reanalysis of Middle Chinese *fou* ‘not be’ as a C element

In this section, I propose an account of the reanalysis of *fou* ‘not be’ as a C element in the early Han dynasty (approximately the 2nd century BCE). I propose that the reanalysis was initiated by movement of the negator to & to check the [*u*Neg] feature there. Movement of the negator to & eventually led to the negator’s acquisition of the [*u*Q] feature, which in turn allowed it ultimately to be base merged in that position. Positing movement as a necessary step in the reanalysis is what accounts for the fact that *fou* is the first negator to undergo this process. This is because *fou* headed the *v*P complement of & and could therefore undergo head movement to &.



As an adjunct to *v*P or VP, *bu* would not have been able to move to &. Consequently, a matrix alternative question in which *bu* ‘not’ is the negator required the overt realization of the second *v*P in order to host the adjunct. Although, it has been suggested that full VP-neg-VP matrix questions virtually disappeared from the language until the 10th century (Zhu 1991; Liu 1994; and others), Liu (2008) has identified a handful of examples in early Middle Chinese Buddhist texts. The following is an Eastern Han (1st-2nd centuries CE) example. Note that the negator is *bu* ‘not’.

- (41) 可 歸 不 可 歸? (Dazhuangyan Lunjing; from Liu 2008: 56)
Ke gui bu ke gui?
 can return not can return
 ‘Can he/she/it return?’

The overwhelming number of cases in the Han Dynasty (2nd century BCE – 2nd century CE), however, are of the embedded VP-neg(-VP) type or the matrix VP-neg type. (42) shows embedded questions.

- (42) a. 非 愚 於 虞 而 智 於 秦 也，
Fei yu yu yu er zhi yu Qin ye,
 not.be stupid in Yu and wise in Qin DECL

用 與 不 用、 聽 與 不 聽 也。 (Shiji 89)
 [yong yu **bu** yong] [ting yu **bu** ting] ye.
 use or not use hear or not hear DECL

‘It’s not that (he) was stupid while in Yu and wise while in Qin, but whether (he) was employed or not, listened to or not.’

- b. 視 吾 舌 尚 在 不。 (Shiji 70)
Shi [wu she shang zai **fou**].
 look my tongue still be not.be
 ‘Look to see if my tongue is still there.’

(43) shows matrix VP-neg questions.

- (43) a. 子 去 寡人 之 楚， 亦 思 寡人 不？
Zi qu guaren zhi Chu, yi si guaren fou?
 you leave me go Chu, still think me not.be
 ‘You left me and went to Chu; do you still think (fondly) of me?’ (Shiji 70)
- b. 秦 王 以 十五 城 請 易 寡人 之 璧，
Qin wang yi shiwu cheng qing yi guaren zhi bi
 Qin king with 15 city ask trade me GEN jade
 可 予 不？ (Shiji 81)
ke yu fou?
 can give not.be
 ‘The Qin king asks if he can exchange 15 cities for my jade. Can I give it to him?’

Assuming that movement to or of functional categories in grammaticalization has the potential to change lexical features of the category in question (Roberts and Roussou 2003), we expect to find evidence of such a change, which in fact we do. First, observe that *fou* is paired with a transitive predicate in (43a). Recall from section 4 that *fou* in Archaic Chinese only occurred with intransitive predicates. There were also examples like (44) in which *fou* occurs with an existential predicate. I suggest that the fact that *fou* could occur with a wide range of predicates indicates that it had already begun the grammaticalization process, as predicted by the movement analysis in (40).

- (44) 公 奴 有 病 不？ (Shiji 105)
Gong nu you bing fou?
 you servant have illness not.be
 ‘Is your servant ill?’

We may ask at this point whether there is evidence that *fou* ‘not be’ could be base merged in C. Crucially, what is not found in this period is a negated predicate preceding the clause-final negator. Therefore, it is certainly not the case that *fou* had to be merged high. And in fact there is evidence that it had to be merged low. This is due to the existence of embedded questions in which *fou* follows an existential predicate. Given that embedded VP-neg(-VP) questions never violated the rule on agreement between negation and the preceding predicate, we must conclude that the agreement restrictions on *fou* had indeed undergone a change. Furthermore, given that there is no position for a Q particle in embedded questions in Chinese, *fou* has to be merged low in the structure in (45) (and presumably also 44).

