"THE ROAST MUST BE DONE!":
INFERRED EVIDENTIALS IN CHINESE

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1. Introduction and theoretical framework

Perceptions – whether visual or related to other senses such as the olfactory one – set up an ideal scenario for analysing the semantic and syntactic paradigm of the inferential expressions. This kind of experience in fact provides an evidential base for assessing a given state of affairs. It is commonly accepted that there is a sort of "inference path", where *perception* becomes the *source of evidence*, and the latter is used as a basis for *inference*, which, in turn, might be related normally to *epistemic expression*. These types of utterances are grouped under the heading of evidentiality, which refers to «the source of evidence the speaker has for his or her statement»[1].

The relation between the modal and the evidential domains are constrained by the source of evidence the inference is based upon, which can be of a sensory type, or can stem from general knowledge, as in (1) and (2), respectively:

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[1] F. De Haan, *Typological approaches to modality*, p. 57. For an insightful definition of the notion of 'source' and 'evidence', cf. E. Krawczyk, *Inferred Propositions and the Expression of the Evidence Relation in Natural Language*, p. 2.

(1)   '**Apparently** the roast is done now.' (I smell a delicious smell of roasted meat)

(2)   '**Presumably** the roast is done now.' (Based on the recipe, it is time to take it out of the oven)

The distinction between these two types of inference can also be marked by different epistemic modals[2], i.e., *must* and *should*, respectively.

(3)   'The roast **must** be done now.' (I smell a delicious smell of roasted meat)

(4)   'The roast **should** be done now.' (Based on the recipe, it is time to take it out of the oven)

According to the modal taxonomy utilized here, the propositions expressing 'inference based upon reasoning' are subsumed under the category of 'Inferential evidentiality', which is an equivalent of the epistemic necessity and it is «thus regarded as an overlap category between modality and evidentiality»[3]. A more refined taxonomy emerges if we switch to a strictly evidential perspective, as in the classical model by Willet (1988).

As suggested at the onset, evidences grounded on sensory perception (i.e., *direct attested evidence*) can be used *as a source to draw an indirect inference* (in our example, based on the smell of the roast), as opposed to *inference from reasoning* (based on knowledge of the recipe). The latter two classes are indirect evidentials, and following Willet I label them as 'inference from results'

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[2] E. F. Woisetschlaeger, *A Semantic Theory of the English Auxiliary System*, p. 182; H. B. Drubig, *On the syntactic form of epistemic modality*, p. 4.

[3] J. van der Auwera, A. V. Plungian, *Modality's semantic map*, p. 85. The topic of the interrelation between the epistemic modality and evidentiality is still a matter of debate between two main views: from Willet: «Evidential distinctions are part of the marking of epistemic modality» (T. L. Willet, *A cross-linguistic survey of the grammaticalization of evidentiality*, p. 52) to Aikhenvald's claim that «Evidentiality is a category in its own right, and not a subcategory of any modality» (A. Aikhenvald, *Evidentiality*, p. 7). In this context, the generalization on the substantial overlap of inferential evidentiality and epistemic modality by van der Auwera and Plungian is perfectly apropos. For more arguments in favour of these latter authors, cf. M. T. Faller, *Semantics and Pragmatics of Evidentials in Cuzco Quechua*, pp. 261-262.

vs. 'inference from reasoning' (a comparative table of the other labels used in the relevant literature is given in Tab. 1)[4]. The markers of these inferential expressions will be called 'evidentials' and will be subdivided into 'results' and 'reasoning evidentials', respectively[5].

TAB. 1: MAJOR EVIDENTIAL TAXONOMIES

Evidential categories Stronger Evidential force →→				←← Weakest evidential force	
Krawczyk (2012) Central Alaskan	Best-fit explanation			Good-fit explanation	Best-fit explanation	
	Direct	Non visual sensory/ Auditory	Inference from Results (Apparent)	Inference from Reasoning (Assumed)	Reported	Quotative
Aikhenvald (2004)	Visual	Sensory	Inference	Assumption	Reported	Quotative
Faller (2002)	direct		learned		second hand	
	Visual	Auditory/ other sensory	Inference from Results	Inference from Reasoning / Assumed	Second hand Third hand	Hearsay/ folklore
de Haan (1998) crosslinguistics	Visual	Non visual	Inferential		Quotative	
Willet (1988)	direct>attested		indirect>inference		indirect>reported	
	Visual	Auditory/ other sensory	Result	Reasoning	Second hand	Folklore, hearsay
Barnes (1984) Tuyuca	Visual	Non visual	Apparent	Assumed	Second hand	

The two major cross-linguistic traits related to the evidential markers are:
(i)   Evidential markers cannot be targeted by negation;
(ii) The results-evidential (*apparently*, *evidently*, *clearly*, *obviously*) are explicitly linked to visual perception (cross-linguistically perceived as the stronger evidential source)[6], but can also refer to other types of perception, including olfactory, as seen in examples (1)-(4);
(iii) Result and reasoning inferences can be signalled by means of different epistemic modals.
     Moreover, as outlined by Krawczyk with reference to English and Central Alaskan Yup'ik:
(iii) Depending on the type of evidential scenario, three classes of evidentials can be singled out.

My aim is to test whether the above-mentioned features also apply to Chinese. In this paper, Section 1 includes an overview of the main typological issues; Section 2 introduces the problem under discussion; Section 3 provides an overview of the most influential theory on Speaker-oriented and evidential adverbs[7], including a brief analysis of their argument structure; Section 4 analyses the major traits of Chinese evidentials; in Section 5 I discuss whether the paradigm outlined cross-linguistically by Krawczyk is also applicable to Chinese.

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tials' (*clearly*, *obviously*) and, as I will introduce in the following section, 'reasoning evidential' (*presumably*).

[6] The hierarchy of evidential force of these classes is from left to right, with the exception of ASSUMED which should be in the far right, for instance, according to Barnes (1984) the scale is: visual, non-visual, apparent, secondhand, and assumed. A more refined model is proposed by Faller (2002:70) who split the scale into 'personal' and 'mediated' evidences, as shown below:
a.   The Personal Evidence Cline: performative > visual > auditory > other sensory > inference from results > reasoning > assumption
b.   The Mediated Evidence Cline: direct > second-hand > third-hand > hearsay/folklore

[7] T. Ernst, *Adverbial Adjuncts in Mandarin Chinese, Speaker-oriented adverbs* and G. Cinque, *Adverbs and functional heads*.

1.1. Typological classification

Given the specific typological orientation of the evidential literature, before describing the semantics and morpho-syntactic constraints of the evidentials, a brief survey of the major typological issues is in order. There are languages whose evidential system avails of grammaticalized morphemes marking (i) whether the speaker has been a direct witness or (ii) whether the information about the described event comes from an indirect source[8]. The following is an example from Tuyuca of an evidential of *direct non-visual* perception, in reference to smell:

(5)   *Yoáro susúhã-ta*
      Longway? smell-**EVID:3pl-past**[9]   **SENSORY** [Non visual]
      'They smelled (of liquor) a long way off.'

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[8] Cf. de Haan, *Typological approaches to modality*, p. 56. A classical example of a rather complex evidential inventory (including both the direct and indirect areas) comes from Barnes (*Evidentials in the Tuyuca verb*, p. 257) who examined the Tuyuca, a Tucanoan language of Colombia and Brazil, highlighting the five categories described in Tab. 1.

a.   *Díiga*   *apé-***wi**   (*idem*)
     soccer   play-**EVID**   **Visual**
     'He played soccer.' (I saw him play.)

b.   *Díiga*   *apé-***ti**
     soccer   play-**EVID**   **Sensory** [Non visual]
     'He played soccer.' (I heard the game and him, but I didn't see it or him.)

c.   *Díiga*   *apé-**yi***
     soccer   play-**EVID**   **Inference** [Inference from results]
     'He played soccer.' (I have seen evidence that he played: his distinctive shoe print on the playing field. But I did not see him play.)

d.   *Díiga*   *apé-**hĩgi***
     soccer   play-**EVID**   **Assumption** [Inference from reasoning]
     'He played soccer.' (It is reasonable to assume that he did.)

In these examples, the inflectional evidential is separated by a hyphen and labelled with the classes adopted by Drubig (*On the syntactic form of epistemic modality*, pp. 3-4.). EVID: evidential marker.

[9] Cf. Barnes, *Evidentials in the Tuyuca verb*, p. 260. The gloss is from de Haan (*Typological approaches to modality*, p. 164.), Barnes does not include it.

In those languages, the use of evidential markers is mandatory in any *realis* sentence, in the similar way in which in Indo-European languages tense is obligatory marked in all finite verbal forms. Just as tense morpheme, evidentials are also inflectional. This is the case of Yup'ik, the Central Alaskan language examined by Krawczyk[10], where the evidential morpheme *llini* is a morphological postbase, that is, an affix of the verb stem, as visible in the morphological parsing of *Ayallrulliniuq* (9).

(6)   *Aya*   *-llru*   ***-llini***   *-uq*
      Leave   -past   **-EVID**.3sg
      'Evidently she left.'

This Central Alaskan language has not grammaticalized markers for direct/attested evidences (visual and sensory), but it avails itself of indirect evidentials (for inference and reported contents). This is the same as in English, with the difference that evidential markers denoting indirect evidences, more specifically, are adverbs such as *apparently*, *evidently* and *obviously*, *presumably* (inference from results) and *presumably* (inference from reasoning). These two languages converge in that they only mark indirect evidentiality, while relying on different strategies: inflectional (verbal affix[11]) for Yup'ik and lexical (adverbs) for English. Mandarin Chinese behaves in a similar way, in that it resorts to inferential lexical forms ranging from speaker-oriented epistemic adverbs (*xiǎnrán*, *obviously*) to items, such as *hǎoxiàng*, *kànqǐlai*, *sìhū*, 'it seems' (*evidently*, *apparently*), generally categorized as adverbials but also as raising verbs. As highlighted by Hsieh, a main characteristic of these words is:

> their *semantic indeterminacy*. Sometimes these items occur in circumstances where they can be understood as involving perception of sight. [...] More

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[10] Krawczyk, *Inferred Propositions and the Expression of the Evidence Relation in Natural Language*, p. 8.
[11] As underlined by Krawczyk, Yup'ik also includes an enclictic evidential, *guuq*, but it is related to the reported evidence, therefore is not related to the results/reasoning contrast described in this paper. For an in-depth description of Chinese indirect/reported evidentials, cf. C.-L. Hsieh, *Evidentiality in Chinese newspaper reports: subjectivity/objectivity as a factor*.

often than not, however, occurrences of such expressions do not suggest anything more than an epistemic evaluation based entirely on logical inference[12].

