The curious case of the negatively biased Mandarin belief verb *yǐwéi*[*]

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Abstract

This short paper attempts to enrich the cross-linguistic typology of belief verbs to include *negatively biased* belief verbs such as Mandarin *yǐwéi*. Sentences containing *yǐwéi* strongly suggest, but do not entail, that *yǐwéi*'s complement is false. The paper argues that *yǐwéi*'s sense of negative bias is tied to a non-at-issue requirement that, after updating with an assertion containing *yǐwéi*, the Common Ground must still be consistent with the negation of *yǐwéi*'s complement. This requirement can give rise to a conversational implicature that the speaker is skeptical towards the complement. Zooming out, the analysis suggests that Mandarin has three types of belief verbs – *know*-type, *think*-type, and *yǐwéi*-type – with the same at-issue content (*believe*) but different non-at-issue requirements about how the reported belief relates to the CG.

1 Introduction

Although mental attitude verbs have occupied linguists and philosophers for decades (e.g. Hintikka 1969, Heim 1992, Kratzer 2006, Anand & Hacquard 2014 *inter alia*), one subtype remains practically untouched: what I will call *negatively biased* belief reports, such the Mandarin verb *yǐwéi*. Similar to English *under the impression that*, *yǐwéi* carries a suggestion that its complement is false; when a speaker utters (1), she conveys that there is *no* test.

(1)   tā   yǐwéi míngtiān yǒu   kǎoshì
        3sg yǐwéi tomorrow have test

        "S/he is under the impression that there's a test tomorrow"

But, as §2 shows, *yǐwéi*'s sense of wrongness is rather slippery. The goal of this short paper is to pin it down, and explain why it is not always present.

After laying out the data in §2, §3 proposes that *x yǐwéi P* has a projecting, non-at-issue requirement that the Common Ground (CG) is to be consistent with not-*P* after update. §4 concludes by situating *yǐwéi* within a typology of belief

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verbs, and within a suite of lexical and pragmatic resources that speakers can use to report beliefs that they do not necessarily endorse.

2 Data

Previous research has found that *yǐwéi*'s sense of incorrectness is quite strong, so much so that children perform better in false-belief tasks when the belief is reported using *yǐwéi* compared to *xiǎng* "want / believe" (Lee et al. 1999). However, although *yǐwéi* sentences convey clear skepticism on the speaker's part, it will be shown that *yǐwéi* can be used even when the speaker clearly believes *yǐwéi*'s complement and commits to it.

Since *yǐwéi* is a belief verb, it gives rise to different inferences depending on the grammatical person of the matrix subject; for example *I believe P* suggests that the speaker endorses *P*, whereas *s/he believes P* need not. Therefore, *yǐwéi* is explored in different grammatical persons throughout this section. *Yǐwéi* is shown to be especially complex in the first person, where it has two distinct uses. Finally, *yǐwéi*'s sense of wrongness is shown to project out of every entailment-cancelling context – except negation.

These data were collected in consultation with twelve native speakers of Mandarin at a United States university. Some examples are adapted from sentences given by the Chinese language-learning website LineDictionary (formerly nciku.com); others were volunteered by the consultant or translated by the consultant from English and judged to be felicitous. Rejected sentences were judged acceptable with another belief verb, isolating the contribution of *yǐwéi*.

Sense of wrongness   Illustrating *yǐwéi*'s sense of incorrectness, (2) communicates that the speaker is *not* sick. If the speaker *is* sick, consultants say they would choose another verb – *zhīdào* "know" or *rènwéi* "think" – instead.

(2)   Māma yǐwéi wǒ bìng le
      Mother yǐwéi I   sick ASP
      "Mom is under the impression that I'm sick"

Since *yǐwéi* sentences so strongly suggest that the belief is incorrect, *yǐwéi* is sometimes a socially risky word choice. For example, it would be egregious to use *yǐwéi* in an academic paper to describe another scholar's opinion. If a newspaper used it, as in (3), it would come across as "really polemical." In contrast, the more neutral *rènwéi* "think" would be unobjectionable in these contexts. *Juédé* "feel that" would also be acceptable, although it might suggest that the belief is less strongly held than with *rènwéi*.

