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Fieldwork on epistemic authority markers: What we can learn from different types of data

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Abstract: Epistemicity in language encompasses various kinds of constructions and expressions that have to do with knowledge-related aspects of linguistic meaning (cf. Grzech, Karolina, Eva Schultze-Berndt and Henrik Bergqvist. 2020c. Knowing in interaction: an introduction. *Folia Linguistica* [this issue]). It includes some well-established categories, such as evidentiality and epistemic modality (Boye, Kasper. 2012. *Epistemic meaning: A crosslinguistic and functional-cognitive study*. Berlin: De Gruyter Mouton), but also categories that have been less well described to-date. In this paper, I focus on one such category: the marking of epistemic authority, i.e. the encoding of “the right to know or claim” (Stivers, Tanya, Lorenza Mondada & Jakob Steensig. 2011b. Knowledge, morality and affiliation in social interaction. In Stivers et al. 2011a). I explore how the marking of epistemic authority can be documented and analysed in the context of linguistic fieldwork. The discussion is based on a case study of Upper Napo Kichwa, a Quechuan language spoken in the Ecuadorian Amazon that exhibits a rich paradigm of epistemic discourse markers, encoding meanings related to epistemic authority and distribution of knowledge between discourse participants. I describe and appraise the methodology for epistemic fieldwork used in the Upper Napo Kichwa documentation and description project. I give a detailed account of the different tools and methods of data collection, showing their strengths and weaknesses. I also discuss the decisions made at the different stages of the project and their implications for data collection and analysis. In discussing these issues, I extrapolate from the case study, proposing practical solutions for fieldwork-based research on epistemic markers.

Keywords: evidentiality, epistemicity, Quechua, Kichwa, discourse markers

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1 Introduction

In Upper Napo Kichwa (Quechuan, Ecuador), epistemic authority markers are not required for the grammaticality of utterances. They form a paradigm of word-final enclitics which can occur on any phrasal head and are not fused with markers from other linguistic categories (e.g. TAM). For some Quechuan languages it has been claimed that evidential enclitics also mark focus (Muysken 1995; Sánchez 2010, 2015), but the Upper Napo Kichwa data suggest that although the enclitics are associated with focus, they cannot be analysed as marking focus (cf. Grzech 2016a: ch. 4). Nonetheless, the placement of epistemic enclitics in the clause is conditioned by information-structural considerations at the discourse level. The clitics' occurrence is influenced by contextual and pragmatic factors, which suggests that they should be analysed as discourse markers (Grzech 2016a: ch. 3).

Consider the placement of the two enclitics from the epistemic paradigm, =*tá* and =*mi*, in (1) and (2) below. Both examples occurred in analogous contexts with the same participants being involved. A is myself, a linguist working in the village, while B runs the local school canteen. In both (1) and (2), A approached B, wanting to eat lunch at the canteen. In both cases, the response would have been equally grammatical without the respective enclitic.

- (1) A: *miku-na* *tia-n=dzu?*
 eat-OBJ.NMLZ exist-3-Q/NEG
 ‘Is there food?’
 B: *tia-n=dá*
 exist-3=TÁ
 ‘There is’
 (attested)¹
- (2) A: *miku-na* *tia-n=dzu* *chara?*
 eat-NMLZ exist-3-Q/NEG still
 ‘Is there still food?’
 B: *tuku-ri-n=mi*
 end-ANTIC-3=MI
 ‘It’s finished.’
 (attested, 24/05/2018)

¹ ‘Attested’ refers to examples which were witnessed, but not recorded. ‘Elicited’ refers to examples which were elicited, but not recorded. For all other examples, a source recording from the ELAR Upper Napo Kichwa corpus (Grzech 2020b) is provided. Unless indicated otherwise, all examples in the article come from Upper Napo Kichwa.

The fact that B chooses a different enclitic in each case demonstrates two issues important for the appropriate characterisation of these markers. It shows that the difference in meaning between *=mi* and *=tá* cannot be characterised in terms of evidentiality, as could be suggested by the fact that cognates of *=mi* in other Quechuan varieties have been analysed as evidentials (e.g. Faller 2002; Floyd 1997; Weber 1986). This kind of analysis cannot be sustained here as B has the same source of evidence for both statements. Given that the two enclitics belong to the paradigm of epistemic markers, the question arises what kind of epistemic distinction they encode. Examples (1) and (2) demonstrate that *=mi* and *=tá* can felicitously occur in near-identical contexts. This suggests that the differences in situational and epistemic context that condition the use of the enclitics are so fine-grained that they are not evident at first glance. If we want to describe and analyse the meaning and use of these markers, we need to identify the cues influencing the speakers' choice of marker. If we want to obtain negative evidence to support our analysis, we need to be able to target those cues in an elicitation/experimental setting. The main aim of this paper is to propose how we can do both of the above, taking the Upper Napo Kichwa epistemic system as an example.

In order to achieve these aims, the paper details the steps of the research process undertaken in the description and analysis of epistemic discourse markers in Upper Napo Kichwa. It appraises these steps critically, so as to propose procedures and methods which could be adapted by researchers dealing with epistemic systems with similar morphosyntactic and semantic properties. I first provide some background information on the language, as well as on the research questions I aimed to answer when analysing the Upper Napo Kichwa epistemic marking and the data used in the process (Section 2). Following on from that, I introduce the Upper Napo Kichwa epistemic paradigm (Section 3). Subsequently, I describe and evaluate the methods and tools I used for epistemic research on this language (Section 4). Finally, I comment on the theoretical and practical issues related to epistemic research design, both in Upper Napo Kichwa and more generally (Section 5).

2 Background: Language, research questions and data

This section provides background information on Upper Napo Kichwa, its system of epistemic discourse marking and the research questions that guided the study of those markers. For reasons of space, I do not discuss the sociolinguistic situation of the language or its vitality (for this, see Grzech et al. 2019).

2.1 Upper Napo Kichwa

Upper Napo Kichwa (ISO 639-3: quw)² belongs to the QII subgroup of the Quechuan language family (Torero 1964). It is spoken by ca. 46,000 people (INEC 2010) in the Province of Napo, in the western region of the Ecuadorian Amazon adjacent to the Andes. Upper Napo Kichwa forms part of a dialect continuum of Amazonian Kichwa (Grzech et al. 2019).

Like other Quechuan languages, Upper Napo Kichwa is agglutinative and almost exclusively suffixing. Quechuan languages have been analysed as discourse-configurational (cf. Lefebvre and Muysken 1988; Muysken 1995), i.e. languages in which constituent order can be determined by factors related to information and discourse structure. However, the basic word order throughout the family is SOV. In Upper Napo Kichwa, SVO is also accepted by speakers, possibly due to extensive contact influence from Spanish. The two main word classes are nominals (encompassing adjectival modifiers) and verbs. While Ecuadorian Kichwa verbal morphology remains complex, it is significantly simpler than the verb-inflection morphology in Quechuan varieties spoken in Bolivia and Peru (cf. Adelaar and Muysken 2004: 187). For instance, there is only residual object marking on the verb whereas in Peruvian varieties both subject and object are indexed obligatorily.

2.2 Research questions

The methodology presented in this paper was designed for a research project with the goal of describing and analysing Upper Napo Kichwa epistemic markers (Grzech 2016a). The present paper aims to evaluate the chosen method, but for this to be possible, it is crucial to cite the research questions which the original project set out to answer. I summarise them in turn below, also outlining the steps taken to answer them.

The first research question was concerned with basic grammatical properties of Upper Napo Kichwa epistemic markers. The set of markers was identified on the basis of naturalistic data (see Section 2.3). This was coupled with elicitation to identify restriction in the markers' co-occurrence with one another, as well as their distribution on the clause and discourse level.

Establishing the morphosyntactic properties of the markers paved the way for answering the second question, concerned with the semantics of the attested

² Different orthographies exist for the language, and its name can be spelled as both 'Quichua' and 'Kichwa' (cf. Grzech et al. 2019).

epistemic markers. At that stage of the research, the methodology described in this paper became especially relevant. My initial hypothesis related to the semantics of the markers was based on the studies of their cognates in other Quechua varieties (e.g. Faller 2002; Floyd 1997; Nuckolls 1993; Weber 1986), which suggested that the markers in question had evidential semantics. The elicitations employed to verify this assumption are discussed in more detail in Section 3, along with the tasks I used once I realised that the semantics of the markers goes beyond indicating the source of evidence.