Adopting the paradigm of indirect evidentiality described by Krawczyk[13] might shed new light on the semantic indeterminacy of the above mentioned-Chinese words and might contribute to evaluating the cross-linguistic stability of such patterns.

TAB. 2: FOUR EVIDENTIAL STRATEGIES

	Direct evidential (grammatical)	Indirect evidential	
Tuyuca	√	√	´
Yup'ik	´	postbase	´
English	´	´	adverbs
Chinese	´	´	adverbs and verbal (raising verb)
	inflectional	lexical	

2. The problem

2.1. CROSS-LINGUIST DATA

In English, the difference between inference from results and from reasoning can be marked by different epistemic modals and by different inferential adverbs or evidentials (*apparently vs. presumably*), which, in turn, can co-occur with a modal (7c)[14]. The choice of the evidential is constrained

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[12] *Ivi*, p. 210.

[13] Krawczyk, *Inferred Propositions and the Expression of the Evidence Relation in Natural Language*.

[14] The adverbs and the modal can convey the same inferential meaning, as for (1) (3), or (2) and (4), but when the modal occurs the sentence focus shifts to the evaluation of the epistemic probability. Instead, with an evidential, the speaker is evaluating the evidences she/he relies on for his or her assessment, as seen in the paraphrases proposed below.

a.   '**Apparently**, someone smoked here.' (*Evidential: Based on what I perceive, I state that…*)

b.   'Someone **must** have smoked here.' (*Epistemic inference: Based on what I perceive, it is the necessarily the case that…*).

by the inferential scenario. For instance, the adverb *obviously* is infelicitous in (7e).

(7) CONTEXT: You are in a non-smoking room and smell cigarettes. Immediately after entering the room, out of the blue you say:

    a. '**Apparently**, someone smoked here.'   **Inf. from results**
    b. 'Someone **must** have smoked here.'
    c. '**Apparently** someone **must** have smoked here.'[15]
    d. '**Presumably** someone smoked here.'
    e. #'**Clearly/Obviously** someone smoked here.'[16]

Generally speaking, following current evidential literature, *clearly/obviously* are felicitous only in a context where the evidence of a given statement is in dispute, as in (8).

(8) CONTEXT: You are explaining why you think that someone has smoked in your office.

    a. 'There's cigarette smell, **obviously** someone smoked here.'
                                      Inf from results (Debate)
    b. 'There's cigarette smell, **presumably** someone smoked here.'
    c. 'There's cigarette smell. Someone **must** have smoked here/Probably someone'.

If we switch to the inference from reasoning scenario, the range of felicitous evidentials is narrower. In fact, *presumably* is acceptable in both results and reasoning contexts, but the same does not hold for *apparently/obviously* (9b).

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[15] The example (7c) is considered redundant by some informants.
[16] (7e) might be felicitous in a sarcastic discourse. Given the limit of this work, it is excluded from present discussion.

(9) CONTEXT: You are trying to figure out who smoked, have no sensory evidence to identify them, but you know the habits of your neighbour and have good reason to assume that…it was him!

    a. 'Someone smoked here, **presumably** it was my neighbour.'

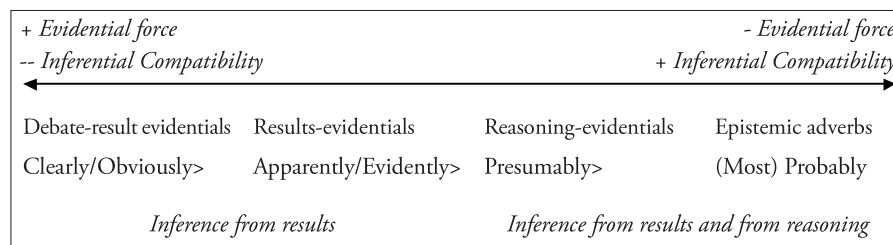<div align="right">**Inf. from reasoning**</div>

    b. *'Someone smoked here, **apparently/evidently/obviously/clearly** it was y neighbour.'

    c. 'Someone smoked here, it **must** be my neighbour.'

    d. 'Someone smoked here, **probably** it was my neighbour.'

As underlined in Krawczyk, the behaviour of these evidentials in different inferential scenarios makes it possible to outline a threefold pattern[17]. It starts with the most selective or 'least compatible' evidentials – the intersubjectives (*clearly/obviously*) – and ends with the most inclusive one, i.e., reasoning-evidential (*presumably*), where the latter behaves in a similar way to *must/should/probably* and diverges from *apparently/evidently* and *clearly/obviously*.

FIG. 1: HIERARCHY OF EVIDENTIAL FORCE

+ Evidential force			*- Evidential force*
-- Inferential Compatibility			*+ Inferential Compatibility*
◄──►			
Debate-result evidentials	Results-evidentials	Reasoning-evidentials	Epistemic adverbs
Clearly/Obviously>	Apparently/Evidently>	Presumably>	(Most) Probably
Inference from results		*Inference from results and from reasoning*	

[17] Among the major syntactic constraints emerging from Krawczyk's investigation, the most relevant are: (i) the narrow scope with respect to negation and (ii) the co-occurrence with different deontic and epistemic modals. In this paper I will deal with the latter topic in terms of Drubig's observation about modal selection as a strategy for expressing an inference from results or from knowledge, as in (1)/(2) and (3)/(4).

TAB. 3: MAIN ENGLISH INFERENTIAL MARKERS[18]

Evidential scenarios / Markers		Inference from results evidence			Inference from on reasoning		
		based on sensory evidence	debate in discourse	about the future	based on general knowledge	reasoning by exclusion	about the future
Inter-subjective result evidential	*obviously clearly*		√				
Result evidential	*apparently evidently*	√		√			
Reasoning evidential	*presumably*	√		√	√	√	√
Epistemic adverb	*probably*	√		√	√	√	√
Epistemic adverb	*most probably*	√	√	√	√	√	√
Epistemic modal	*must*	√	√	√		√	√
Epistemic modal	*should*			√	√		√

2.2. MATCHING A PATTERN FOR MANDARIN CHINESE

The strongest generalization in the literature can be summarized in the following points:

1) Languages with a different evidential system can present similar evidential patterns, as in Central Alaskan Yup'ik (inflectional) and English (lexical), which share the same scalar sequence *intersubjective>result>reasoning evidential>epistemic adverb/verb*;

2) The visual perception is conceived as the strongest evidential source and it is referred to also for inferences based on non-visual perception, as for *apparently/evidently* used with reference to smell;

3) All evidentials are not targeted by negation; a feature which is shared by all Speaker-oriented adverbs, including *probably*;

    Moreover, another common trait which can be deduced, in particular, from Krawczyk's account, is that:

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[18] The data concerning the English evidentials are from Krawczyk (*Inferred Propositions and the Expression of the Evidence Relation...*, pp. 38-54).

4) The most flexible markers have the weakest evidential force, as the case of the epistemic *probably* which is a sort of "all-round" adverb, compatible with all the inferential scenarios (Fig. 1 and Tab. 3).

TAB. 4: SPEAKER-ORIENTED ADVERBS IN MODERN CHINESE

Epistemic markers	*Probably*	*Dàgài*
	Certainly	*Kěndìng,*
	Likely, possibly	*Kěnéng*
	Definitely, necessarily	*Yídìng*
Result evidentials	*Apparently – it looks like*	*Hǎoxiàng*
	Seemingly – it seems	*Sìhū*
	It seems that	*Kànlai, kànqǐlai*
Debate evidentials	*Obviously*	*Xiǎnrán*
	Clearly	*Míngming*
Reasoning evidentials	*Presumably*	*Xiǎngbì*

Our main goal is to test whether the Chinese inferential system might pattern with English and therefore, following Krawczyk[19], also with Central Alaskan. I will now begin to outline a tentative list of the equivalent evidential and epistemic adverbs (Tab. 4).

With reference to Chinese I will:

i) Single out scalar sequence as described above;

ii) Test if the above-mentioned four classes display the same syntactical constraint with regards to their interaction with negation;

iii) Test if the "traditional" Chinese equivalents of *probably* (i.e., *dàgài* and *kěnéng*) possess the same high degree of inferential compatibility as their English Speaker-oriented counterpart. In other words, I will verify if *dàgài* and *kěnéng* could be considered as "all-round" epistemic-inferential adverbs (such as *probably/most probably*);

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[19] *Ibidem.*

iv) Test if Chinese makes use of a modal strategy to switch from result to reasoning inference.

Before discussing in Sections 4 and 5 whether these features are confirmed also in Chinese, I will summarize the most influential theories on Speaker-oriented adverbs, i.e., the macro area which includes both the evidential and the epistemic adverbs.

3. Lexical Evidentials

3.1. ADVERBS AND INFERENTIALS: SOME GENERAL CONSIDERATIONS

In this section we explore the more influential interpretations about the distributional properties of evidential adverbs, starting from the «syntactic-based»[20] and the «semantic-based»[21] perspectives. It must be underlined that, with the exception of Cinque, who adopts an evidential construal of these words (to «express the type of evidence the speaker has for his/her assertion»[22]), the other two authors, though in varying degrees, apply an «epistemic-view» of evidentials. Haumann defines them as words expressing different «degrees of certitude with respect to the speaker's subjective perception of the truth of a proposition»[23]. Ernst, although underlining that they «invoke publicly available evidence»[24], interprets them as the most objective pole of a Speaker's belief set. In fact, in Ernst[25], dedicated to the Chinese adverbial system, evidentials are subsumed under the epistemic class.

