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The Orientation of Evidentials in Attitude Contexts: A Case Study Based on Narratives in Paraguayan Guarani

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Abstract: This paper examines the orientation of evidentials in complements of attitude verbs, with Paraguayan Guarani evidential *ra'e* as a case study. It argues that embedded evidentials can be directed either towards the speaker or towards a matrix attitude-holder argument (e.g., the subject of the attitude verb) and that a syntactic representation of the *evidence-acquisition event*, with its pronominal subject, in the lower end of the CP field, is well-poised to capture this potential ambiguity. Language-particular properties can also play a determining role in the orientation of the embedded evidential, as is the case of the subordinator *ha* in Paraguayan Guarani. It is argued that this subordinator requires the presence of a Complementizer specified with a (strong) Modal component (which encodes certainty/commitment on the part of the attitude holder with respect to the embedded proposition) and that this property biases the orientation of *ra'e* towards the matrix attitude-holder argument.

Keywords: evidentials; attitude verbs; Paraguayan Guarani

1. Introduction

Recent research suggests that the Complementizer field (the highest part of the clause) is where the grammar encodes certain *perspectival (or attitudinal) properties* of the proposition (Baker 2008; Charnavel 2019; Giorgi 2010; Landau 2015; Speas and Tenny 2003; Pancheva and Zubizarreta 2019; Zu 2018, a.o.). In particular, it has been suggested that the speech event is syntactically represented in the high end of the CP field, minimally via its participants (Speaker, Addressee) and its temporal–spatial coordinates. Evidential markers encode information as to the source of evidence regarding the propositional content expressed by the speaker or attributed to another attitude holder. As such, evidential markers also encode perspective and may be assumed to be associated with a dedicated attitudinal syntactic projection in the CP part of the clause (Speas 2004).

More specifically, Pancheva and Zubizarreta op. cit. proposed that grammaticalized evidentiality, at least in Paraguayan Guarani, is syntactically located in the lower part of the CP field, below the C that expresses the force of the sentence and above the IP. The evidential functional projection is referred to as EA, which stands for *evidence-acquisition event*, for continuity with the semantic literature (e.g., Chung 2007; Lee 2013; Smirnova 2013; Koev 2016). More specifically, the EA head encodes a perceptual event of acquiring evidence for the content expressed by its sister node, the IP, the prejacent (abstracting away from other possible intervening categories encoding modality and aspect). EA, like any other semi-functional category, takes an external argument, represented by a null pronominal, bound by another null pronominal, itself denoting the local attitude holder for that clause. In the case of the matrix clause, this attitude holder is the Speaker, which we assume is syntactically represented in the higher CP field (pro-SP in the structure below).[1] EA is an optional projection, but if present, it must be licensed by an evidential marker with the appropriate semantic content.

(1)   [<u>pro</u>-SP [C [*pro* [EA [. . . IP]]]]]

Two central questions arise regarding the study of evidentials in embedded attitude contexts: (1) What is the scope of the evidential? In other words, is the prejacent constituted by the matrix proposition or by the embedded proposition? (2) What is the orientation of the evidential? In other words, to which attitude holder is the evidence-acquisition event attributed?

In the framework outlined above, the first question translates as follows: Is the embedded evidential associated with an EA in the matrix C (wide scope) or with an EA in the embedded C (narrow scope)? Pancheva and Zubizarreta (2019), in their study on Guarani *ra'e*, proposed that this association is achieved via LF movement: the evidential marker *ra'e* adjoins to its associated EA at LF. If the evidential is adjoined to the matrix EA, i.e., it has matrix scope, then we expect that the evidential be speaker-oriented, given that the *pro* subject of the matrix EA is bound to the speaker (or narrator in a narrative context).[2] This partially answers the second question above: matrix scope is associated with speaker orientation.

On the other hand, if the embedded evidential is associated with an EA in the embedded clause, i.e., it has scope in the embedded clause (the only available option), the evidential may be oriented towards an argument of the embedding attitude predicate (typically, its subject), but it may also be oriented towards the speaker.

Thus, the answers to questions (1) and (2) above are as follows: embedded evidentials scope within the embedded clause, and this structural position allows them to be oriented, in principle, either to the speaker or to the matrix attitude holder.

In many studies, embedded evidentials have been reported to be oriented to the matrix attitude holder (often but not necessarily the matrix subject); e.g., in Tibetan, studied by Garrett (2001) among others, and in a variety of languages studied in (Aikhenvald 2004, 2018; Korotkova 2016; Murray 2017). Pancheva and Zubizarreta op. cit. also report similar findings for Paraguayan Guarani. On the other hand, Koev (2016) reports that embedded evidentials are speaker-oriented in Bulgarian, though this is disputed in Korotkova (2016).

The study of the orientation of *ra'e* in embedded contexts reported in Pancheva and Zubizarreta op. cit. is based on constructed examples, with minimal context. Other authors have only studied *ra'e* in matrix contexts (Velázquez-Castillo 2017; Carol and Avellana 2019). In the present study, we aim to study naturally occurring instances of this evidential in a rich narrative context.

1.1. Methodology

To this end, we studied 15 short stories (each 1 to 3 pages long) from a collection of oral folk stories (*Mombe'u pyre, Mombe'u pyra*), which were recorded, transcribed, and minimally edited by the author (Domingo Aguilera Jiménez). We read, reviewed, and translated each story with two consultants independently, both bilingual speakers of Guarani and Spanish, with Guarani acquired in early childhood. As reported in the literature (Velázquez-Castillo 2017; Carol and Avellana 2019), matrix *ra'e* is generally translated to Spanish in terms of *había sido* (the counterpart of English *it turns out*). It is more difficult to obtain a direct translation (without using a paraphrase) in embedded contexts because Spanish *había sido* does not naturally appear in embedded contexts. For each sentence with *ra'e*, we complemented the exercise with particular questions, with the intent of determining its scope and orientation.

Prior to the above task, we presented the consultants with sentences that contained *ra'e* in different contexts. This task revealed that the consultants had sharp intuitions regarding the semantic contribution of *ra'e*, which can be informally paraphrased in terms of "realization or discovery" on the part of the attitude holder. This is consistent with what has been reported in earlier literature (Salanova and Carol 2017; Pancheva and Zubizarreta 2019; Carol and Avellana 2019) and is consistent with the description given by (Ayala 1996; Velázquez-Castillo 2017).

As we read and translated the story, for each sentence containing *ra'e*, the consultants were asked to identify the contents of the realization/discovery and whether this realization/discovery was to be attributed to the narrator (i.e., the speaker) or to a character, or whether it could be either one (whether the narrative context allowed for ambiguity). Because *ra'e* is a particle with a certain amount of mobility (as noted in the earlier literature and recapitulated below), we tested the position of *ra'e* in one or more positions distinct from the original one, to verify if this change in position gave rise to a change in intuitions regarding the scope and orientation of *ra'e*. This is particularly important for cases with *ra'e* positioned at the end of a complex sentence. If *ra'e* is in fact part of the embedded clause, then moving it to an internal position within the embedded clause should not change the core semantic contribution of *ra'e*, namely its scope and orientation. To ascertain the reliability of the obtained replies, we went over each story a second time six months after, and we asked the same questions regarding *ra'e* that we asked the first time around. The replies were consistent within the same consultant, as well as between the two consultants.

The 15 stories, glossed and translated, and with annotations on the interpretation of each rendition of *ra'e*, can be found on the following website: https:guaranicorpus.usc.edu, accessible as of November 2022. The data was collected in Asuncion, Paraguay, at various stages, between 2019 and 2022.

1.2. General Findings

We found that embedded evidential *ra'e* in Paraguayan Guarani can be oriented towards the speaker or the attitude-holder argument of the matrix verb. This finding provides more nuance to the report in Pancheva and Zubizarreta (2019) concerning the link between the presence/absence of the subordinator *ha* and the orientation of *ra'e*. (We assume that *C…ha* is a discontinuous complementizer, with *ha* providing lexicalization for C at a distance.) Pancheva and Zubizarreta (2019) give an example that illustrates the speaker orientation of embedded *ra'e* in the absence of the subordinator *ha*. Here, we confirm that observation, but we found that in the absence of *ha,* matrix subject orientation is also possible, given the right context. Furthermore, we found that there is a correlation between the content of the prejacent and the orientation of *ra'e* in embedded clauses: if evidence acquisition is attributed to the narrator (or speaker), the prejacent is the entire complex sentence (and vice versa), while if the evidence acquisition is attributed to the matrix attitude holder, then the prejacent is the embedded clause (and vice versa).