The third research question concerned the information-structural properties of the markers. In other varieties, Quechuan evidential enclitics have been analysed as marking the information-structural categories of topic and focus. Therefore, it was important to establish whether and how the Upper Napo Kichwa markers contribute to information structure and the pragmatic structuring of clauses. Methods and tools employed to achieve this goal overlapped with the ones employed to describe the semantics of the markers (see Sections 4.2 and 4.3). A detailed discussion of the clitics' information-structural functions beyond the scope of this paper and can be found elsewhere (Grzech 2016a: ch. 4). The same stimuli were used to answer a related research question that emerged at the later stage of the project, namely what factors, in addition to evidentiality and information structure, account for the markers' distribution in discourse.

2.3 The corpus

The design of the corpus is one of the first methodological decisions documentary and descriptive linguists have to make (cf. e.g. Austin 2006). This applies to all aspects of language description, including research on epistemic marking. In order to make their results transparent, researchers should be clear about the data that these results are based on. Hence, this section provides a detailed discussion of the Upper Napo Kichwa corpus, explaining the choices related to the collection of the different kinds of data.

The corpus in question was a result of collaborative fieldwork funded by ELDP (Endangered Languages Documentation Programme, Grant id: IGS0166). It was collected during two trips in 2013 and 2014, amounting to 10 months of fieldwork, during which I lived in the speaker community in the province of Napo, Ecuador. As mentioned above, the documentation of Upper Napo Kichwa was a collaborative project. Several native-speaker researchers were involved in all of its stages, from data collection to transcription and translation (see Acknowledgements). The objective behind the creation of the corpus was to make it useful for research on epistemic marking, as well as valuable and interesting for the speakers of Upper

Table 1: Upper Napo Kichwa documentary corpus.

	Elicitation	Staged communicative events	Naturalistic discourse
2013	7 h 39 min 57 s	17 min 41 s	9 h 34 min 06 s
2014	19 h 55 min 50 s	1 h 45 min 49 s	1 h 26 min 43 s
Total	27 h 35 min 47 s	2 h 3 min 30 s (~1537 turns)	10 h 52 min 03 s (~12,040 turns)

Napo Kichwa. To meet these different needs, the corpus was divided into three parts: naturalistic discourse, staged communicative events and elicitation. The first two parts were recorded on audio and video, while for elicitation only audio recordings were made. Table 1 provides a summary of the corpus, showing which kinds of data were collected during which fieldwork period. During the first fieldtrip, I focused on grammatical elicitation and naturalistic discourse. The second fieldtrip involved testing hypotheses regarding epistemic enclitics through elicitation and experiments.

These recordings were transcribed and translated into Spanish by native-speaker researchers in ELAN and revised twice to ensure the accuracy of transcription and translation. The materials were segmented by native speakers without linguistic training, so ‘turns’ as used in Table 1 roughly correspond to intonation units; they only loosely correlate with the notion of ‘turn’ as used in linguistic research.

The naturalistic discourse part of the corpus was designed jointly with the other members of the research team, who are native speakers of Upper Napo Kichwa. Its purpose was to document discourse practices of the speech community as well as culturally important topics and customs. The naturalistic discourse corpus is a crucially important and indispensable part of an epistemic research toolkit (cf. Grzech 2020c; Mithun 2020). Naturalistic data allow an insight into how epistemic marking is used in real-life situations and provide the background for hypotheses regarding the functions of epistemic marking (see Section 5). As stated by Kittilä et al. (2018: 285), “[d]ata that represent authentic language use in real situations are necessary for arriving at a complete picture of the use of evidentials in any given language (...).” This observation could be extended to all kinds of epistemic expressions.

To construct this part of the corpus, the native-speaker members of the research team suggested topics that were interesting from the point of view of linguistic and cultural documentation. They approached community members who were experts on a given topic and asked them to participate in interviews or demonstrations. The native-speaker researchers also acted as interviewers and facilitators, which was crucial for the naturalistic quality of the recorded data and

its high value for epistemic research. This part of the corpus includes interviews, life-stories, traditional narratives, two-party and multi-party conversations, monologues, ceremonial speeches, community events, political discourse and songs. This is important from the methodological point of view: given the connections epistemic expressions have with pragmatic and intersubjective aspects of language, their use is prone to vary between different discourse genres (cf. Kittilä et al. 2018: 282).

The staged communicative events (cf. Himmelmann 1998: 185–186) part of the corpus includes discourse resulting from presenting consultants with video and picture stimuli and asking them to perform specific tasks. The stimuli, which I discuss in more detail in Section 4.2, include e.g. the *Pear Story* video (Chafe 1980) and tasks for two consultants from the *Questionnaire on Information Structure* (Skopeteas et al. 2006), which could be classified as interactive tasks related to narrative production and problem solving (cf. Grzech 2020c). These types of tasks allow for comparing constructions used by various speakers in the same context and for controlling what information is shared between participants. This part of the corpus was recorded with six speakers, transcribed and translated in ELAN by native speakers, parsed and glossed in Toolbox and re-exported to ELAN for search purposes.

The elicitation corpus contains data from one-to-one elicitation sessions. In these sessions speakers were asked to translate sentences from Spanish to Upper Napo Kichwa, to come up with utterances fitting a given context, and to judge grammaticality or felicity of utterances (cf. Matthewson 2004: 381). The one-to-one elicitation sessions also included requests for translations or reactions, with rich situational context provided, so as to elicit evidential meanings (see Section 4.2). The one-to-one elicitation sessions also included single consultant tasks from the *Questionnaire on Information Structure* (Skopeteas et al. 2006). Recorded sessions were conducted with three speakers, but I occasionally asked other speakers for judgements regarding utterances or tried them out in my own speech to check how they would be received.

The recorded corpus was also supplemented with ubiquitous participant observation during the 10 months spent in the speaker community. Many ideas, hypotheses and observations were made possible by observing naturalistic language use and trying out certain constructions in interaction to check if they would be judged appropriate by native speakers.

3 Epistemic marking in Upper Napo Kichwa

In this section I provide an overview of the paradigm of Upper Napo Kichwa epistemic enclitics. In order to understand the methodological challenges involved

in my research, the readers should have a general idea of the system I was aiming to describe.

My initial hypothesis was that Upper Napo Kichwa has three evidential enclitics: *=mi* expressing direct/best possible evidence (cf. Faller 2002), *=cha* expressing inference and conjecture, and *=shi* – a reportative evidential. The morphosyntactic properties of the markers turned out to be similar to their cognates from other varieties and thus congruent with my initial assumptions. The clitics are not syntactically obligatory, and they occur on phrasal heads. Their position in the clause is motivated by information structure, as they show a preference for occurring on focal constituents (Grzech 2020a). On the discourse level, the use of the clitics is motivated by epistemic factors. However, it quickly transpired that the Upper Napo Kichwa epistemic paradigm did not have three members, but eight. The cognate of the reportative *=shi* was absent from the data, while six other markers were attested in the same morphosyntactic slot as *=mi* and *=cha*. The cognates of these additional markers were described for other Quechuan varieties (see Table 2 below), but most of them were not described in detail, and/or not considered jointly with the evidential markers.

The initial hypothesis about the semantics and composition of the paradigm proved to be wrong early on in the project. Firstly, already at the stage of initial participant observation and describing the basic grammar of the language, I noticed that *=mi* and *=cha* were not used to mark direct and inferential/conjectural evidence, respectively. Secondly, as mentioned above, the reportative marker was not attested in the data. Instead, reports were introduced by the use of *=mi* and the verb *ni-* ‘say’. These observations led me to dismiss the initial three-member evidential paradigm hypothesis, in favour of an eight-member epistemic paradigm. In Table 2, I list the enclitics belonging to the Upper Napo Kichwa epistemic set. I also provide an overview of how they were analysed in those Quechuan varieties in which they have been described, and how I analysed them on the basis of the Upper Napo Kichwa data. Note that Table 2 is meant as an illustration of the complexity of the paradigm rather than an exhaustive overview of all the analyses of the markers conducted to-date across the Quechuan language family. For this reason, it does not include markers attested in other varieties, but not in Upper Napo Kichwa (cf. e.g. Hintz and Hintz 2017). Since the main point of this paper is methodological rather than empirical, the objective of Table 2 is to give the readers an idea about the complexity the system, rather than to provide a comprehensive analysis.

The discussion in the following sections is illustrated with the examples of the two enclitics that are the cognates of the evidential enclitics attested in all the other varieties described to-date, namely *=mi* and *=cha*. Examples below illustrate the use of these markers. Example (3) is a default greeting. Apart from the epistemic

Table 2: Upper Napo Kichwa epistemic clitics and their cognates in other Quechuan varieties.

