The Expression of Epistemic Modality in Classical and Han period Chinese

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The expression of epistemic modality
in Classical and Han period Chinese

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1. Introduction

In this paper, the syntactic and semantic constraints of adverbial expressions of epistemic modality in Classical and Han period Chinese are at issue. Modal values are not morphologically marked in Chinese; they are basically expressed by lexical means, i.e. by modal adverbs, including the sub-class of modal negative markers, and by modal auxiliary verbs. Adverbs and auxiliary verbs do not display any morphological distinctions, although it has been assumed that there might have been some morphological marking of adverbs in Chinese, e.g. by the suffix *-s* of Ancient Chinese, resulting in the *qùshēng* of Middle Chinese (Jin 2006).[1] Syntactically modal adverbs and modal auxiliary verbs have been assumed to be subject to different constraints, i.e. they appear in different preverbal positions; closed classes of auxiliary verbs and modal adverbs can be distinguished.[2]

In the general linguistic literature on modal auxiliary verbs the hypothesis has been proposed that for polysemic modal auxiliary verbs e.g. in English such as 'must', which can express both root (deontic) and epistemic values, the epistemic reading has developed from the deontic reading (e.g Bybee et al. 1994,[3] Traugott 1989,[4] 2006[5]). Most of the few studies on the diachronic development of Chinese modal markers have attempted to confirm a similar path of grammaticalization for the Chinese modal system.[6] However, it seems to be

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1   See Jin Lixin 金理新, *Shanggu Hanyu xingtai yanjiu* 上古漢語形態研究, Hefei: Huangshan shushe, 2006.

2   For instance in Yang Bojun 楊伯峻, He Leshi 何樂士, *Gu Hanyu yufa ji qi fazhan* 古漢語語法及其發展. Beijing: Yuwen chubanshe, 1992.

3   Bybee, Joan, Revere Perkins, William Pagliuca, *The evolution of grammar. Tense, aspect and modality in the languages of the world*, Chicago: The University of Chicago Press, 1994.

4   Traugott, E.C., "On the rise of epistemic meanings in English: An example of subjectivation in semantic change", *Language*, 65, 1989, 31-55.

5   Traugott, E.C., "Historical aspects of modality", in: Frawley W., ed., *The Expression of Modality*, Berlin: Mouton de Gruyter, 2006, 107-139.

6   Peyraube Alain, "The modal auxiliaries of possibility in Classical Chinese", in: Tsao Fengfu, Wang Samuel und Lien Chinfa, *Selected Papers from the Fifth International Conference on Chinese Linguistics*. Taipei: The Crane Publishing Co. Ltd., 1999; Li Ming, 李明, *Hanyu zhudongci de lishi fazhan* 漢語助動詞的歷史發展, PhD: Beijing Daxue, 2001; Li Renzhi, *Modality in English and Chinese. A typological perspective,* Boca Rota (Florida): Dissertation.com, 2004.

difficult to claim such a general development for the modal expressions in the earlier peri-
ods of Chinese. This can be evidenced e.g. by the basically epistemic modal *bì* 必 CER-
TAINLY, MUST and by the modal verb *dāng* 當 SHOULD which both seem to exhibit this
polysemy. Regarding the modal *bì* 必, it evidently displays particular syntactic constraints
which allow its analysis as either an adverb or an auxiliary verb; as an adverb it is one of
the central epistemic markers in Classical and Han period Chinese.[7] Historically the adver-
bial function expressing epistemic necessity seems to be the basic function of *bì* 必, and it
does not seem to be derived from its occasionally attested root (deontic) reading. *Bì* 必
evidently contrasts to those epistemic markers which qualify as typical modal adverbs such
as *gù* 固 'certainly'. Example (1a) represents the typical epistemic, and example (1b) the
typical deontic reading of *bì* 必.

(1a) 子曰：「丘也幸，苟有過，人必知之。」   *Lunyu* 7.31.3
    Zǐ yuē: Qiū yě xìng, gǒu   yǒu guò,   rén bì zhī zhī
    Zi say: Qiu SFP lucky, if.really have mistake, man BI know OBJ
    'I am lucky; if I really have a fault, people will surely/certainly know it.'

(1b) 君必殺之   (*Guóyǔ Jìn* 8)
    Jūn   bì shā zhī
    Prince BI kill OBJ
    'You have to kill him!'

Contrastingly, the basic modal value of *dāng* 當 is to express root (deontic) modality. Al-
though *dāng* 當 seems to follow a default path of grammaticalization from deontic to epis-
temic modality, the occasionally attested epistemic reading of *dāng* 當 is contextually in-
duced, and it is the root and not the epistemic reading that prevails in history (Meisterernst
2011)[8]. Examples (2a) and (2b) display the contrast between the expression of deontic
modality with the modal verb *dāng* 當 and that of epistemic modality with the modal ad-
verb *gù* 固

(2a) 我方先君後臣，因謂王即弗用鞅，當殺之   (*Shǐjì*: 68,2227)
    wǒ fāng xiān jūn hòu   chén, yīn   wèi wáng jí fú   yòng
    I   asp forward ruler put.behind vassal, therefore say king if NEG employ
    Yǎng, dāng shā zhī Yǎng, dang kill obj
    'I am just putting the ruler first and the vassal last, and therefore I told the king that if
    he did not employ you, Yǎng, he should kill you.'

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7 Meisterernst, Barbara, "A syntactic analysis of modal bì 必: auxiliary verb or adverb?", in: Cao Guang-
    shun, Hilary Chappell, Redouane Djamouri, and Thekla Wiebusch, eds., *Breaking down the Barriers:
    Interdisciplinary Studies in Chinese Linguistics and Beyond* (*Language and Linguistics Monograph Se-
    ries*). Taipei, 2013.
8 Meisterernst, Barbara, "From obligation to future? A diachronic sketch of the syntax and the semantics
    of the auxiliary verb *dāng* 當, *Cahiers de Linguistique Asie Orientale* 40,2, 2011, 137-188.

(2b) 豎牛曰：「夫子固欲去之。」   (*Zuǒzhuàn, Zhāo* 4)
　　　Shù　　　Niú yuē: fūzǐ　gù yù　qù　　zhī
　　　Attendant Niu say, master GU wish remove OBJ
　　　'And attendant Niu said: "The master certainly wished to remove it."'

According to Meisterernst (2008)[9] and Meisterernst (2011), the epistemic readings of modal verbs such as *kě(yǐ)* 可(以) and *dāng* 當 do not belong to the basic semantics of these verbs, but depend on their appearance in the complement of epistemic verbs. Epistemic modality has obviously been expressed by modal adverbs and not by modal auxiliary verbs in Classical and Han period Chinese.

　　In this paper it will be proposed that the epistemic adverbial modal markers constitute a class of their own as markers of propositional modality characterised by their high position in the sentence (see Cinque 1999)[10]. These epistemic adverbs generally follow the subject, but they precede most other adverbials including aspecto-temporal adverbs and negative markers (see also Wei 1999)[11]. They contrast syntactically and semantically with genuine root (deontic and dynamic or participant-internal) modal markers which are predominantly represented by auxiliary verbs such as *dāng* 當. These auxiliary verbs appear in a position different to, i.e. below that of the adverbs at issue (and also usually below aspecto-temporal adverbs). Additionally, adverbial modal negative markers which are predominantly deontic also appear in a position below these epistemic adverbs. These syntactic constraints correspond well to general assumptions on the position of modal adverbs (e.g. by Cinque 1999). They are the basis for the hypothesis that the observed differences between the grammaticalization from deontic to epistemic modality in English and Chinese are not only due to semantic reasons, i.e. the fact that deontic modality is often expressed indirectly, but also to syntactic constraints. Epistemic modality is predominantly expressed by sentential adverbs, having the entire proposition in their scope,[12] and not by verbs, and deontic modality is predominantly expressed by modal auxiliary verbs, following negation and aspecto-temporal adverbs.[13]

1.1 A short overview on modality

In studies on modality frequently no difference is made between the semantics of adverbial modal markers and modal auxiliary verbs. Different classifications of modality are attested

9　Meisterernst, Barbara, "Modal verbs in Han period Chinese Part I: The syntax and semantics of kě 可 and kěyǐ 可以", *Cahiers de Linguistique Asie Orientale* 37,1, 2008b, 85-120.

10　Cinque, Guglielmo, *Adverbs and Functional Heads, a Cross-Linguistic Perspective*, Oxford: Oxford Univ. Press, 1999.

11　Wei Pei-Chuan 魏培泉, "Lun xian-Qin hanyu yunfu de weizhi 論先秦漢語運符的位置", in: Peyraube, Alain, Chaofen Sun, eds., *In Honor of Mei Tsu-Lin, Studies on Chinese Historical Syntax and Morphology*, Paris: École des Hautes Études en Sciences Sociales, 1999, 259-299.

12　See Cinque (1999: 135) who states that "the truth of a proposition can only be evaluated if the proposition is located in a precise moment of time. Consequently, epistemic modality presupposes an operand which is already tensed (whence its scope external to Tense.)" Additionally, Cinque (1999: 124) claims that epistemic modals are not under the scope of negation.