(3)   tā yǐwéi tā huì yíng lādīng de xuǎnjǔ
      3sg yǐwéi 3sg will win Latino DE vote
      "She is under the impression that she will win the Latino vote"

This abrasive effect sets *yĭwéi* apart from the German Konjunktiv I (discussed in e.g. von Stechow 2002, Schlenker 2003, Potts 2005) or the French conditional, tense markings which (like English "allegedly") can be used by journalists to report ideas in a noncommittal manner.

Because *yĭwéi* sentences can come across as critical, *yĭwéi* is not considered polite in the second person, although it makes sense. For example, (4) is a coherent sentence, but consultants did not like it because it is rude to characterize the hearer's belief in such a negatively biased way.

(4)   I am not confident that I will get a job, but James thinks I will get one. He says:

Nǐ   yĭwéi nǐ   zhǎo-bú-dào gōngzuò, dànshì nǐ   huì zhǎodào de
you yĭwéi you seek-not-find work,   but   you will seek-find DE

"You are under the impression that you won't get a job but you will"

Yĭwéi misfires when its complement is known to be true. Consultants found (5) puzzling; "but a flounder *is* flat!"

(5)   (adapted from LineDictionary)

tā   yĭwéi bǐmùyú shì biǎnpíng de
3sg yĭwéi flounder be flat   DE

"She's under the impression that flounders are flat"

Given what we have seen so far, it looks like *yĭwéi* simply entails that its complement is false. However, in what follows, we will see that the reality is more nuanced.

Two first-person uses   Since *yĭwéi* sentences suggest that *yĭwéi*'s complement is false, it may seem surprising that *yĭwéi* has a first-person use at all. After all, as Wittgenstein 1953 noted, "If there were a verb meaning 'to believe falsely,' it would not have any significant first person, present indicative" (para. 470). But in fact, *yĭwéi* has two distinct uses in the first person, each of which involves a different way of reconciling the speaker's reported belief with her apparent skepticism towards it.

First, the most common first-person use of *yĭwéi* communicates that the speaker *previously* believed the complement, but now either thinks it is false or is open to revising the belief. This temporal shift in the first person is possible because Mandarin does not morphologically distinguish past from present; instead temporal interpretation arises from a rich aspectual system plus pragmatic inference (Smith & Erbaugh 2005, Lin 2006). Since *yĭwéi* is atelic, it interpreted as present by default. But in the first person, *yĭwéi* is often interpreted as *previously thought*, apparently to rescue a sentence that might otherwise indicate that the speaker both believes the complement and wants to suggest that it is false.

In other words, first-person *yǐwéi* gives rise to a "cessation implicature" in the sense of Altshuler & Schwarzschild 2013, indicating that the state (of believing the complement) no longer holds.

For example, the most natural interpretation of (6) is that the speaker used to think there was a talk, but now realizes there is not. In contrast, if *rènwéi* "think" or *juédé* "feel that" is used instead, the sentence most naturally means that the speaker *currently* believes there is a talk.

(6)   Wǒ yǐwéi jīntiān yǒu ge jiǎngzuò
      I   yǐwéi today have CL talk

      "I previously thought there was a talk today"

As (7) shows, the speaker need not believe that the complement is false. Here, the speaker is open to revising her belief that Mark likes Kim and Jess, but may not have completely given up on this belief.

(7)   Mark says, "I really don't want to go see Kim and Jess tonight." I say:

      wǒ yǐwéi nǐ   xǐhuān tāmen
      I   yǐwéi you like   them

      "I thought you liked them"

In the second, distinct use of first-person *yǐwéi*, the speaker is understood to hold the belief at speech-time, and the entire sentence is interpreted as a hedge. For example, the speaker of (8) *currently* believes that "you should do this," but welcomes the hearer to disagree. The speaker of (9) uses *yǐwéi* to highlight his uncertainty. When *rènwéi* "think" is used instead, these utterances become more forceful.