Clitic	Analyses of cognates in other Quechuan varieties	Analysis in Upper Napo Kichwa
mi	Direct evidential (e.g. Huallaga Quechua: Weber 1996; Wanka Quechua: Floyd 1997); Direct evidential/‘best possible ground’ (Cuzco Quechua: Faller 2002); Attested (Cuzco/Collao Quechua: Cusi- huamán 1976/2001) Direct evidential/assertion of individual knowledge (South Conchucos Quechua/ Sihuas Quechua: Hintz and Hintz 2017); First-hand information (Imbabura Quechua: Cole 1982: 164); Speaker perspective (Pastaza Quichua ³ : Nuckolls 2012).	Exclusive epistemic authority of the speaker/origo.
ma	Emphatic first-hand information (Imbabura Quechua: Cole 1982: 164); Direct experience/mutual knowledge (Sihuas Quechua: Hintz and Hintz 2017); Impressive (Cuzco/Collao Quechua: Cusi- huamán 1976/2001); Surprise (Cuzco Quechua: Faller 2002).	Meaning similar to that of =mi; Further work needed.
mari	Emphatic =mi (e.g. Wanka Quechua: Jake and Chuqín 1979, cited in Floyd 1997: 85; Huallaga Quechua: Weber 1996: 595). Equivalent of -ma (Imbabura Quechua: Cole 1982: 164)	Epistemic authority of the speaker/origo. Information known to addressee, but not activated.
chu	Negation/polar question (e.g. Huallaga Quechua: Weber 1996; Imbabura Quechua: Cole 1982: 164; Cuzco Quechua: Faller 2002; Negation/interrogative (Cuzco/Collao Quechua Cusi- huamán 1976/2001); Negative (Wanka Quechua: Floyd 1997; Pastaza Quichua: Nuckolls 1993).	Negation/polar question marker.
cha	Inferential evidential (e.g. Huallaga Quechua: Weber 1996; Wanka Quechua: Floyd 1997); Inferential evidential and epistemic modal (e.g. Cuzco Quechua: Faller 2002);	Disclaimer of speaker’s epistemic authority, potentially shared knowledge (Grzech 2016a; 2020c).

3 Orthographic conventions for language names and whether the markers are preceded by hyphen /= sign follow the cited sources.

Table 2: (continued)

Clitic	Analyses of cognates in other Quechuan varieties	Analysis in Upper Napo Kichwa
	Supposition/speculation/anticipation (Cuzco/Collao Quechua: Cusihamán 1976/2001: 233); Doubt (Imbabura Quechua: Cole 1982: 164) Individual conjecture (South Conchucos Quechua: Hintz and Hintz 2017: 93).	
chari	Emphatic equivalent of certainty marker -chaq (Huallaga Quechua: Weber 1996: 595); Equivalent of -cha (Cole 1982: 164).	Meaning similar to that of =cha; Further work needed.
ta	Possibly cognate of -taq (interrogative marker in Huallaga Quechua: Weber 1996; contrastive marker in Cuzco/Collao Quechua: Cusihamán 1976/2001).	Content question marker.
tá	Not attested in other varieties. Functionally similar to emotive -ya in Quechua II-C (e.g. Cusihamán 1976/2001).	Epistemic authority of the speaker, activated knowledge shared with addressee. Distributional similar to verum focus marking.

authority =mi, it also showcases the use of the marker =chu in its interrogative function, and the topic marker =ga:

- (3) A: *kawsa-ngui=chu?*
live-2=Q/NEG
'How are you? (lit. are you alive?)'
B: *alli=mi kawsa-ni. Kan=ga?*
good=MI live-1 2SG=TOP
'I am well. [And] you?'
(attested)

As mentioned in Section 1, the epistemic clitics also interact with focus. In (3), =mi occurs on adverbial modifier, and the focus of the clause corresponds to its host constituent (for more detailed discussion, cf. Faller 2019; Grzech 2020a). However, the evidential/epistemic value of the marker has sentential scope (Muysken 1995: 385).

In (4), =mi is again juxtaposed with =chu, in this case functioning as a negation marker. Although the epistemic enclitics in Upper Napo Kichwa are not syntactically obligatory, (4) below illustrates the case of a corrective focus construction, which speakers judge as infelicitous without =mi (cf. Grzech 2020a).

- (4) *mana ñuka ushi=chu, ñuka warmi=mi*
 NEG 1SG daughter=Q/NEG 1SG woman=MI
 ‘She’s not my daughter, she’s my wife.’
 (el_28112014_05)

The context for (4) is the following: a man comes to a party with a younger woman, and someone asks him what his daughter’s name is. He replies with the utterance given in (4). Although this example was elicited, analogous utterances were frequently attested in more natural circumstances, such as (5) below, uttered during one of the staged communicative events, clarifying what happened in a video the two consultants just watched:

- (5) *mana atari-ka=chu, tia-nuka=lla=mi*
 NEG get.up-PST=Q/NEG be-3PL.PST=LIM=MI
 ‘[(S)he] didn’t stand up, they just sat there (...)’
 (el_24112014_01 041)

The enclitic =*mi*, although most frequent in declarative utterances, can also occur in interrogatives. In the corpus it is mostly in yes/no questions, as shown in (6) but it also occurs in context questions, such as the one shown in (7):

- (6) *unay wañu-shka=mi kay?*
 long.ago die-ANT =MI P.DEM
 ‘Has this (person) died a long time ago?’
 (in_25052013_1_02 184)
- (7) *ima shuti=mi?*
 what name=MI
 ‘what’s (her) name?’
 (in_20092013_03 216)

The other enclitic which features prominently in the discussion in the following section is =*cha*, the cognate of the inferential evidential in other Quechuan varieties. In Upper Napo Kichwa, this marker encodes a disclaimer of epistemic authority on the part of the speaker.

- (8) *kari=cha {audifono}⁴-ra chura-ria-n?*
 young.man=CHA headphones-ACC put-CONT-3
 ‘Is the man wearing headphones?’ [in the video you watched]
 (el_05122014_01 021)

4 {} mark Spanish words, in line with a convention proposed by Nikolaeva (2014).

The use of =*cha* in (5) could suggest that the enclitic could be analysed as an interrogative marker. However, a more detailed analysis reveals that the interrogative reading of (5) is derived from the clitic's semantics, encoding lack of epistemic authority (cf. Grzech 2016a: ch. 5 for detailed discussion). While out-of-the-blue utterances marked with =*cha* are always interpreted as interrogatives, in connected discourse =*cha*-marked utterances are interpreted as dubitative statements or rhetorical questions.

- (9) *usa=llara=cha chi maska-n, ima=chari...*
 louse=ID.REF=**CHA** D.DEM look.for-3 what=**CHARI**
 'It might also be lice that [she is] looking for...'
 (el_16082013_02 059)

In (6), the speaker narrates a video he has just watched. The video, coming from the *Reciprocal stimuli set* (Evans et al. 2004), shows people who pretend to de-louse each other. The statement in (6) is based on direct visual evidence, but the speaker has trouble interpreting what he is seeing. The use of =*cha* in (6) is warranted by the fact that the speaker is unwilling to claim epistemic authority/primacy or vouch for the validity of his conclusions.

The examples above, as well as Table 2, give the reader some notion of the complexity of the Upper Napo Kichwa epistemic paradigm. As already mentioned, when embarking on fieldwork, I expected that Upper Napo Kichwa would display a three-marker paradigm encoding evidential values, which is the most common case in Quechuan languages described to-date (e.g. Cusihuamán 1976/2001; Faller 2002; Floyd 1997; Weber 1996). It was only after the fieldwork was at a reasonably advanced stage that I became aware of the work describing other Quechuan evidential systems, which, beside the direct/inferential/reportative evidential values, also encode shared vs. exclusive knowledge distinctions (Howard 2012; Hintz and Hintz 2017). This initial lack of awareness had significant implications for the methodology of this research. Its initial stages focused on attempts to understand the evidential semantics of the markers. This focus was partly due to the fact that the epistemic literature available and/or widely discussed at the time did not discuss epistemic notions beyond evidentiality and epistemic modality in much detail (cf. Grzech 2020c). Consequently, having arrived at the conclusion that the values encoded by the markers are related to ownership and distribution of knowledge (see Section 4), I had to make major adjustments to the initially envisaged work-flow. The first adjustment consisted in coming back to the naturalistic language data in search of patterns, and – more importantly – expanding the range of context-related factors to be taken into account in the analysis of the markers. The second adjustment involved consultation with expert colleagues and expanding the scope of the literature initially considered relevant to the topic. This

gradually led me towards conversation analytical literature (e.g. Stivers et al. 2011b) and work on Territories of Information (Kamio 1997), which used concepts that had explanatory value for the Upper Napo Kichwa data. Since 2013, the field has developed significantly. Notions relevant to the description of the Upper Napo Kichwa epistemic paradigm have recently been discussed for instance in relation to the newly proposed category of engagement (Evans et al. 2018a, 2018b; cf. Grzech 2020c).