Another important finding is that in the presence of the subordinator *ha*, the orientation is obligatorily biased towards the attitude-holder argument of the embedding verb. We will suggest that this bias should be attributed to a language-specific property of the subordinator *ha*. More specifically, in the presence of this subordinator (and irrespective of the presence of *ra'e*), the matrix attitude holder is attributed a high degree of certainty regarding the truth of the embedded proposition (with some dialectal variability to be discussed). Thus, it appears that the subordinator *ha* contributes a modal component of meaning. We submit that the bias towards a matrix attitude holder orientation for embedded *ra'e*, in the presence of the subordinator *ha*, is to be attributed to this modal meaning, which we propose to formalize in terms of a Modal feature on Comp, along the lines of Kratzer (2013).

1.3. Organization of the Paper

In Section 2, we summarize the basic properties of *ra'e* in matrix declaratives, incorporating into the discussion some novel data from our corpus study. In Section 3, we discuss the properties of embedded *ra'e* in declarative complements to attitude verbs, with and without the presence of the subordinator *ha,* and present our analysis. In Section 4, we briefly turn to the case of *ra'e* in questions. Section 5 summarizes and concludes this paper. In Appendix A, we briefly discuss perception verbs in Paraguayan Guarani, which, when they embed clausal complements, report a perceptually acquired evidence regarding the embedded proposition.

2. Properties of *ra'e* in Root Clauses

Prior work has shown that *ra'e* is an indirect evidential, attributing evidence to abductive reasoning or a report. In root clauses, it attributes inferential or reportative evidence to the speaker. More specifically, *ra'e* is a perception-based indirect evidential: inferences are restricted to abductive reasoning following a perceptual observation; they cannot be based solely on facts known to the speaker in the absence of a sensory perception of some situation. This is not a unique property of *ra'e*: it falls within the category of 'inference from results' (vs. 'inference from reasoning') that has already been recognized in Willett's (1988) typology of evidential markers. The perception-based nature of the evidential source extends to the reportative interpretation of *ra'e*: here the situation observed by the speaker is another communication, in which the speaker may be an addressee participant or a non-participant observer.

In addition to marking indirect evidence, *ra'e* is often, but not always, associated with some degree of counter-expectation/surprise, a property known as mirativity, which we believe is best described as part of the pragmatics of indirect evidentiality, as in Peterson (2015). Importantly, the counter-expectation/surprise is not always present (Salanova and Carol 2017), which shows that *ra'e* is not a mirative mopheme.[3] On the other hand, the evidential meaning (realization/discovery) is always there. Furthermore, the above works have shown that *ra'e* is sensitive to the temporal properties of the event. Thus, it can appear with activity verbs like *rain* and *sing* at the time of evaluation, but it cannot appear with punctual verbs like *break* and *kick*. Pancheva and Zubizarreta (2019) attribute this restriction to the fact that an abductive inference can be made based on perceptual evidence of an event at one particular interval to a superset of intervals. See also (Carol and Avellana 2019) for an account along similar lines.

Ra'e furthermore makes a temporal contribution in the sense that the evidence acquisition (EA) event—the perceptual observation—must be temporally close to the evaluation time for the clause, i.e., the speech time in the unmarked case in a matrix clause. See (Pancheva and Zubizarreta 2019) for an extensive discussion of these properties and for an attempt to relate the temporal features of *ra'e* (*proximate* to the evaluation time, i.e., the attitude holder's *now*) to the person features of the subject of EA (*proximate* to the attitude event).[4]

Ra'e may appear in the first position of the clause. In such cases, *ra'e* forms an independent prosodic unit, and the entire sentence is interpreted as being in focus. The counterpart at the right edge of the sentence is also possible if preceded by a salient prosodic juncture. Furthermore, *ra'e* can be pronounced by itself in a narrative, the prejacent being recovered from the context. Yet, *ra'e* is a particle with considerable mobility. As discussed in (Pancheva and Zubizarreta 2019), *ra'e* may appear immediately to the right of any focused clausal constituent (i.e., after the DP subject, the VP, or an XP argument). In such cases, *ra'e* is often deaccented and forms a prosodic unit with the focused constituent to its left. Pancheva and Zubizarreta (2019) suggest that *ra'e* is generated in its surface position and that it is associated with the EA in its clause via LF movement: it adjoins to its associated EA at LF. Note that focus sensitivity is not a property specific to *ra'e*. Several aspectual morphemes have the same mobility and focus sensitivity; see (Pancheva and Zubizarreta 2019; Zubizarreta 2022). It is clear though that *ra'e* cannot be reduced to a focusing function and the prejacent should not be confused with focal information. The prejacent is the proposition for which the attitude holder has acquired evidence on the basis of abductive inference or hearsay—all or parts of which can be focused. Furthermore, as mentioned earlier, *ra'e* is sensitive to the temporal location of the evidence-acquisition event, as befitting an evidential marker, but not so a focus particle (such as *niko/ningo* in Paraguayan Guarani). This focus particle can coexist with *ra'e*. See the above works for further discussion. To recapitulate, the only stable (obligatory) property is the evidential meaning. This has been well established in the literature, and it constitutes the basis of our current study, the goal of which is to investigate the orientation of *ra'e* in complements

embedded under attitude verbs, based mainly on narratives. A few constructed examples were added when necessary to elucidate an important point.

As mentioned in the introduction, our data were drawn from 15 folk stories, in conjunction with elicited judgments, with the purpose of illustrating the orientation of evidential *ra'e* in matrix clauses, its variable position within the clause, as well as its focusing role. We found 22 cases of matrix *ra'e*. In 14 of these 22 cases, *ra'e* coexists with the particle *nimbo* (and the occasional *nipo*), and when it does, this particle must precede *ra'e*. *Nimbo/nipo* introduce some degree of uncertainty on the part of the attitude holder, not unlike the hedging parenthetical 'it appears' in English. The co-occurrence of *ra'e* with *nimbo/nipo* has already been noticed by the grammarian Valentin Ayala (Ayala 1996).

We illustrate below with a sample of the sentences found in our database of folk stories. The example in (2) is from a story where a tick challenges a deer to run a race and outsmarts the deer by jumping on and hiding in the hair of the deer's buttocks, thus getting a free ride. As illustrated in (3), based on the prior example (with the omission of the parenthetical), the particle *nimbo* may appear in various clausal positions, where the angled brackets indicate alternative possible positions. We have in fact found examples of such positions in our corpus data. The one restriction is that *nimbo* must always precede *ra'e* when they co-occur and that it cannot appear inside a nominal complement.[5]

(2)   *Nimbo*   jatevu,   o-ñepyrṽ   la   karréra,
       PART   tick   3-begin   DEF   race

       o-po   guasu   rumby   rague   rehe   *ra'e*
       3-jump   deer   buttock   hair   on.it   EVID
       'It turns out that the tick, when the race started, jumped on the hair of the deer's buttock.'

(*Omombe'u*, p. 21)

(3)   <*Nimbo*>   jatevu   o-po   <*nimbo*>   guasu
       PART   tick   3-jump   PART   deer
       <*nimbo>   rumby   rague   rehe   *ra'e.*
       PART   buttock   hair   on.it   EVID

As noted in Pancheva and Zubizarreta op. cit., the distributional pattern of *nimbo* applies to *ra'e* as well: *ra'e* may appear in a variety of clausal positions, but never inside a noun phrase. In (4), when *ra'e* is located after the last constituent, the focus is on the location; when located in the initial position, the focus is on the entire clause; when located in the post-subject position, the focus is on the subject; and when located in the post-verbal position, the focus is on the VP (the event description). The variable positions of *ra'e* are attested in the various examples found in our folk stories.

(4)   Nimbo   <*ra'e*>   jatevu   <*ra'e*>   guasu   <**ra'e*>   rumby   rehe   *ra'e.*

The example in (5), with an intonational hiatus after the verb (indicated by #), illustrates a case where the sequence *nimbo* …*ra'e* appears to delineate a narrow, contrastive, focus on the location. And, as such, it can be fronted to a position immediately before the verb; (5b). The interpretation is very much like that of a cleft.

(5)   a.   Jatevu   o-po   #   *nimbo*   guasu   rehe   *ra'e*
           Tick   3-jump   PART   deer   on.it   EVID

           (nda-ha'e-i   kavaju   rehe   *ra'e*).
           (NEG-COP-NEG   horse   on.it   EVID
           'It is on the deer that the tick jumped onto (it was not on the horse)'.

   b.   *Nimbo*   guasu   rehe   *ra'e*   #   jatevu   o-po
           PART   deer   on.it   EVID   tick   3-jump

	(nda-ha'e-i	kavaju	rehe	*ra'e*).
	(NEG-COP-NEG	horse	on.it	EVID).