(8)   wǒ gèrén   yǐwéi nǐ yīnggāi zhèyàng zuò
      I   personally yǐwéi you should this-way do
      "Personally, I think you should do this"

(9)   While doing phonology homework with a friend, Robert has just proposed an idea that he feels very uncertain about. He follows up with:

      zhìshǎo wǒ xiànzài   yǐwéi shì zhèyàng
      at-least I   right-now yǐwéi be that-way

      "That's my impression so far, anyway."

Consultants described these formulations as "polite", "tentative", and "conservative," suggesting that the sentences do not fully commit the speaker to the complement. These sentences contain clues that the speaker is hedging, such as "personally" or "at least right now." Without such clues, these sentences more saliently mean that the speaker *previously* endorsed the complement but has now changed her mind.

Some consultants described uses like (8) as sounding slightly archaic, formal, or excessively polite. But at least some instances of this first-person *yǐwéi* are judged perfectly colloquial, such as (9). Therefore, I will attempt to analyze both the past and hedged first-person uses in a unified manner.

Based on the first-person data, we see that we cannot characterize *yǐwéi*'s sense of incorrectness as a Manner implicature. A proponent of such an analysis would say that *yǐwéi* is a more marked way to describe a belief than *rènwéi* – perhaps because *yǐwéi* is historically derived[1] from *take . . . to be*, as in "I took him to be kidding." Describing a belief as what one *takes to be* true highlights that this belief is based on what one gleans from the situation rather than what is actually there. When a speaker describes a belief in this unusual way, the hearer may infer that the speaker chose this framing to flag the complement as unreliable.

But the biggest problem for this analysis is why *yǐwéi* gives rise to this chain of reasoning while *juédé* "feel that" does not. What someone "feels" to be true, like what someone "takes" to be true, is potentially subjective and unreliable. Thus if both *yǐwéi* and *juédé* describe the belief as rooted in a potentially flawed conception of reality, why is *yǐwéi* more strongly biased against the complement than *juédé*? Why does *juédé* not give rise to a past inference in the first person as *yǐwéi* does? These differences remain unexplained if *yǐwéi* gets its sense of incorrectness from a Manner implicature.

Uses where complement is true   We have seen that *yǐwéi* sentences strongly suggest that *yǐwéi*'s complement is false. However, even outside of the first person, *yǐwéi* sentences are coherent even in contexts where the speaker believes and commits to the complement.

For example, out of context, consultants say the first clause of (10) alone means "actually he is not an expert." However, the same consultants judged the entire sentence to be coherent:

(10)   (adapted from LineDictionary)

rénmén   yǐwéi tā shì gè zhuānjiā, ér   tā díquè shì
person-PL yǐwéi 3sg be CL expert   and 3sg indeed be

"People are under the impression that he's an expert, and he really is"

Similarly, the first clause of (11) alone would suggest that the speaker did not bring Laura a gift, but the whole thing is judged consistent:

(11)   (adapted from LineDictionary, second clause added)

Láolā yǐwéi wǒ lǚxíng guīlái   huì gěi tā dài   lǐwù, ér   wǒ hái
Laura yǐwéi I   travel come-back will give 3sg bring gift   and I   still

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[1]Even synchronically, the morphemes *yǐ* and *wéi* can be used with this meaning (Integrated Chinese Level 2 lesson 12)

zhēnde dài   le
really   bring ASP

"Laura expected that I would bring her a gift from the trip, and I really did"

According to one consultant, these sentences are "subversive" because they violate one's expectations – in (11), "you're expecting the person to say, 'but I forgot,"' he said. Other consultants said that some of these sentences would make more sense with *juédé* "feel that" or *rènwéi* "think" instead of *yǐwéi*. Consultants insisted that the sentences at least need *zhēnde* "really" or *díquè* "indeed" to acknowledge that the second clause subverts the expectation raised by the first. But while these sentences seem to be constructed for some sort of rhetorical effect, they are consistently acceptable.