The common starting point of these models is Jackendoff (1972)[26], who

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[20] Cinque, *Adverbs and functional heads*; C. Haumann, *Adverb licensing and clause structure in English*.
[21] Ernst, *Adverbial Adjuncts in Mandarin Chinese*; *Speaker-oriented adverbs*.
[22] Cinque, *Adverbs and functional heads*, p. 85.
[23] Haumann, *Adverb licensing and clause structure in English*, p. 352.
[24] Ernst, *Speaker-oriented adverbs*, p. 516.
[25] Id., *Adverbial Adjuncts in Mandarin Chinese*.
[26] R. Jackendoff, *Semantic Interpretation in Generative Grammar*.

posited words like *evidently/apparently*, *obviously/clearly* and *presumably* in the category of «Speaker-oriented adverbs» (words expressing the speaker's attitude toward the propositional content)[27]. Generally, this domain is subdivided into a number of subclasses including: illocutionary (e.g., *frankly*), evaluative (e.g., *unfortunately*), evidential and, finally, epistemic (e.g., *probably*) adverbs[28]. According to the «Functional-specifier»[29] approach, they occupy the Specifier position in designated function head projections, located between the Complementizer layer and «a still lower zone comprising the tenses, and various aspect, modal, and voice phrases»; more specifically, evidential adverbs are generated in the specifier position of the Evidential Mood Phrase[30].

The projections of the Speaker-oriented adverbs are ordered according to the following hierarchy[31]:

Illocutionary> Evaluative> Evidential> Epistemic[32]

Evidential adverbs occur clause-initially (a), but can also surface in the post-subject position (b), in the position after the finite non-lexical verb (c) and clause-finally (d)[33]. Therefore, they display a relatively flexible position, as shown below:

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[27] Such a classification is based on an analysis of the distributional properties of speaker-oriented *vs.* subject-oriented adverbs, where the latter are predicate operators and the former are sentence-level operators (they evaluate the entire sentence).

[28] These four sets are proposed in Cinque, whose syntactic account actually provides a semantically fine-tuned classification. In Ernst the illocutionary is not mentioned, but he talks about strong and weak evaluative.

[29] Cinque, *Adverbs and functional heads*; Haumann, *Adverb licensing and clause structure in English*.

[30] Cinque *Adverbs and functional heads*, pp. 38 and 86.

[31] For a cartographic analysis of Chinese adverbs, cf., C.-C. J. Tang, *Functional projections and adverbial expressions in Chinese* and W.-T. D. Tsai, *On the Topography of Chinese Modals*.

[32] Cinque *Adverbs and functional heads*, pp. 33 and 107.

[33] Haumann, *Adverb licensing and clause structure in English*, p. 352.

(10) a. '**Evidently.** John has eaten the beans.'[34]
     b. 'John. **Evidently.** has eaten the beans.'
     c. 'John has **evidently** eaten the beans.'
     d. 'John has **evidently** eaten the beans.'
     e. 'John has eaten the beans, **evidently**.'

A similar behaviour is confirmed also in Chinese, despite its almost "legendary" rigid adverbial syntax.

3.2. Scopal properties with regards to negation

A sound generalization about evidential adverbs is that they are sentence-level operators[35]. As mentioned with reference to the cartographic approach, a common property shared by all Speaker-oriented adverbs is that they scope over the adverbs licensed in the lower part of the clause, e.g., subject-oriented adverbs, sentential negation, aspectual adverbs and temporal expressions. Consistently with this feature, evidential adverbs generally precede negation (11)[36], but occasionally can follow it (as often happens with *obviously* and *clearly*).

(11) '**Evidently,** you have **not** figured out how to use the «link» button yet.'[37]
     *'You have **not evidently** figured out how to use the «link» button yet.'

Haumann underlines that in these cases the contracted negation is often preferred, which makes it ambiguous between sentential and constituent negation, as in (12a).

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[34] Jackendoff, *Semantic Interpretation in Generative Grammar*, pp. 72 ff.; Delfitto, Everaert, van Riemsdijk, *Adverb Classes and Adverb Placement*, p. 97.
[35] The case of metalinguistic negation is explicitly excluded from consideration in the analysis of all the literature considered so far.
[36] Another context where these constraints are not at work is that of metalinguistic negation.
[37] Haumann, *Adverb licensing and clause structure in English*, p. 337.

(12)   a.   'She has**n't *obviously*** cleaned the table.'[38]

        b.   'It is **obvious** that she has **not** cleaned the table: from what I see, she did not clean the table.'

In some cases ambiguity can arise with respect to the semantic scope of the adverb, as in (13). It should be noted that in both (13a) and (13b) there is a repeated focus (*obviously/not obviously*) which contributes for narrow scope reading of the negated occurrence.

(13)   a.   'If the case for racial privacy is just **obviously** right, then there may be no reason to go on with the discussion. But the countervailing considerations mentioned above show that it is**n't obviously** right — which isn't to say that it isn't ultimately right.'[39]

        (= narrow scope: It is **not obvious** that it is right)

        (≠ wide scope: **Obviously** it is **not** right)

        b.   'Others feel that, while Pound has **obviously** been an enthusiastic, generous, and often discerning man, he has **not obviously** been a wise man, and a glance at his works seems to confirm the impression of an exuberant crank.'[40]

        (≠ narrow scope: The fact that Pound was a wise man was **not obvious**)

        (= wide scope: Pound **obviously** was **not** a wise man)

The possibility of occurring in the scope of negation – even though, preferably with an abridged negation, as in (13a) – sets the evidentials apart from the other Speaker-oriented adverbs. But, on closer analysis, an asymmetry can be noted among the evidential adverbs themselves. I will address this issue following Ernst[41], according to which the different polarity

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[38] *Ivi*, p. 353.

[39] P. C. Taylor, *Race: A Philosophical Introduction*.

[40] H. N. Frye, G. R. Gill, *Northrop Frye on Twentieth-century Literature*, p. 99.

[41] Ernst, *Speaker-oriented adverbs*.

displayed by Speaker-oriented adverbs can be explained with reference to the notion of veridicality[42]. In such a framework, these adverbs represent the «speaker's subjective commitment to the truth of the evaluation represented by *possibly*, *luckily*, and most other Speaker oriented adverbs», and for this reason they are, to different degrees, «incompatible with doubt expressed by non-veridical operators»[43]. The more a given adverb is subjective, the more sensitive it is to veridical operators (as sentential negation, questions and the antecedent of conditionals), thus behaving as a Positive Polarity Item[44].

For instance, the adverb *presumably* exhibits some sort of incompatibility with the doubt and falsity expressed by 'non-veridical'[45] operators. More specifically, it is blocked in anti-veridical contexts (such as, after sentential negation) but can be felicitous in such non-veridical contexts as questions (14a) and the antecedents of conditionals (14b), though in the latter case a parenthetical use is normally preferred, such as a pause or lowering of tone acting as a *caesura* from the rest of the proposition.

[42] A. Giannakidou, *Varieties of polarity items and the (Non)veridicality Hypothesis*.

[43] Ernst, *Speaker-oriented adverbs*, p. 508. Ernst's model captures very effectively the semantics of Speaker-oriented adverbs, but, as underlined by the author himself, we must address the possibility that «at least for evidentials, the formulation in terms of speaker-orientation may be too narrow» (*ivi*, p. 536, n. 30). Without excluding that evidentials have an epistemic stance, I would like to underline, in the spirit of the evidentiality literature quoted in the outset of this paper, that their prominent meaning is truly *evidential*, i.e., related not as much to the truth of the proposition, but rather to the source of the evidence adopted in one's assessment on the truth of the proposition.

[44] More specifically, the subdivisions proposed by Ernst (*ivi*, p. 512), in terms of different degrees of veridicality/Positive Polarity are as follows:
- Strong Positive Polarity: strong evaluatives, *unfortunately, luckily, amazingly, unbelievably*;
- Weak Positive Polarity: weak evaluatives, *mysteriously, appropriately, famously*, modals: *probably, possibly, certainly, maybe, perhaps, assuredly, surely*;
- Non Positive Polarity: evidentials: *evidently, seemingly, clearly, obviously*.

[45] This account of negative Polarity is based on the non-veridicality theory of polarity (Ernst, *Adverbs and Positive Polarity in Mandarin Chinese*; *Speaker-oriented adverbs*, based on Giannakidou, *Affective dependencies*).

(14) a. 'Where did John **presumably/evidently/apparently** go?'[46]

    b. 'If he (**presumably**) has 1000 pounds at home, why did he withdraw money?' (www)

It must be noted that in veridical sentences there is no need for such a linear *caesura* between *presumably* and the other portion of the proposition (a), whereas it is required with sentential negation (b), though it is normally deleted in relative clauses (c).

(15) a. 'He has **presumably/evidently/apparently** visited those cities.'

    b. 'He has**n't**, **presumably**, visited those cities.'
          '?He has**n't presumably** visited those cities.'

    c. 'He talks about cities that he has**n't presumably** visited.'

3.2.1. Different polarities

A similar behaviour, but slightly less sensitive to veridical operators, is found for *apparently* and *evidently*. In fact these 'result evidentials' are compatible with sentential negation and the antecedent of conditional, where they can be inserted with no *caesura*, as seen in (a) and (b), respectively.

(16) a. 'He has**n't apparently/evidently** visited those cities.'

    b. 'If he **evidently/apparently** had 1,000 pounds at home, why did he withdraw money?'

Finally, the evidentials displaying fewer syntactical constraints (with reference to veridicality) are *obviously* and *clearly,* as suggested for (12) and (13). These 'intersubjective evidentials" fit nicely in all non-veridical contexts, and often occur in negative questions, such as 'Isn't …*obviously/clearly*', as in the

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[46] Krawczyk, *Inferred Propositions and the Expression of the Evidence Relation in Natural Language*, p. 53.

example below, where the other evidentials (including *apparently/evidently*) are not fully felicitous (b).