In another folk story, we found the following example, with two instances of *ra'e*, also speaker-oriented, and with the entire sentence in focus. Either *ra'e* can be omitted with no apparent change in meaning.[6]

(6) | *Nipo* | *ra'e* | chavurró-nte | o-ñe'ẽ | hína | *ra'e* | kavaju | ndive. |
|---|---|---|---|---|---|---|---|
| PART | EVID | donkey-only | 3-speak | CONT | EVID | horse | with |

'Apparently, it was only the donkey speaking with the horse, it turns out.'
(*Omombe'u*, p. 32)

Interestingly, in the following narrative, the orientation of *ra'e* is a character in the narrative, namely the subject of the preceding sequence of sentences. The last sentence that contains *ra'e* is separated from the previous one via a colon (and the punctuation appears to be relevant). This is a case of free indirect speech (which is often signaled by exclamation, present here). According to our consultant, "it is as if the narrator puts her/himself in the place of the character".[7] In such a case, the speaker assumes the character's point of view. This example illustrates the subtlety in perspective proper to a narrative text.

(7) | O-ñe-mondýi | o-ho | o-gueru | machete, | oi-karãi | pype |
|---|---|---|---|---|---|
| 3-REFL-fear | 3-go | 3-bring | machete, | 3-scratch | PART |
| ha | o-juhu | o-mimbí: | óro | meme-te | |
| CONJ | 3-find | 3-shine | gold | habitually- DEG | |
| *nimbo* | *ra'e* | la | i-kavaju | kangue! | |
| PART | EVID | DEF | 3. POS -horse | bone | |

'He got frightened, he went and brought a machete, he scratched with it and found [something] shining: it was all gold, it turns out, the horse's bone! (the character realizes)
(*Omombe'u*, p. 95)

It appears that, if *nimbo ra'e* is displaced to the beginning of the sentence, as shown in (8), the sentence can no longer be construed as free indirect speech, and it is then interpreted as speaker (narrator)-oriented. Thus, we see that the attitude holder is the speaker (or narrator) in matrix clauses in direct speech, but not in free indirect speech, where the narrator assumes the role of a character (what we may assume to be a person-shifting context). Although this phenomenon deserves further investigation, it is beyond the scope of the present work.

(8) | *nimbo* | *ra'e* | óro | meme-te | la | i-kavaju | kangue. |
|---|---|---|---|---|---|---|
| PART | EVID | gold | habitually- DEG | DEF | 3. POS-horse | bone |

To recapitulate the main empirical points, the indirect evidential *ra'e* is speaker (or narrator)-oriented in matrix clauses in the case of direct speech. As expected, in free indirect speech, the speaker takes on the point of view of a character. It was also shown that *ra'e* may be focus-sensitive and may right-attach to a focused constituent, in particular when the focused constituent precedes the verb. In such cases, *ra'e* is deaccented and forms a prosodic constituent with the focused constituent, prosodically identified by an extra-high pitch. Yet, as we will see below, *ra'e* does not obligatorily have to associate with focus.

To recapitulate the main analytic points, the syntax provides a dedicated EA projection that encodes the *evidence-acquisition perceptual event*, below C and above IP. EA is a semi-functional head that introduces a *pro* subject (namely the *evidence-acquirer*) and much of the semantic contribution of indirect evidentiality. EA requires licensing by a semantically appropriate evidential within its scope, namely *ra'e*. It is assumed that this licensing relation is sanctioned by the attachment of *ra'e* to EA at LF. When *ra'e* attaches to an EA in the matrix clause, the *pro* subject of EA is necessarily bound to the speaker. Thus, in such cases, the evidence-acquirer is the narrator/speaker, and the IP sister to EA provides the content of the prejacent proposition for the evidential. Particles like *nimbo/nipo* specify the degree of (un)certainty that the attitude holder has towards the prejacent proposition.

The second relevant property of evidential *ra'e* for our present purposes is its sensitivity to focus.[8] *Ra'e* may, but need not, attach to the focused constituent, which shows that *ra'e* is focus-sensitive. The language identifies focus by extra-high pitch, and it also has a dedicated focused particle (*ningo/niko*). When *ra'e* attaches to a focused constituent, it is deaccented and forms a prosodic group with the focused constituent.

To illustrate, consider the sentence in (9), with focal emphasis on the subject. It conveys the meaning that the speaker recently discovered that the person who came was Kalo (among a set of implicit contextual alternatives), a nuance that our simplified text translation to English does not generally capture. Here, the backgrounded proposition that someone came is not part of the reported or inferred content: the speaker already knows that someone came (as well as the addressee), and the evidential contribution in (9) is restricted to just the identity of that person. For instance, (9) may be felicitously used in the following situation: The speaker and addressee are returning to their house, expecting several guests to be coming for a visit, separately. They see a bag left in the garden, so they know that a visitor has arrived. Then, on seeing Kalo's coat in the hallway, the speaker infers that it is Kalo who has arrived and utters (9). In this example, *ra'e* is deaccented and forms a prosodic group with the subject. While in (9) the preverbal subject followed by *ra'e* must be focused, this is not the case if *ra'e* follows the verb. In that case, the subject will be interpreted as focused if it carries a focal pitch accent.[9]

(9)   Kalo   *ra'e*   o-u.
        Kalo   EVID   3-come.
        'It is Kalo who came, it turns out.'

The structure in (10) readily allows for a representation of the focus sensitivity of *ra'e*. The semantic contribution of indirect evidentiality is due to the lexical content of the EA predicate, which appropriately takes scope over the IP-contained prejacent. Focus evokes alternatives, as originally noted by Jackendoff (1972) and incorporated in subsequent formal analyses; in (10), these are Kalo and other contextually salient individuals. We can further model focus sensitivity along the lines of the Alternative Semantics approach (e.g., Rooth 1992, 1996), although this is not essential and could be implemented differently. Simplifying a lot, the IP containing the F-marked constituent is in the scope of an unpronounced focus-interpretation operator that introduces a presupposed set of alternatives, *C*, itself determined by the focus value of the IP, as in (10a-b). Effectively, the alternatives are now calculated at the level of the IP and so are of the form '*x came*'. The focus contribution, independently of *ra'e*, is that the choice among the focus alternatives is under discussion.

(10)   [...   [*pro* EA   [$_{IP}$ Kalo$_F$ came]]
      a.   [...   [*pro* EA [[~ C] [$_{IP}$ Kalo$_F$ came]]]]
      b. $C \subseteq$ {p: $\exists$x. p = x came}

Because all alternatives share the predicative content of '*x came*' and differ only in the identity of the subject, pragmatic congruence requires that the evidential contribution address not the shared content but the focused constituent. It would be infelicitous to use (9) in a context where the salient issue is whether or not Kalo will come, and the inference or report concerns the fact that Kalo did in fact come. Thus, even without encoding focus sensitivity in the lexical semantics of EA or *ra'e*, the evidential contribution is sensitive to the focus structure of the prejacent. In that sense, *ra'e*'s focus sensitivity is similar to that of sentential negation, rather than to the focus sensitivity of focus-associating adverbs like *only*, *even*, and the like. The observation that sentential negation is sensitive to focus goes back to Jackendoff (1972); much subsequent work has established that it is not a case of conventionalized association with focus (so it is unlike the contribution of *only* or *even*) but is pragmatic in nature (see Fălăuş 2020 for recent discussion). The same holds for *ra'e*.

3. The Properties of *ra'e* in Embedded Declarative Clauses

Embedded declarative clauses in PG often, but not always, appear with the subordinator *ha*. In an earlier study, with the goal of investigating this variability, we presented

8 native speakers (one participant at a time) with sentences in an oral questionnaire, using several attitude verbs in the presence vs. absence of *ha*. The verbs were: *oi-imõ'a* '3-weakly believe', *o-juhu* '3-find out', *o-rovia* '3-strongly believe', *o-mombe'u* '3-tell', *o-mbyasy* '3-regret', *oi-kuaa* '3-know', *o-vy'a* '3-be-happy/glad', *o-jepy'apy* '3-worry', *o-hechakuaa* '3-realize', *o-hendu* '3-hear (direct perception)', *o-hendu* '3-hear (indirect perception)'. Two examples were given with each verb—one with the subordinator *ha* and one without it. Participants could choose one of the two, both (indicating their preference, if any), or none. We found considerable variation among speakers. Four speakers selected the option with the subordinator *ha* (at least as an option) for all verbs. The other four participants selected solely the form without the subordinator *ha* with the following four verbs: *oi-imõ'a* '3-weakly believe' (2/8), *o-jepya'py* '3-worry' (2/8), direct perception *o-hendu* '3-hear' (1/8), *o-juhu* '3-find out' (1/8). The first three verbs were also the ones for which the form without the subordinator *ha* was a possible option for most other participants: *oi-imõ'a* '3-weakly believe' (6/8), *o-jepya'py* '3-worry' (6/8), direct perception *o-hendu* '3-hear' (5/8). This study showed that there is variability among speakers regarding the distribution of *ha* in relation to the choice of the embedding verb. (We return to this point below.) We then asked the participants if they felt a difference between the examples in which *ha* is present and their counterpart where *ha* is absent. The response was that in the presence of *ha*, the embedded clause is "strongly affirmative", meaning that the presence of *ha* suggests a strong certainty/commitment on the part of the matrix attitude holder with respect to the truth of the embedded proposition, a property that we will refer to as the modal strength of the attitude. This was confirmed by our later fieldwork, based on the *Omombe'u* stories, discussed further below.