4 Data collection in epistemic research

In this section, I discuss the practical considerations pertaining to epistemic research design and data collection. In a well-designed and well-executed language documentation project, data collection is not a matter of merely recording speakers, or a “(...) mechanical, cognitively “light” activity” (cf. Grinevald and Sinha 2016: 28). Rather, it is an outcome of theoretically informed decisions, which need to be verified and adjusted during the course of data collection and analysis.

On top of that, there are multiple methodological challenges particularly relevant to epistemic fieldwork. The most apparent one is that epistemic expressions very often have meaning extensions (see e.g. Aikhenvald 2004; Mortensen 2012) and thus can be highly polyfunctional. This means that they often show an extreme context-sensitivity (e.g. Mushin 2013), which makes it hard to pinpoint their contribution to the clause and the utterance. Consequently, in order to be precise about their meanings, it is necessary to consider multiple aspects of utterance context in the analysis (e.g. Gipper, 2020). Furthermore, epistemic meanings are relatively abstract. Thus, they are often non-accessible to meta-linguistic intuitions of native speakers and are extremely difficult to target in elicitation tasks (cf. e.g. Mithun 2020). This has important implications for how hypotheses can be generated and verified in research on epistemic marking.

The main focus of this section is on the different types of data and how they can be used in epistemic research. Corpus-based research is well-established in the study of evidentiality and related phenomena (cf. e.g. Grzech 2020c; Guentchéva 2018). However, in the ideal world, corpora should not be the only source of data in epistemic research (cf. Section 5). Naturally occurring speech cannot supply negative evidence since it does not contain ungrammatical or infelicitous constructions (Matthewson 2004: 376–77; Kittilä et al. 2018: 290). Moreover, low-frequency constructions might not appear in naturalistic discourse even in a relatively large corpus. Consequently, while naturalistic discourse is an extremely valuable source of linguistic data (cf. Section 2.3) in semantic and pragmatic fieldwork, including fieldwork on epistemic marking and other context-sensitive

expressions, it needs to be coupled with different types of structured elicitation. Another strong argument for juxtaposing naturalistic language use with more controlled data in epistemic research comes from Kittilä et al. (2018: 291). The authors observe that in the context of natural language use it is extremely challenging to access the communicative intentions of the speaker, and hence we may never be sure if our interpretation of a given utterance is correct. *Post-hoc* discussion of examples with speakers at the time of transcription can be an opportunity to ask them about a given segment, but subtle aspects of epistemic meaning are likely to be inaccessible to native speaker intuition (cf. Bochnak and Matthewson 2020; Matthewson 2004; Mithun 2020; cf. Section 5).

Below, I discuss the elicitation and stimuli-based tasks used in the analysis of the Upper Napo Kichwa epistemic marking system, from the least to the most interactive ones. I discuss the rationale for using each task type, explain the procedure, and include a brief evaluation of the effectiveness of the tasks of a given type. Throughout the research process, I used Upper Napo Kichwa in interactions with speakers and descriptions of tasks whenever possible. However, my language competence was not sufficient to always be able to provide clear explanations and cues. Consequently, Spanish was preferred for the sake of better mutual understanding, despite the fact that the utterances provided by the consultants could potentially be affected by this choice of metalanguage (cf. Grzech 2020c; Zhornik and Pokrovskaya 2018).

4.1 Elicitation

Elicitation is understood here as tasks which do not involve interaction between native speakers, are based on textual cues, and do not involve any additional stimuli. In the context of the Upper Napo Kichwa project, a typical elicitation task involved the researcher and one consultant. The consultant was asked to provide grammaticality or felicity judgements, to translate sentences from Spanish to Upper Napo Kichwa, or to provide an appropriate utterance in Upper Napo Kichwa in the context described by the researcher.

As discussed above, my initial working hypothesis was that Upper Napo Kichwa had evidential markers. This led to elicitation of a range of sentences related to different ways of acquiring information, e.g. asking consultants how the same proposition would be uttered if they learnt about it through direct observation, touch, hearing, inference, or hearsay from a trustworthy or untrustworthy source. Since the enclitics did not always surface in the contexts in which they were assumed to be possible, I introduced a reverse scenario. Consultants were provided with an utterance with one of the assumed evidentials, *=mi* (direct) and *=cha*

(inferential/conjectural) and then asked whether it would be appropriate in a particular evidential context. The less constrained tasks, in which the consultants were given more freedom to think about the context of the utterance or the utterance itself, generally delivered results that turned out to be more in line with naturalistic language use.

Another concern in the investigation of the targeted clitics, was the type of semantic contribution they make in an utterance, i.e. whether their meaning is propositional or illocutionary (cf. e.g. Faller 2014). The need for establishing this was grounded in the debate regarding the semantic nature of evidentials and epistemic modals (see e.g. Matthewson et al. 2007). The distinction is seen – at least by scholars using formal semantic approaches – as a pre-requisite for a thorough description of evidential markers. Tests targeting the level of meaning, devised specifically for evidential research, were proposed e.g. by Peterson (2010: § 3.5) and include (i) the known truth/falsity test, (ii) the challengeability test,⁵ (iii) the interrogative scope test and (iv) the embeddability test. The first two aim to determine whether an expression under study is truth-conditional, and the latter two allow conclusions on whether it can be analysed as having an illocutionary meaning (cf. Peterson 2010). I decided to apply the tests in my own research, following their application in other studies of evidential systems in lesser spoken languages (Faller 2002; Peterson 2010). This decision was also guided by the erstwhile consensus in the literature that the meaning encoded by epistemic marking could be either evidential or epistemic modal (Boye 2012), and by the assumption that the Upper Napo Kichwa evidentials are semantically similar to those in Cuzco Quechua (cf. Faller 2002). The first three of the above tests could only be conducted in the elicitation setting since they require asking speakers for grammaticality judgements. The embeddability test was conducted on the basis of stimuli-based data (but cf. Grzech 2016a: 344–345), but I discuss some of its results below jointly with the results of the interrogative scope test.

The assumption underlying the known truth/falsity test is that epistemic modals are not felicitous when the speaker knows the truth value of the proposition since they are used to quantify over epistemically accessible possible words (cf. Faller 2002; Matthewson 2011: 335). As Peterson (2010: 110) puts it: “if the use of the evidential is felicitous when the speaker knows the prejacent is true or false, the evidential cannot be a modal.” Thus, if the consultant is presented with a statement which they know is true/false, they should judge it infelicitous with an epistemic modal. This test was applied to verify whether the Upper Napo

⁵ The ‘challengeability’ test is a label used by Faller (2002: 100). Peterson (2010: 113) calls it the ‘assent/dissent test’.

Kichwa =*mi* could be analysed as such. The results of the elicitation have shown that, like its cognate in Cuzco Quechua, the Upper Napo Kichwa =*mi* does not weaken the assertion but rather makes it stronger/more emphatic (Faller 2002: 155). In Upper Napo Kichwa =*mi*-marked statements are felicitous when the speaker knows that the proposition expressed is a fact, as shown in (2), (4) or (5) above or (10) below. Therefore, on the basis of elicitation it was possible to establish that =*mi* behaves unlike an epistemic modal. In relation to the possible modal analysis, targeted by the truth/falsity test, Faller (2002: ch. 4) also looks into whether the Cuzco Quechua =*mi* can be analysed as an expression of certainty. She rejects this analysis on the grounds that the Cuzco Quechua =*mi* “regularly occurs in content questions” (Faller 2002: 154), and that it thus does not make much sense to analyse it as expressing a high degree of certainty. In Upper Napo Kichwa =*mi* also occurs in interrogatives, as shown in examples (6) and (7) in Section 3. Thus, also in Upper Napo Kichwa, the analysis of =*mi* as a marker of certainty does not hold up.⁶

The second test, used to determine whether a given expression has truth-conditional meaning, is the challengeability test. It relies on the assumption that if an expression affects the truth conditions of the utterance, it can also be challenged: questioned, doubted, rejected or disagreed with. Non-truth-conditional expressions, on the other hand, do not specify how the world should be for the utterance to be true and thus are non-challengeable. The test involves eliciting possible responses to an epistemically marked statement to verify whether it is possible to challenge the marker under study, in this case, =*mi*. The execution of this test was more problematic than that of the known truth/falsity tests as illustrated with (10) and the ensuing discussion.