13　These facts, however, do not exclude a possible later development of epistemic readings of the root modal verbs of Chinese.

in the linguistic literature; the most common are a two-way distinction between epistemic and deontic modality and a three-way distinction adding the category 'dynamic modality' (von Wright 1951,[14] Palmer 1986,[15] 2001[16]). The first distinction disregards the differences within the class of non-epistemic modalities, whereas these differences are often included in the term 'root modality' which refers to deontic modality in a broader sense. The bipartite linguistic distinction of epistemic and deontic modality was introduced by Jespersen (1924)[17] and was further developed e.g. in Lyons (1978)[18] who defines epistemic modality as being concerned with matters of knowledge, belief or opinion rather than fact (Lyons 1978: 793f) and deontic modality as being concerned with the necessity or possibility of acts performed by morally responsible agents (ibid. 823).[19] Within deontic modality, usually, two different subcategories, i.e. obligation and permission, are distinguished (cf. Meisterernst 2008b: 87). From epistemic, sometimes evidential modality is differentiated.[20] According to Palmer's approach (2001: 7f) "epistemic modality and evidential modality are concerned with the speaker's attitude to the truth value or factual status of the proposition (Propositional modality). By contrast, deontic and dynamic modality refer to events that are not actualized, events that have not taken place but are merely potential (Event modality)." In Hsieh (2005)[21] the adequateness of these categories for the semantic analysis of modal verbs and modal adverbs in Chinese is discussed and a distinction of four different categories, i.e. deontic, epistemic, dynamic and evaluative is established; particular focus is attributed to the category SOURCE.[22] The category SOURCE is particularly relevant in the determination of evidential modality but also in the distinction of epistemic modal verbs and epistemic adverbs (see Leiss (2009: 10)[23].

A classical schematic representation of epistemic meanings is the one following Hintikka 1962 in terms of possible world semantics (cf. Hendricks and Symons 2009)[24]:

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14 Von Wright, E.H., *An essay in modal logic*, Amsterdam, 1951.

15 Palmer F.R., *Mood and modality*, Cambridge: Cambridge University Press, 1986.

16 Palmer, F.R., *Mood and modality* (Second Edition), Cambridge: Cambridge University Press, 2001.

17 Jesperson Otto, *The philosophy of grammar*, London: Allen and Unwin, 1924.

18 Lyons, John, *Semantics*, Vol. 2, Cambridge: Cambridge Universtiy Press, 1978 (reprint).

19 Other categorisations have been presented, e.g. von Wright's (1951) seminal work, in which he distinguishes between alethic, epistemic, deontic, and existential moods.

20 For a discussion on the distinction between epistemic and evidential modality see, for instance, Cornillie, Bert, "Evidentiality and Epistemic Modality", *Functions of Language*, 16.1, Amsterdam: John Benjamins, 2009.

21 Hsieh Chia-Ling, "Modal verbs and modal adverbs in Chinese: An investigation into the semantic source", *UST Working Papers in Linguistics*, 1, 2005, 31-58.

22 The notions eventuality and epistemic modality are also discussed in Cornillie who quotes Nuytts (2001b:21 cf. Cornillie 2009: 46) with the following definition "The epistemic category refers to the "evaluation of the chances that a certain state of affairs under consideration (or some aspect of it) will occur, is occurring or has occurred in a possible world".

23 Leiss, Elisabeth, "Drei Spielarten der Epistemizität, drei Spielarten der Evidentialität und drei Spielarten des Wissens", in Abraham, Werner, Elisabeth Leiss, *Modalität, Epistemik und Evidentialität bei Modalverb, Adverb, Modalpartikel und Modus, Studien zur Deutschen Grammatik* 77, Tübingen: Stauffenberg, 2009,

24 Hendricks, Vincent and Symons, John, "Epistemic Logic", in: Zalta, Edward N., ed., *The Stanford Encyclopedia of Philosophy* (Spring 2009 Edition),
<http://plato.stanford.edu/archives/spr2009/entries/logic-epistemic/>.

K_cA: in all possible worlds compatible with what c knows, it is the case that A
B_cA: in all possible worlds compatible with what c believes, it is the case that A.

The epistemic proposition does not refer to facts in the real world, but to the speaker's attitude towards the facts he knows about the real world which force or allow him to know or believe that A (see also Maché 2009: 26)[25].

Syntactically, epistemic modality – when conveyed by modal verbs – is traditionally connected with raising constructions, i.e. with verbs that do not impose any selectional restrictions on their subject (Lin and Tang 1995: 72f)[26]. They take a single propositional argument "while non-epistemic modals take two arguments, an individual and a proposition, like control predicates" (Portner 2009: 143)[27]. In recent literature the raising – control distinction has been modified and some scholars have abandoned the view of a necessary correspondence of it to the epistemic and root distinction (for a discussion see Durbin 2006[28] and Maché 2009). According to Hacquard (2006)[29] epistemic modality displays the same features with regard to the subject as true deontics; both are speaker-oriented to the effect that epistemic modals do not report the subject's, but the speaker's or the believer's epistemic state, i.e. the speaker's knowledge or belief. Different categories of epistemic modal verbs according to the source of information are established in Leiss (2009: 10). Leiss argues against the frequent semantic equation of modal verbs and modal adverbials in the literature in examples such as the following:

(3a) *Er   muss   die   Klausur bestanden haben* (modal verb)
     3Sg MUST DET test   passed   have
     'He must have passed the test.'

(3b) *Er   hat die Klausur sicherlich bestanden* (modal adverb)
     3SG has DET test   certainly passed
     'He certainly passed the text.'   (Leiss 2009: 8)

She claims that the category *source* is the distinctive feature of epistemic verbs and epistemic adverbs. Epistemic marking by adverbs does not include a source of information for the epistemic evaluation of the speaker: epistemic adverbs are mono-deictic, while epistemic verbs are bi-deictic (Leiss 2009: 13) including both the speaker evaluation and the

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25 Maché, Jakob, "Das Wesen epistemischer Modalität", in Abraham, Werner, Elisabeth Leiss, *Modalität, Epistemik und Evidentialität bei Modalverb, Adverb, Modalpartikel und Modus, Studien zur Deutschen Grammatik* 77, Tübingen: Stauffenberg, 2009, 25-55.

26 Lin, Jo-Wang, Jane Tang, "Modals as Verbs in Chinese: A GB Perspective ", *The Bulletin of the Institute of History and Philology* 66, 1995, 53-105.

27 Portner, Paul, *Modality*, Oxford: Oxford University Press, 2009.

28 Durbin, John R., *Modal Verbs and Aspect: The Event Structure in Syntax*, Indiana University: PhD. Thesis, 2006. This hypothesis can be supported by the fact that root modals can have passive complements and thus cannot assign a theta role to their subject. Accordingly, some scholars gave up the distinction between raise and control in the minimalist program.

29 Hacquard, Valentine, *Aspects of Modality*, PhD thesis, Cambridge, MA: MIT, 2006).

source. In the following this claim will be checked with regard to the adverbs at issue in this discussion.

2. Epistemic adverbs in Classical and Han period Chinese

In the following the syntactic and the semantic constraints of the most representative modal adverbs which are assumed to express epistemic modality will be discussed. In a study on the position of operators in Classical (5th -3rd c. BCE (Pre-Qin)) Chinese by Wei (1999), the following adverbs are listed as modal adverbs. They are characterized by their high position in a sentence, i.e. preceding almost all other adverbial phrases, although Wei concedes differences in position among the listed adverbs. Wei (1999: 261) divides the group of modal adverbs into two different categories:

1. those expressing the realis (*biǎo shí* 表實): these are *guǒ* 果 'really', *gù* 固 'certainly', *chéng* 誠 'really, actually', *xìn* 信 'truly', and *shí* 實 'really, and
2. those referring to the irrealis (*biǎo xū* 表虛): these are *qí* 其 'probably', *jiāng* 將 'FUT', *qiě* 且 FUT', *dài* 殆 'almost', *shù* 庶 'maybe, hopefully', *shùjī* 庶幾 'probably, possibly', *yì* 意 'possibly', *yì zhě* 意者 'possibly', *huòzhě* 或者 'possibly'.

In terms of epistemic modality, adverbs of the first group are supposed to express epistemic certainty and, possibly, evidentiality; but in fact most of them rather convey evaluative modality. The adverbs of the second group seem to express epistemic possibility. Unger (1992)[30] distinguishes modal markers into a) assertory particles which cover – with the addition of *bì* 必 'certainly', and *zhēn* 真 'really' – Wei's first list of realis adverbs, and b) the particles expressing an assumption which more or less cover Wei's latter list of irrealis adverbs. Of the adverbs listed in Wei (1999) and in Unger (1992) not all qualifiy for an analysis as genuine epistemic adverbs. The adverbs *jiāng* 將 and *qiě* 且 in Wei's list of irrealis adverbs are discussed under the label of temporal particles in Unger, and they are categorized as belonging to the class of aspecto-temporal adverbs in Meisterernst (2004, 2015).[31] Accordingly both will be excluded from this study, although future and modality are often difficult to distinguish.[32] Adverbs such as *chéng* 誠 'really', *xìn* 信 'truly', and *shí* 實 'really' will also be excluded, although they certainly belong to the class of modal adverbs. These adverbs probably rather have to be analysed as evidential or evaluative adverbs than as epistemic adverbs (see Cornillie 2009: 58, Leiss 2009: 13);[33] they differ con-

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30 Unger, Ulrich, *Grammatik des Klassischen Chinesisch*, Münster: Westfälische Wilhelms University, 1987-97 (unpublished).