In contrast, when the conjuncts are reversed, such sentences are judged incoherent:

(12)   (adapted from LineDictionary)

%tā shì gè zhuānjiā, ér   rénmén   yǐwéi tā shì
3sg be CL expert,   and person-PL yǐwéi 3sg be

"%He's an expert, and people are under the impression that he is"

One might worry that *díquè* "indeed" or *zhēnde* "really" signal that the speaker is correcting herself rather than elaborating on her utterance in a consistent manner. However, (13) (a clear instance of self-correction, without *yǐwéi*) was judged incoherent unless the two pronouns refer to two different people, or the speaker means that he is an expert in one sense but not another. In contrast, (10) was judged consistent on the intended reading, showing that *yǐwéi* is indeed consistent with the speaker going on to confirm the complement.

(13)   tā bú shì ge zhuānjiā, ér   tā díquè shì
3sg not be CL expert,   and 3sg indeed be
"He's not an expert, and he really is"

These data show that *yǐwéi* cannot be captured using the analysis from Kierstead 2013, who examines a similar belief report in Tagalog, *akala*. Kierstead suggests that *akala* conventionally implicates that the speaker doubts the complement. However, this analysis does not translate to *yǐwéi* because it does not predict the observation that a speaker can use *yǐwéi* even when she clearly does not doubt the complement and in fact commits to it.

Projection   For the analysis, it is important to examine how *yǐwéi* behaves in entailment-cancelling contexts, such as in questions, under negation, in conditional antecedents and under possibility modals (Chierchia & McConnell-Ginet 1990). These contexts suspend at-issue content, but allow other types of mean-

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ing (conventional implicature, presuppositions, and so on) to persist, so they are crucial for diagnosing the types of meaning at play in *yǐwéi*.

In questions, *yǐwéi* still suggests that the complement – or whatever is taken to be the complement of a question – is incorrect. For example, (14) is only appropriate if the speaker believes that there is no test. If the speaker does believe that there is a test, *rènwéi* or *zhīdào* would be used instead.

(14)   Tā yǐwéi míngtiān yǒu kǎoshì ma?
        3sg yǐwéi tomorrow have test   QUESTION
        "Is he under the impression that there's a test tomorrow?"

In contexts where *yǐwéi* is used in a question about the hearer's beliefs, it often comes across as antagonistic. For example, consultants said (15) sounds "aggressive" or "scolding;" one translated it into English as "Who the hell do you think you are?" In contrast, they said the same sentence with *rènwéi* might be an aggressive question like (15), but might also be "a serious question, like in philosophy," because *rènwéi* "think" is more neutral about whether the complement is true.

(15)   (adapted from LineDictionary)

        Nǐ   yǐwéi nǐ   shì shéi?
        you yǐwéi you be who

        "Who do you think you are?"

Similarly, when *yǐwéi* appears in the antecedent of a conditional, *yǐwéi* sentences still suggests that the complement is false. For example, (16) is judged appropriate in a scenario where we sometimes have pop quizzes, but I am convinced that we are done with pop quizzes for the quarter. We're at a party and we're wondering where our classmate Kate is. I say (16):

(16)   rúguǒ tā yǐwéi míngtian yǒu kǎoshì, tā yīnggāi zài   xuéxi
        if   3sg yǐwéi tomorrow have test,   3sg should PROG study
        "If she thinks there's a test tomorrow, she should be studying"

Thus, (16) suggests that I, the speaker, think Kate would be wrong to believe there is a test tomorrow. It is not appropriate if I believe that we do have a test tomorrow.

We have seen that *yǐwéi*'s sense of wrongness persists under conditional antecedents, a context that have been analyzed as downward-entailing and therefore possibly inhospitable to weak-to-not-strong scalar implicatures (Horn 1989: 233-4 via Chierchia 2002; Chierchia 2000). These data might be taken as evidence that *yǐwéi*'s sense of wrongness should not be analyzed as a scalar implicature (Horn 1972) that *yǐwéi* implicates *not rènwéi*. But we can already rule out such an analysis on simpler grounds: x *yǐwéi* P specifically means that x believes P; whereas x *not rènwéi* P would mean that x does *not* believe P; so the two are

not equivalent.