- (10) *ñuka* *yaya* *shamu-w=mi*
 1SG father come-PROG=**MI**
 ‘My father is coming.’

How can =*mi* in (10) be challenged? If, in line with the project’s initial hypothesis, we assumed that the marker encodes direct evidence, negating it would require a statement such as “That’s not true. You didn’t see it” (Faller 2002: 158). However, if the meaning we are trying to target is the speaker’s ‘right to know’, the challenging utterance should look like (11).

⁶ It should also be noted that both in Cuzco Quechua and in Upper Napo Kichwa, =*mi* undergoes origo shift in interrogative contexts. This adds complexity to the marker’s analysis, but discussing it in detail is beyond the scope of this paper.

- (11) # *mana! kan mana yacha-ngui=chu chi-ta=ga!*
 NEG 2SG NEG know-2=Q/NEG D.DEM-ACC=TOP
 ‘No! You don’t know that!’
 (elicited)

In response to (10), (11) was indeed judged infelicitous. However, a question arises whether such a judgement constitutes sufficient evidence for reaching a conclusion about the semantic contribution of *=mi* to the clause. The utterance of (11) could be judged infelicitous for a variety of reasons independently of the contribution of *=mi* to the assertion in (10). For instance, it could be rejected due to norms related to politeness, but reliably identifying our consultants’ motivations for rejecting a given utterance is extremely difficult. Consequently, the results of elicitation such as the one discussed above should not be treated as definitive but rather as indicative of certain properties of the expression under study – in this case, non-truth conditionality.

The remaining two tests are the interrogative scope test and the embeddability test. As mentioned above, they are meant to determine whether a meaning of an evidential expression is propositional or illocutionary, given that each of these analyses makes “different predictions regarding embeddability and scope” of evidentials (Peterson 2010: 117). As I show in the discussion below, the results of applying these tests to the Upper Napo Kichwa epistemic markers, illustrated here with *=mi*, were not clear-cut.

The interrogative scope test is based on the premise that pragmatic operators (illocutionary evidentials) are assumed to scope over propositional operators (modal evidentials, Peterson 2010: 120). It follows that “epistemic modals cannot take scope over an illocutionary act, such as performing a request/asking a question” (Peterson 2010: 121). If the expression under study is a pragmatic operator, it should then scope over a speech act, which would mean that it could be used e.g. to perform that speech act on somebody else’s behalf. Faller (2002: 233) applies this test to the reportative evidential *-si* in Cuzco Quechua and proves that it can, in fact, be used in that way, as shown in (12):

- (12) *imayna-ta-s ka-sha-nki?*
 how-ACC-SI be-PROG-2
 ‘How are you?’
 (Cuzco Quechua: Faller 2002: 233)

Faller (2002: 233) explains that (12) was uttered by one of the consultants to repeat the original question she (Faller) asked someone else: *imaynata kashanki?* (‘how are you?’). Since the addressee didn’t hear Faller’s question, the consultant

repeated it, adding the reportative marker. The resulting answer of the original addressee was given directly to Faller, and not to the speaker who uttered (12).

My attempts to find out if in Upper Napo Kichwa the epistemic markers also could scope over speech acts proved to be more challenging. A key to successful elicitation is to make sure that both the analyst and the consultant have the same context in mind (cf. Bochnak and Matthewson 2020). When I tried to explain to consultants that I would like them to make a statement/give an order/ask a question on somebody else's behalf, the sentences they volunteered were usually marked with the reportative construction *=mi ni-* (*=mi* say-), where *ni-* can be analysed as part of the reportative construction, rather than as the main verb in the embedding clause. This is shown in (13), where the main verb is another verb of speech, *rima-* 'talk'.

- (13) *'Marcos shamu-shka=**mi**' ni-sha=*mi* rima-nun*
 NAME come-ANT=**MI** **say**-COR=*MI* talk-3PL
 'They say "Marcos has come back."'"
 (el_18092014_01 059)

This construction, despite containing *=mi*, also makes explicit reference to the original speaker, framing the utterance as theirs by means of an inflected verb of speech. The data suggest that this way of reporting is not limited to declaratives. I found the relevant context very hard to elicit, but utterances supporting this claim are attested elsewhere in the corpus.

The Upper Napo Kichwa example in (14) occurred in a situation analogous to the one related to the Cuzco Quechua example (12). In the case of (14), I was at consultants' house to record them narrating the *Pear Story*. When we were about to begin the second iteration of the task, one of the consultants did not notice that I said he should start. The other consultant then uttered (14):

- (14) *{video}-ma {pasa}-chi-na=**mi** ni-n=*mari**
 video-DAT PASS-CAUS-INF=**mi** **say**-3=*MARI*
 'She says to watch the video again'
 (el_24092014_02 001)

The conversation prior to (14) was not recorded, so my original utterance cannot be recovered. Most likely, it was an illocutionary act of requesting, prompting the speakers to start. In this report, unlike in (12), I was explicitly signalled as the original speaker, and the utterance was a report rather than a speech act of requesting performed on my behalf. The above suggests that while *=mi* is used to report utterances of others or utterances from previous discourse, it cannot be used

to perform a speech act on someone's behalf since the original speaker is indexed by the inflected verb of speech.

The discussion above is also linked to the final of the four tests mentioned above, namely the one related to embeddability. Peterson formulates it as follows: "an illocutionary operator cannot be understood as part of the propositional content of an embedded clause, but a modal can" (Peterson 2010: 118). From the discussion above regarding the impossibility of challenging the meaning encoded by *=mi*, it follows that the marker is not part of the negated proposition, which would point to it being illocutionary. On the other hand, attempts of embedding *=mi* in conditional antecedents deliver mixed results, which should be explored in detail in further research.

Peterson distinguishes between *syntactic* and *semantic* embedding, which do not mutually entail one another. Syntactic embedding entails that the element occurs in a clause other than the root clause while semantic embedding means that it is interpreted as being in the scope of some other operator (cf. Schenner 2010, cited in Peterson 2010: 118). Examples (13) and (14) show that *=mi* can be syntactically embedded under verbs of speech, and the corpus delivers similar examples for verbs of thinking (cf. Grzech 2016a: §5.3.3.4). Can *=mi* in these utterances also be analysed as semantically embedded? First of all, note that in (13) *=mi* occurs both in the embedded speech complement and in the matrix clause, which suggests that each of the two occurrences targets the epistemic authority of a different speaker. An analogous case obtains in (14). In that example *=mi* seems to target the reported speaker (myself). At the same time *=mari*, which indicates a speaker-addressee imbalance in epistemic authority (cf. Grzech in preparation), targets the speaker who uttered (14) and our mutual addressee. While this analysis emerges from the use of the markers and the translations, I found targeting it in elicitation and obtaining negative evidence extremely challenging. Epistemic authority is an elusive concept, which can arise due to a variety of factors, and appropriately targeting the relevant contrasts in elicitation seemed unattainable, at least at the relatively early stage of the research described in this paper.

Another issue that arises in relation to elicitation is how much it can tell us about the meaning of the markers under study. The scope test, as well as the one related to embedding, was originally aimed at establishing whether a marker can be analysed as an illocutionary modifier. As mentioned above, embeddability and scoping under speech acts were seen as proving the non-illocutionary nature of the markers (cf. Peterson 2010). More recently, it has been argued that discourse particles interact both with clause type and illocutionary force – they can be restricted to certain clause types and at the same time contribute to the illocutionary force of utterances by modifying the speaker's communicative intention (Coniglio and Zegrean 2012: 230). The relationship between illocutionary meaning

and embedding has been discussed in more detail (cf. Krifka 2014; Woods 2016). These findings put the usefulness of the tests discussed above into question or, at least, suggest that their results should be treated with caution and not regarded as definite proof of any of the marker's properties. Throughout this paper, I argue that similar caution should be extended towards all the elicitation-based results concerning epistemic markers. The extreme context-sensitivity of such markers does not lend itself well to the elicitation setting, and their complex meanings are often extremely hard to capture adequately in setting up contexts for eliciting translations and judgements. In the following section, I discuss other methods of obtaining data from which a more accurate picture of the usage of epistemic marking may emerge.