31 Meisterernst, Barbara, "The Future Tense in Classical and Han period Chinese", in: Takashima Ken'ichi, Shaoyu Jiang, eds., *Meaning and Form: Essays in Pre-Modern Chinese Grammar*, München: Lincom 2004, Meisterernst, Barbara, *Tense and Aspect in Han Period Chinese: A linguistic study of the Shǐjì.* Trends in Modern Linguistics Series 274. Berlin: DeGruyter, 2015.

32 Qiě 且 starts to function as a modal adverb from the Han period on and it is only this modal function that prevails after the Han period. However, as a modal adverb, it expresses deontic values and accordingly it is not at issue in this paper.

33 Cornillie (2009, p. 58) "Finally, focusing on the status of the evidence can also help differentiate be-

siderably from modal adverbs such as *qí* 其, and apparently do not belong to the class of epistemic markers in a strict sense. As one example of this class of realis adverbs, only the adverb *guǒ* 果 will be discussed. In contrast to utterances with epistemic modal verbs, those with modal adverbs cannot include both the speaker evaluation and the source, but they can shift from the speaker evaluation to the source of evidence (Leiss 2009: 13). This explains the assumed multifunctionaliy of some adverbs as either epistemic or evidential.

   The following study will be confined to an overview of the adverbs *gù* 固 and *guǒ* 果 of the first group and the adverbs *qí* 其, *dài* 殆, *wúnǎi* 無乃, *huòzhě* 或者 and *gài* 蓋 of the latter group. Whereas the first two adverbs serve to express certainty, the adverbs of the latter group all express probability and possibility.[34] The adverb *shùjī* 庶幾 will not be included in this study, since it predominantly appears in root modal, i.e. in bouletic readings, and the epistemic adverb *bì* 必 is subject of a separate study (Meisterernst 2013) and will thus also be excluded here.

   Syntactically the adverbs at issue in this study belong to what Tenny (2000: 318)[35] labels – on the basis of Cinque (1999) – the semantic zones of 'point of view' adverbs and 'truth value' adverbs.[36] By introducing the term 'semantic zone' she avoids the great number of different functional projections proposed in Cinque (1999). These adverbs evidently take an entire proposition as their argument. This is according to Maché (2009: 25) a distinctive feature of expressions of epistemic modality which always function on the level of the proposition and do not display any constraints with regard to the situation type of the VP they combine with; in this regard they differ from non-epistemic modals which always select a VP with a situational argument.

2.1 Epistemic certainty

Epistemic certainty entails that the speaker is entirely committed to the truth of the uttered proposition:

   K_cA: in all possible worlds compatible with what c knows, it is the case that A

It is expressed by the adverb *gù* 固 'certainly'.[37] The adverb *guǒ* 果 also discussed in this section evidently differs semantically from the adverb *gù* 固.

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    tween evidentiality and epistemic modality: if the evidence for the qualification can be shifted from the speaker to another source and vice versa, an expression is evidential."

34 Occasionally, a functional overlap between the two different groups and with deontic or root meanings occurs.

35 Tenny, Carol, "Core events and adverbial modification", in: Tenny, Carol, James Pustejovsky, eds., *Events as Grammatical Objects*, Stanford: Center for the Study of Language and Information, 2000, 285-334.

36 According to Cinque, these two categories are separated by the functional projection of 'tense', i.e. the point of view adverbs appear hierarchically above and the truth value adverbs appear below the projection of 'tense'.

37 It is also expressed by the adverb *bì* 必 'certainly', not included in Wei's (1999) list and not discussed here.

2.1.1 The adverb gù 固

Besides its function as an adverb *gù* 固 is attested as a state verb 'solid, firm' and as a noun 'firmness'. As an adverb it can function as a modal adverb or a manner adverb according to its position. As a manner adverb it is confined to the immediate preverbal position. In the *Shuōwén jiězì* it is glossed as *sì sài* 'four frontiers' (*Gǔdài Hànyǔ xūcí cídiǎn* 2000:180)[38]. As a modal adverb it confirms the real nature of a situation or it conveys epistemic necessity. According to Unger (1992:33) *gù* 固 conveys the truth of, or the assent to an utterance presupposed by the speaker. It can modify nominal and verbal predicates. It has to be distinguished from a manner adverb 'firmly' represented by examples (4a) and (4b) from the Late Archaic literature. In example (4a), the sentence is modally marked by the epistemic adverb *bì* 必 preceding the manner adverb. In example (4b) an epistemic verb is modified by *gù* 固. In this example it also clearly functions as a manner adverb, the speaker does not convey his commitment to the truth of what he is relating, but the strength of his belief.

(4a) 以合伐之，趙必固守。   (*Zhànguó cè* 33.10.16)
Yǐ   hé   fá   zhī, Zhào bì   gù   shòu
With alliance attack OBJ, Zhao certainly firm defend
'If we attack it according to the alliance, Zhao will certainly defend itself firmly.'

(4b) 吾固以為天下莫若是兩人也。」   (*Zhànguó cè* 16.4.6)
Wú gù   yǐwéi tiānxià   mò   ruò   shì liǎng rén yě
I   GU think heaven.below no.one be.like this two man SFP
'I firmly think that no one in the empire is similar to these two men.'

In the following examples, *gù* 固 evidently appears as an epistemic adverb, expressing certainty, i.e. the speaker's full commitment to the truth of the utterance. Although past (and present) tense contexts are typical for the epistemic evaluation, *gù* 固 appears in a future context followed by the aspecto-temporal adverb *jiāng* 將 indicating future tense in example (5),[39] the context of the evaluation of the speaker is revealed in the first clause. Future contexts are generally connected to the deontic readings of modals. Epistemic readings in future contexts demonstrate that epistemicity does not necessarily have to be connected to the truth value or factuality of a proposition; it is the commitment of the speaker to what he assumes to be true in the real or in a future world that determines the epistemic expressions. In example (6) *gù* 固 modifies the volitional verb *yù* 欲 as its complement in a typical past tense context.

(5) 辭曰：「楚遠而久，固將退矣。   (*Zuǒzhuàn, Chéng* 2)
Cí   yuē Chǔ yuǎn   ér   jiǔ, gù jiāng tuì   yǐ
Apologize say: Chu far.away CON long, GU FUT withdraw SFP

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38 *Gudai Hanyu xuci cidian* 古代漢語虛詞詞典 (GDHYXCCD), Beijing: Shangwu yinshuguan, (1999) 2000.

39 Although this adverb evidently expresses future tense, it cannot be generated in a tense projection according to Chinque (1999) which is assumed to follow the point of view adverbs, but precede the truth value adverbs according to Tenny (2000: 318). See also Meisterernst (2015).

'He apologized and said: "Chu has come far and is long [on the way], it will certainly withdraw."'

(6) 豎牛曰：「夫子固欲去之。」 (*Zuǒzhuàn, Zhāo* 4)
Shù Niú yuē: fūzǐ gù yù qù zhī
Attendant Niu say, master GU wish remove OBJ
'And attendant Niu said: "The master certainly wished to remove it."'

The following examples are from Han period texts. In example (7) *gù* 固 modifies a nominal predicate, negated by the negative copula *fēi* 非 'is not'. Nominal predicates are tense-neutral categorical expressions.

(7) 今陛下創大業，建萬世之功，固非愚儒所知。 (*Shǐjì*: 6,254)
Jīn bìxià chuàng dà yè, jiàn wàn shì zhī gōng,
Now sir begin great enterprise, establish ten.thousand generation SUB merit,
gù fēi yú rú suǒ zhī
GU NEG~cop~ stupid Confucian REL know
'Now has Your Highness started a great enterprise and established merit for ten thousand generations, this is certainly not anything stupid Confucians can understand.'

In all preceding examples, the speaker and the subject of the proposition evaluated by the speaker are not identical. This seems to be the most typical case for the epistemic evaluation with *gù* 固. In example (8) the speaker, though not being the grammatical subject, evaluates his own situation according to the reasoning in the preceding narrative.

(8) 是寡人命固盡也，子毋復言！」 (*Lùnhéng* 17.1.30)
Shì guǎ rén mìng gù jǐn yě, zǐ wú fù yán
This.is lonely man life GU exhaust SFP, you NEG~mod~ again speak
'This means that my lifetime is certainly exhausted; please don't speak [of it] again!'

In example (9) the subject and the speaker are identical. It differs from the other examples in two ways: 1) the speaker evaluates the truth of his own utterance; 2) the utterance refers to a perfective and factitive situation, marked by the perfective adverb *yǐ* 已, which does not require a modal evaluation. In evaluating the factitive situation, the speaker conveys a distance to his own utterance.[40]

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40 This seems frequently to be the case in perfective predicates marked by the aspectual adverb *yǐ* 已. The aspectual adverb *jì* 既 does not seem to be attested in this function.
   (i) 齊王固已怒矣 Lǚshì chūnqiū 11,2.3
       Qí wáng gù yǐ nù yǐ
       Qi king certainly already angry FIN
       'The king of Qi was certainly already angry.'