- (45) 問 張 王 果 有 計謀 不。
Wen [Zhang Wang guo you jimo fou].
 ask Zhang Wang really have plot not.be
 ‘(He) asked if Zhang Wang was really involved in the plot.’ (Shiji 89)

By the 5th century, *fou* had been reanalyzed as a Q particle base merged in C. I propose that movement to & resulted in *fou* being located in the functional head which checked the [Q] feature on C. This also enabled *fou* to acquire the [*u*Q] feature on &. At this point, movement could be replaced by base generation in &. This analysis is parallel, then, to Roberts and Roussou’s (2003) proposal for English modals, as well as the grammaticalization of other functional categories on the clausal spine in a variety of languages. The final step was reanalysis of *fou* as the Q particle in C. I assume that this was the result of children acquiring the default option for marking a *yes/no* question with a Q particle, i.e. base merge of this particle in C. Due to the relative paucity of VP-neg-VP matrix questions in early Middle Chinese, the language lacked the robust evidence needed to posit the position for *fou* in the *v*P disjunction structure. Instead, acquirers chose the default position for a Q particle and base-merged it in C⁷. The high position accounts for the ability of *fou* to occur with a negated predicate in Middle Chinese, as we saw in Section 3.

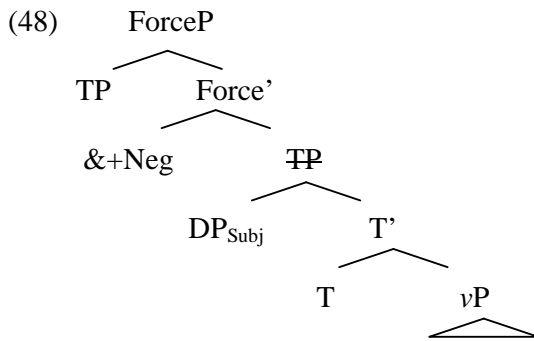
- (46) a. 無 諸 惡 不?
Wu zhu e fou?
 not.have DET.PL evil not.be
 ‘Are (you) free of the various irritations?’ (Zabao Zangjing 73)
- b. 眼 耳 未 覺 惡 不?
Yan er wei jue e fou?
 eye ear not.yet feel weak not.be
 ‘(Your) eyes and ears are not yet feeling weak, right?’ (Shishuo Xinyu 19.31)

However, there is evidence that the structure still involves a disjunction at this point. As mentioned earlier, F. Wu (, 1996, 1997) has argued convincingly that this *yi* is the reflex of the Archaic Chinese disjunction marker *yu* ‘or’.

- (47) a. 少 食 以 不?
Shao shi yi fou?
 little eat or not
 ‘They ate a little bit, didn’t they?’ (Zabao Zangjing 48)
- b. 汝 能 隨 我 至 寺 以 不?
Ru neng sui wo zhi si yi fou?
 you can with me go temple or not.be
 ‘Can you come with me to the temple?’ (Zabao Zangjing 50)

To account for this, I first assume the split CP first proposed by Rizzi (1997). Next, I follow Jayaseelan (2001) in claiming that a disjunction operator can occupy the head of ForceP. I propose that examples like (47) involve clausal disjunction of the positive and negative vaules of the proposition expressed by TP.

⁷ Roberts (1997), Roberts and Roussou (2003), and others argue that robust evidence is required for children to acquire marked structures or transformations. They particularly make this case for displacement transformations. I assume that the same should be true for ellipsis operations.