4.2 Non-interactive stimuli

The tasks I discuss here are, unlike elicitation, based on stimuli. Their aim is to prompt speakers to produce either coherent stretches of text or individual sentences which are nonetheless connected with one another. By referring to non-interactive stimuli, I mean that they are not meant for eliciting interactive discourse. Rather, they are stimuli meant for work with one consultant per session. In the context of this project, stimuli for individual consultants were first introduced to determine the information-structural contribution of the different markers to the clause. The data obtained this way have, however, also proven useful beyond their original research purpose.

As mentioned in Section 1, Quechuan evidential markers are also analysed as markers of focus (Muysken 1995; Sánchez 2010, 2015). For this reason, I considered it necessary to study this aspect of their use together with their epistemic meaning. At first glance, epistemic meaning and the information-structural contribution of the markers might seem unrelated. However, both are context sensitive phenomena, which is why establishing the communicative context appropriate for a given utterance is extremely important (cf. Matthewson 2004: 395). While naturalistic discourse is an obvious source of context-bound utterances, using it as the sole source of data raises the same kind of issues in the case of information-structure research as in the case of epistemic fieldwork. While relational notions such as topic or focus may be constrained or influenced by the discourse context, they are not uniquely determined by it (Gundel and Fretheim 2004: 177). Much like epistemic marking, they can be influenced by the speaker's interests, perspective or previous experience, among other factors. Whether or not to present information as focal/topical is a decision depending on the subjective perspective a speaker chooses to adopt. Consequently, studying the linguistic context of an

utterance without an insight into the speaker's motivations and mental states will only deliver partial results regarding the possible topic-focus articulations. I come back to this issue in Section 5, where I discuss the involvement of consultants in the transcription of the data as one of the ways to mitigate this issue. The argument developed in the above paragraph is not meant to discourage fieldworkers from collecting naturalistic data. Rather, it aims to point out that supplementing naturalistic corpus data with more structured data sources can deliver more complete results.

Given this possible indeterminacy of information-structural categories, it is important to be able to elicit texts where the content and development of common ground, as well as the intentions of the interlocutors, can be monitored more easily. Skopeteas et al. (2006) developed a set of stimuli designed specifically for research on information structure; these were adapted to fieldwork on Upper Napo Kichwa. The experimental part of the toolkit (QUIS, Skopeteas et al. 2006) consists of 29 tasks, aiming to elicit different aspects of information structure. It is accompanied by a manual describing the goals of each task and the procedure of using each stimulus. The tasks are divided into four sessions for a single consultant, which I discuss below, and four sessions for two consultants (see Section 4.3). The tasks are repeated several times over the sessions, which ensures intra-speaker reproducibility of results (Bochnak and Matthewson 2015: 5; cf. Section 5), thus increasing the reliability of the obtained data. In my fieldwork on Upper Napo Kichwa, the QUIS tasks were carried out with two consultants, a male and a female, aged 28 and 18, respectively. They were both native speakers of Upper Napo Kichwa and bilingual in Spanish. Four individual sessions were carried out with each consultant, and they both participated in four two-participant sessions. The collected material amounted to nearly 5.5 h of data, comprising 919 utterances, transcribed and tagged for the presence of discourse enclitics. Given that the sessions were only conducted with two consultants, their results were not robust and hence were treated as indicative of certain properties of the epistemic markers rather than as conclusive.

In both kinds of sessions (individual and for two consultants), the tasks were randomised and repeated in different orders. I selected 18 of the 29 tasks on the basis of two factors. Firstly, the chosen tasks were aimed at investigating the distinction between given and new information, focus, contrast, and topicality. Secondly, I decided not to use the tasks which required familiarity with complex interpretative conventions (cf. Section 5). For most of the picture-based tasks, the original stimuli were adapted to the fieldwork context; the characters, objects and activities were redrawn to better depict the Amazonian reality (see Figures 1 and 2).

Figure 1: Original stimulus for QUISTask 18 (*Who does what*).

Figure 2: Adapted stimulus for QUISTask 18 (*Who does what*).

Although the adaptation brought about positive results, such as the consultants' heightened interest in the pictures and ease of interpretation, the process was not without its pitfalls, which I discuss in more detail in Section 5.

The sessions for individual consultants were mostly aimed at eliciting utterances with different information-structural configurations, triggering topical constructions and different types of foci. Interestingly, the stimuli delivered mostly tokens of *=ga*, the marker of topicality/given information (Grzech 2016b), which occurred here with much higher frequency than in the other parts of the corpus. This was not the case for the epistemic enclitics, which were used sporadically in the sessions for individual consultants. Rather than rendering the data invalid, this points to one of the characteristics of the epistemic enclitics, namely to their tendency to occur in high-stake interactions (cf. e.g. Schultze-Berndt 2017: 198; Grzech 2020c). In contexts which the speakers judge as not communicatively real or engaging, they are not likely to use epistemic clitics.

An example of a task for one consultant that did not succeed in eliciting epistemic markers despite the fact that it was aimed at eliciting the topic-focus distinction was Task 18 from the QUIST stimuli set (Skopeteas et al. 2006), *Who does what*. An example of one of the pictures used in this task is shown in Figure 2 above.

In the different iterations of the task, the consultants were shown one of the two pictures, and asked questions aimed at eliciting different topic-focus articulations, distributed across eight conditions. These conditions, and the corresponding questions (relevant for Figure 2), are shown in Table 3. The two images from Figure 2 were used separately. The conditions related to parallel events refer to the image showing two people, and those relating to a single event refer to the image of just one person.

The questions in Table 3 were translated into Upper Napo Kichwa beforehand with the help of native-speaker consultants to ensure that they were accurate and natural. Despite that, this task, as well as other similar tasks from the QUIS manual, was not successful in the elicitation of epistemic enclitics. As mentioned above, the only enclitic ubiquitous in the elicitations based on the QUIS manual was the marker =ga, related to topicality (e.g. in response to the question in condition B from Table 3; cf. Grzech 2016b for a more detailed discussion).

Another method used in single-consultant sessions were sequences of pictures forming a story – a simpler version of storyboards (cf. Bochnak and Matthewson 2020; Gawne 2020; Knuchel 2020). They proved much more successful in emulating a naturalistic way of speaking. The stimuli set included two picture sequences, one of them shown in Figure 3 below. The consultants were asked to narrate both stories three times: from the point of view of the youngest child, the parent and an external narrator. These different iterations of the narrative were recorded on separate occasions. Responses consisted of longer stretches of text, including fictional dialogues between the characters, as shown in (15):

Table 3: QUIS Task 18: conditions and questions (Skopeteas et al. 2006: 145–148).

Condition A:	Multiple constituent question, parallel events
Question:	Who is peeling what?
Condition B:	Coordinated questions with agent focus, parallel events
Question:	Who is peeling the orange and who is peeling the plantain?
Condition C:	Coordinated questions with patient focus, parallel events
Question:	What is the man peeling and what is the woman peeling?
Condition D:	All new question, parallel events
Question:	What is happening?
Condition E:	Multiple constituent question, single event
Question:	Who is peeling what?
Condition F:	Single question with agent focus, parallel events
Question:	Who is peeling the plantain?
Condition G:	Single question with patient focus, parallel events
Question:	What is the man peeling?
Condition H:	All new question, single event
Question:	What is happening?

- (15) *wasi-ma tигра-kpi ñuka mama “mana alli-ra=mi*
house-DAT return-SWREF 1SG mother PTCL good-ACC=**MI**
apa-mu-shka-ngui” ni-sha ñuka-ra pagrachu-n.
take-CIS-ANT-2 say-COR 1SG-ACC thank-3
‘When I get home, my mother thanks me, saying “well, you’ve bought the
right [things]”’
(el_05122014_07 051)

Figure 3: Tomato story from the QUIS set (Task 19).

The consultants' responses to this task gave a more realistic view of how language is used, and they included epistemic clitics. At the same time, the context of the clitics' use was relatively straightforward. This enabled tracking the knowledge states of the three types of narrators making the resulting texts accessible to analysis. The consultants seemed to feel relatively at ease while performing the task in comparison to the elicitation sessions and the simpler picture-based stimuli, with which they sometimes visibly failed to engage. Although this stimulus was not adapted to the local context, the stories were simple and relatable, based around easily identifiable relationships between family members.