Further investigation revealed two other interesting facts. First, there is variability in native speakers' intuitions with respect to the modal strength in the presence of the subordinator *ha*. For one of our speakers, the modal strength is maximal and absolute: it cannot be weakened (consultant M). For our other consultant, the maximal modal strength is only a default, which, in the presence of other mitigating lexical items, can be weakened (consultant G). Thus, consultant M generally does not allow the subordinator *ha* to co-occur with *(oi)mo'ã* (a verb of weak belief), but allows it to co-occur with *(o)rovia* (a verb of strong belief). On the other hand, consultant G does allow the subordinator *ha* to co-occur with both verbs. Second, as we will see further below, the conceptual meaning of a lexical item is somewhat malleable. This was revealed by one of our consultants, M, who generally does not allow the subordinator *ha* to co-occur with *(oi)mo'ã*. This Consultant did allow the presence of the subordinator *ha* in one case (to be discussed further below), but interestingly, the Consultant also made the spontaneous observation that, in that particular case, the meaning of the verb *(oi)mo'ã* does not have its standard (core) meaning *of weak belief* (i.e., *suspect*), but it is more akin to *imagine*—as if the attitude holder "sees in his thought process an event unfold".[10] This shows that the conceptual meaning of lexical items can, to some extent, shift depending on context, as has already been abundantly illustrated in the literature (e.g., Borer 2005 more generally, and Bogal-Allbritten 2016 concerning attitude verbs in particular). The modal strength associated with the lexical item adjusts accordingly. It is likely that the above factors, and especially the first one, are at the root of the participants' variable judgments obtained with the questionnaire discussed above.

Given the above observations, we propose to encode the facts in terms of a Modal specification in the C domain of clauses embedded under attitude verbs, when the subordinator *ha* is present. Furthermore, the strength of the Modal appears to be gradable, an observation that is in line with the well-known property that the degree of confidence that the attitude holder has with respect to a proposition is gradable (e.g., Kratzer 2012; Lassiter 2017; Herburger and Rubinstein 2019).

(11) 1. In the presence of the subordinator *ha*, the C complement of the embedding attitude verb is specified as Modal.
2. For consultant M, Modal has invariable, maximal strength: Max Modal. For consultant G, Max Modal is a default, which can be overridden by the presence of other elements in the clause (like a verb of weak belief or the presence of a dubitative particle).

Kratzer (2013) proposed specifying *the modal strength of attitude verbs* in the C domain of their complement: the modal semantics of embedding constructions comes from the various types of modal elements in the left periphery of embedded sentences. We have adopted this proposal for Paraguayan Guarani but only for the complements of attitude verbs introduced by the subordinator *ha*. When *ha* is absent, we assume that the Modal component is specified on the embedding attitude verb itself. More specifically, we propose that the Modal specification on C is made visible (and learnable) by the presence of the subordinator *ha*, *which requires maximal modal strength, independently of the choice of verb*. It is then unsurprising that for some speakers, the subordinator *ha* must be present with (*o*)*orovia* (verb of strong belief): it further underscores the strength of the certainty/commitment entailed by the verb. It is equally unsurprising that the subordinator *ha* is generally absent with (*oi*)*mo'ã* (verb of weak belief), and when present, the verb acquires a different shade of meaning.

If the realization of Modal on the C complement of attitude verbs is not a universal property across constructions and across languages, then it must be learned from positive evidence. While the semantic property of subordinator *ha* is subtle, it must be robust enough to be learnable. It is possible that its prosodic properties contribute to its robustness. In an intonational study of PG (Zubizarreta 2022; Jun and Zubizarreta 2022), it was found that the subordinator *ha* is always pitch-accented (it can never lose its PA) and generally forms an accentual phrase with the verbal material to its left. Yet, a few cases were found where *ha* carries focal accent, forming its own accentual phrase. In such cases, the modal property of the embedded clause appears to be emphasized, rendering this semantic property (strong certainty/commitment) quite salient. While such cases may be infrequent, its existence in the data lends support to the proposal that the subordinator *ha* makes the Modal property of its associated C visible and learnable.

We turn now to the data from our *Omombe'u* corpus and the orientation of *ra'e* in embedded clauses, where we found 18 cases of subordinator *ha*. In Table 1, we give a summary of the embedding verbs accompanied by the subordinator *ha* in their complement. As we can see, *ha* is most common with verbs of saying.[11]

Table 1. Embedding verbs with the subordinator *ha*.

(o) he'i ('say')	6		(oi) kuaa ('know')	2
(o) mombe'u ('tell')	4		ofrese ('offer')	1
(oi) mo'ã ('believe/suspect')	1		(o) hecha ('see')	2
dekonfia ('suspect')	1		(o) pilla ('catch'/'surprise')	1 (with *ra'e*)

As for embedded *ra'e*, we found 16 such cases, 8 of which were in declarative clausal complements of attitude verbs. (Of the remaining 8 cases of embedded *ra'e*, 7 were in interrogatives, to be discussed in Section 4, and one in a conditional; see note 10). In 7 of the 8 declarative complements with *ra'e*, the subordinator *ha* was absent. The only case where embedded *ra'e* co-occurred with *ha* (or more precisely with *ha* in combination with a terminative aspect *ha-gue*) was with the verb 'o-*pilla* '3-catch' (to be discussed later); see Table 2. While these data might suggest a complementarity between embedded *ra'e* and the subordinator *ha*, our follow-up fieldwork suggests that that is not the case.

Table 2. Embedding verbs with embedded *ra'e* in declarative clauses.

(oi-) mo'ã ('believe')	6		(o-)pilla ('catch'/'surprise')	1 (with *ha*)
(o-) hecha ('see')	1			

In the one case where *ha* is present (with embedding verb *o-pilla*) and in 5 out of the 8 cases where *ha* is absent, embedded *ra'e* is matrix-subject-oriented. In the remaining 3 cases where *ha* was absent (with *oimo'ã* as the embedding verb), *ra'e* was interpreted by our consultants as being speaker/narrator-oriented. The conclusion drawn from the data in Table 3 is that in the absence of *ha*, embedded *ra'e* may be interpreted as matrix-

subject-oriented or speaker-oriented. On the other hand, the presence of the subordinator *ha* requires that evidential *ra'e* be oriented towards the matrix attitude holder.

Table 3. Presence/absence of ha and orientation of *ra'e*.

Embedding Verb	#	*ha*	Orientation of *ra'e*	
oi-mo'ã '3-believe'	3	absent	matrix subject	
oi-mo'ã '3-believe'	3	absent	speaker	adding *ha* shifts orientation
o-hecha '3-see'	1	absent	matrix subject	
o-pilla '3-catch/surprise'	1	present	matrix subject	

We illustrate the speaker orientation of embedded *ra'e* with an example from a story about a monkey talking his way into a tiger's house while only the tiger's wife is home, and then into the couple's bed, see (12). Here the matrix subject refers to the tiger, who, upon his return to his home, joins his wife in bed, not knowing that there is a monkey under the cover. With the use of *ra'e*, the omnipresent narrator speaks as if (s)he were present at the scene. The narrator knows that it is the monkey under the cover who is tickling the tiger, and the narrator also knows that the tiger lacks this information. On the basis of some observation (i.e., the tiger's reaction to the tickling), the narrator makes and reports an inference that it must be the case that the tiger believes that he (the tiger) is dreaming. In other words, the prejacent of EA is the entire clause and the evidential is speaker-oriented. (The other two examples of embedded *ra'e* with matrix subject orientation are of the same type: the narrator/speaker realization that the character holds a belief that is contrary to facts). According to consultant G, who otherwise allows the co-occurrence of the subordinator *ha* with the verb *oimo'ã*, the insertion of subordinator *ha* in (12) would shift the orientation of *ra'e* to the matrix subject, which is not appropriate in the context of the narrative which it is part of. We note furthermore that in the example in (12), *ra'e* forms a prosodic unit with the preceding verbal predicate, with both *hína* and *ra'e* deaccented, and the main stress is on the verb *soña*. If an intonational hiatus is inserted before *ra'e*, the intended meaning would be lost.

(12)   Ha'e   oi-mo'ã   o-soña   hína   *ra'e.*
        3. PRON   3-believe   3-dream   CONT   EVID
        'He (the tiger) believed he was dreaming, it turns out'
(*Omombe'u*, p. 30)

As for the position of *ra'e* in (12), we note that it could also be placed after the matrix verb *oimo'ã*, without changing the orientation of *ra'e*; see (13). The only perceived change is a shift in emphasis from a subordinate event to a matrix event, but given the context, the relevant (new) information is not that the tiger holds a belief, but rather the dream quality of the belief. This is why *ra'e* is in the embedded clause in the original example.