7. Reanalysis of the existential negator as Mandarin Q particle *ma*

To summarize the discussion so far, I have proposed that embedded VP-neg-VP disjunctive questions came to be used as matrix questions in late Archaic Chinese. This was possible due to the existence of a clause-medial interrogative position to host the disjunction. VP-neg questions were derived by deletion of the second VP and stranding of the negator in *v*. Subsequent movement of this negator to & allowed it to be reanalyzed as a Q particle and be base generated, first in & and subsequently in C.

In this section, I consider the question of why the existential negator *wu* did not participate in matrix VP-neg questions until much later Middle Chinese. As we have seen in Section 3.1, VP-neg questions involving *wu* ‘not have’ began to emerge around the 5th century. By early Mandarin, *wu* had been reanalyzed as the Q particle *ma*. In this subsection, I consider the question of why the reanalysis of *wu* did not take place sooner. I propose that the reason is because *wu* was not a functional head but rather was a lexical verb in Archaic Chinese, which prevented it from moving to *v* and then to &.

In Archaic Chinese, *wu* could take a complement NP and form a predicate in a negative existential construction.

- (49) a. 不 患 無 位， 患 所 以 立。 (*Analects* 4)
Bu huan [**wu** *wei*], *huan suo yi li*.
 not worry not.have position worry REL with stand
 ‘Do not worry that (you) do not have a position; worry about how (you) establish yourself.’
- b. 仁 者 無 敵。 (*Mencius* 1)
Ren zhe [**wu** *di*].
 benevolent DET not.have enemy
 ‘One who is benevolent does not have enemies.’

Wu ‘not have’ could participate in alternative questions in embedded clauses, when its complement also appeared following it.

- (50) 有 窮 無 窮 未 可 智，
 [You *qiong*] [**wu** *qiong*] *wei ke zhi*,
 have limit not.have limit not.yet can know
 則 可 盡 不 可 盡 未 可 智。
Ze [*ke jin*] *bu* [*ke jin*] *wei ke zhi*.
 then can reach not can reach not.yet can know
 ‘If one does not know whether there is a limit, then one does not know whether (that limit) can be reached.’ (*Mozi* 41)

But *wu* did not appear in isolation without its NP complement. One point to note in this regard is the fact that null objects were typically not allowed in Archaic Chinese. Even topicalized objects had to be resumed by pronouns in the clause. In (51), the object has been topicalized and is resumed by a pronoun in the clause. The resumptive pronoun appears to the left of the verb. This is because object pronouns were required to cliticize to the negator in negative clauses, and is not related to topicalization, per se.

- (51) 諸侯 之 禮， 吾 未 之 學 也。 (*Mencius* 6)
 [Zhuhou zhi li] wu wei zhi xue ye.
 feudal.lord GEN rite I not.yet 3.OBJ study DECL
 ‘The rites of the feudal lords, I have not yet studied.’

Huang (1984) argues that null pronominalization in object position is somewhat more constrained than subject null pronominalization in modern Mandarin, as well. Huang (1991a) and Otani and Whitman (1991) posit that certain instances of what appears to be null pronominalization in object position is actually the result of verb raising out of VP, followed by remnant VP deletion. Supporting evidence for this analysis comes from the possibility of a sloppy reading for the null object in the second conjunct.

- (52) John_i kanjian-le tade_i mama, Mary_j ye
 John see-PRV his mother Mary also
 kanjian-le [_{VP} <kanjian> tade_j — mama].
 see-PRV see her mother
 ‘John saw his mother, and Mary did, too.’ (Huang 1991a: 64)

If zero pronominalization is actually the result of remnant VP deletion, then the inability of lexical verbs to raise out of VP would account for the lack of object zero pronominalization in Archaic Chinese. If Archaic Chinese had verb-movement to *v*, we would also expect to find examples like the following modern Mandarin sentences, in which the second verb is missing from a sequence of conjoined VPs. Tang (2001) argues that modern Mandarin sentences like these are derived through ATB movement of the verb to *v*. Huang (1994) has elsewhere argued for verb-movement to *v* in modern Mandarin.