The positive outcomes of using of these simple storyboards confirm the positive appraisal of storyboards in the existing literature and in other papers in the present volume (Gawne, Gipper, Knuchel). Matthewson (2018) advocates using storyboards for research on discourse markers. Bochnak and Matthewson (2020: 261) point out their usefulness for working on "phenomena which rely on controlling for interlocutor beliefs", and the SCOPIC project uses storyboards for collecting parallax corpora used for analysing expressions of social cognition (Barth and Evans 2017; Bergqvist 2020; Knuchel 2020).

4.3 Interactive stimuli

The last type of stimuli used within the Upper Napo Kichwa project were what Lüpke (2009) calls 'interactive stimuli', aimed at generating interactions between participants. This was the most heterogeneous group of stimuli, including pictures and videos serving as bases for constructing narratives, generating dialogues, solving problems or performing joint tasks (ordering pictures into the right sequence, finding a way on a map). Just like the non-interactive stimuli, the interactive stimuli – with the exception of one video, which I discuss below – were not designed specifically for work on epistemic marking. Rather, they were chosen for their capacity for generating interactive discourse while also allowing for tracking participants' knowledge states and epistemic rights. Some of the stimuli – e.g. the videos for eliciting reciprocal constructions (Evans et al. 2004) – were included in the epistemic investigation *post-hoc*, after it turned out that the interactions they generated were better suited for epistemic research than for the purpose they were originally designed for. This part of the corpus included map tasks and picture ordering tasks, which are discussed thoroughly in other contributions to this volume (Knuchel) and which turned out to be less effective in generating "disputes about factual knowledge" (Mushin 2013: 639) than the stimuli more related to the consultants' real life experience. Given their limited success in eliciting reasonably naturalistic interaction in the context of my

fieldwork, the map tasks and picture ordering tasks (Tasks 20 and 8 from the QUIS set, respectively) are not discussed here in more detail.

Instead, I focus on the video stimuli which did succeed in generating a more engaging conversation. The tasks with the most coverage were the re-tellings of the *Pear Story* videos (Chafe 1980), carried out with four pairs of speakers. One member of the speaker pair watched the video first, without the other one being present, and then narrated it to the researcher. Subsequently, the second speaker was invited, and they then watched the video together, discussing it amongst themselves. This way of administering the task created an epistemic imbalance and restricted the common ground to the events in the video. Example (16) demonstrates why such a constraint on shared knowledge is analytically useful:

- (16) *chi rumi-ra payguna=mi chura-sha chapa-nu-shka chi-bi...*
 D.DEM stone-ACC 3PL=**MI** put-COR wait-3PL-ANT D.DEM-LOC
 ‘They have placed this stone ... they’ve waited [having put it there].’
 (el_25092014_03 048)

It was uttered when two speakers were discussing a scene in which the main character accidentally runs his bicycle into a stone in the middle of the road. The speaker, who was watching the film for the first time, conjectured that it was the three boys, shown before in the video, who placed the stone on the road. As mentioned in Section 3, the position of the clitic is associated with the focus of the clause – in this case the 3PL pronoun – while the epistemic meaning of the clitic scopes over the entire clause (cf. Muysken 1995). If this statement was uttered in a real-life situation, it would be impossible to know whether the boys discussed are known for playing pranks or have done something similar in the past, which would create a different evidential base for the use of =*mi*. In this case, since the speaker can only base the utterance on the events in the film, we can conclude that the statement is based on a conjecture. This, in turn, allows us to call the direct evidential analysis of =*mi* into question.

Other interactions based on video stimuli also support the argument for re-analysing the Upper Napo Kichwa evidentials in broader epistemic terms. The only stimulus which was custom-made for the project was created on the basis of a YouTube video of a magician performing six instances of the ‘three shell’ game, in which the audience has to decide under which of three cups a ball ends up. I edited the video, separating each iteration of the game, and creating two clips for each game – one where the video stopped just before the final location of the ball was revealed, and another of the complete trick revealing the ball’s location. I ran the task with two consultants relatively early on in the project when it was still unclear if the evidential analysis of the clitics was correct. I asked the participants to

comment on the ball's location after watching the cut clip. I expected them to mark their guesses about the ball's locations with =*cha*, the cognate of inferential/conjectural evidentials in other Quechuan languages. However, in the 10-min interaction =*cha* did not surface at all. Instead, the speakers frequently marked their conjectures with =*mi*, even after repeatedly having made the wrong guesses:

- (17) *lluki pura-ma=mi ri-n, lluki pura-ma...*
 left side-DAT=*mi* go-3 left side-DAT
 '[the ball] goes to the left, to the left...'
 (el_03102014_01 076)

This use of =*mi* in guesswork, where the inferential =*cha* would be expected, was another suggestion that the analysis of Upper Napo Kichwa epistemic enclitics required considering semantic factors beyond evidentiality. The use of =*mi* in guesses was not predicted by its analysis as a direct evidential or a marker of the best possible ground (Faller 2002) but it could be accounted for as an attempt to exercise the 'primary right' to assess the situation (Heritage and Raymond 2005; Stivers et al. 2011a) even in the absence of a factual claim to knowledge.

Both targeted elicitation (see Section 4.1) and the above stimulus specifically designed to elicit instances of =*cha* failed to trigger the use of the marker. Unexpectedly, =*cha* did surface in response to a stimulus meant for another purpose altogether: the *Reciprocal Constructions and Situation Type* videos (Evans et al. 2004). These recordings feature reciprocal actions such as hugging, de-lousing, kissing or shaking hands. The events were staged by students, and it is evident in the films that even the actors themselves treated the tasks they performed as a game, rather than as a realistic enactment. The authors assumed that viewers would be able to treat the recorded content as an abstraction from the real-life situations they experienced. In the Upper Napo Kichwa project this assumption failed completely. The stimuli proved useful for eliciting several reasonably spontaneous exchanges, but their aim was trying to guess what the actors were doing and why. This is illustrated in (16) with a statement prompted by the actors hugging and subsequently doing a 'high five', which is not a well-known gesture in rural Ecuador:

- (18) *ukllari-shka washa payguna maki-ra wakta-nun*
 embrace-ANT after 3PL hand-ACC hit-3PL
ima ra-sha=cha wakta-nun mana mana yacha-ni
 what do-COR=*CHA* hit-3PL NEG NEG know-1
 'After embracing they hit hands, what are they doing hitting, I don't....don't know.'
 (el_16082013_01 152)

The example shows that the video unintentionally served as a good ground for discussing assumptions and factual knowledge thus allowing an insight into how =*cha* is used in discourse. In the context of elicitation, when I presented speakers with =*cha*-marked utterances without a surrounding discourse context, they were always interpreted as interrogatives. This is shown in (19).

- (19) a. # *tamia-shka=cha*
 rain-ANT=**CHA**
 Intended meaning: ‘It rained.’ / ‘It must have rained.’
 [speaker conjectures that it rained]
- b. *tamia-shka=cha?*
 rain-ANT=**CHA**
 ‘Has it rained?’/‘It has rained, hasn’t it?’
 (el_18092014_01 002)

The fact that (19a) was interpreted as infelicitous suggested that =*cha* cannot be analysed in terms similar to its cognate in e.g. Cuzco Quechua, where the equivalent of (19a) would have been felicitous (cf. Faller 2002: 3). This interpretation seemed to have been confirmed by the fact that the marker did not occur in contexts where conjecture would have been expected, like in the three shell game video described above, and that Upper Napo Kichwa speakers frequently marked conjectural claims with the construction =*mi yachin* (=mi seem-3) rather than with =*cha*. Against the backdrop of these observations, it was the example in (18) that gave me an insight into how the marker was used in natural language to express lack of knowledge/authority, independently of the mode of access to the event described by the speaker. The reciprocal videos were an instance of opportunistic data collection, which was not included in the original research design but did contribute meaningful data for the study of the epistemic marking system.

The interpretation of the marker based on example (18) was later confirmed in a discussion that followed another interactive stimulus, the *Pear Story* video.

- (20) {coco}... *mana*, “{coco}=**mi**” *ni-ni*. {coco}=**cha?**
 coconut NEG “coconut=**MI** say-1 coconut=**CHA**
 ‘Coconut... no, I said “coconut”, is it coconut?
 (el_24092014_03 005)

In (20), the speaker narrates the video at the same time as she is watching it for the first time. She first interprets the pears as coconuts, but then immediately (while the pear tree is still on the screen) corrects her own assumption and makes

a =*cha*-marked query, which is based on direct, visual evidence. These and similar examples led me to analyse =*cha* as a marker disclaiming epistemic authority rather than a conjectural evidential (cf. Grzech 2020c for more details of this analysis).