Under possibility modals, *yǐwéi* sentences continue to suggest that the complement is false; (17) was judged to suggest that "actually this is a bad idea"

(17) tāmen kěnéng yǐwéi zhè shì yígè   hǎo bànfǎ
      they   may   yǐwéi this be one-CL good method
      "They might think this is a good strategy"

Surprisingly, while *yǐwéi* continues to suggest wrongness under all the other entailment canceling operators I've examined, the sense of wrongness seems to disappear under negation. Consultants usually say *yǐwéi* sentences sounds awkward with negation, but I found a few examples in the Chinese Gigaword Corpus (Graff & Chen 2003) and on the Web that sounded native to consultants.

(18) (from Chinese Gigaword)

      tā bù   yǐwéi zìjǐ yǒu shénme guòrén   běnshì
      3sg NEG yǐwéi self have what   outstanding ability

      "He doesn't think he has any outstanding abilities"

Out of context, (18) does *not* convey whether the belief-holder is right or wrong; in one consultant's words, "either he is wrong and he does have outstanding abilities, or he thinks he has average abilities and he is right." Like English *think*, *yǐwéi* is a neg-raiser: *she does not yǐwéi P* means *she believes not P*.

Similarly, consultants say that (19) does not tell us whether the belief-holder is right or wrong to think being a priest is not his vocation; they said the sentence would have the same effect if *rènwéi* "think" were substituted for *yǐwéi*.

(19) (from Dict.cn, a Chinese-English dictionary)

      tā bù   yǐwéi zuò mùshī shì zìjǐ de tiānzhí
      3sg not yǐwéi be   priest be self DE life.purpose

      "He doesn't think being a priest is his purpose in life"

Thus, to the extent that *yǐwéi* is acceptable under negation, it does not suggest that the complement is true or false. This finding is unexpected, since *yǐwéi*'s sense of wrongness persists under the other entailment-cancelling operators.

Finally, when *yǐwéi* is embedded under another verb reporting a speech act or belief, the sense of wrongness anchors to the belief-holder rather than the speaker. For example, in (20), the speaker believes that Xiao Ming will succeed; it is only the matrix subject, Xiao Wang, who believes she will fail.

(20) Context: Xiao Ming is a budding filmmaker who believes she can succeed
      in the field even though she makes unusual, avant-garde films. Xiao Wang
      does not believe in Xiao Ming's potential, but I am certain of it. I say:

	rènwéi	*yǐwéi*
1st person ___ *p*	present by default, not hedged	understood as past or hedged
2nd person ___ *p*	typically not rude	typically rude because it suggests hearer is in error
3rd person ___ *p*	*p* might or might not be true; an unbiased way to report another party's opinion	typically conveys that speaker disbelieves or doubts *p*; a "polemical" way to describe another party's opinion
3rd person ___ *p* and in fact *p*	unsurprising	subverts expectations
under embeddings	no sense of wrongness in the first place, so nothing projects	sense of wrongness appears to project *except* under negation
x says/thinks z ___ *p*	no sense of wrongness in the first place	sense of wrongness is in x's eyes, not necessarily speaker's

Figure 1: Summary of data on the negatively biased *yǐwéi* vs. the more neutral *rènwéi* "think"

> Xiǎo Wáng shuō/rènwéi Xiǎo Míng yǐwéi Xiǎo Míng huì chénggōng,
> Xiao Wang say/think   Xiao Ming yǐwéi Xiao Ming will succeed
> dànshì wǒ zhīdào tā zhēnde huì
> but   I   know 3sg really will
>
> "Xiao Wang says/thinks Xiao Ming is mistaken to think that she will succeed, but I know she actually will"

Since *yǐwéi* is embeddable and easily understood as non-speaker-oriented, it is distinct from the largely unembeddable appositives and expressives analyzed by Potts 2005 *et seq*, and more similar to the "classic" conventional implicatures explored in e.g. Levin & Rappaport 1988.