(17) a. 'Isn't he **obviously/clearly** guilty of domestic violence?'
      b. '?Isn't he **presumably/apparently/evidently** guilty of domestic violence?'

Many other examples could be found with negative questions, for example, «isn't it clearly/obviously…», a phenomenon that is confirmed, in Chinese, as we will see in the next section. In summary, the results of this analysis suggest that: i) the 'intersubjective evidentials' (*clearly/obviously*) are the least sensitive to veridical-operators; ii) 'reasoning-evidential' (*presumably*) are the more sensitive, and patterns more with epistemic adverbs, such as *probably*.

In other words, Ernst's[47] model of polarity can be fine-tuned with reference to evidentials. In fact, despite their classification as non-Positive Polarity items[48], inferential evidentials display different degrees of polarity:

1) Reasoning-evidential (*presumably*). Positive Polarity Items: follow negation only in relative clauses (15.c) otherwise its occurrence is parenthetical. Moreover, they cannot occur in negative questions (15.b);
2) Intersubjectives (*clearly/obviously*) and results-evidentials (*apparently/evidently*): Non-Polarity Items: often occur in negative interrogation of the type (*isn't it obviously/clearly…?*) and may follow negation.

These observations suggest that the inferential evidentials are not a homogenous class with respect to interaction with negation. In addition, they attest to the stronger modal flavour of *presumably* (if compared with *apparently/evidently* and *clearly/obviously*), confirming Krawczyk's position (viz., *presumably* patterning more with modal *should* than with other evidentials).

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[47] Ernst, *Speaker-oriented adverbs.*
[48] *Ivi*, p. 512.

3.3. In crescendo: sight, perceptual clarity, inference

The adverbs under examination here can be subdivided easily into distinct groups, with respect to their evidential meaning components. As opposed to the modal adverbs *probably* and *certainly* (but also the modals *must* and *should*), expressing the degree of the speaker's commitment to the truth, the adverbs *clearly*, *obviously*, *apparently* and *evidently* refer in a more or less direct way to the speaker's source of evidence. *Presumably* tells us that the speaker is "presuming", i.e., is inferring from reasoning. The others are all related to the 'apparent' division (inference from results), but they do so in different ways. *Apparently* and *evidently* provide a reference to sight – as detectable from their Latin etymology, related, respective, to *parēre* 'show oneself' and *videre*, 'see' – whereas *clearly* and *obviously* do not refer specifically to visual sense, but rather to the clarity and immediacy of the perception.

It can be intuitively understood that in the 'result-evidential' area, a significant semantic shift must have occurred, capable of extending the meaning of 'apparent' to include non-visual perception. Such a process, as underlined already in Barron[49], is visible at cross-linguistic level and is the result of a semantic bleaching, through which a two-argument predicate related to sight (*see*) "loses" one argument, thus "creating" a raising verbs (*it seems/ appears*). In other words, the semantic shift (or better, extension), from visual to non-visual evidences (including smell) is related to the argument structure of the original perception verb and its grammaticalization as an evidential.

3.4. The argument structure

As anticipated at the outset, despite this categorization into three different classes, Speaker-oriented adverbs are generally interpreted as sentence operators whose semantic structure can be analyzed as a one-place copula clause

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[49] J. Barron, *LFG and the history of raising verbs*.

with the adjectival counterpart, and the argument is the sentence without adverb, as seen in (b):

(18) a. '*Probably/certainly/obviously/presumably/evidently* someone smoked here.'
      b. 'It is *probable/certain/obvious/presumable/evident* that someone smoked here.'

As underlined in Delfitto, this semantic treatment fits nicely with modal adverbs and many evidential, but is less successful with other-speaker oriented adverbs, such as the evaluative *happily*, which, in some cases, can be analysed as two-place adjectival predicates, having as a first argument the sentence and as a second the noun phrase related to the speaker, as in (17).

(19) a. '*Happily*, Frank is avoiding us.'
      b. '*I* am *happy* that Frank is avoiding us.'[50]

Similarly, some fine-tuning might be required also for *apparently* or *seemingly*, whose semantic structure is not a one-place copula clause containing the counterpart adjective, but a one-place predicate (the counterpart of the adverb: *to appear* and *to seem*), taking the sentence as unique argument.

(20) a. '*Apparently/seemingly* someone smoked here.'
      b. 'It *seems/appears* that someone smoked here.'

Finally, a further adjustment could be adopted for *presumably* since this adverb is a derivation of *presumable* which, in turn, is a derivation of the predicate *to presume* (related to an activity, rather than to a state). Therefore, its semantic construal is compatible with a two-place predicate (*presume*)

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[50] Delfitto, Everaert, van Riemsdijk, *Adverb Classes and Adverb Placement*, p. 90.

having the sentence as first argument and a noun phrase referred to the speaker as a second one.

(21)   a.   '***Presumably*** someone smoked here.'
        c.   'It is ***presumable*** that someone smoked here.'
        b.   '***I presume*** that someone smoked here.'

Thus, it emerges that all the three different classes described in Krawckyk (2012) – 'result', 'intersubjective' and 'reasoning evidential' – take the sentence as a primary argument. Again the intersubjective class seems to be more selective, since they are captured only by one type of semantic structure (22a), whereas the result and reasoning are also compatible with others as seen, respectively in (22b) and (22c).

(22)   a.   *Evidently/clearly/obviously/presumably*>It is *evident/clear/obvious/ presumable* that
                One-place copula clause with the adjectival counterpart of the adverb
                Result, intersubjective, reasoning evidentials
        b.   *Apparently/seemingly*>It *appears/seems* that
                One-place predicate, verbal counterpart
                Result-evidentials
        c.   *Presumably*>I *presume* that
                Two-place predicate, verbal counterpart
                Reasoning evidential

If compared with the others, *presumably* differs markedly, in that: i) its cognate is not referred to a mere sensory activity (sight) but to a mental verb, and ii) its semantic construal includes a subject that is not semantically empty, i.e., the speaker who evaluates the proposition.

4. Evidential markers in Chinese

The category of speaker-oriented adverbs is cross-linguistically stable and can be found also in Chinese[51]. More specifically, in Standard Chinese, the range of markers used for expressing inferences embraces items of different grammatical status. The markers that are here under scrutiny (see Tab. 4) are related to two types of speaker-oriented adverbials:

a) Epistemic markers, encoding no evidential information[52] (*kěndìng, dàgài*);
b) Markers expressing evidential content.

The latter are subdivided into three categories:

— 'intersubjective evidentials' *xiǎnrán/míngming*, equivalent to *clearly/obviously*[53];
— 'result evidentials' (*hǎoxiàng*), equivalent to *apparently/evidently*;
— 'reasoning evidentials' (*xiǎngbì*), equivalent to *presumably*.

4.1. MORPHOLOGY AND LEXICAL SPECIFICATION

Concerning the 'intersubjective evidentials', the most plausible candidate is *xiǎnrán* 显然, which is a derivational adverb, as seen in the adverbial suffix *–rán*. The verbal meaning of the morpheme *xiǎn* ('to become manifest,

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[51] Ernst, *Adverbs and Positive Polarity in Mandarin Chinese; Speaker-oriented adverbs.*

[52] Drubig (*On the syntactic form of epistemic modality*), and also more recent research in the field of the epistemic/evidential relationship, attests that epistemic modals encode evidential restrictions (K. von Fintel, A. S. Gillies, *Must… stay… strong!*) and evidential information (L. Matthewson, *Evidential restrictions on epistemic modals*), an aspect which is also confirmed by the present study. The point I am making here is more basic and it is linked to the explicit evidential information provided by a given lexical unit. Moreover, adverbs such as *certainly, admittedly, definitely, surely* and *undeniably* are also considered as evidential (Haumann, *Adverb licensing and clause structure in English*) or as a subclass of the evidential category, expressing «subjective view on the truth of what is said» (Haumann, *Adverb licensing and clause structure in English*, p. 396).

[53] The intersubjective-result evidentials were discussed in the previous section in connection to their high evidential force and high selectivity of the inference scenario (it was felicitous only in the 'Debate in discourse' scenario). Another candidate in Chinese is *míngming*.

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appear') belongs to the same semantic domain of *appear*, from the Latin *apparēre*. Moreover, as an adjectival predicate, *xiǎn* is also a synonym of *míngbai* and *qīngchu*, meaning *obvious, clear, unequivocal* (GYCD). There-fore, *xiǎnrán* is equivalent to *obviously*, in the same way the adverb *mínmíng* 明明 corresponds to *clearly*[54]. On the other hand, the grammar status of the Chinese 'result-evidentials' is a matter of debate. In fact, this evidential content can be expressed through a set of items. such as *hǎoxiàng, kànlai, kànqilai, kànshàngqu* and *sìhū*. Just as their English counterparts ('it seems/appears/looks like'), they are often considered as raising verbs:

> […] in the sense that the theme (object) argument of the main predicate is obliterated. Rather, what is perceived or evaluated is a proposition, denoted by the embedded clause[55].

In this context, the raising predicate analysis allows us to single out an im-portant syntactic feature (seen on a cross-linguistic level) of the evidentials. In fact, these markers have scope over the entire proposition. Nonetheless, words such as *kànlái* are also interpreted as adverbs. For our purposes, there is no need to take a position on this issue, and I would rather like to classify *hǎoxiàng* more flexibly as part of 'adverbials', that is, «phrasal categories of different sorts roughly performing the same function as lexical adverbs»[56].