(13)   Ha'e   oi-mo'ã   *ra'e*   o-soña   hína.
        3. PRON   3-believe   EVID   3-dream   CONT

While all 3 examples of the type illustrated in (12) found in the narratives involved false beliefs, the question arises whether a similar example is possible without the false-belief component. An example like this is cited in ([Pancheva and Zubizarreta 2019]) but without much context. We addressed this issue with one of our consultants with the following constructed example:

(14)   Kalo   oi-mo'ã   Maria   o-viajá-ma   *ra'e*   Buenos Aires-pe.
        Kalo   3-weak.believe   Maria   3-travel-already   EVID   B.A.-Loc
        'It turns out that Maria already travelled to Buenos Aires.'

This example can be uttered by the Speaker in the following context: the Speaker infers from a phone conversation that Kalo is having with a friend that Kalo suspects that Maria has already left for Bs.As., with the Speaker agnostic as to whether this is true or not. Alternatively, the Speaker utters that statement shortly after having heard that Kalo suspects a third party. Note that in this example, *ra'e* is positioned between the

verb and its PP complement, clearly indicating that the evidential is contained within the embedded clause.

An example where an embedded *ra'e* has matrix-subject orientation in the absence of the subordinator *ha* is given below. Note the presence of the particle *nimbo* which introduces uncertainty on the part of the man (referred to by the matrix silent subject *pro*) as to whether the snake is truly trapped.

(15) | Upéi | o-ja-ve | | ha | o-hecha | nimbo | peteĩ |
|------|---------|--|-----|---------|-------|-------|
| Then | 3P-get close-more | | CONJ | 3-saw | *nimbo* | one |
| ita | guasu | o-jopy | *ra'e* | la | | mbói-pe... |
| rock | big | 3-squeeze | EVID | DEF.DET | | snake-DO |

'Then he [the man] got closer and saw a rock squeezing the snake, as it turns out.'

(*Omombe'u*, p. 11)

In all cases of embedded *ra'e* with matrix-subject orientation, consultant G allowed for the insertion of subordinator *ha*, despite the presence of the dubitative particle *nimbo*. Thus, for G, (15) is a possible alternative to (13), without affecting the orientation of *ra'e*.[12]

(16) ...o-hecha nimbo peteĩ ita guasu o-jopy-ha *ra'e* la mbói-pe...

Consultant M did not accept the insertion of subordinator *ha* in the above case, and strongly dispreferred it in all the other cases with *oi-mo'ã*, a verb of weak belief, as the embedding verb (except one, discussed below). For M, the presence of *ha* strengthens the certainty that the attitude holder (i.e., the matrix subject) has regarding the truth of the embedded proposition. While the correlation between strong commitment and the presence of the subordinator *ha* is a default for G, which can be overridden by contextual lexical items, this is not the case for M. Since *nimbo* introduces uncertainty (on the part of the man as to whether the snake is truly trapped), M finds that this property of *nimbo* conflicts with the properties of the subordinator *ha*, given that, in his grammar, *ha* is associated with an absolute, high degree of certainty. As proposed by a reviewer, perhaps this is due to the fact that, for consultant M, there is a concord relation between the Modal specification (strong certainty) on C and the other Modal lexical items in the same clause.

Of the four cases with matrix-subject orientation of *ra'e* embedded under *oi-moã*, M allowed insertion of subordinator *ha* only in one case. Recall that *oi-mo'ã* generally encodes weak belief on the part of the matrix subject, akin *to suspect*. For M, such a verb is thus not easily compatible with subordinator *ha*. The example below, from a treasure-hunting story, exemplifies such cases.[13]

(17) | Ha | lo | mitakaria'y | oi-mo'ã | oi-kuaá-ma | mama |
|------|-----|-------------|---------|------------|------|
| CONJ | DEF.DET | guys | 3-think | 3-know-already | mother |
| *ra'e* | la | | o-jehu | va'ekue | Aguí=pe. |
| EVID | DEF.DET | | 3-happen | REL.DISTAL | Augustin.DO |

'And the guys suspected that their mother already knew what had happened to Agustin.'

(*Omombe'u*, p. 102)

M finds that if the verb *oi-mo'ã* in the example above were substituted by *o-rovia*, which expresses indisputable commitment to the truth of embedded proposition on the part of the attitude holder, then insertion of the subordinator *ha* would be completely natural.

(18) ...o-rovia oi-kuaá-ma-*ha* mama *ra'e*...

In the case of one example in which *ra'e* is embedded under the verb *oimo'ã* and where M allowed insertion of the subordinator *ha*, M reports that the meaning of *o-mo'ã* does not denote a mental state of weak belief or suspicion, but rather a mental state akin to the one denoted by the verb *imagine*. The example below is from a story in which a bunch of monkeys captured and tied up a tiger, who is playing dead. In this example, *ra'e* is associated with a focused embedded event and is matrix-subject-oriented. In M's words, it is as if *the tiger is seeing a scene as in a movie,* in which the monkeys, thinking that the tiger is already dead, are untying him. M spontaneously remarked that in this case, the tiger *imagines* that the monkeys were going to untie him, thinking that he (the tiger) is dead. As

noted earlier, the observation that *oimo'ã* can in certain contexts have the meaning of *imagine* coincides with the translation in Paraguayan Guarani of the song title by John Lennon 'Imagine': it uses the same verbal root as weak belief: Ei-*mo'ã*-na (Imp-verb-Rogative). In this case, M finds that the insertion of the subordinator *ha*, as in (19), is natural. We suggest that this shift in meaning of *oim'ã* from 'suspect' to 'imagine' renders the verb compatible with a strong degree of commitment regarding the truth of the embedded proposition, namely, that the monkeys, thinking that he was dead, were going to untie him.

(19)

Ha	jaguarete	oi-mo'ã	o-jorá-ta	chupe	hikuái
CONJ	tiger	3-think	3-untie-PROSP	3P-OBJ	3PL.SUBJ
ra'e,		kómo	la	o-manó-ma	ha'e.
EVID		as	DEF.DET	3-die-already	3P.SUBJ

'And the tiger imagined that they were going to untie him, as if he were already dead.'

(*Omombe'u*, p. 23)

(20)

Ha	jaguarete	oimo'ã	o-jorá-ta-*ha*	chupe	hikuái	*ra'e*...

As mentioned earlier, we found one example, (21) below, in which the subordinator *ha* is present, and actually obligatory, namely a case where the terminative aspect suffix –*kue* is needed but can only be expressed in combination with the subordinator *ha*, giving rise to the morphologically complex form *hague*. In other words, the obligatory presence of *ha* in such cases is due to morphological reasons. The example below is from the same story as the above example: the tiger had come to check his fountain (or water spring) and discovers that the monkeys had been drinking from it. As expected, given the presence of the subordinator *ha*, embedded *ra'e* is unambiguously matrix-subject-oriented.

(21)

O-ma'ẽ-ma'ẽ	upé-rupi	ha	o-pillá-ma	ka'ikuéra
3-look-look	DEM-around	CONJ	3-saw-already	monkey
o-guejy-*ha*-gue		hoy'u	i-jyguá-pe	*ra'e*
3-come.down-SUB-TERM.ASP		3.drink	3.POS-fountain-LOC	EVID

'He looked and looked around and discovered that the monkeys had come down to drink in his fountain.'

(*Omombe'u*, p. 22)

In the above example, *ra'e* follows the locative complement, but there are other potential alternative positions within the embedded clause for *ra'e,* e.g., after the subordinate verb, with no change in orientation; the only difference is that the locus of the focus in that case would be unambiguously on the embedded event description, while in (21), focus on the locative complement is a natural option. Yet, it appears that the choice in (21) is the most adequate one in the context of the story, where the tiger is specifically concerned about the fact that it is from his water fountain that the monkeys are drinking.

The above observation leads us to postulate the following generalizations:

(22) a. In the absence of subordinator *ha*, embedded *ra'e* can be speaker-oriented or oriented towards the attitude-holder argument of the embedding verb.

    b. In the presence of subordinator *ha*, the orientation of embedded *ra'e* is restricted to the attitude-holder argument of the embedding verb.

Before we turn to the discussion of the language-particular restriction imposed by the subordinator *ha* on the interpretation of embedded *ra'e* (22), let us examine what (22) means within our present framework. In the absence of an EA in the embedded C domain, embedded *ra'e* is associated with the matrix EA (as discussed earlier); it is speaker-oriented and has the entire complex sentence as its prejacent. In the presence of an EA projection in the embedded C-domain, *ra'e* adjoins to the embedded EA and takes the embedded complement as its prejacent. Furthermore, given that that the *pro* subject of EA is bound to the matrix attitude-holder argument, *ra'e* will be oriented towards that argument. That is the case that we have illustrated above. The question remains pending whether it is possible to have an embedded *ra'e* that takes the embedded complement as its prejacent, while being speaker-oriented. As mentioned earlier, the 3 cases of embedded *ra'e* with speaker orientation that we have found are cases which are compatible with an analysis in

which the prejacent is the entire clause (cases where the narrator realizes that the matrix subject holds a false belief.