(9) 代王曰：「寡人固已為王矣，又何王？」   (*Shǐjì*: 10, 414)
    Dài wáng yuē: guǎ rén gù yǐ wéi wáng yǐ, yòu hé wàng
    Dai king   say: lonely man GU already be   king SFP, again how become.king?
    'King Dai said: "I have (certainly) already become a king, how can I become a king
    again?"'

Gù 固 is attested with most of the aspecto-temporal adverbs of Classical and Han period
Chinese in particular with *jiāng/qiě* 且/將, *yǐ* 已, and *cháng* 嘗,[41] and the adverbs express-
ing habituality, such as *cháng* 常, *wèi cháng* 未嘗 etc.; its employment is evidently inde-
pendent of tense and aspect. It always precedes the aspecto-temporal adverbs. In examples
(9) and (10), *gù* 固 is followed by the aspecto-temporal adverb *yǐ* 已 referring to the com-
pletive and the resultative. This adverb by default selects an event verb or a verb which can
add an event argument as its complement. In example (11) the temporal adverb *qiě* 且 re-
ferring to the future follows *gù* 固.

(10) 自獻公為太子時，重耳固已成人矣。   (*Shǐjì*: 39, 1656)
     Zì   Xiàn gōng wéi   tàizǐ shí, Chóng'ěr gù yǐ chéng rén yǐ
     From Xian duke become heir time, Chong'er GU PFV complete man SFP
     'At the time when duke Xian became heir, Chong'er had (certainly) already grown
     up.'

(11) 微君之疾，群臣固且請立趙後。   (*Shǐjì*: 43,1784)
     Wéi   jūn zhī jí, qún chén gù qiě qǐng lì   Zhào hòu
     Where.it.not.for ruler SUB ill, all minister GU FUT ask etablish Zhao offspring
     'But for your illness, all ministers will certainly ask you to enthrone the offspring of
     Zhao.'

The following examples (12) and (13) contain aspecto-temporal adverbs expressing habitu-
ality; example (12) is marked by *wèi cháng* 未嘗, expressing negative habituality in the
past 'never', example (13) contains the adverb *cháng* 常 'usually, always' selecting a nom-
inal predicate. Both predicates are concluded by the stative SFP *yě* 也.

(12) 問其妻，對曰：「長卿固未嘗有書也。   (*Shǐjì*: 117,3063)
     Wèn qí qī, duì   yuē: Zhǎngqīng gù wèi   cháng yǒu shū   yě
     Ask his wife, answer say: Zhangqing GU NEG$_{asp}$ PST   have writing SFP
     'He asked his wife and she answered: "Zhangqing certainly never had any writings
     [here]."'

(13) 名生於高官，而毀起於卑位。卑位，固常[42]賢儒之所在也。 (*Lùnhéng* 40.3.45)
     Méng shēng yú   gāo guān, ér   huǐ qǐ yú bēi wèi. Bēi wèi
     Name result PREP high position, CON disdain rise PREP low position. Low position

41 This combination is not attested in the *Shǐjì*.
42 The Academia Sinica datanase has the variant cháng 嘗.

gù cháng xián rú   zhī suǒ zài yě
GU always able scholar SUB REL be.at SFP
'Fame results from a high position and disdain raises from low positions. A low
position is where able scholars are always in.'

As can be expected, phrases with *yǐ* 以 and *yǔ* 與 follow the modal adverb *gù* 固. In example (14) with the aspecto-temporal adverb *qiě* 且 the YI-phrase follows both the modal and the aspecto-temporal adverb. These phrases[43] are licensed in a position below aspecto-temporal adverbs; they belong to the few syntactic elements that are licensed in the position between aspecto-temporal adverbs and verbs.[44] In example (14) again, the speaker and the subject of the proposition are identical.

(14) 「臣之來也，固不敢言人事也，固且以鬼事見君。」 (*Zhànguó cè*: 10.3.1)
    Chén zhī lái   yě,   gù bù   gǎn yán rén shì   yě,
    Subject SUB come SFP, GU NEG dare talk man affair SFP,
    gù qiě yǐ guǐ   shì   jiàn jūn
    GU FUT YI spirit affair see prince
    'With regard to my coming, I will certainly not dare to talk about human affairs, but I
     will certainly visit you because of the matter of spirits.'

In all examples *gù* 固 expresses a direct evaluation of the truth value of the proposition by the speaker, mostly in speech parts. Although this evaluation is frequently based on an explicit reasoning, no source of the evaluation is involved; *gù* 固 evidently expresses epistemic modality. It is neither confined with regard to the tense nor to the grammatical or lexical aspect of the predicate it selects; both telic (event) and atelic predicates can be in the scope of *gù* 固. Accordingly both the dynamic, change of state SFP *yǐ* 矣 usually corresponding to the perfective aspect (ex. (9), (10)), and the stative SFP *yě* 也, typical for the imperfective aspect (ex. (12), (13)) can conclude an epistemic evaluation by *gù* 固. It always appears in a position above aspecto-temporal adverbs. This distribution demonstrates that the interrelation between modality and aspect as it has been established e.g. in Abraham and Leiss (2008)[45] for modal verbs, i.e. that "embedded infinitival perfectivity implies root modal readings, whereas embedded infinitival imperfectivity (and sentence negation) triggers epistemic readings" ((Abraham and Leiss 2008: XIII) cannot be directly applied to

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43 The exact function of YI which is frequently labelled preposition is under debate. For a discussion of the function of yǐ 以 see Aldridge, Edith, "PPs and Applicatives in Late Archaic Chinese", *Studies in Chinese Linguistics*, 33.3, 2012, 139-164.

44 The following is one of the very infrequent examples with a YU-phrase preceding the adverb *qiě* 且. According to the position of *qiě* 且 in this example it cannot be excluded that it in fact functions as a deontic adverb.
(i) 寡人固與韓且絕矣。 *Shǐjì*: 69,2275
Guǎ rén gù yǔ Hán qiě jué   yǐ
Lonely man GU with Han FUT break.up SFP
'I am certainly about to / should break up relations with Han.'

45 Abraham, Werner and Leiss, Elisabeth, *Modality-aspect interfaces: implications and typological solutions*. Amsterdam ; Philadelphia : John Benjamins Pub. Co., 2008.

Chinese. But in this context it has to be conceded that epistemic modality in Late Archaic and Han period Chinese is expressed by modal adverbs and apparently not by modal auxiliary verbs.[46] These adverbs evidently occupy a position different from that of the modal auxiliary verbs which are assumed to be located in a lower position, probably within *v*P; accordingly their syntactic constraints differ from that of modal adverbs (Meisterernst 2012[47], Durbin 2006). In any case, it rather confirms Maché's claim (Maché 2009: 25) that epistemic modality is not subject to selectional restrictions, i.e. that it can also select perfective aspect.

2.1.2 The adverb *guǒ* 果 'really'

Guǒ 果 'really' is another adverb expressing the realis or assertion (Unger 1992, Wei 1999). It is less frequent than *gù* 固, and although it behaves syntactically similar to the latter, it is more confined in its range of employment, in particular with regard to other adverbial markers. *Guǒ* 果 is frequently employed to confirm facts according to arguments previously related by the speaker (see also GDHYXCCD), and not to convey the speaker's knowledge or belief. Following Hsieh (2005: 50) it rather conveys evaluative modality which can express "the opinion or attitude towards a proposition with reference to the speaker's presuppositions, including those conforming to his/her presuppositions."[48] Semantically, *guǒ* 果 is apparently closer to adverbs such as *shí* 實 'really', or *xìn* 信 'truly'. In the *Shuōwén jiězì* it is glossed by *mù shí* 木實 'fruit of a tree'. However, its function as an adverb is assumed to be borrowed and not to be directly related to the nominal function (cf. GDHYXCCD 2000: 189); it can be translated by *guǒrán* 果然 or *guǒzhēn* 果真 'really, as expected'. Occasionally, it also expresses epistemic necessity. Negative markers can precede or follow the adverb *guǒ* 果 involving a different scope of the negation. Genuine modal adverbs in general precede negative markers, since they have scope over the entire proposition, and accordingly an analysis of *guǒ* 果 as a manner adverb when following a negative marker might be more conclusive. *Guǒ* 果 generally selects a complement in the perfective aspect and appears only occasionally in future contexts (Unger 1992: 38). Contrastively to *gù* 固 which evidently conveys the speaker's commitment to the truth of the utterance, it rather reports the expected realisation of a situation according to known facts. In this function it is attested in the Classical and the Han period literature.

(15) 晉侯在外，十九年矣，而果得晉國。   (*Zuǒzhuàn, Xī* 28)
    Jìn hóu   zài wài,   shí jiǔ nián yǐ, ér   guǒ dé Jìn guó
    Jin marquis be.at abroad, ten nine year SFP, CON GUO get Jin state
    'The marquis of Jin had been abroad for nineteen years, and has indeed gained the
    state of Jin.'

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46 The few studies on modality in Pre-Tang Chinese suggest that a grammaticalization from deontic to epistemic modality with regard to modal auxiliary verbs is difficult to claim for that period.

47 Meisterernst, Barbara, "Root possibility and ability in Pre-Tang Chinese: Syntax and Semantics", paper presented at Tsing-Hua University, Taiwan, October 2012, ms.)