4.2. Syntactic position
Concerning the syntactical order, it must be stressed that:

> Pre-verbal adverbial[57] expressions in Mandarin Chinese show the same range

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[54] Other equivalents are cognate adverbs such as *míngxiǎn, xiǎnde*, but given the limited scope of this work, they are not included in this analysis.
[55] S.-I. Shyu, Y.-F. Wang, Z.-J. Lin, *An Approximation to Secondary Predication Structure*, p. 721.
[56] Delfitto, Everaert, van Riemsdijk, *Adverb Classes and Adverb Placement*, p. 85.
[57] The author distinguishes between pre-verbal and post-verbal adverbs, where the latter include duration and frequency. I interpret duration and frequency as verbal quantifiers acting as 'quasi

of flexible positions, word orders, degrees of flexibility in those orders, ambiguities, and other typical behaviours as do all other languages with well-studied adverbial systems[58].

The same applies to sentence-level operators, such as evidentials. As is the case in English[59], their position is comparatively less-rigid than with other classes of adverbs. More specifically, in Standard Chinese they are often located initially in the clause (a) or after the subject (b), that is, before negation and modals, with the exception of the constructions of the type *kàn* + directional resultative (*kànlai*, *kànqǐlai*), as in (c)[60].

(23)   a. 看来/好像/显然/想必妈妈做了烤肉。
         Kànlai/hǎoxiàng/xiǎnrán/xiǎngbì *māmā zuòle kǎoròu.*
         mom ***apparently/evidently/obviously/presumably*** prepared LE roast
     b. 妈妈好像/显然/想必做了烤肉。
         Māmā ***hǎoxiàng/xiǎnrán/xiǎngbì*** *zuòle kǎoròu.*
         mom ***apparently/evidently/obviously/presumably*** prepared LE roast
         'Apparently/evidently/obviously/presumably Mom did the roast!'
     c. 妈妈*看来做了烤肉。
         Māmā *****Kànlai*** *zuòle kǎoròu.*

Context-permitting, evidentials may also surface in lower positions within the descriptive complement, as shown in (24-26). In this case, the evidential adverb is targeting the adjectival predicate within the complement, which is

argument' of the verb (W. Paul, *The syntax of verb-object phrases in Chinese*, *New Perspectives on Chinese Syntax*). Therefore, in my terminology, in Chinese we only have pre-verbal adverbials – which in some contexts surface in the lower part of the clause, such as the evidentials in (24-26).

[58] Ernst, *Adverbial Adjuncts in Mandarin Chinese*, p. 52.

[59] Delfitto, Everaert, van Riemsdijk, *Adverb Classes and Adverb Placement*.

[60] This sentence-internal preverbal position corresponds to the post-subject and the post finite-non-lexical verb of English, described in (10.b-c).

understood as a manner adverb[61] (24.b), sometimes also with a 'consecutive flavour' (24.c).

(24)   a.   妈妈的烤肉做得好像很好吃。
           *Māmā de kǎoròu zuò de **hǎoxiàng** hěn hǎochī.*
           mom DE roast prepare DE ***seems*** very good.to.eat
       b.   '**Apparently** Mom's roast is really well done!'
           'Mom's roast is **apparently** really well done!'
       c.   (Mom prepared the roast in such a way that it looks delicious)
       d.   'Mom's roast **looks** really delicious!'

Concerning post-verbal evidentials, the most natural English rendering excludes the main predicate (e.g. 'prepare' or 'treat' in previous examples) and replaces it with the evidential verbal counterpart, 'look', as in (24.d) and (25.c-d).

(25)   a.   你对孩子管得似乎太严了。 (www)
           *Nǐ duì háizi guǎn de **sìhū** tài yán le.*
           you towards kid take.care DE **seem** too strict LE
           '**It seems that/apparently** you treat the kids too strictly.'
       b.   (=The way you treat your kids is apparently too strict)
       c.   '**Apparently** you are too strict with the kids.'
       d.   'You **look** too strict with the kids.'

This abridgement is possible when, due to internal sentence semantics, no ambiguities might arise with respect to the activity characterizing the state of affairs, as inn (24) and (25). Therefore, in the English rendering of the Chinese descriptive complement, the ellipsis of the main predicate (in the example below *pǎo* 'run'), and its replacement with the verbal counterpart of the evidential adverb (*seem*), is avoided when the adjectival predicate could refer to different events, such as *kuài* in (26.a).

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[61] For an in-depth analysis on this topic, cf. Paul, *New Perspectives on Chinese Syntax.*

(26) a. 她跑得显然/好像/似乎/看来不够快。[62]
       *Tā pǎo dé **xiǎnrán/hǎoxiàng/sìhū/kànlai** búgòu kuài.*
       she run DE ***evidently/apparently/it.looks.like/seem*** not.enough fast
       '**Evidently/obviously** she doesn't **run** fast enough.'
    b. (=The way she runs is obviously not fast enough.)
    c. # 'She **doesn't seem** fast enough.'
       (fast in what? writing, running, speaking…)
       # '**Evidently/obviously** she is not fast enough.'

The post-verbal occurrence of the evidential is therefore conditioned by the proposition they modify. If the latter is a descriptive complement, they surface after the main predicate.

4.3. Scopal properties
Evidentials are not targeted by negation, as seen in the example below with reference to the 'result-evidential'.

(27) 似乎/好像/看来不会下雨。[63]
     ***Sìhū/hǎoxiàng/kànlai** bú huì xià yǔ*
     it.looks.like/apparently/seem not FUT fall rain
     '**Apparently/seemingly** it is not going to rain.'
     bù **sìhū/hǎoxiàng/kànlai huì xià yǔ*
     ≠ 'It **does not look** like it is going to rain.'

Therefore we are not surprised to see that in the *Academia Sinica Balanced Corpus of Modern Chinese* (ASBC) there are no occurrences of negated evidentials, which confirms the claim of Ernst[64] who classifies them into the Positive Polarity Item class.

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[62] Slightly modified from Shyu, Wang, Lin, *An Approximation to Secondary Predication Structure*, p. 715.
[63] Slightly modified from T. McEnery, R. Xiao, *Corpus-Based Contrastive Studies of English and Chinese*, p. 153.
[64] Ernst, *Adverbial Adjuncts in Mandarin Chinese*.

Therefore, adverbials such as *hǎoxiàng* are not felicitous after negation. Moreover, the most natural form to express a narrow-scope construction such as 'it doesn't seem, look like', is provided by a potential construction, where the negative potential infix (the unstressed *bu*) targets the potential component, as in *kàn bu lái* 看不来 'doesn't seem like' and *sīháo kàn bu lái* 丝毫看不来 'it doesn't seem at all (in the slightest)'. Here the evidential component (the verb *kàn*) is outside the scope of negation and it only comprehends the complement which expresses information regarding the possibility of being 'apparent' or not. Despite this observation, negated occurrences of *sìhū* are found, not only in spontaneous speech, but also in written texts. In these cases, these 'result evidentials' often follow the copula, as in *bù sìhū/hǎoxiàng shì*.

(28)   在多年挣扎下终于成为作家,[65]
         Zài duōnián zhēngzhá xià zhōngyú chéngwéi zuòjiā,
         in many year struggle under finally become writer
         'After many years of struggle I finally became a writer;'
         不像是我在模仿他人，也不似乎是在利用我的名字。
         bù xiàng shì wǒ zài mófǎng tārén, yě ***bù sìhū*** shì zài lìyòng wǒ de míngzì.
         not look be PROGR copy others, also not seem be PROGR use my name
         '**it did not look as if** I were copying other authors, **neither** did it **look** as if I
         was exploiting my name.'
         = '**neither** was I **seemingly** exploiting my name.'

In these instances, the evidential marker *sìhū* can be interpreted as a main verb, though it must be noted that, as opposed to the English counterpart 'it doesn't look/seem', the construction *bù sìhū shì* does not sound perfectly grammatical, as in (29).

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[65] Kaifang Open Magazine, *Kāifàng*, p. 95.

(29)　阿沙敢不似乎是代表游牧郌茗的势力。[66]

*Āhāgǎn **bù sìhū shì** dàibiǎo yóumù Tái Míng de shìlì*

Ashagan **not seem** represent nomadic Tai Ming DE power

'Ashagan **did not seem to be** representing the power of the nomadic Tai Ming.'

= 'Ashagan **wasn't apparently** representing the power of the nomadic Tai Ming.'

This type of negated form can occur also in relative clauses, as in (30). However a narrow scope construction ('apparently did not' *sìhū méiyǒu*) would be more natural.

(30)　在中英鸦片战前确有不似乎是接受西学的机会,[67]

*Zài Zhōng-Yīng yāpiàn zhàn qián què yǒu **bù sìhū shì** jiēshoù xīxué de jǐhuì,*

in Sino-English opium war before really exist **not seem be** accept western. studies DE occasion

'Before the Sino-English Opium War there actually were [learning] opportunities which did **not seem** to accept Western studies,'

但是课程只限于文字语言。

dànshì kèchéng zhǐ xiànyú wénzì yǔyán.

but be courses only limit.to written language

'but they were courses limited to written language.'

='there were occasions **which** were**n't apparently** accepting Western studies.'

= 有似乎没接受西学的机会

= exist **seem not** accept western studies DE occasions

The occurrence after negation is found also for markers having an uncontroversial adverbial status, such as the 'intersubjective results-evidential' in (31). The main predicate is once more *shì* 'to be'. Also in this case, according to some informants, a narrow scope in wording would be more natural, as in *xiǎnrán bú shì*.

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[66] MGBS, *Ménggǔ mìshǐ. Xīnhuá chūbǎnshè*, p. 264.
[67] ZHWH, *Zhōnghuá wénhuà fùxīng yùndòng tuīxíng wěiyuánhuì*, 7:16.

(31)　可轻松地看到完全操作测试不显然是最好的方式。　　　(www)
*Kě qīngsōng de kàn dào wánquán cāozuò cèshì **bù xiǎnrán shì** zuìhǎo de fāngshì.*
can effortless DE see RES complete operation test **not obviously be** best manner
'It can be seen without effort that the complete operation test **isn't obviously** the best method.'

The 'results evidential' and the 'intersubjective results-evidentials' are compatible with non veridical contexts as questions (32a) and conditional antecedents (32b), but only the 'intersubjectives' markers are felicitous in negative questions (32c-d).