- (53) a. Laoshi [_{VP} t_{Subj} song-le [_{VP} Zhangsan t_V yi-ben shu]
 teacher give-PRV Zhangsan one-CLF book
 [_{VP} Lisi t_V yi-zhi bi]].
 Lisi one-CLF pen
 ‘The teacher gave Zhangsan a book and Lisi a pen.’
 b. Zhangsan [_{VP} t_{Subj} kan-guo [_{VP} xiao mao t_V yi-ci]
 Zhangsan see-have little cat one-CLF
 [_{VP} xiao gou t_V liang-ci]].
 little dog two-CLF
 ‘Zhangsan has seen the kitten once and the puppy twice.’ (Tang 2001:210)

This pattern emerges in early Middle Chinese. (54) shows a very early example from the Han period (2nd century CE)⁸. However, this type of coordination is not attested in the archaic period.

⁸ This dating presupposes the unorthodox view that middle Chinese began in the first Han Dynasty, in opposition to the traditional dating in the second Han Dynasty (beginning in the 1st century CE). Due to clear evidence of middle Chinese grammatical features in early Han texts, I take the position that the beginning of the middle Chinese should be traced to this time. However, in order to avoid controversy, I offer that the early Han period could also be thought of as a period of transition from archaic to middle Chinese.

- (54) 嬰 初 以 中涓 從 擊 破
Ying chu yi zhongjuan cong ji po
 Ying first as imperial.guard accompany attack defeat
 東郡 尉 於 成武 及 秦 軍 於 杠里。
 [Dongjun wei tv yu Chengwu] ji [Qin jun tv yu Gangli]
 Dongjun official in Chengwu and Qin army in Gangli
 ‘At first, Ying accompanied (Liu Bang) as an imperial guard to attack and defeat the Dongjun official at Chengwu and the Qin army in Gangli.’ (Shiji 95)

Additional evidence for the lack of verb raising comes from answers to *yes/no* questions. Laka (1990), McCloskey 1991, Holmberg (2001, 2007), and others have argued that answers to *yes/no* questions which consist of just a verb are the result of raising the verb and subsequent deletion of the remnant resulting from that movement. Interestingly, Archaic Chinese did not allow transitive lexical verbs to be stranded as answers to *yes/no* verbs. The complete VP could be repeated, as in (55a). Or an auxiliary could be stranded, as in (55b).

- (55) a. Q: 君 饋 之 粟， 則 受 之 乎？
Jun kui zhi su, ze shou zhi hu?
 lord give 3.OBJ grain then receive 3.OBJ Q
 ‘If his lord gives him grain, then should (he) take it?’
 A: 受 之。
Shou zhi.
 receive 3.OBJ
 ‘Yes, he should.’ (Mencius 10)
- b. Q: 燕 可 伐 乎？
Yan ke fa hu?
 Yan can.be attack Q
 ‘Can Yan be attacked?’
 A: 可。
Ke.
 can
 ‘Yes, it can.’ (Mencius 4)

For negative answers, the negative auxiliaries *fou* ‘not be’ could be used in isolation. This is not surprising, given that *fou* always stood alone as a predicate.

- (56) Q: 自 織 之 與？
Zi zhi zhi yu?
 self weave 3.OBJ Q
 ‘Did weave it yourself?’
 A: 否， 以 粟 易 之。
Fou, yi su yi zhi.
 not.be APPL grain trade it
 ‘No, I traded grain for it.’ (Mencius 5)

However, *wu* could not be stranded without its complement. It could appear in the answer to a *yes/no* question if the complement appeared as well. But it could not be stranded. This is parallel to the case of the transitive verb in (55a).

- (57) 夫 曰：『何 客 也？』
Fu yue: 'He ke ye?'
 husband say what guest DECL
 其 妻 曰：『無 客。』
Qi qi yue: 'Wu ke.'
 3.GEN wife say not.have guest
 'The husband asked, 'Who was the guest?' His wife answered, 'There was no guest.'

It is not until Middle Chinese of the 5th century that we begin seeing *wu* occurring by itself without a complement. This is also the period in which we see the emergence of VP-neg questions involving clause-final *wu*. The first clause in (58) shows *wu* in an embedded alternative question. The third clause in (58) shows *wu* standing alone as a predicate.