48 Hsieh lists the modern equivalent of *guǒ* 果, *guǒrán* 果然 'really, just as expected' as an example.

In example (16), a question refers to communicated facts; the modal adverb *qí* 其 precedes *guǒ* 果. In example (17) the modal adverb *yì* 亦 follows *guǒ* 果. In a sequence of adverbs, *qí* 其 usually appears in the highest position.

(16) 「延州來季子其果立乎？   (*Zuǒzhuàn*, *Xī* 31)
    Yán Zhōulái Jì zǐ qí   guǒ lì   hū
    Yan Zhoulai Ji zi MOD GUO establish SFP
    'Has Ji zi from Yan Zhoulai really been established?'

(17) 秦拔宜陽，景翠果進兵。秦懼，遽效煮棗‧韓氏果亦效重寶。(*Zhànguó cè* 1.2.6)
    Qín bá   Yíyáng, Jìng Cuì guǒ jìn   bīng . Qín jù, jù   xiào
    Qin conquer Yiyang, Jing Cui GUO advance army. Qin afraid, quickly hand.over
    Zhúzǎo, Hán shì   guǒ yì xiào   zhòng   bǎo
    Zhuzao, Han family GUO YI hand.over important precious
    'Qin conquered Yiyang and Jing Cui (indeed) advanced his troops. Qin was afraid and quickly handed over Zhuzao and the Han family also (indeed) handed over precious gifts.'

(18) 楚王聽之，宜陽果拔。   (*Zhànguó cè* 16.9.3)
    Chǔ wáng tīng   zhī, Yíyáng guǒ   bá
    Chu king listen OBJ, Yiyang GUO conquer
    'The king of Chu listened to him, and Yiyang was indeed conquered.'

In example (19) and (20), an aspecto-temporal adverb follows *guǒ* 果 which evidently qualifies *guǒ* 果 syntactically as a propositional adverb. In example (19) it is the future marker *qiě* 且, and in example (20) it is the iterative Aktionsart adverb *shuò* 數 'repeatedly'.

(19) 果且有彼是乎哉？果且无彼是乎哉？   (*Zhuāng zǐ* 2.3.8)
    Guǒ qiě   yǒu bǐ   shì hū zāi? Guǒ qiě wú   bǐ shì hū zāi
    GUO FUT have that this SFP SFP? GUO FUT not.have that this SFP SFP
    'Will he indeed have a 'that' and a 'this, or won't he indeed have a 'that' and a 'this'?'

(20) 漢果數挑楚軍戰，楚軍不出。   (*Shǐjì* 7,330)
    Hàn guǒ shuò   tiǎo   Chǔ jūn zhàn, Chǔ jūn bù chū
    Han GUO repeatedly provoke Chu army fight, Chu army NEG go.out
    'Han indeed repeatedly provoked the Chu army to fight, but the Chu army did not come out.'

Most examples, with the exeption of example (19), indeed refer to a perfective situation; all verbs are typical telic achievement verbs. Example (19) contains the verb *yǒu* 有 which can be both telic and atelic. Functionally, the adverb *guǒ* 果 evidently differs from the real epistemic adverb *gù* 固. Contrary to *gù* 固 which is not confined in the selection of the type of situation *guǒ* 果 typically selects perfective situations. Additionally, it does not convey

the commitment of the speaker to the truth of his utterance, but rather confirms facts; accordingly its value is rather factitive than epistemic. Whereas modal *gù* 固 most typically appears in speech parts – the speaker who conveys his commitment to the utterance is actually present in the dialogue –, this is most frequently not the case with the adverb *guǒ* 果. Although *guǒ* 果 is also attested in dialogues, it rather occurs in narrative passages; the speaker who confirms the actual occurrence of the presupposed situation is not necessarily individualised. One of the infrequent instances in which *guǒ* 果 possibly expresses epistemic necessity is the following example; this is also one of the few cases in which the speaker and the subject of the proposition, here the subject of the second clause, are identical. The predicate is stative marked by the stative SFP *yě* 也.

(21) 若果是也，我果非耶?   (*Zhuāng zǐ* 2.6.17)
    Ruò guǒ shì yě, wǒ guǒ fēi   yé?
    You really right SFP, I   really wrong SFP
    '… are you then necessarily right and am I then necessarily wrong?'

In general, the speaker who conveys the evaluation and the subject of the proposition are not identical.

2.2 Epistemic probability and possibility
Epistemic probablility and possibility entail a reduced commitment of the speaker to the truth of the utterance; his attitude towards the facts of the real world is rather one of believing than of knowing.

B_cA: in all possible worlds compatible with what c believes, it is the case that A.

A number of adverbial phrases expressing probability and possibility exist; the most prominent is the adverb *qí* 其

2.2.1 The adverb *qí* 其
In Classical Chinese, the most prominent adverb expressing future probability or possibility is the adverb *qí* 其. According to Djamouri (2001: 150)[49] in the oracle bone inscriptions *qí* 其 in preverbal position is analysed as a modal auxiliary (together with *wéi* 唯, and *huì* 惠); additionally he states that it can be employed as a copula and a marker of focalization. In all cases *qí* 其 serves as a future marker (ibidem: 144).[50] Pulleyblank (1995: 123)[51] analyses *qí* 其 as a modal particle qualifying "a statement as possible or probable rather than a matter of known fact." But it also appears in imperative sentences, in a deontic modal function expressing hortatory modality or a mild advice (ibidem).[52] In most cases, however, *qí* 其

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49 Djamouri Redouane, "Particules de négation dans les inscriptions sur bronze de la dynastie des Zhou", *Cahiers de Linguistique – Asie Orientale,* 20(1), 1991, 5-76.
50 See also *Gǔdài Hànyǔ xūcí cídiǎn* (2000: 407) for its qualification as a future marker.
51 Pulleyblank, Edwin G., *Outline of Classical Chinese Grammar*, Vancouver: UBC Press, 1995.
52 The hortative meaning, described as indicating a wish, is also one of the several modal functions listed

rather expresses epistemic meanings. As a modal adverb, it appears quite high in the adverbial hierarchy (see Wei 1999: 261f), it is even occasionally attested in sentence-initial position. According to Wei (1999: 261) *qí* 其 predomionantly expresses the 'irrealis' either in hortative sentences, or in assumptions, i.e. in expressions relating a reduced degree of certainty. It prevails longest in its hortative, deontic function (Wei 1999: 262, Unger 1992: 60). Frequently, sentences with *qí* 其 contain a sentence final particle, predominantly a particle expressing force or attitude such as *hū* 乎. It evidently serves to express the speaker's commitment to the truth of the utterance: the speaker conveys either a reduced degree of confidence, i.e. the assertion that what he relates will probably be true, or he conveys certainty on his side in a humble way. It frequently, but not exclusively refers to future contexts. In examples (22) and (23) the SFP *hū* 乎 concludes the sentence. Although most of the examples presented here have an atelic predicate, *qí* 其 is not confined to them, but also modifies event predicates.

(22) 曹夫子其有憂乎   (*Zuǒzhuàn, Huán* 9)
　　 Cáo fūzǐ　qí　yǒu　yōu　hū
　　 Cao prince QI have worry SFP
　　 'The prince of Cao supposedly has some worries!?'

Negative markers as a rule follow *qí* 其, the only exception are negated rhetorical questions. In example (23) a circumstantial interpretation cannot be excluded; the verb is a typical event verb.

(23) 人有此三行，雖有大過，天其不(遂)[墮]乎   (*Xún* 6/2/44)
　　 Rén yǒu cǐ sān xìng,　suī　yǒu dà　guò,　tiān　qí bù　(suì)
　　 Man have this three conduct, although have great mistake, heaven QI NEG (follow)
　　 [duò]　hū
　　 discard SFP
　　 'If someone has these three conducts, even if he commits a great mistake, Heaven will not discard him!'

In example (24), it is the SFP *yǐ* 矣 which corresponds to *qí* 其. This SFP expresses neither force nor attitude and is traditionally labelled as an aspectual particle expressing a change of state (Pulleyblank 1995). The example refers to a past tense context. In example (25) this SFP is combined with the SFP *hū* 乎 conveying either force or attitude.

(24) 先君其知之矣   (*Zuǒzhuàn, Zhuāng* 4)
　　 Xiān jūn qí zhī　zhī yǐ
　　 Early ruler QI know OBJ SFP
　　 'The earlier rulers presumably knew about it.'

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for adverbial *qí* 其 in the *Gǔdài Hànyǔ xūcí cídiǎn* (2000: 407).

(25) 中庸之為德也其至矣乎   (*Lúnyǔ* 6,29)
  Zhōng yōng zhī wéi dé   yě qí zhì yǐ   hū
  Middle usual SUB be virtue SFP QI most SFP SFP
  'Supreme indeed is the Mean as a moral virtue.' (tr. Lau 1992: 53)[53]

In the Han period literature, the epistemic function of *qí* 其 is only infrequently attested, and it apparently ceases to be productive after the Han period, e.g. in the early Buddhist literature. In the following example, the modal predicate is concluded by the quotative SFP *yún* 云.