(32)　　a.　这好像有什么误会？
　　　　　*Zhè **hǎoxiàng** yǒu **shénme** wùhuì?*
　　　　　this **look.like** has **what** misunderstanding?
　　　　　'This, **apparently**, has **what** misunderstanding?'

　　　　b.　如果似乎即将要失去的话，就要马上取回。　　(www)⁶⁸
　　　　　***Rúguǒ sìhū** jíjiāng yào shīqù dehuà, jiù yào mǎshàng qǔhuí*
　　　　　if look.like on.the.verge.to FUT loose DE time, then must immediately retrieve
　　　　　'**If it looks like** it is going to disappear…'
　　　　　'**If it is apparently** going to disappear, you must immediately retrieve it.'

　　　　c.　这不明明是故意杀人吗?
　　　　　*Zhè **bù míngming** shì gùyì shārén ma?*
　　　　　this **not obviously** be intentionally kill person MA?
　　　　　'Is**n't** it **clearly** an intentional murder?'

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⁶⁸ According to some informants, this sentence is also not perfectly natural. A preferable wording would be "*Rúguǒ nǐ juéde jíjiāng yào…*".

    d.   这不**显然**是一种矛盾么?

        *Zhè **bù xiǎnrán** shì yī zhǒng máodùn me?*

        this **not obviously** be one kind contradiction ME?

        'Is**n't** this **obviously** a kind of contradiction?'

4.4. Presumably or most probably?

To conclude this section, we now need to identify the Chinese equivalents of the 'reasoning evidential' (*presumably*) and of the marker quoted in the literature as a sort of prototypical epistemic adverb (*probably*). From what we have said so far, we know that in English these two adverbs behave as Positive Polarity items[69]. In other words, albeit its status, presumably patterns with the epistemic more than with the other evidential adverbs. Moreover (see Section 3), we know that:

i)   *probably* is felicitous in all contexts compatible with the evidentials (*presumably* included);

ii) *probably* and *presumably* are often used interchangeably;

iii) *presumably* has greater constraints than *probably*.

If, following a long-standing tradition[70], we accept that the equivalent of *probably* is *dàgài*, then in Chinese the situation seems to be reversed. As seen in (33), an inferential scenario characterized by 'reasoning by exclusion'[71] –

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[69] Please note that classification varies according to the markers being analyzed. For instance, Ernst (Ernst, *Speaker-oriented adverbs*, p. 512) classifies *probably* as a Weak-polarity item and such analysis is consistent if we take into account the evaluative adverbs, such as *oddly*, which are Strong Polarity items. If, instead, we focus only on the class of inferential evidentials, then *probably* must be included in the class of items which are more incompatible to non-veridical context, as opposed to *obviously*/clearly (non-Positive polarity), with *apparently*/*evidently* (Weak Positive Polarity) as an intermediate class.

[70] To name only a few: Ernst, *Speaker-oriented adverbs*, *Adverbial Adjuncts in Mandarin Chinese*, S.-Y. J. Lin, *On (a)symmetric epistemic interference* and Tsai, *On the Topography of Chinese Modals*.

[71] Another rendering of *dàgài* is *perhaps* (Hsieh, *Evidentiality in Chinese newspaper reports: subjectivity/objectivity as a factor*, p. 23); *probably* is also often translated with *kěnéng*, glossed as *possible/probable* (Tang, *Functional projections and adverbial expressions in Chinese*, p. 233).

which in English is compatible with both *presumably* and *probably* – in Chinese is felicitous only with *xiǎngbì* (*presumably*) and *kěnéng (likely)* or, even better, with *hěn kěnéng* (*most likely*), but not with the 'classical rendering' of *probably*, i.e., *dàgài*.

(33) CONTEXT: you asked your husband to post a letter for a close friend; some time has passed but you have received no reply. You are trying to figure out what might have happened and ask your husband if he actually posted it, then you check the address once more. Finally, since your friend is normally very reliable, and you have excluded all other possibilities, having no other explanation, you say:

    a. 'No reply from him yet; **presumably/certainly** he hasn't received my letter.'
       他没有回信，想必／一定还没有收到我的信。
       Tā méiyǒu huí xìn, **xiǎngbì/yídìng** *hái méiyǒu shōu dào wǒ de xìn.*
       he not return letter, **presumably/necessarily** yet not receive res. my letter
    b. 'No reply from him yet; **(most) likely/probably** he hasn't received my letter.'
       他没有回信，很可能/?可能/*大概　还没有收到我的信。
       Tā méiyǒu huí xìn, **hěn kěnéng/?kěnéng/*dàgài** *hái méiyǒu shōu dào wǒ de xìn.*
       he not return letter, **very likely/?likely/*probably** yet not receive res. my letter

   As seen in (34), when reasoning by exclusion, *kěnéng* does not behave as a perfect equivalent of the epistemic adverb *probably*. This claim is supported also if we look at the scopal properties of these two markers. In fact, *kěnéng*, together with *yídìng* 'definitely', 'necessarily', is the only epistemic modal capable of taking scope both over and under negation. Therefore *kěnéng* and *yídìng* behave similarly to modal adverbs that are compatible with prefix negation (as in *unlikely*, *unnecessarily*) and that may, with different limitations, follow negation (as *necessarily*, *definitely*, *possibly*)[72].

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[72] Hsiao & Lin 2011 Drubig, *On the syntactic form of epistemic modality*, pp. 8-9.

(34)   他可能没收到我的信。

          *Tā **kěnéng méi** shōudào wǒde xìn.*   [narrow scope, likely not]

          he **likely not** receive-RES my letter

          'He is **likely** to have received my letter.'

(35)   他不可能收到我的信。

          *Tā **bùkěnéng** shōudào wǒde xìn.*   [narrow scope, not likely]

          he **unlikely** receive-RES my letter

          'He is **unlikely** to have received my letter.'

This full compatibility with negation (not found among the adverbs described in previous sections), has a solid explanation both within a semantic and a syntactic-based analysis. First, *kěnéng* and *yídìng* are modals and not Speaker-oriented adverbs. Secondarily, in the cartography model, their functional heads are analyzed as separate projections of a "pure possibility/necessity" modality located in a lower seat, compatible with both wide and narrow negation, between the epistemic and the root modality (volitional, obligation, ability)[73].

Moreover, if we look closer at the lexical specifications of *kěnéng*, *xiǎngbì* and *dàgài*, it emerges that each of them belongs to a different class of markers and that none of the three covers the meaning of the epistemic adverb *probably*. In fact, *xiǎngbì* is a full-fledged evidential, expressing inference from reasoning[74].

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[73] Cf. Cinque, *Adverbs and functional heads*, p. 79.

[74] As attested in its definition: 'presume the degree of certainty [of a given state of affairs] based on one's thoughts' (*Yǐ jǐyì tuīcè ér zhī bìrán rúcǐ* 以己意推测而知必然如此, GYCD). Another inferential is *kěndìng*, but, as Peng observed (2007, p. 431): «The kind of inference expressed by *kěndìng* is based upon the inner world of the speaker, his feelings and sensations. When a speaker resorts to *kěndìng* in order to express his inference, this does not necessarily imply an emphasis on the evidence he avails himself of. Rather, it generally displays a stemming out of a subjective understanding, in other words this kind of knowledge derives from an inference based on the speaker's intuition». [«肯定" 作出的[必然]推断，推断的基础是说话人自身主观感受或感觉，是一种主观情态。说话人用"肯定"表达推断时，不一定注重说话的证据，而主要从主观认识出发，或者说，这种认识源自说话人自己直觉的推断。而用 "得（děi）"时作出的[必然]推断，推断的基础往往是可及的证据。从证据的来源上看，

Its first morpheme carries evidential content (*xiǎng*, 'think', 'presume') and the second provides modal information (*bì*, the most prominent epistemic marker in classical Chinese). Concerning the others, the first reading of *kěnéng* denotes only the modal content of 'possibility' which is more specifically related to the notion of general possibility. It expresses that something is (virtually) achievable *biǎoshī kěyǐ shíxiàn* 可以实现 (GYCD). Therefore, it is a full-fledged epistemic marker. On the other hand, the primary meaning of *dàgài* is not the epistemic *probably*, but the adverb, 'roughly', 'approximately', as in *dàgài shuō*, 'roughly speaking'; it underlines that the speaker is just proposing a tentative estimation, therefore, it is more an evaluative or even an illocutionary marker then an epistemic one. This might explain why it is often infelicitous in contexts in which the English *presumably* and *probably* would be fully accepted, as in (34.b), and why it cannot scope under negation[75].

A very natural candidate for the Chinese counterpart of *probably* – with semantic properties that pattern with this English epistemic adverb – is the construction *hěn kěneng*, which is felicitous in all contexts in which the evidentials are licensed. It can occur only in constructions with wide scope (36.b), whereas with narrow scope it is either a-grammatical (36.c) or not fully acceptable (36.d).

(36)   a.   他很可能收到了我的信。
          *Tā **hěn kěnéng** shōudào le wǒde xìn*
          he **very likely** receive-RES LE my letter
          'He **very likely** received my letter.'
     b.   他很可能没收到我的信。
          *Tā **hěn kěnéng méi** shōudào wǒde xìn*   [wide scope]
          'He **very.likely/probably didn't** receive my letter.'

这是一种客观情态。说话人用"得（děi）"作出推断时，注重证据，带有示证（evidentiality）的意味。用"肯定"时，有时候给人的感觉可能是武断、臆断»].

[75] In fact, illocutionary and evaluative adverbs are described as displaying stronger extra-propositional features than evidentials. In Ernst's model they are classified as Strong Positive Polarity, and in Cinque's cartography they are located in a higher functional head than the evidentials.

    c.   他*不很可能收到我的信。

        *Tā ****bù hěn kěnéng*** *shōudào wǒde xìn*   [narrow scope]

        'He **not very.likely/probably** received my letter.'

    d.   *???*他很不可能收到我的信。

        ??? Tā ***hěn bùkěnéng*** *shōudào wǒde xìn*   [narrow scope]

        'He **very unlikely/impossibly** received my letter.'