We now turn to the question of why the presence of the subordinator *ha* requires that the *pro* subject of embedded EA be bound by the attitude-holder argument of the embedding verb and cannot be bound by the speaker. We propose that this is due to the presence of the Modal specification of C in the presence of the subordinator *ha*, as stated in (23). The assumption underlying this proposal is that once the language learner has acquired the lexical property of the subordinator *ha* (namely the requirement that it be associated with a C specified as Max Modal), a pragmatic bias will favor an evidence-based certainty/commitment on the part of the matrix attitude holder regarding the truth of the embedded proposition, which in turn leads the language learner to postulate the grammatical requirement below. In other words, we are proposing that (23) is a grammaticalized convention based on a pragmatic learning bias. (Clearly, it is not a logical requirement: certainty/commitments are possible without evidence, whether direct or indirect, and in fact C could be specified as Modal in the absence of EA).

(23)   When EA is embedded under a C specified as Max Modal, the *pro* subject of EA must be bound to the matrix attitude holder of the embedding verb, namely to the same individual to which the certainty/commitment is attributed.

On the other hand, the embedded EA has no access to the modal information when this is specified in the embedding attitude verb. Only information contained within the same phase domain as EA, namely its immediate C domain, is visible to EA. Information contained in the phase above is not. Hence, there is no automatic shift in the orientation of an evidential contained within an embedded CP in which modality is specified in the verbal head rather than in the C immediately above EA.

Consider briefly the alternative universalist view in which every C embedded under an attitude verb is specified as Max Modal across the board. It will have to arbitrarily stipulate that, in the presence of the subordinator *ha*, the *pro* subject of EA cannot be subject-oriented. The problem with this view, aside from its arbitrariness, is that it is unlearnable: there is no (in)direct negative evidence on the basis of which the language learner could acquire such a constraint.

Finally, a word is in order regarding the temporal import of evidential *ra'e*: the evidence-acquisition event (EA) is *proximate* to the evaluation time. In root clauses, the evaluation time is generally the speech time. As for embedded clauses, we expect that the choice of reference time will go hand-in-hand with the orientation of the evidential, and that is indeed the case. We illustrate this with the following two examples. In (24), evidential *ra'e*, which is attached to the focused embedded subject, is interpreted as speaker-oriented, and the evidence-acquisition event is proximate to the Speaker's time. On the other hand, in (25), evidential *ra'e* is oriented toward the matrix subject, and the evidence-acquisition event is interpreted as proximate to the matrix event (Lalo's speech event). See (Pancheva and Zubizarreta 2019) for formal details as to how this temporal interpretation is obtained.

(24)   Context: Lalo is expecting his brother Kalo. Kalo's girlfriend Maria lent him her car. Speaker S knows this fact, but Lalo does not. When Lalo sees Maria's car pulling up in his driveway, S sees Lalo's surprised face and remarks:

Lalo	oi-mo'ã	Maria	*ra'e*	o-guahẽ.
Lalo	3-thinks	Maria	EVID	3-arrived.

'Lalo thinks that it is Maria who arrived.'

(25)   Context: Lalo is expecting friends. Lalo looks out the window and sees Maria's car in the driveway. Speaker later reports Lalo's remark:

Lalo	he'i	Maria	*ra'e*	o-guahẽ-ma(-ha).
Lalo	3-say	Maria	EVID	3-arrive-already(-SUB).

'Lalo said that it is Maria who already arrived.'

4. *Ra'e* in Questions

We briefly discuss *ra'e* in questions because it is typologically rather atypical: *ra'e* has scope over the presupposition of the question, rather than over the set of assertions

that constitute the possible answers to the question, leading to different orientations. A fine-grained analysis would require a detailed scrutiny of the semantics of questions and their interaction with evidentials. Below, we only present some facts and advance some general ideas.

4.1. Matrix Questions

In matrix questions, the orientation of *ra'e* does not change to the addressee, as it does in many languages, but remains anchored to the speaker. For instance, in (26), it is natural if the Speaker has been watching Maria dancing (recall that inferential *ra'e* is compatible with activity verbs) or if the Speaker heard that Maria is dancing in another room, but the Speaker does not know who she is dancing with.[14] There is no surprise/mirative meaning necessarily involved here (per consultant's intuitions).

(26)	Máva-ndi-pa	Maria	o-jeroky	*ra'e*?
	who-with-Q	Maria	3-dance	EVID
	'Maria danced with someone, it turns out, and who is it?'			

Paraguayan Guarani stands in contrast to many of the languages where evidentials in questions have been studied. Typologically, evidential shift from speaker to hearer in questions (so-called interrogative flip) appears to be the most common case (Aikhenvald 2004, p. 244). We illustrate below with a Tagalog example from AnderBois (2019) in (27). The sentence, a *wh*-question, is interpreted differently from the Paraguayan Guarani (26). It has an interpretation, where the evidential orientation switches to the addressee.[15] Such meaning is absent in (26).

(27)	Sino	daw	yun	kumanta?
	who	REP	dem.lnk	singer
	(i)	'Who was the singer?'		
	(ii)	'Interrogative flip': speaker expects the addressee to have reportative evidence for the answer (evidence holder = addressee)		

Questions are assumed to have a Q in Comp, which indicates the scope of the question and thus partially determines the form of the set of possible answers. In complex sentences, the location of Q is crucial: the Q in matrix C generates a different set of possible answers than a Q in an embedded C. Although the distinction between Q and the *wh*-word is not transparent in a language like English or Spanish, it is in other languages, including Guarani, where Q is overtly realized (as the morpheme *–pa* or *piko*), independently of the *wh*-phrase. The common assumption is that in many (but not all languages), Q (whether morphologically realized or not) triggers the fronting of the *wh*-phrase to C. Cf. *Máva-ndi-pahe'i Maria ojerokyha*/*With whom* did *Maria say that she danced* vs. *Maria he'i máva-ndi-pa ojeroky*/*Maria said with whom she danced*. As mentioned earlier, in Paraguayan Guarani, the presence of evidential *ra'e* in a question indicates that the attitude holder (in this case, the speaker) has indirect evidence for the presupposition of the question. In Tagalog, on the other hand, the presence of the evidential indicates that the speaker expects the addressee to provide an evidence-based answer. We might conjecture that this difference can be modelled in terms of the location of Q with respect to EA: in the latter type of language, Q is below EA, and a set of evidence-based possible answers (assertions) are generated, while in the former type of language, EA is above Q, and therefore the set of possible answers (assertions) generated by Q are not evidence-based. Yet, we still need to account for how EA scopes over the presupposition in such cases, and this of course speaks directly to the semantics of questions. Since we do not yet have a full understanding of how Q formally interacts with evidentials across languages and given that the implications of such interactions might have non-trivial implications for the formalization of questions, we will not pursue this question here.

Finally, we note that there is yet another interpretation that has been reported for evidentials in *wh*-questions. Consider the Cheyenne example in (28), Murray (2017): ex. (3.15). It has an interrogative flip interpretation, as in (28), unavailable in PG, but it also has the reading in (28), which appears similar to the one found in PG. Yet this case, unlike

its PG counterpart, does not have the force of a direct question, i.e., it does not indicate that the speaker expects an answer. Murray (2017) calls this interpretation a 'statement of uncertainty'. A similar interpretation has been reported for Cuzco Quechua (Faller 2002) and described as a self-directed, conjectural question.

(28)   Tósa'e   é-hoé-sèstse   Annie
         where   3-live-report.3SG   Annie
         a.   'Given what you heard, where does Annie live?'
         b.   'Annie lives somewhere, I wonder where.'

To recapitulate, in Paraguayan Guarani, the orientation of the evidential remains stable across sentence type: in matrix sentences, it is anchored to the speaker. An interrogative flip, where the evidential orientation switches to the addressee, is not possible in questions with evidential *ra'e* in Paraguayan Guarani. Neither is a by-proxy interpretation (see note 14), even though it retains the speaker orientation of the evidential. Another interpretation (the conjectural question), described as a self-directed question in other languages, bears key similarities to the interpretation found in Paraguayan Guarani, but in the latter language, it remains an information-seeking question.

A reviewer inquires whether *ra'e* can appear in yes/no questions. The answer is yes. In such a case, *ra'e* appears to bias the answer towards the positive answer. Thus, a question like *Kalo, o-ú-ma piko ra'e*? (Kalo 3-come-already Q Evid) can be uttered if the Speaker has some tentative evidence that Kalo already came and is seeking confirmation of this fact. In the presence of focus, the focal presupposition becomes the prejacent for *ra'e;* if the focus is on Kalo, the interpretation of the polar question "Is it Kalo who came" in the presence of *ra'e* is that the Speaker has indirect evidence that someone came and is asking whether that is Kalo.