(26) 「陛下建漢家封禪，天其報德星云。」   (*Shǐjì*:12, 477)
  Bìxià jiàn   Hàn jiā fēng shàn, tiān   qí bào dé   xīng yún
  Sir   establish Han house Feng Shan, Heaven QI repay virtue star SFP
  'Your Highness has established the Feng and the Shan sacrifices for the House of Han;
  Heaven presumably repays it with the 'Virtue Star'.

Example (27) includes the modal verb *kě* 可 in the negative which by default expresses root modal values. Two modal adverbs modify the modal verb: the modal adverb *yìzhě* 意者 followed by *qí* 其; both have a similar function as an epistemic marker indicating probability.

(27) 仁者不以德來，彊者不以力并，意者其殆不可乎！   (*Shǐjì*: 117, 3049)
  Rén zhě bù yǐ dé lái, qiáng zhě bù yǐ lì   bìng,
  Human NOM NEG with virtue come, strong NOM NEG with strength annex,
  yìzhě qí dài   bù kě   hū
  YIZHE QI dangerous NEG possible SFP
  'Those who are human would not be invited by our virtue, those that are strong would
  not be annexed by our strength; presumably this might be dangerous; it is impossible!'

In all examples the speaker conveys his belief in and his evaluation of the truth of the utterance, frequently in speech parts. Identically to *gù* 固, no source of information is involved. The speaker and the subject of the proposition are predominantly not identical.

2.2.2 The adverb dài 殆

Dài 殆 first appears as a noun with the meaning 'danger', and as a verb 'uncertain, dangerous, dubious' (see ex. (27)). Already in Classical Chinese it is attested as an epistemic modal adverb, indicating probability 'probably, presumably', and uncertainty (see Unger 1992: 53). Identically to the modal adverbs discussed above, *dài* 殆 also selects verbal and nominal predicates. According to Unger and to the early instances of modal *dài* 殆, it sometimes seems to include an apprehensive meaning besides the purely epistemic meaning. As the other modal adverbs it by default precedes aspecto-temporal adverbs and negative markers. Similarly to *qí* 其, expressions with *dài* 殆 are frequently concluded by a sen-

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53 Lau, E.C., *Confucius, The Analects*, Hong Kong: The Chinese University Press, [1]1979, 1992.

tence-final particle. Although SFPs in modal expressions with *dài* 殆 include force and attitude SFPs, it is more frequently attested with the SFPs *yě* 也, indicating stativity, and *yǐ* 矣, indicating a change of state. Consequently, sentences with *dài* 殆 seem to be more assertive than those with *qí* 其. Example (28) represents the default case of *dài* 殆; the speaker conveys his belief with regard to the utterance. The verb modified by *dài* 殆 is the modal verb *néng* 能 expressing participant internal (dynamic) possibility. In example (29), *dài* 殆 precedes the aspecto-temporal adverb *jiāng* 將 indicating future tense.

(28) 「寡人聞韓侈巧士也，習諸侯事，殆能自免也。   (*Zhànguó cè* 16.9.3)
    Guǎ   rén wén Hán Chǐ qiǎo shì   yě, xí   zhūhóu   shì,
    Lonely man hear Han Chi skilled gentleman SFP, experience feudal.lord affair,
    dài néng zì   miǎn yě
    DAI can self escape SFP
    'I have heard that Han Chi is a skilled gentleman and well experienced in the affairs of the feudal lords, he is probably able to escape by himself.'

(29) 夫子殆將病也！」   (*Lǐjì* 3.2/29)
    Fūzǐ   dài jiāng bìng yě
    Master DAI FUT   ill   SFP
    'The master will probably become ill.'

In example (30), the modal adverb *dài* 殆 is followed by the epistemic adverb *bì* 必 expressing certainty. According to the *Gǔdài Hàyù xūcí cídiǎn* (2000:80) *dài bì* 殆必 constitutes a complex adverb indicating the certainty of a change of state, a future certainty.

(30) 甯子可謂不恤其後矣。將可乎哉？殆必不可。   (*Zuōzhuàn, Xiāng* 25)
    Nìng zǐ kě wèi bù   xuè qí hòu   yǐ. Jiāng kě hū zāi? Dài bì bù   kě
    Ning zi can call NEG care his behind SFP. FUT can SFP SFP? DAI BI NEG can
    'About Ning zi can be said that he does not care for what is coming after him. Will it be possible [then]? It will certainly be impossible!'

In examples (31) and (32) from the Han period literature the predicate is a nominal phrase. The examples express typical epistemic probability; the speaker conveys different degrees of commitment to the truth of his utterance. In example (31), the speaker is nearly convinced of the truth of the proposition, whereas in example (32) – a typical example for the *Lùnhéng* – the speaker rather conveys scepticism. In example (33) the subject of the predicate is a 1st person subject, i.e. the speaker and the subject of the proposition are identical. In this example the original apprehensive meaning of *dài* 殆 is still present. The examples refer to the past (ex. (31)) and the present tense (ex. (32), (33)) respectively, both typical for epistemic evaluation. All predicates are stative, i.e. imperfective.

(31) 「吾嘗見一子於路，殆君之子也。」   (*Shǐjì*: 43,1789)
    Wú cháng jiàn yī zǐ   yú lù,   dài jūn   zhī zǐ yě
    I   PAST see one child at street, DAI prince SUB son SFP

'I once saw a child on the street; he was probably your son.'

(32) 世以為然，殆虛言也。   (*Lùnhéng* 16.3.23)
    Shì   yǐwéi rán,   dài xū   yán yě
    World think correct, DAI empty word SFP
    'The world thinks it is correct, but it is probably just empty talk.'

(33) 「張儀，天下賢士，吾殆弗如也。   (*Shǐjì*: 70,2280)
    Zhāng Yí, tiānxià xián shì,   wú dài fú rú   yě
    Zhang Yi, empire worthy gentleman, I   DAI NEG be.like SFP
    'Zhang Yi is one of the worthiest gentlemen in the empire; I probably do not equal
    him.'

In example (34) *dài* 殆 precedes the modal negative marker *wú* 無 expressing deontic mo-
dality in the strict sense, i.e. conveying a command. Accordingly, the utterance includes
both epistemic and deontic modality; as has to be expected the epistemic marker precedes
the deontic marker. The speaker conveys his belief directly to the addressee, the subject of
the deontic proposition.

(34) 王既定負遺俗之慮，殆無顧天下之議矣。   (*Shǐjì* 43, 1807)
    Wáng jì   ding   fù yí   sú   zhī lǜ,   dài
    King PFV establish bear hand.down custom SUB consideration, DAI
    wú   gù   tiānxià zhī yì   yǐ
    NEG_mod worry empire SUB criticism SFP
     'Since Your Majesty already decided to turn your back on the considerations of tradi-
    tional customs, you probably should not worry about the criticism of the empire.'[54]

In the following example, a YU-phrase appears between *dài* 殆 and the verb. In this exam-
ple *dài* 殆 is employed to express the speaker's certainty in a reserved way.

(35) 申屠嘉可謂剛毅守節矣，然無術學，殆與蕭、曹、陳平異矣。 (*Shǐjì* 96, 2685)
    Shēntú Jiā kě wèi gāngyì shǒu jié   yǐ, rán wú   shù xué,
    Shentu Jia can call resolute keep right.measure SFP, but not.have art learn,
    dài yǔ Xiāo, Cáo, Chén Píng yì   yǐ
    DAI with Xiao, Cao, Chen Ping different SFP
    '… and Shentu Jia can be called resolute and principled, but they do not have arts or
    learning, they (presumably) differ from Xiao, Cao, and Chen Ping.'

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54 The same instance is attested in *Zhànguó cè* 19.4.4 with the negative marker *wú* 毋 which is supposed to
   be originally a marker of epistemic modality in Djamouri (1991). However, Crump in his translation in-
   terprets the negative marker as a deontic marker according to his translation: "Having decided to turn
   your back on the thinking of common men you must also be indifferent to their comments (cf. TLS, ac-
   cessed 23.08.2011).

Although syntactically *dài* 殆 displays a great similarity with the epistemic adverb *gù* 固, it seems to be more confined with regard to the aspect of the verb it selects. Whereas both imperfective and perfective predicates are regularly selected by *gù* 固, *dài* 殆 seems to be more confined to imperfective, i.e. stative predicates. Similarly to *gù* 固, it is predominantly attested in speech parts, i.e. the speaker who conveys his commitment to the utterance is present in the dialogue. Although occasionally the speaker and the subject of the proposition are identical, most of the time they are different.

2.2.3 The adverb wúnǎi 無/毋乃

According to the *Gǔdài Hànyǔ xūcí cídiǎn* (2000:617) *wúnǎi* 無乃 is the combination of two adverbs; the modal negative marker *wú* 無 expressing a guess and the connecting adverb *nǎi* 乃 (see also Pulleyblank 1995: 144). It is already attested in the Classical Literature and prevails in the *wényán* literature. The two adverbs together express a guess or an assumption. In combination with the sentence-final particle *hū* 乎, or other SFP of similar meaning, it expresses a rhetorical question. Pragmatically, these rhetorical questions usually serve to express a surmise, an assumption, i.e. they convey the humble, but decisive opinion of the speaker (Unger 1992:54). *Wúnǎi* 無乃 is much more constrained in the selection of its complement than e.g. *gù* 固 and *dài* 殆; it usually does not select aspectually marked predicates, most of the predicates are atelic, i.e. imperfective.[55] Frequently the following VP is negated. The speaker who conveys his commitment to the truth of his utterance and the subject of the preposition are usually not identical. The adverb is regularly attested in the *Zuǒzhuàn*, and in particular in the following phrase.