        'He is **very unlikely** to have received…'

Based on these data, it can be claimed that:

i)   Unlike *probably* and *presumably*, *dàgài* cannot be used in all contexts in which *xiǎngbì* is felicitous;

ii)   *Kěnéng* is a hypernym of *xiǎngbì*, therefore it is felicitous in all contexts in which *xiǎngbì* is felicitous;

iii) In contexts in which *xiǎngbì* is felicitous, *hěn kěnéng* is more natural then *kěnéng*.

To conclude, the only evidentials which seem to be fully acceptable in negative environments (more precisely, in negated questions) are the inter-subjectives evidentials, i.e., *xiǎnrán* and *míngming*, in a similar way to their English equivalent (see Section 3.2.1). The preliminary results of the analysis on Chinese inferential evidentials carried out through the Krawczyk test, are illustrated in Fig. 2:

Fig. 2: Overlap of Chinese epistemic modals and inferential evidentials
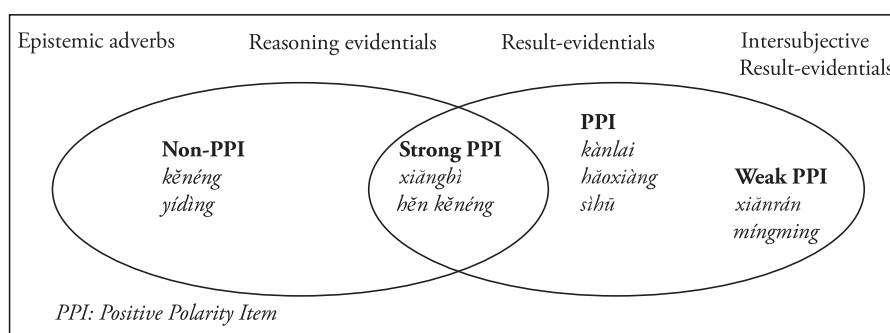
5. *Chinese evidentials in different inferential contexts*

Now I will return to the six evidential scenarios singled out by Krawczyk and test how well this explanation fits Chinese.

5.1. THE SCENARIOS
1) Inference based on sensory evidence (including olfactory)
(37) CONTEXT: You come home and your house smells of natural gas.

    a. '**Apparently** I left the oven on.'[76]
       看来/好像我忘关烤箱了。
       Kànlai/hǎoxiàng *wǒ wàng guān kǎoxiāng le.*
       it.looks.as.if I forget close oven LE

    b. '**Probably/Presumably** I left the oven on.'[77]
       我很可能/想必/一定忘关烤箱了。
       *Wǒ hěn **kěnéng/xiǎngbì/yídìng** wàng guān kǎoxiāng le.*
       I very **probably/presumably/definitely** forget close oven LE

    c. '**Possibly** I left the oven on.'[78]
       我可能/想必/一定忘关烤箱了。
       *Wǒ **kěnéng** wàng guān kǎoxiāng le.*
       I **probably** forget close oven LE

    d. # **Obviously** I left the oven on.   (out-of-the-blue)[79]
       #明明/显然我忘关烤箱了。
       # ***Xiǎnrán*** *wǒ wàng guān kǎoxiāng le.*
       # **obviously** I forget close oven LE

(38) CONTEXT: You have roasted the meat and now are watching TV, and there is a delicious smell of roasted meat, so you say:

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[76] *Ivi*, p. 40.
[77] *Ivi*, p. 47.
[78] *Ivi*, p. 47.
[79] *Ivi*, p. 51.

 a. 'The roast **must** be done now.' 烤肉好了!

 b. '**Apparently** the roast is done now.'

 c. 烤肉好了!

  Kǎoròu hǎo le!

  roast meat good LE

 d. 好像/看来/似乎烤肉 好了!

  Hǎoxiàng/kànlai/sìhū *kǎoròu hǎo le!*

  evidently/apparently roast meat good LE

 e. 烤肉该 好了。

  *Kǎoròu **gāi** hǎo le.*

  roast meat **should** good LE

 f. *'**Obviously** the roast is done now.'

  * (显然) 烤肉好了!

  (Xiǎnrán) *kǎoròu hǎo le!*

  obviously roast meat good LE

2) Inference based on reasoning

(39) CONTEXT: You read the recipe for roast beef and follow the instructions. You are watching the news and now it is time to take the roast out of the oven, therefore say:

 a. 'The roast **should** be done now.'

  烤肉该好了。

  *Kǎoròu **gāi** hǎo le.*

  roast meat should good LE

 b. '**Presumably/probably** the roast is done now.'

  想必/很可能烤肉 好了。

  Xiǎngbì/hěn kěnéng *kǎoròu hǎo le.*

 c. *'(**Apparently/evidently/obviously**) the roast is done now.'

  * (好像/看来/似乎/显然) 烤肉好了!

  (Hǎoxiàng/kànlai/sìhū/xiǎnrán) *kǎoròu hǎo le!*

  *(***apparently/evidently/obviously***) roast meat good LE

As seen in (37)-(39), in Chinese, the transition from result into reasoning

inference does not occur by resorting to a different modal. The inference based on sensory evidence (in our example, the smell of roast meat) is signalled by the aspectual marker *le*, referred to a change in the state of affairs, as in (38c). In this context, the only modal that can be used is *yīnggāi*, which can signal both the result (38e) and the reasoning scenario (39a). Therefore, in this respect, Chinese does not pattern with English.

3) Conjectural context
(40) CONTEXT: You are walking with a friend, looking at the sky and out of the blue you say:

    a. '**Evidently/apparently** it is going to snow.'[80]
       看起来/好像要下雪了。
       ***Kàn** qǐlai/**hǎoxiàng** yào xià xuě le*
       look-DIR/apparently FUT fall snow LE
    b. 'The sky is dark. **Presumably/probably**, there is going to be a storm.
       天色阴沉，想必/很可能要下雪。
       *Tiānsè yīnchén, **xiǎngbì/kěnéng** yào xià xuě.*
       sky.colour gloomy, presumably FUT fall snow
    c. '# **Obviously** it is going to snow.'
       显然/要下雪了。
       ***xiǎnrán/**yào xià xuě le*
       obviously FUT fall snow LE

As seen in (37d), (38f), (39c) and (40c), *xiǎnrán* is not felicitous in a context which does not imply a debate in discourse, in other words, cannot be uttered "out-of-the-blue". Their use would instead be licit in a context in which you are trying to convince someone on the truthfulness of your assumption, as in (41a).

[80] Slightly modified, *ivi*, p. 40.

4) Matter of debate in the discourse
(41) CONTEXT: You are walking with a friend, looking at the sky and out of the blue you say: "apparently/evidently it is going to rain". Your friend disagrees and you insist saying:

    a. '**Obviously** it is going to snow.'
        显然/要下雪了。
        ***xiǎnrán**/yào xià xuě le*
        obviously FUT fall snow LE

5) Reasoning by exclusions
This inferential scenario is the one described in (33). It is compatible with *xiǎngbì* and *hěn kěnéng*, but is infelicitous with all other evidentials, including *dàgài*.

TAB. 5: INFERENTIAL EVIDENTIALS AND MODALS IN MODERN CHINESE

	English equivalents	Chinese evidentials	*Compatibility*					
			Non veridical context	Inference based on sensory evidence	Inference based on reasoning	Conjectural context	Matter of debate in the discourse	Reasoning by exclusion or elimination
Evaluative adverbs	*Roughly*	*Dàgài*	×	×	√	√	×	×
Epistemic modals	*Probably*	*Hěn kěnéng*	×	√	√	√	×	√
	Certainly	*Kěndìng,*	×	√	√	√	×	√
Pure necessity/ possibility modals	*Possibly*	*Kěnéng*	√	√	√	√	×	×
	Necessarily	*Yídìng*	√	√	√	√	×	×
Result evidentials	*Apparently* *Seemingly* *It seems that*	*Hǎoxiàng*	×	√	×	√	×	×
		Kànlai	×	√	×	√	×	×
		Sìhū	?	√	×	√	×	×
Debate-result evidentials	*Obviously*	*Xiǎnrán*	√	×	×	×	√	×
	Clearly	*Míngming*	√	×	×	×	√	×
Reasoning evidentials	*Presumably*	*Xiǎngbì*	×	√	√	√	×	√

6. Conclusiones

The analysis offered in this paper is aimed at providing a test for four aspects pertaining to the relation between modality and evidentiality, and including the subdivision internal to these two areas (see Section 2.2). The starting point of the investigation is a cross-linguistic phenomenon. As underlined in the evidential literature, visual perception is not only regarded as the strongest evidential source, but it is also referred to for attesting an inference based on a non-visual experience, as when we resort to *apparently/evidently* in relation to an olfactory perception. In English, such semantic extension from visual to non-visual evidences is the result of a "bleaching" through which a two-argument predicate related to sight (*see*) "loses" one argument, thus "creating" a raising verbs (*it seems/appears*)[81]. Such phenomenon can be observed also for Chinese, for adverbials such as *hǎoxiàng, kànlai, sìhū* ('result evidentials), which display a raising predicate behaviour.

In general terms, it could be said that there is a crescendo from *sight* to *perceptual clarity* and *inference*, which can culminate in an epistemic conjecture. This threefold path from direct evidence to indirect inference is consistent with the classification of the evidential markers into three main classes, suggested by Krawczyk based on her investigation on English and Central Alaskan Yup'ik. In this regard, we have shown that:

(i) Chinese patterns with Krawczyk's threefold paradigm. More specifically, based on the compatibility with five main inferential scenarios, the Chinese equivalents for the three inferential classes are:
— *xiǎnrán/míngming*, 'intersubjective evidentials', equivalent to *clearly/obviously*;
— *hǎoxiàng/kànlai/sìhū*, 'result evidentials', equivalents to *apparently/evidently*;
— *xiǎngbì*, 'reasoning evidentials', equivalent to *presumably*.