- (58) 阮宣子 論 鬼 神 有 無 者，
Ruan Xuanzi lun [gui shen you wu] zhe,
 Ruan Xuanzi debate ghost spirit have not.have DET
 或 以 人 死 有 鬼，
huo yi ren si you gui,
 some believe person die have ghost
 宣子 獨 以為 無。
Xuanzi du yiwei wu.
 Xuanzi alone believe not.have
 (Shishuo Xinyu 5.22)

'When Ruan Xuanzi was debating whether there were ghosts and spirits, there was someone who maintained that there was a ghost when a person died, while Xuanzi alone asserted that there was none.'

In the dialogue below, *wu* by itself functions as an embedded predicate in (59a) and a matrix predicate in (59b). Note further that (59b) is the answer to a *yes/no* question.

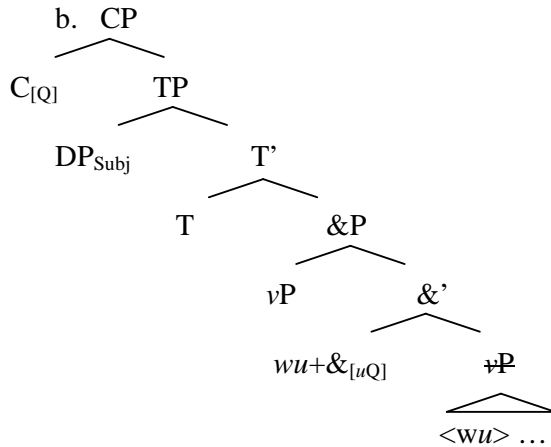
- (59) a. 問 曰：天下 為 有 為 無？
Wen yue: Tianxia wei you wei wu?
 ask say world take.as exist take.as not.have
 'One asked, "Do we take the world to exist or not exist?"'
 b. 答 曰：亦 有 亦 無。
Da yue: Yi you yi wu.
 answer say also exist also not.have
 '(The Buddha) answered, "It exists and it doesn't exist."

Laka (1990) and Holmberg (2001, 2007) argue that responses to *yes/no* questions consisting of just a verb are derived by verb raising to an TP peripheral position. Following this, the remnant TP is deleted, stranding the verb. I hesitate to claim that verb raising in Chinese can target a position external to TP. Huang (1991a) and Tang (2001) argue convincingly that verbs in Chinese raise no higher than *v*. I therefore assume a position closer to McCloskey's (1991) proposal for Irish. McCloskey proposes that the verb raises out of VP and then the remnant VP is deleted. I assume for Chinese that the verb raises to *v*, followed by deletion of the remnant VP. Auxiliary stranding in (55b) and (56) require no movement, since the auxiliary is base merged outside VP and will therefore be stranded after VP deletion.

It is not surprising, then, that *wu* 'not have' begins to participate in VP-neg questions from Middle Chinese. The proposal for VP-neg questions involving *fou* 'not be' can be extended to questions with *wu* as well. Recall from Section 3.1 that early VP-*wu* questions required agreement between *wu* and the main predicate, indicating that *wu* was base merged low,

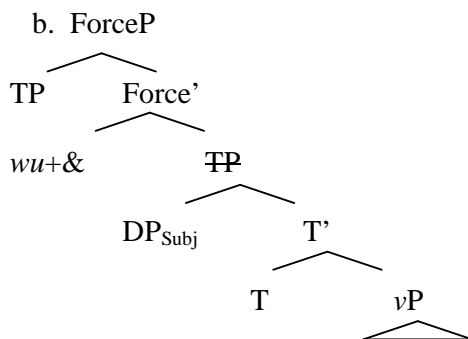
specifically in the alternative question disjunction structure. Since *wu* in this period had gained the ability to move out of VP, it was able to raise to & and check the [*u*Neg] feature there.