This section has shown that *yǐwéi* carries a strong sense of negative bias, but that it can actually still be used in cases where the speaker endorses the complement. As a summary, *yǐwéi* is compared to a more neutral belief verb such as *rènwéi* "think" in Figure 1.

3 Analysis

To give *yǐwéi* just the right amount of negative bias towards its complement, I propose a two-part analysis, combining a fixed non-at-issue component with a more flexible conversational implicature.

The analysis relies on the idea that reporting someone's belief that P has the potential to update the CG with P itself, and not just the person's belief that P. Non-factive verbs such as *think, believe* and *say* by definition do not *require*

their complements to be true (Kiparsky & Kiparsky 1970; Karttunen 1973) – in other words, they are *nonverdical* in the sense of Giannakidou 1999 – but their complements can be *communicated* to be true depending on the hearer's world knowledge (Karttunen 1973, Simons 2007 *inter alia*). If the hearer believes the complement is likely enough, if the belief-holder is reliable, and if he can think of a good reason that the speaker chose to report *x believes P* instead of *P* alone, then he is likely to update his beliefs with *P* as well as *x believes P*. If the speaker also endorses *P*, and if both interlocutors recognize that the other one endorses *P*, *P* becomes part of the CG. The invented dialogue in (21) illustrates how a reported belief (here, that teenagers are not interested in watches) can become part of the CG, even when that belief was only explicitly attributed to a third party.

(21)   *Ana and Bob are trying to sell accessories to teens.*
        Ana: The market researches think teenagers are not interested in watches.
        Bob: Okay, what about sunglasses?
        Ana: Sunglasses are better.

de Marneffe <u>et al.</u> 2012 find evidence for this intuitive idea in a series of Mechanical Turk experiments based on sentences from the FactBank Corpus (Saurí & Pustejovsky 2009). de Marneffe *et al* asked Turkers to decide whether an event whose description is embedded under a non-factive verb occurred or not, allowing Turkers to take into account world knowledge and the credibility of the source. They find that when the source is authoritative and the event is plausible, Turkers are willing to accept as "certain" event reports that are reported only as believed or said to have happened. The current analysis of *yǐwéi* relies on this idea.

It is argued that *yǐwéi* has three parts to its meaning.

I   *At-issue meaning: x yǐwéi P* asserts that x believes *P*.

II *Non-at-issue meaning: x yǐwéi P* has a non-at-issue requirement that the CG must be consistent with NOT(*P*) after updating with *x yǐwéi P*.

III *Flexible, cancelable conversational implicature:* Since the speaker explicitly does not want to update the CG with *P*, *yǐwéi* often comes to conversationally implicate that *P* is false.

On this proposal, *yǐwéi* has the same at-issue meaning (I) as a more neutral belief verb such as *rènwéi* "think;" it means "believe." Where *yǐwéi* differs is in its non-at-issue requirement that the CG must be consistent with the *negation* of the complement[2], not-*P*. Although the speaker's assertion only proposed to update with *x believes P*, not *P* itself, we have seen that belief reports can end up updating with the belief itself. *Yǐwéi*'s not-at-issue meaning (II) explicitly prevents this. By default, the CG that contains *not-P* worlds is the matrix

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[2]A similar requirement has been proposed by Collins 2015 for free relatives: Collins argues that a free relative such as "whoever arrived first" has a non-at-issue requirement that the Common Ground does not settle who arrived first, similar to the requirement here that the CG does not settle in favor of *P*.

CG; but under embeddings, it could also be some more local context, such as a reported or imagined epistemic state.

The hearer reasons (III) about why the speaker chose *yǐwéi*, specifically indicating that she does not want the complement to be added to the CG, instead of a more neutral verb such as *rènwéi* "think" or *juédé* "feel that". Perhaps, the hearer reasons, the speaker does not want the complement to be added to the CG because she thinks it is false.