As in English and in Yup'ik, also in Chinese, the 'reasoning evidential'

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[81] Barron, *LFG and the history of raising verbs.*

(*xiǎngbì*) displays the highest compatibility with different inferential scenario, has the weakest evidential force and the strongest modal flavour. In other words, patterns more with the epistemic adverbs than with the other evidentials. Moreover, it is not compatible with non-veridical operators (such as sentential negation, questions and the antecedent of conditionals), thus behaving as a Positive Polarity Item. On the other hand, the 'intersubjective evidentials' (*xiǎnrán/míngming*) are more compatible with non-veridical-operators but are also more selective, since they are felicitous only with intersubjective inferential scenarios, characterized by a debate in discourse (see Fig. 2 and Tab. 5).

These data suggest that (ii) the above mentioned classes show similar syntactic constraints in both languages, but Chinese evidentials are more sensitive to veridical contexts. On this regard, the most salient outcome is that the inferential evidentials are not a homogenous class. In fact, the considered items display three different degrees of polarities. As a result of these observations, Ernst's[82] model can be fine-tuned with reference to the evidentials, as visible in (42).

(42)	Strong Positive Polarity	Positive Polarity	Weak Positive Polarity	Non-Positive Polarity Items
	xiǎngbì	*hǎoxiàng*	*xiǎnrán*	*kěnéng*
	hěn kěnéng	*kànlai/sìhū*	*míngming*	*yídìng*
	Reasoning/Modal	Results	Intersubjective result	Modal
			presumably	*apparently/evidently*
			probably, possibly	*clearly/obviously*
			Reasoning/Modal	Results and Intersubjective

We have shown that (iii) *dàgài* and *kěnéng*, are not endowed with the same high degree of inferential compatibility of *probably*, i.e. their "traditional" English equivalent. An "all-round" epistemic-inferential adverb (as *probably/*

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[82] Ernst, *Speaker-oriented adverbs*, *Adverbial Adjuncts in Mandarin Chinese*.

most probably) is instead the expression *hěn kěnéng*. In this way we have singled out the modal and the evidential markers having the same inferential use and syntactic constraint of *probably* and *presumably*, namely *xiǎngbì* (inference from reasoning) and *hěn kěnéng* (epistemic assessment).

Finally our test suggests that, unlike English, (iv) Chinese does not resort to a "modal strategy" for switching from 'result' to 'reasoning' inference. If we exclude the use of evidentials, the same modal (the epistemic *gāi*) can express both an inferences based on direct sensory evidence (as in 38) and an inference based on reasoning (39), whereas, if the epistemic marker is absent, the construction with the aspectual marker (final particle *le*, here also referred to change of state) can be used only in the former scenario (38).

The present constitutes the first phase of broader research activity aimed at highlighting the cross-linguistic and the Chinese language-specific features of inferential expressions. For a more in-depth investigation on the use of inferential markers additional tests are needed that take into account different inferential scenarios and, possibly, crosschecking the felicity of the sentences with a wider number of informants.

REFERENCES

Aikhenvald, A., *Evidentiality*, Oxford University Press, Oxford 2004.

Barnes, J., *Evidentials in the Tuyuca verb*, in "International Journal of American Linguistics", 50 (1984), pp. 255-271.

Barron, J., *LFG and the history of raising verbs*, in M. Butt and T. Holloway King (eds.), *Proceedings of the LFG97 Conference*, University of California, Berkeley 1997.

Cinque, G., *Adverbs and functional heads: A cross-linguistic perspective*, Oxford University Press, Oxford 1999.

De Haan, F., *Evidentiality and epistemic modality: Setting boundaries*, in "Southwest Journal of Linguistics", 18 (1999), pp. 83-101.

De Haan, F., *The relationship between modality and evidentiality*, in R. Müller and M. Reis (hrsg.), *Modalität und Modalverben im Deutschen*, Buske, Hamburg 2001, pp. 201-216.

De Haan, F., *Typological approaches to modality*, in W. Frawley (ed.), *The Expression of Modality*, De Gruyter, Berlin-New York 2006, pp. 27-69.

Delfitto, D., Everaert, M., van Riemsdijk, H., *Adverb Classes and Adverb Placement*, Blackwell Publishing, Hoboken 2006, Published Online, DOI: 10.1002/9780470996591.ch4.

Drubig, H. B., *On the syntactic form of epistemic modality*, Manuscript, University of Tübingen 2001.

Ernst, T., *Adverbs and Positive Polarity in Mandarin Chinese*, in M. K. M. Chan and H. Kang. Columbus (eds.), *Proceedings of the 20th North American Conference on Chinese Linguistics* (NACCL-20), The Ohio State University, Ohio 2008, vol. 1, pp. 69-85.

Ernst, T., *Speaker-oriented adverbs*, in "Natural Language and Linguistic Theory", 27-3 (2009), pp. 497-544.

Ernst, T., *Adverbial Adjuncts in Mandarin Chinese*, in C.-T. James Huang, Y.-H. Audrey Li and A. Simpson (eds.), *The Handbook of Chinese Linguistics*, Blackwell Handbooks in Linguistics, Wiley-Blackwell, Hoboken 2014, pp. 25-41.

Faller, M. T., *Semantics and Pragmatics of Evidentials in Cuzco Quechua*, PhD thesis, Stanford University, Stanford 2002.

GIANNAKIDOU, A., *Affective dependencies*, in "Linguistics and Philosophy", 22 (1999), pp. 367-421.

GIANNAKIDOU, A., *Varieties of polarity items and the (Non)veridicality Hypothesis*, in J. Hoeksema, H. Rullman, V. Sanchez-Valencia and T. van der Wouden (eds.) *Perspectives on negation and polarity items*, John Benjamins, Amsterdam 2001, pp. 99-128.

HAUMANN, D., *Adverb licensing and clause structure in English* (Linguistik Aktuell/Linguistics Today 105), John Benjamins, Amsterdam & Philadelphia, 2007.

HSIEH, C.-L., *Evidentiality in Chinese newspaper reports: subjectivity/objectivity as a factor*, in "Discourse Studies", 10-2 (2008), pp. 205-229.

HSIEH, C.-L., *Epistemic stance taking in Chinese media discourse*, in "Research in theoretical linguistics", 3 (2009), 1-35

HUANG, Y. H., *On the Form and Meaning of Chinese Bare Conditionals: Not Just Whatever*, PhD thesis, University of Texas Austin, Austin 2010.

JACKENDOFF, R., *Semantic Interpretation in Generative Grammar*, MIT Press, Cambridge (MA) 1972.

KRAWCZYK, E., *Inferred Propositions and the Expression of the Evidence Relation in Natural Language: Evidentiality in Central Alaskan Yup'ik Eskimo and English*, PhD thesis, Georgetown University, Washington DC 2012.

LIN, S.-Y. J., *On (a)symmetric epistemic interference*, LingBuzz 2012, <http://ling.auf.net/lingBuzz/001508>.

MATTHEWSON, L., *Evidential restrictions on epistemic modals*, Workshop on Epistemic Indefinites, University of Götingen, June 2010.

MCENERY, T., XIAO, R., *Corpus-Based Contrastive Studies of English and Chinese*, Routledge, London 2010.

PAUL, W., *The syntax of verb-object phrases in Chinese: constraints and reanalysis*, Langages Croisés, Paris 1988.

PAUL, W., *New Perspectives on Chinese Syntax, Trends in Linguistics Studies and Monograph*s, De Gruyter, Berlin/Munich/Boston 2015.

PENG, L.-Z., *Xiandai hanyu qingtai yanjiu,* Zhongguo shehui kexue chubanshe, Beijing 2007. 彭利贞，现代汉语情态研究. 北京：中国社会科学出版社.

SHYU, S.-i., WANG, Y.-F., LIN, Z.-J., *An Approximation to Secondary Predication Structure: A Case of V-qilai in Mandarin Chinese*, in "Language and Linguistics",

14-4 (2013), pp. 701-736, <http://www.ling.sinica.edu.tw/files/publication/j2013_4_03_4555.pdf>.

Tang, C.-C. J., *Functional projections and adverbial expressions in Chinese*, in "Language and Linguistics", 2-2 (2001), pp. 203-241.

Tang, L. L., *Evidentiality and Chinese modals*, PhD thesis, City University of Hong Kong, Hong Kong 2010.

Tsai, W.-T. D., *On the Topography of Chinese Modals*, in U. Shlonsky (ed.), *Beyond Functional Sequence*, Oxford University Press, Oxford 2014.

van der Auwera, J., Plungian, A. V., *Modality's semantic map*, in "Linguistic Typology", 2 (1998), pp. 79-124.

von Fintel, K., Gillies, A. S., *Must… stay… strong!*, in "Natural Language Semantics", 18-4 (2010), pp. 351-383.

Willet, T. L., *A cross-linguistic survey of the grammaticalization of evidentiality*, in "Studies in Language", 12 (1988), pp. 51-97.

Woisetschlaeger, E. F., *A Semantic Theory of the English Auxiliary System*, Indiana University Linguistics Club, Bloomington 1976.

Repertoire

ASBC. Sinica Corpus – Academia Sinica Balanced Corpus of Modern Chinese, <http://www.sinica.edu.tw/SinicaCorpus/>.

Frye, H. N., Gill, G. R., *Northrop Frye on Twentieth-century Literature*, University of Toronto Press, Toronto 2010.

Kaifang Open Magazine (2003), *Kāifàng*, Chōngtiān yǒuxiàn gōngsī. 开放，冲天有限公司.

MGMS, *Ménggǔ mìshǐ*. Xīnhuá chūbǎnshè. 蒙古秘史, 新华出版社, 2006.

Taylor, P. C., *Race: A Philosophical Introduction*, John Wiley & Sons, Hoboken 2013.

ZHWH, *Zhōnghuá wénhuà fùxīng yùndòng tuīxíng wěiyuánhuì*, Táiwān shāngwù yìnshūguǎn. 中华文化复兴运动推行委员会，台湾商务印书馆, 1986.