(36) 「君以禮與信屬諸侯，而以姦終之，無乃不可乎？   (*Zuǒzhuàn, Xī* 7)
 Jūn yǐ lǐ yǔ xìn   zhǔ zhūhóu, ér yǐ jiān
 Prince with rites and trustworthyness attach feudal.lord, CON with treason
 zhōng zhī, wúnǎi bù kě   hū
 finish OBJ, WUNAI NEG possible SFP
 'You have attached the feudal lords by means of proper behaviour and trustworthiness,
  and if you now finish it with treason, wouldn't that be impossible (= that would be
 impossible).'

(37) 今君德無乃猶有所闕，而以伐人，若之何？   (*Zuǒzhuàn, Xī* 19)
 Jīn jūn   dé   wúnǎi yóu yǒu suǒ quē, ér yǐ fá   rén, ruò
 Now prince virtue WUNAI still have REL defect, CON so attach man, be.like
 zhī hé?
 OBJ what
 'Now the prince's virtue presumably still has some defects, how could he in this way
 attack others.'

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55 According to the TSL (accessed 31.08.2011) there is one instance of *wúnǎi* 毋乃 followed by the aspectual negative marker *wèi* 未 'not yet'.

Although *wúnǎi* 無乃 is still attested in the *wényán* literature, it is quite rare in the *Shǐjì*, the *Hànshū*, and the *Lùnhéng*. The following example is a quotation from the Classical text *Guóyǔ*.[56] The speaker conveys his assumption by way of a polite rhetorical question.

(38) 天子曰『予必以不享征之，且觀之兵』，無乃廢先王之訓，而王幾頓乎？

                                                                    (*Shǐjì*: 4,136)

Tiān   zǐ   yuē yú bì yǐ   bù   xiǎng zhēng   zhī, qiě
Heaven son say I BI with NEG *xiang* make.expedition.against OBJ, furthermore
guàn zhī bīng,   wúnǎi fèi   xiān   wáng zhī xùn,   ér   wàng
see OBJ weapon,   WUNAI abandon previous king SUB precept, CON kingdom
jī   dùn hū
nearly crash SFP

'If the Son of Heaven said: "Because they did not perform the *xiang* sacrifice, I must go on an expedition against them and also show them the weapons, would this not mean to abandon the precepts of the former kings and to bring the kingdom near to destruction?' >> This would probably mean …

This is one of altogether five instances in the *Shǐjì,* two in the variant *wú* 無乃, and two in the variant 毋乃),[57] four instances are attested in the *Lùnhéng* (of these three in the variant *wúnǎi* 毋乃, and eight in the *Hànshū* (four with *wú* 無 and four with *wú* 毋).[58]

(39) 以水為害而攻土，土勝水，攻社之義，毋乃如今世工匠之用椎鑿也？

                                                                 (*Lùnhéng* 46.3.13)

Yǐ   shuǐ wéi   hài   ér   gōng tǔ,   tǔ   shēng shǐ, gōng shè
With water make damage CON attack earth, earth master water, attack god.of.soil
zhī   yì,   wúnǎi rú   jīn   shì   gōng jiàng zhī yòng chuí   zuò
SUB idea, WUNAI be.like today generation worker artisan SUB use hammer chisel
yě
SFP

'Causing damage by water attacks the earth, but the earth can master the water; this is the meaning of attacking the gods of the earth and it is presumably like the craftsmen and artisans of today using hammer and chisel!?

2.2.4 The adverb *huòzhě* 或者

Another epistemic marker which is even less frequent than *wúnǎi* 無乃 in Late Archaic and Han period Chinese is *huòzhě* 或者 'maybe, possibly'. In this function it prevails until today (GDHYXCCD 2000: 256). In the Han period literature at issue here, it is altogether extremely infrequent. It also frequently appears in combination with interrogative or exclamatory (force and attitude) sentence final particles. As the following examples show, *huòzhě* 或者 also predominantly modifies atelic, imperfective predicates, however, at least

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56 *Guóyǔ* 1/3a/11. In the *Guóyǔ* modal *qí* 其 precedes *wúnǎi* 無乃.
57 A third instance which has a parallel in *Hànshū* has to be analysed as deontic: *Shǐjì*: 60,2212; *Hànshū*: 63,2750.
58 A nineth instance, *Hànshū*: 63,2750, has to be analysed as deontic.

occasionally, the aspecto-temporal adverb *jiāng* 將 (in example (40)) and the aspectual negative marker *wèi* 未 are attested in the selected predicate. This distinguishes it from *wúnǎi* 無乃 which in the Classical literature is never followed by this adverb (TSL, accessed 31.08.2011).[59] The speaker who conveys his commitment to the truth of his utterance and the subject of the preposition are usually not identical.

(40) 後之人或者將敬奉德義以事神人，而申固其命，   (*Zuǒzhuàn, Xuān* 15)
Hòu zhī rén huòzhě jiāng jìng   fèng dé   yì   yǐ
Later SUB man HUOZHE FUT reverently present virtue righteousness in.order.to
shì   shén rén, ér   shēn gù   qí   mìng,
serve spirit man, CON extend strengthen his mandate
 'His successors will presumably reverently provide their virtue and righteousness in
 order to serve the spirits and men, and will thus strengthen their mandate, …'

The following is one of four instances of *huòzhě* 或者 in the *Hànshū* (in the *Shǐjì* it is only once attested).

(41) 爾國君或者無不反曰：「難大，   (*Hànshū*: 84,3429)
Ěr   guó   jūn huòzhě wú   bù fǎn yuē: nàn   dà
You country ruler HUOZHE not.have NEG turn say: difficulty great
'The rulers of your country will probably have to object: "The difficulties are great."'

In example (42),[60] *huòzhě* 或者 precedes the aspectual negative marker *wèi* 未 'not yet' which usually selects event verbs; it is preceded be the modal adverb *qí* 其.[61]

(42) 晉為盟主，其或者未之祀乎？」   (*Lùnhéng* 63.19.22)
Jìn wéi méng   zhǔ, qí   huòzhě wèi   zhī sì   yě
Jin   be covenant master, MOD HUOZHE NEG_asp OBJ sacrifice SFP
'Jin is master of the covenant, but perhaps he has not yet sacrificed to him?!'

2.2.5 The adverb *gài* 蓋

Contrastively to the modal adverbs discussed above which are predominantly confined to preverbal position, i.e. following the subject, the adverb *gài* 蓋 is regularly attested in two different positions: the preverbal and the sentence initial position. In Pulleyblank (1995: 124) these two positions are obviously treated as one modal function which primarily serves as an affirmative 'particle', confirming the truth of the related utterance (Pulleyblank's terminology) and which secondarily can express 'the possibility of doubt.' Frequently it is attested in an 'explanatory clause ending in *yě* 也' (ibidem). The two examples Pulleyblank presents are subjectless, and he does not comment on the different positions

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59 However, *wúnǎi* 無乃 can be followed by several adverbs which have a temporal notion, and also (in combination with state verbs) by the adverb *yǐ* 已 which in these cases apparently does not have an aspectual function.
60 This is one of the two instances attested in the *Lùnhéng*.
61 This example is a quotation from the *Zuǒzhuàn*.

possible for *gài* 蓋. In the *Gǔdài Hànyǔ xūcí cídiǎn* (2000:165) *gài* 蓋 is labelled as an adverb in both positions: 1) in preverbal position expressing different shades of probability; 2) in sentence-initial position expressing some uncertainty with regard to the truth of the utterance. It is already attested in the *Shījīng* and prevails in the *wényán* literature in both positions. *Gài* 蓋 evidently predominantly combines with atelic and imperfective predicates. It only infrequently takes propositions with event predicates, including those marked by the SFP *yǐ* 矣, and/or by aspecto-temporal adverbs. The speaker who conveys his commitment to the truth of the utterance and the subject of the proposition are usually not identical. In example (43) from the *Shījīng*, *gài* 蓋 is followed by the modal adverb *yì* 亦; this seems to be the default position of *yì* 亦 with regard to modal adverbs and confirms that *gài* 蓋 is subject to the same syntactic constraints as the other modal adverbs. This is also confirmed by the fact that the predicate is negated by the modal (causative) negative marker *wù* 勿 following *gài* 蓋. In example (43) and (44) *gài* 蓋 appears in preverbal position (the subject is not overtly present), expressing different shades of probability and epistemic possibility. The meaning of epistemic probability is also present in example (45) which represents sentence-initial *gài* 蓋 in the Classical literature.

(43) 其誰知之？蓋亦勿思！   (*Shījīng, Guó fēng* 109/2)
    Qí   shuí zhī   zhī? Gài yì   wù   sī
    MOD who know OBJ? GAI MOD NEG_{mod} think
    'Who does know about it? Presumably they don't think about it!

(44) 我未見力不足者。蓋有之矣，我未之見也。   (*Lúnyǔ* 4,6)
    Wǒ wèi   jiàn lì   bù   zú   zhě, gài yǒu   zhī yǐ, wǒ wèi
    I NEG_{asp} see strength NEG suffice REL, GAI there.is OBJ SFP, I NEG_{asp}
    zhī   jiàn yě
    OBJ see SFP
    'I have never seen those whose strength is not sufficient, maybe they exist, but I have not yet seen them.'