- (60) a. 有 劇 我 者 無? (Xianyujing, from Wu 1997)
 You *ju* *wo* *zhe* *wu*?
 have play me DET not.have
 ‘Is someone toying with me?’



Wu underwent the same grammaticalization process as *fou* and came to be base merged in C. When the main predicate was negated, I assume that *wu* had to be merged in the C domain, as I also proposed for *fou* ‘not be’. Note that *wu* could also be preceded by a disjunctive particle⁹, indicating that it also participated in the high disjunction structure posited in (48) for *fou*.

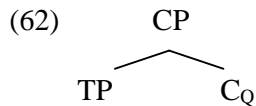
- (61) a. 莫 是 本來 人 也 無? (Zutangji, Dongshan)
 Mo *shi* *benlai* *ren* *ye* *wu*?
 none COP original man or not.have
 ‘Is (it) not an original man?’



Wu was finally grammaticalized into the modern Mandarin Q particle when the TP in the specifier of Force was reanalyzed as a complement, yielding the simple C-final structure in (62). I assume that this reanalysis was again a consequence of the lack of robust evidence, in this case specifically the loss of a strong sense of disjunction in the interpretation. Without robust evidence that a disjunction exists, learners acquiring the language would opt for the

⁹ The disjunction particle used with *fou* ‘not be’ is *yi*, while *ye* is used with *wu* ‘not have’. The change in the vowel is due to a phonological process, induced by the main vowel in the following negator.

simpler analysis in which the TP to the left of the *wu* is analyzed as its complement, rather than positing a second TP which is later deleted.



This yields a head-final CP for modern Mandarin, as argued by Paul (2007). However, I suggest that this is not a problem for the FOFC, specifically, because the clause-final Q particle in structures like (62) have lost their [Neg] features, as well as their association with disjunction. The case of the Mandarin Q particle, then, may be an argument for the suggestion of Biberauer et al. (2009) that clause-final particles which are categorially deficient are not subject to the FOFC in the first place.

The final question I consider in this paper is why it was *wu* ‘not have’ and not *fou* ‘not be’ which was ultimately reanalyzed as the modern Mandarin Q particle in the structure in (62). I posit that this is due to the presence of a phonological trigger for the reanalysis. As mentioned in section 2, *wu* was pronounced as /mua/ in early Mandarin, according to Wang (1958) and Zhong (1997). The presence of the glide provided the condition factor for the change in the initial consonant from /m-/ to modern Mandarin /w-/ in the negative existential *wu*. However, when /mua/ appeared in clause-final position, it was unstressed and lost the glide. This meant also that the conditioning factor for the lenition in the initial consonant was lost, resulting in a split between negative existential *wu* and Q particle *ma*. Therefore, there was a distinct phonological form which could be reanalyzed as a Q particle, independent of the negator. Since such a split did not take place in the case of *fou*, there was no phonological trigger for the final reanalysis of *fou* as Q particle.

8. Conclusion

In this paper, I examined the reanalysis of negators as *yes/no* question particles in Chinese. I proposed that the input to the reanalysis was an alternative question involving disjunctive *v*Ps. This type of alternative question originated in embedded *yes/no* questions in late Archaic Chinese. The structure later came to be used in matrix clauses, due to the availability of a clause-medial interrogative position which existed in the language at that time. The reanalysis of a negator as an interrogative element was facilitated by movement of the negator to the head of the disjunction phrase. The movement analysis accounts additionally for the fact that the first negator to be used in VP-neg matrix questions was the negative auxiliary *fou* ‘not be’. Specifically, the auxiliary was able to undergo this head-movement but not the adverbial negator *bu* ‘not’ or the verbal negator *wu* ‘not have’. It was only after lexical verbs acquired the ability to move out of VP in Middle Chinese that *wu* began to participate in VP-neg questions. In Middle Chinese, *wu* began to compete with *fou* in forming VP-neg questions. A phonological split between the negator *wu* ‘not have’ and the clause-final particle *ma* provided the phonological trigger for the final reanalysis of this particle as the modern Mandarin Q particle *ma*.

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