To formalize *yǐwéi*, the non-at-issue content is notated in the way Heim & Kratzer 1998 indicate presuppositions, although this content does not constitute a presupposition in the usual sense. A denotation for *yǐwéi* is given in (22).

(22) $\lambda P \lambda x : \exists w' \in CG_w : P(w') = 0. \forall w' : w' \in bel(x, w) \to P(w') = 1$
        Takes a proposition P and an individual x
        At-issue contribution: P is true in all of x's belief worlds
        Non-at-issue contribution: there is at least one world in the CG where P is false

Using this denotation, *tā yǐwéi yǒu kǎoshì* "s/he *yǐwéi* that there is a test" has the at-issue contribution that in all of the agent's belief worlds, there is a test; in other words, s/he believes there is a test). The non-at-issue contribution that at least one world in the CG after update must be a *non*-test world; in other words, we the interlocutors agree that there might *not* be a test.

On this analysis, *yǐwéi*'s suggestion of wrongness is characterized as a conversational implicature. This seems appropriate, because it is salient to speakers, but it can be cancelled, as when the speaker goes on to confirm the complement. This analysis also explains where this conversational implicature comes from. Since *yǐwéi* indicates that the complement may be incorrect, its meaning is inherently negatively biased. When the speaker chooses a negatively biased belief verb instead of a more neutral one like *yǐwéi*'s competitors, hearers will infer that she wanted to implicate that the complement is incorrect. Unlike the Manner implicature analysis that was dismissed above, the current analysis can explain why *yǐwéi* works differently from *juédé* "feel that": only *yǐwéi* carries this conventional implicature.

One might ask why *yǐwéi* comes across as more negatively biased than the German Konkunktiv I analyzed in Potts 2005, the tense marking used by journalists to report people's beliefs and claims impartially. According to Potts, the Konjunktiv conventionally implicates that the speaker/author refrains from committing to the embedded proposition. Apparently this conventional implicature does *not* give rise to a strong conversational implicature that the embedded proposition is false, since its use in newspapers comes across as objective. The Konjunktiv is neutral in that it indicates the *speaker's* non-commitment while letting the hearer draw his own conclusions. But with *yǐwéi*, the speaker explicitly tells the hearer that she does not want him to take up the reported belief, explicitly creating bias against the complement.

Past inference   The conflict between *yǐwéi*'s at-issue contribution and its non-at-issue requirement causes *yǐwéi* to be interpreted as "previously believed" in the first person. Imagine that a speaker asserts *I yǐwéi P*. This commits her to *yǐwéi*'s asserted content – that she believes or believed P at some evaluation time. In choosing *yǐwéi* instead of a more neutral belief verb, she also implicates that she believes that P is false. (I assume that a speaker's implicatures always reflect her beliefs at speech-time.) But this would mean that the speaker simultaneously believes P and wishes to implicate that P is false – a contradictory position. To resolve the tension, the belief time is shifted backward. The resulting interpretation is as desired: the speaker previously P, but at speech time, she conversationally implicates that P is false or uncertain – indicating that she has corrected herself.

First-person tentative suggestions   The analysis also captures the first-person tentative suggestions. These uses are compatible with the speaker believing the complement at speech-time. To get this "tentatively suggest" reading instead of the more salient "previously thought" reading, one often needs to add cues that the speaker is hedging – *at least, personally*, and so on.

First-person *yǐwéi* creates a tension: it conveys that the speaker believes P, but does not want people to update with P. Normally, in the "previously thought" uses, hearers strengthen that conventional implicature to a *conversational* implicature that the complement is wrong. But when it is clear that the speaker is trying to hedge, hearers infer that the speaker chose *yǐwéi* not to implicate that the complement is wrong, but to soften her assertion. Thus, hearers do not derive the implicature that the speaker thinks the complement is incorrect. Instead, the speaker communicates that she currently believes the complement but also acknowledges that she may be wrong about it – a tentative commitment.