(45) 丘也聞有國有家者，不患寡而患不均，不患貧而患不安。蓋均無貧，和無寡，
    安無傾。   (*Lúnyǔ* 16,1)
    Qiū yě wén yǒu guó yǒu jiā   zhě, bù   huàn guǎ ér   huàn bù   jūn,
    Qiu SFP hear have state have family REL, NEG worry lonely CON worry NEG equal.
    bù   huàn pín ér   huàn bù   ān. Gài jūn   wú   pín,
    NEG worry poor CON worry NEG peace. GAI equality not.have poverty,
    hé   wú   guǎ, ān   wú   qīng
    harmony not.have lonely, peace not.have overturn
    'I, Qiu, have heard that those who rule a state or a family do not worry about too few people, but about an uneven distribution, they do not worry about poverty, but about instability. For presumably, in even distribution, there is no poverty, in harmony there are not too few people, and in peace there is no overturning.'

In the Han period literature, *gài* 蓋 is attested on a regular basis in both sentence-initial and preverbal position. Identically to the other modal adverbs discussed above, *gài* 蓋 can select a nominal and a verbal predicate. In example (46) the selected predicate is a noun phrase which is concluded by the quotative SFP *yún* 云.

(46) 陛下肅祇郊祀，上帝報享，錫一角獸，蓋麟云。」   (*Shǐjì*: 12,457)
    Bìxià sù   zhī   jiāo sì,   shàng dì bào xiǎng,   xī   yī
    Sir   solemn reverent Jiao sacrifice, above god repay sacrifice, bestow one
    jué   shòu, gài lín   yún
    horn animal, GAI unicorn SFP
    'Your Majesty has solemnly and reverently performed the Jiao sacrifice, and the highest god has repaid your sacrifice and bestowed you with a one-horned animal, presumably it was a unicorn.'

In example (47) *gài* 蓋 occurs in the compliment of the evidential verb *wén* 聞 reporting 'hearsay'; it thus conveys evidential modality. The degree of certainty is comparably high in this example. More examples of *gài* 蓋 in a clause following *wén* 聞 are attested, but only in this example does it appear in the immediate complement of *wén* 聞.

(47) 臣聞中國者，蓋聰明徇智之所居也，   (*Shǐjì*: 43, 1808)
    Chén   wén Zhōngguó zhě,   gài cōng   míng xùn   zhì
    Subject hear Middlelands NOM, GAI intelligent bright overall knowledge
    zhī   suǒ jū   yě,
    SUB REL dwell SFP
    'I have heard that it is in the Middlelands where intelligence and brightness and encompassing wisdom apparently dwell, …'

In example (48), *gài* 蓋 is followed by the aspecto-temporal adverb *cháng* 嘗 referring to a situation in the past. Although instances of an aspecto-temporal adverb following *gài* 蓋 are almost unique in the Han period literature, they are attested with several aspecto-temporal adverbs in the subsequent *wényán* literature which confirms that at least syntactically *gài* 蓋 belongs to the same category of modal adverbs as *gù* 固 and *dài* 殆.

(48) 呂尚蓋嘗窮困，年老矣，以漁釣奸周西伯。   (*Shǐjì*: 32,1477)
    Lǔ Shàng gài cháng qióng kùn,   nián lǎo yǐ,   yǐ   yú diào gān
    Lü Shang GAI PAST poor distressed, year old SFP, with fish angle seek
    Zhōu Xī   bó
    Zhou West lord
    'Presumably, Lü Shang was just then poor and in great difficulties, and he was already old, and he was looking for the Lord of the West of Zhou by fishing and angling.'

In the following examples *gài* 蓋 evidently appears in sentence initial position, preceding an overt subject. Example (49) represents one of the infrequent examples with an event

verb; however, the SFP *yě* 也is stative and does not involve a change of state. Example (50) has a nominal predicate.

(49) 百姓靡敝，孤寡老弱不能相養，道路死者相望，蓋天下始畔秦也。

                                                          (*Shǐjì*: 112,2954)

Bǎixìng mǐ bì, gū   guǎ lǎo ruò bù néng xiāng   yǎng, dào lù
People fall ruin, orphan widow old weak NEG can   each.other nourish, road street
sǐ zhě xiāng   wàng, gài tiānxià shǐ pàn   Qín yě
die REL each.other look.at, GAI empire start revolt QIN SFP
'The people are destroyed and ruined, orphans and widows, old and weak could not
feed each other; those who died on the streets were to be seen everywhere; presumably
the empire is on the point of revolting against Qin.'

(50) 夫言秦燔詩、書，是也；言本百兩篇者，妄也。蓋尚書本百篇，孔子以授也。

                                                          (*Lùnhéng* 81.3.5)

Fú yán Qín fán shī, shū, shì   yě; yán běn   bǎi   liǎng piān zhě,
PRT say Qin burn *Shī, Shū* correct SFP; say originally hundred two chapter NOM,
wàng yě. Gài shàng shū běn   bǎi   piān,   Kǒng zǐ yǐ shòu yě
wrong SFP GAI *Shàng Shū* originally hundred chapter, Kong zi so give SFP
'Now to say that Qin burned the *Shījīng* and the *Shūjīng* is correct; to say that it had
originally one hundred and two chapters is wrong. For, presumably, the *Shàngshū* had
originally one hundred chapters, and Kong zi handed them down.'

Only example (50) displays an evident causal reading. However, it is not quite obvious whether this reading results from *gài* 蓋 or is contextually induced as has been hypothesized by Pulleyblank. In any case, causal sentences can well convey an epistemic reading (see Maché 2009: 46); accordingly, the function of *gài* 蓋 as a causal epistemic conjunction in topic position would not be problematic. Additionally, since epistemic adverbs take an entire proposition as their complement, they are not per definitionem excluded from the sentence-initial position. In any case *gài* 蓋 seems to be employed to express a certain distance with regard to the proposition uttered by the speaker.

3. Conclusion

Only some of the modal adverbs presented in Wei (1999) and in Unger (1992) (under the label 'modal particles') qualify as genuine epistemic markers conveying the commitment of the speaker to the truth of the untterance. Of the adverbs discussed here, only the adverb *gù* 固 expresses unrestrained certainty on the side of the speaker.[62] The adverb *guǒ* 果 express-

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62 The adverb *bì* 必 which basically has the same function, i.e. to express unrestrained certainty, differs to
   a certain extent from the adverbs presented here. As earlier studies have revealed (Meisterernst 2013) it
   differs syntactically from the adverbs at issue in this study and, as the examples have shown, in combi-
   nation with one of the epistemic markers at issue in this study, it always follows them. Additionally, it is
   mainly confined to future contexts, whereas at least some of the epistemic markers are not confined to a

es evaluative modality, by default referring to factitive situations. It thus differs considerably from true epistemic markers. Most of the modal markers at issue in this study express different shades of probability. The true epistemic markers all predominantly appear in speech parts, conveying the speaker's commitment to the truth of the utterance. Frequently, the speaker and the subject of the proposition are not identical. Even if the context of the speaker's evaluation is explicitly mentioned, the adverbial modal expression is mono-deictic; the modal expression only conveys the speaker's evaluation without any additional source involved. This is in compliance with Leiss hypothesis (2009: 13) on epistemic adverbs. The epistemic reading can shift to an evidential reading e.g. in the complement of the evidential verb *wén* 聞 reporting 'hearsay'. Although almost all of the adverbs can – to different degrees – select a perfective event (telic) predicate, in most examples the predicate is actually imperfective, i.e. atelic, frequently it is stative.

As has already been pointed out by Wei (1999), modal adverbs including epistemic adverbs appear quite high in the hierarchy of adverbs and can even sometimes precede the subject.

(56) Table of epistemic adverbs in Classical and Han period Chinese

Adverb	Position[63]	Period	tense/aspect markers	situation type
gù 固	PreV	Cl/Han	no restriction	atelic/telic
qí 其	PreV	Cl/(Han)	very infrequent (未)	atelic/telic
dài 殆	PreV	Cl/Han	few (future/未)	mainly atelic
wúnǎi 無乃	PreV	Cl/Han (rare)	almost none (1x 未)	atelic/telic
huòzhě 或者	PreV	Cl/Han (rare)	infrequent (future, 未)	atelic/(telic)
gài 蓋	PreV/SI	Cl/Han	no restriction, but infrequent	atelic/telic

(57) Tentative overview of the relative position of adverbs in Classical and Han period Chinese:

(MOD$_{epistemic}$ 蓋) MOD$_{epistemic}$ 其 > MOD$_{epistemic}$ 固 / 殆 / 無乃 / 或者 / 蓋 >

MOD$_{epistemic}$ 必 > MOD 亦 > ASP/TENSE > NEG > MOD$_{deontic\ AUX}$ / VERB

Epistemic modality is predominantly expressed by sentential adverbs, having the entire proposition in their scope, and deontic modality is predominantly expressed by modal auxiliary verbs, following negation and aspecto-temporal adverbs.

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particular tense or aspect.
63 PreV = preverbal, SI = sentence-initial.