4.2. Ra'e in Embedded Questions

We found seven cases of *ra'e* in embedded interrogatives in our folk stories, two of which are yes/no questions. The embedding verbs are: *(o)mombe'u* 'tell' (x2), *(o)hecha* 'see' (x2), *(oi)kuaa* 'know' (x2), *(o)porandu* 'ask' (x1). In all cases, *ra'e* was found to be matrix-subject-oriented; it coincides with the speaker only if the matrix subject is in the first person (we found one such case). In all cases of embedded *wh*-questions, the presupposition of the *wh*-question is the prejacent of *ra'e,* just as was the case with *ra'e* in matrix *wh*-questions, as discussed earlier.

We illustrate below with an example from the story about the snake that was trapped under a rock and was freed by a man passing by. Subsequently, the snake wants to eat his savior, but they agree they will go find an arbiter (a horse, among others). The example below is a case of two conjoined questions embedded under the verb *o-mombe'u* 'to tell'. It is of particular interest because embedded *ra'e* is oriented towards the goal argument of the matrix verb *o-mombe'u*, namely the 3P pronoun referencing *kavaju* 'the horse'. Thus, we see that an argument other than the subject can function as the attitude-holder controller of the embedded EA event (see also note 11 for another such case).

(29)   O-ñemboja   ijypý-pe   hikuái   ha   o-mombe'u   chupe
      3-approach   close-LOC   3PL.PRON   CONJ   3-tell   3.PRON.IO
      mba'éicha-pa   la   mbói   o-ī   *ra'e*   hína
      manner-Q   DEF.DET   snake   3-exist   EVID   CONT
      ha   *mba'é-pa*   la   *karia'y*   o-japo   hese   *ra'e*
      CONJ   what-Q   DEF.DET   lad   3-do   3.PRON.IO   EVID
      'They got close [to the horse] and told him how the snake had been and what the young man had done for him.'

In the above examples, the horse is attributed a recently acquired knowledge of the contents of the presupposition of the *wh*-complement, namely that the snake had been *in some condition* and that the man had done *something* for the snake. (This meaning was elicited with the consultant while reading and translating the story). These presuppositions function as the prejacent for the EA event in the representation of the questions. The local

attitude-holder (the horse), recipient of the information, is the one acquiring the knowledge based on the reported speech.

The next piece of text from the same story illustrates a yes/no interrogative embedded under the verb *o-hecha* ('to see'). The speaker is a character in the story, namely a cunning fox (the final arbiter in the story). He addresses the snake and suggests that they go back where the man had found the snake squeezed under a rock and see if it is true or not that the snake had been suffering there. (The fox will eventually coax the snake to get back into its trapped position under the rock to verify his suffering state). This case (second sentence in the sequence) exemplifies evidential *ra'e* in an embedded yes/no question. The evidential contributes the meaning of a recently acquired knowledge of an uncertain state of affairs (the snake's suffering), which requires verification: whether it is true or not that the snake has been in a state of suffering. In this case, EA is oriented toward the speaker, namely the fox; the usage of the 1P inclusive inflection on the verb furthermore shows that the addressee is also included in this case. In yes/no questions, such as this one, it appears furthermore that the presupposition of the question is the same as the two possible alternative answers, namely that there are two mutually exclusive state of affairs: *it is true that you suffered* or *it is not true that you have suffered*, although the answer appears to be pragmatically biased toward the positive option.

(30) a. O-maña   aguara   hína   la   itá-re,
          3-look   fox   CONT   DEF.DET   rock-OBL
          ha   he'i   mbói-pe:
          CONJ   3.SG   snake-IO
          'The fox was looking at the rock and said to the snake:'
       b. E-ñe-moĩ-mi   jey   pe   rei-me-hagué-pe,
          IMP-REFL-put-DIM   again   DEM   2SG-be-REL.TERM.ASP-LOC
          ja-hecha   *añeté-pa*   la   re-me   asy   *ra'e*.
          1PL.INCL-see   true-Q   DEF.DET   2SG-be   suffer   EVID
          'Put yourself again (in the place) where you were previously, let's see whether it is true that you are in a state of suffering (when you are in that place)'

We will not attempt here to further refine the semantics of *ra'e* embedded under such interrogatives, as it will require getting into considerably greater depths into the semantics of questions and its interaction with evidentiality. We leave this to future research.

5. Summary and Conclusions

We have found that in Paraguayan Guarani, the indirect evidential *ra'e* can appear in complements to attitude verbs (both in declarative and interrogative complements). We found that the embedded *ra'e* can be oriented towards the speaker or the attitude-holder argument of the embedding verb. Given the proposal that evidence acquisition be represented in the C domain of the clause, as a semi-functional head (EA) with a *pro* subject, we can readily capture both options in terms of the interpretation of such a *pro* subject: either as a variable bound to the speaker or as a variable bound to the local attitude-holder argument. In fact, this is the kind of variation that such a theory predicts.

Importantly, we have also uncovered a language-specific restriction on the orientation of embedded *ra'e*, which surfaces when the subordinator *ha* is present. We proposed to capture this property via the modal specification on the C head of the complement of attitude verbs in the presence of the subordinator *ha*. (We assume that C...*ha* is a discontinuous complementizer, with *ha* providing lexicalization for C at a distance.) This specification strongly biases the evidential *ra'e* to be oriented towards the same attitude holder who is certain of, and therefore commits to, the truth of the embedded proposition, as stated in (23). In the absence of the subordinator *ha*, the modal specification is realized on the attitude verb itself (the unmarked case), in which case (23) fails to apply and the evidential can be either speaker- or matrix-attitude-holder-oriented.

There is a methodological lesson that we have learned from this study. It is the combination of the study of narratives, followed up with detailed work with our consultants, that lead us to uncover fine-grained constraints on the orientation of embedded *ra'e*, and

in particular the language-specific constraint inherent to the subordinator *ha*, which is also subject to variation among speakers. While the latter is of interest in its own right, it also reveals that if we abstract away from language-specific properties, we can arrive at a coherent view of the orientation of embedded evidentials. Whether the orientation of the embedded evidential is truly a locus of cross-linguistic variation remains to be seen. This would require a more in-depth comparison of evidentials in similar contexts across languages, a type of study that is still lacking.

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Appendix A

In this appendix, we provide a brief description of the perception verbs *o-hendu* '3-hear' and *o-hecha* '3-see', which, when they embed clausal complements, report a perceptually acquired evidence regarding the embedded proposition.

Paraguayan Guarani has a direct/inverse (person-sensitive) inflectional system (Zubizarreta and Pancheva 2017).[16] Like other transitive verbs, perception verbs with propositional complements also make this distinction; see (31), where the 1sg clitic *che* appears on the matrix verb (the inverse pattern). We will call this the DP-CP structure, which is only available for the inverse inflectional pattern, where the Object clitic that precedes the verb may be analyzed as a TOP of the embedded complement that has been raised to the matrix clause. Thus, the complement would have a structure akin to the clitic left-dislocation of Romance and Greek (cf. Iatridou 1990; Schneider-Zioga 1994; Zubizarreta 1998), but with the addition of TOP raising. The subordinator of the CP complement is *ha* (as expected). An alternative embedded clause under perception verbs is one introduced by the temporal conjunction *jave* (31b)), but the latter appears to be an adjunct, as suggested by the asymmetry in (32): it is possible to extract from the *ha*-clause but not from the *jave*-clause. An alternative analysis that one might consider for (31a) and (32a) is the pseudo-relative structure proposed by (Cinque 1992) for Romance. Yet, it is to be noticed that the subordinator for a DP relative in Paraguayan Guarani is *va*, not *ha*, although such a distinction also holds for pseudo-relatives and DP relatives in Greek and Bulgarian. Nonetheless, these structures are still in need of a more in-depth investigation. We leave this for future research.

(31) a.

Kalo	che	rendu	a-ñe'e-*ha*	che sý-ndi.
Kalo	1SG	hear	1SG-speak-SUB	1SG.POSS mother-with

'Kalo heard me speak to my mother.'

b.

Kalo	che	rendu	a-ñe'e	*jave*	che sý-ndi.
Kalo	1SG	hear	1SG-speak	TEMP.SUB	1SG.POSS mother-with

'Kalo heard me while I was speaking to my mother.'

(32) a.

Máva-ndi-pa	Kalo	che	rendu	a-ñe'e-*ha*?
Who-with-Q	Kalo	1SG	hea	1SG-speak-SUB

'With whom did Kalo hear me speaking?'

b.