Cancelling the implicature   We have also seen that *yǐwéi*'s sense of wrongness can be cancelled later in the sentence, subverting the expectation raised by *yǐwéi*. To handle these examples, we have to say that *yǐwéi*'s conventional implicature (that at least some not-P worlds remain in the CG) can apply only to a *local context* (Karttunen 1973, Stalnaker 1979), here the first conjunct. The first conjunct of (10) tells the hearer not to update with *he is an expert*, but the second conjunct goes on to do so. Perhaps the speaker wants to suggest that her private evidence for him being an expert is better than other people's evidence for this, or she wants to create rhetorical tension for humorous effect. We can moreover understand why some speakers wanted to substitute a different verb for *yǐwéi* – because asking a hearer to revise his interpretation of the previous clause creates a sort of pragmatic garden path. Finally, the analysis explains why reversing the conjuncts – as in, *P and people yǐwéi P* – is infelicitous: because the speaker has attempted to update with P, but subsequently reveals using *yǐwéi* that she does not want the CG to be updated with P, a contradictory position.

Embedding This analysis also explains *yĭwéi*'s behavior under embedding. Under questions, conditional antecedents and possibility modals, *yĭwéi* continues to suggest that the complement is incorrect. Here, the proposed update (that x believes P) is not added to the CG, but the non-at-issue content is still added. By choosing a belief verb indicating that P is possibly false, the speaker still implicates that she thinks P is incorrect, whether or not x believes it.

There are still some details to be worked out in the analysis of conditional antecedents. When *yĭwéi* occurs in a conditional antecedent, one might think that the only the conditional antecedent, not the entire utterance, should be subject to the non-at-issue requirement that some the CG be consistent with not-P. After all, in the "subversive" sentences where *yĭwéi*'s implicature is cancelled, *yĭwéi* must be allowed to apply only to the first conjunct of a sentence rather than the whole thing. But if *yĭwéi*'s non-at-issue contribution only applies to the conditional antecedent that case, it is not clear why the entire utterance should convey skepticism towards P. I leave this issue as an open question.

Turning to negation, the current account can explain why negated *yĭwéi* becomes neutral about whether the complement is true or false. Negated *yĭwéi* proposes to update the CG with NOT(x believes P), and requires that the CG contain some worlds where P is false. (Although *yĭwéi* is a neg-raiser, I assume that the logical form of negated belief predicates is not(x believes P) rather than x believes not-P, so that neg-raising properties arise from some sort of pragmatic inference as in Bartsch 1973 and related work.) Thus, all it means is that x does not believe P, and may be correct not to do so. In no way does this meaning suggest that x is mistaken, consistent with the data.

4 Conclusion

This short paper observes a puzzle involving the Mandarin belief report *yĭwéi*: that it strongly suggests that the speaker disbelieves its complement, but it can also be used in cases where the speaker clearly believes or commits to the complement. The contradictory behavior of *yĭwéi* is explained as a requirement that some not-P worlds remain in the CG after the update. This requirement gives rise to a flexible conversational implicature: usually, the hearer infers that the speaker did not want to update with the complement because she believes it to be false. But sometimes, the speaker may have chosen this negatively biased form in order to hedge her assertion even if she believes it.

More broadly, I hope that this short paper has contributed to our understanding of the typology of lexical semantic resources that speakers can use to direct the pragmatically complex process of deciding whether to take up reported beliefs. Like the French conditional and German Konjunktiv I, *yĭwéi* allows the speaker to signal non-commitment towards a reported belief; but *yĭwéi* goes further in that it also instructs hearers *not* to take up the reported belief. Thus in Mandarin, it seems that there are at least three types of belief reports that share the same at-issue content but differ in their non-at-issue requirements about how

the complement relates to the CG – *zhīdào* "know" requires it to be accepted as true, *rènwéi* "think" does not specify, and *yǐwéi* requires the CG to remain consistent with its negation. We might also ask whether English *under the impression that* should be analyzed in the same vein, or if its sense of skepticism could be derived via a Manner implicature, since in describing the belief as an *impression*, its compositional meaning seems to distance the speaker from the belief. It may be that the same end is achieved by different lexical-semantic and pragmatic means in these different languages, meriting comparative research.

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