Máva-ndi-pa	Kalo	che	rendu	a-ñe'e	*jave*?
Who-with-Q	Kalo	1SG	hear	1SG-speak	TEMP.SUB

Lit: 'With whom did Kalo hear me while I was speaking?'

The second type of complement for perception verbs is a simple CP structure, as illustrated below. We refer to it as the CP complement, in contrast with the TOP-CP structure.

(33)   Kalo   o-hendu   a-guahẽ-*ha*.
            Kalo   3-hear   1SG-arrive-SUB
            'Kalo heard that I (had) arrived.'

While the CP complement can be associated with an interpretation of direct or indirect perception, the TOP-CP complement can be associated only with a direct perception interpretation. Thus, while the example in (33) is compatible with a context whereby Kalo actually heard me arriving (e.g., he heard my footsteps or my voice) or with a context whereby he heard from a third party that I had arrived, the example in (34) is appropriate only in the former context.

(34)   Kalo   che-hendu   a-guahẽ-*ha*.
            Kalo   1.SG-hear   1SG-arrive-SUB
            'Kalo heard me arriving.'

As for the verb *(o)hecha* 'to see', its most noteworthy property is that it lacks an indirect perception (inferential) meaning. Thus, the sentences in (35) and (36) are only appropriate in a context where Kalo sees me arriving; e.g., Kalo pokes his head out the front window and sees me opening the front gate. Neither the TOP-CP structure (35) nor the CP-complement structure (36) are appropriate in a context where Kalo sees my shoes by the entrance door and infers that I have arrived. It was suggested by our consultants that the verb *(o)hechakua'a* 'to realize' would be used in such a context; (37).

(35)   a.   Kalo   che-recha   a-guahẽ-*ha*.
               Kalo   1.SG-saw   1SG- arrive -SUB
               'Kalo saw me arriving.'
     b.   Kalo   che-recha   a-guahẽ *jave*.

(36)   a.   Kalo   o-recha   a-guahẽ-*ha*.
               Kalo   3-see   SG-arrive-SUB
               'Kalo saw that I arrived.'
     b.   Kalo   o-recha   a-guahẽ-*jave*
                 Kalo   3-see   1SG-arrive-TEMP.SUB

(37) Kalo   o-hechakua'a   a-guahẽ-*ha*.
     Kalo   3-realize   1SG-arrive-SUB
     'Kalo realized that I arrived.'

We note furthermore that both consultants strongly preferred, and often required, the presence of the subordinator *ha* in the CP complement of perception verbs, in contrast with the CP complement of attitude verbs discussed in the main text. In the questionnaire reported at the beginning of Section 3, there was one of eight participants who chose the option without the subordinator *ha* in the case of *o-hendu* 'to hear' with a direct perception interpretation. We surmise that this might be due to an interference from the Spanish infinitival construction; e.g., *Me/le escuchó llegar (He heard me/him arrive)*, which can only have a direct perception interpretation. We also note that the subordinator *ha* in the complement of perception verbs does not seem to be associated with any modal notion of certainty/commitment, in contrast with the subordinator *ha* in the complement of attitude verbs. It then makes sense that the attitude verbs (but not the perception verbs) should alternate with a null C option: the presence vs. absence conditions of the subordinator *ha* in the complement of attitude verbs regulate the presence vs. absence of the grammaticalization of the certainty/commitment with respect to the truth of the embedded proposition on the part of the attitude holder.

Notes

[1]   In narratives, the attitude holder may shift to a protagonist, rather than the narrator (i.e., the speaker).

[2]   Korotkova (2016) argues that embedded evidentials cannot receive matrix scope and have the whole sentence as their prejacent. What we suggest here is different: the EA is merged in the matrix clause, the embedded evidential undergoes long LF movement to adjoin to it.

3   Salanova and Carol op.cit. redefine mirativity in terms of the notion of discovery, thus blurring the boundaries between evidentials and miratives. We do not accept this view.

4   In (Pancheva and Zubizarreta 2019) we suggested that the person feature on the subject of EA is [participant, proximate] (where [participant] entails [proximate]). What is relevant for the person-temporal connection in features is the feature [proximate]. In fact, [participant] is too strong a specification, because the evidential attitude holder of a reportative EA could have simply overheard a communication in which they were not a participant, but just a proximate observer.

5   See (Pancheva and Zubizarreta 2019) (note 22) for illustration of the impossibility of embedding *ra'e* inside a nominal complement of an attitude verb.

6   See (Zubizarreta 2022) for arguments that the right edge of the VP coincides with the right edge of the verb (and its extended projections), while the arguments of the verb are realized phonologically to the right of the VP. Thus, in (6) the argument '*with the horse*' is phonologically at the right-edge of the VP; it is not in its base position within VP.

7   As is the case of an explicit indirect speech, where the perspective is that of the matrix subject character (example (i) is from a story about a bunch of monkeys who outwit a tiger).

(i)	Ma'ẽ,	o-manó-*mbo*[=*nimbo*]	amigo	jaguareté	ápe	*ra'e*	-	he'i	ndaje.
	look,	3-die-PART	friend	tiger	here	EVID	-	3.say	REPORT.EVID

'Look, the friend tiger died here, it turns out—he reportedly said.'

8   *Ra'e* is not the only element that has a dual function, one of which is focusing the constituent to which it is right-adjacent, and on which it generally leans prosodically. The particle *kuri*, which Pancheva and Zubizarreta (2023) analyze as a retrospective aspect, also has a focusing function. And so does the particle *hína*, which gives rise to a continuative meaning when combined with the verb, but which loses its temporal contribution when it combines with other constituents of the clause while retaining its focusing properties.

9   The well-known property of evidentials of not-at-issue or not-under-discussion applies to *ra'e* as well. e.g., in (9), it would not be appropriate for the addressee to challenge the speaker's having evidence for Kalo's arrival.

10 Interestingly, his observation coincides with how the title of the song by John Lennon 'Imagine' got translated to Guarani: it uses the same verbal root as weak belief: Ei-*mo'ã*-na (Imp-imagine-Rogative).

11 The verb *o-pilla* 'to catch or surprise someone in an act' has a Spanish root and it corresponds to the verb (*o*)*popa'ã* in PG. It is not uncommon for native roots in PG to be substituted by Spanish roots, adapted to PG's morphophonology. And speakers can oscillate from one to the other. The verb *dekonfia* is also of Spanish origins (with the PG inflectional morphology dropped), as well *ofrece*, where the initial vowel could be reinterpreted as the 3 Person marking.

12 We found one case of *ra'e* in a *when*-conditional and in this case the attitude holder toward which *ra'e* is oriented is the speaker, who is also the implicit experiencer argument of the main verb, namely the psych verb with a Spanish root: '*gusto*' to please (the PG counterpart is a complex verb, *ñe-ñandu-porã*, 'REFL-feel-good'). In other words, an attitude holder of an experiencer of a psych verb can function as the perspective holder. For other relevant examples, see the next section.

(i)	I-gústo.ité	[re]i-ko	añete	la	ka'i-mi
	3. POS-pleasant-SUPERL-EMPH	2SG.exist	truly	DEF.DET	monkey-DM
	ñane-mo-kyrỹi-rõ	*ra'e*	-	he'i	ha'e.
	1Pl.INCL-CAUS-tickle-WHEN	EVID	-	3.say	3.PRON

'It is truly very pleasant (for us) when the little monkey tickles us', said he [the tiger].

13 There is a mythology in Paraguay about gold/money being buried during the big war, and a series of folk stories have arisen around it.

14 The evidential *ra'e* in questions may, but not need be, syntactically attached to the *wh*-phrase; cf. *Máva-ndi-pa ra'e Maria o-jeroky*.

15 The Tagalog sentence also has another interpretation, lacking in Paraguayan Guarani, namely the "by-proxy" reading. Here the evidential remains anchored to the speaker: it is the speaker who has reportative evidence that someone else has this question and is asking the question on behalf of that person. In terms of the structural description set up here, in such cases the EA is also anchored to the speaker. There is cross-linguistic variation in the availability. of the interrogative flip and the by-proxy interpretations. The interrogative flip has also been reported for Tibetan (Garrett 2001), Cuzco Qechua (Faller 2002: ex. (189b)), St'at'imcets (Matthewson et al. 2007, p. 232), Cheyenne (Murray 2017: ex. (2.96)) but is said to be impossible in Yucatec Maya (AnderBois 2019). The by-proxy interpretation has been reported for Cuzco Qechua (Faller 2002) and Yucatec Maya (AnderBois 2019) but is absent in Cheyenne (Murray 2017).

16 The perception verbs –*hendu* and -*hecha* belong to the so-called triforme verb class (e.g., *tendu, hendu, rendu; techa, recha, techa*), with *rendu* and *recha* as the choice root form in inverse structures where the Objective NP is higher in the person hierarchy (1 > 2 > 3) than the external argument. See (Zubizarreta and Pancheva 2017) for details.

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