The last example of an interactive stimulus is also the one that has proven the most successful in emulating naturalistic interaction in which participants have real stakes. It was the *Stolen Watch* video series from the QUIS set (*Tell a story* task, Skopeteas et al. 2006). The videos tell a story of theft, but each of them casts a different character as the thief – a young man in one, and a young woman in the other. First, I showed a different video to each of the two consultants. Subsequently, I asked them to imagine they have both been accused of stealing the watch and have to accuse the other in order to defend themselves. This generated a lively discussion, with the use of epistemic clitics similar to that in everyday discourse, as shown in (21) and (22).

- (21) *ñuka=ga yanga, {galletas}=lla-ra=**mi** apa-sha ri-ka-ni*
 1SG=TOP nothing cookies=LLA-ACC=**MI** bring-COR go-PST-1
 ‘Me, [as opposed to you] just like that, [I] went to take just the cookies.’
 (el_02122014_05 023)

The use of =*mi* in (21) showcases the point made in Section 4.1, i.e. that utterances containing the enclitic can be more forceful and argumentative than epistemically unmarked utterances.

In elicitation, speakers often find statements with =*mi* on second-person pronouns or predicates problematic and inappropriate. The disagreement shown in (22) contributes evidence that such a use is possible and felicitous in certain contexts.

- (22) A: *paka=lla ra-sha apa-shka-ngui yachi-n shina.*
 hide=LIM do-COR take-ANT-2 seem-3 like.this
 ‘Doing so as not to be noticed, it seems that you took it like this.’
 B: *mana, kan=**mi** api-ka-ngui, kan, ña riku-ka-ni!*
 NEG 2SG=**MI** take-PST-2 2SG well see-PST-1
 ‘No! You took it, I have seen [you]!’
 (el_02122014_05 019-21)

The use of =*mi* in this enacted conversation allows an insight into how epistemic marking might be used in conflict, without the potential problem associated with recording this type of high-stake interactions in real life.

5 Issues and solutions in epistemic research design

In the previous sections, I have introduced a paradigm of epistemic clitics attested in Upper Napo Kichwa (Section 3), and reviewed the toolkit I used in the field to document and analyse that system (Section 4). Below, I provide some up-to-date methodological suggestions for researchers interested in undertaking epistemic fieldwork. I point to the aspects of my methodology that did work and reflect on the ones that did not while placing the methods I used in the context of the current literature on field methods in semantic research (cf. also Grzech 2020).

The issue that is perhaps the most salient in the discussion in the preceding sections relates to the use of different types of data. In semantic fieldwork, which shares many concerns with fieldwork on epistemic expression and their pragmatics, there are divergent positions in the literature with respect to whether small-scale fieldwork, and in particular one-on-one work with consultants, can deliver sufficient evidence for making far-reaching claims about the nature of linguistic phenomena (cf. Bochnak and Matthewson 2015 and references therein). The example of my work on Upper Napo Kichwa as well as the case studies of minority languages described by other authors in this volume contribute to the position that small-scale fieldwork is valuable and can meet the standards of properly structured scientific process. As observed by Bochnak and Matthewson (2015: 5) “[t]argeted, hypothesis-driven elicitation is designed to test the predictions of falsifiable hypotheses about language, and as such it meets the primary criterion for scientific research.” Nonetheless, the discussion of the methods applied in my study of Upper Napo Kichwa also demonstrates that the more different sources of data we include in our investigation, the more robust are the conclusions we can reach. Moreover, multiple means of data collection allow the researchers to ensure reproducibility of the obtained results across the different settings, both between the different speakers and on the intra-speaker level (cf. Bochnak and Matthewson 2015: 5).

In Section 4.1, I discussed elicitation methods I used in the project. While I pointed out that elicitation allowed me to disprove my initial hypothesis regarding the evidential semantics of the markers under study, it was less useful in answering the research questions regarding the semantics of the markers and their distribution in discourse (see Section 2.2.). Answering these questions required establishing the conventionalised meaning of the markers, stable across the different contexts of their use (cf. Boye 2018). This, in turn, could only be successfully achieved on the basis of a corpus of naturalistic data given that, as mentioned in

Sections 4.2 and 4.3, it was not always possible to emulate naturalistic use of the markers in stimuli-based utterances.

In discussing the usefulness of the corpus of naturalistic language use, I made certain assumptions regarding the content of the corpus that have not been made explicit earlier in the paper. The research on Upper Napo Kichwa demonstrates that in order to be of use, the corpus should be representative of how language is used in its natural habitat (cf. Seifart 2008). That is, the corpus needs to contain data from a diverse range of genres varying in spontaneity (cf. Woodbury 2003). This is especially important in epistemic research, given that epistemic marking might be used differently in different genres (cf. Grzech 2020c; Mithun 2020). In the case of Upper Napo Kichwa, the particular value of the naturalistic discourse corpus was that it was created in collaboration with the speaker community (cf. Section 2.3). This allowed us to document natural interactions between native speakers as being an accurate rendition of how speakers use the markers when they are not being recorded – something that I was able to confirm when comparing the use of markers in the recorded data with participant observation conducted during fieldwork.

Another aspect of the corpus which I consider to be particularly valuable from the perspective of epistemic research was that the corpus was transcribed by native speakers. Moreover, I was then able to discuss the transcriptions with their authors and ask follow-up questions about the use of epistemic markers in situated language use. This allowed me to mitigate, at least to some extent, the drawback of naturalistic data raised by Kittilä et al. (2018), namely that in the case of language use recorded in naturalistic corpora, researchers cannot access speaker intuitions. Nonetheless, as observed by Mithun (2020), certain types of markers may still not be accessible to native speakers' intuitions, especially if they have been working on the language for months rather than years or decades.

Another issue is what types of conclusions can be reached on the basis of naturalistic data. In cases such as Upper Napo Kichwa, where epistemic marking is not grammatically obligatory, the fact that certain markers or constructions occur in discourse proves their felicity in the context in which they are used (cf. Matthewson 2004). The reverse, however, does not obtain: that a marker did not occur in certain contexts does not entail it would not be felicitous for it to occur there. A further problem is that in the case of epistemic expressions, like in the case of other context-sensitive phenomena (cf. e.g. Bochnak and Matthewson 2020), the relevant context is not just the surrounding text; it also includes the situational context, the relationships between speakers, and what they do (and do not) assume to be common ground at the moment of speech. Thus, answering the question related to the context of use of epistemic markers is potentially very time-consuming. It requires being able to clarify what aspects of interactional and

situational context are possibly relevant to the use of the markers in question. This is especially important in the description of non-obligatory markers, like the Upper Napo Kichwa paradigm discussed in this paper. To be able to describe and analyse non-obligatory marking, one has to identify the aspects of context that trigger the occurrence of the markers as well as establish the reasons for the markers' non-occurrence. Moreover, since the field of epistemic research is still in a relatively early stage of development, fieldworkers lack empirical guidelines on how each subtype of epistemic meaning could be teased apart from the others (cf. Grzech 2020c). As demonstrated in this and other papers in this volume (e.g. Gipper, Mithun), the epistemic meanings expressed by dedicated markers in one language can be quite heterogeneous, which renders their initial description even more challenging.

It is for this reason that I found stimuli-based elicitation tasks to also be a crucial component of the fieldwork toolkit for studying such markers. Elicitation can be used to confirm the patterns obtained by the other modes of data collection as well as to obtain negative evidence. As discussed in Section 4.3, controlled, stimuli-based conversations between native speakers can provide very useful insights into the meaning of epistemic markers and contexts of their use. In order to achieve that, however, the stimuli need to meet one crucial condition: they should successfully ensure that the interactional context the researcher wants to emulate is understood by the participating speakers (cf. Bochnak and Matthewson 2020).

This task is far from trivial. The authors of stimuli sets (e.g. Evans et al. 2004; Skopeteas et al. 2006) often assume that the researcher has access to a large pool of naïve native speakers of the target language, who nonetheless have had enough formal education to be able to engage with quite sophisticated interpretative conventions. In the actual field situation this is rarely the case. Being able to find consultants willing and able to do complex linguistic work is an important challenge researchers face in stimuli-based fieldwork. An issue that is often underestimated, despite being relevant in the case of virtually any project that involves linguistic fieldwork, is the assumption that certain interpretative conventions are universal and cross-culturally shared (cf. Cohn 2015, 2020), already hinted at in Section 4.3.

This issue often surfaced in the Upper Napo Kichwa project when I used stimuli originally designed to investigate linguistic phenomena less context-sensitive and subjective than epistemic marking. The *Reciprocal stimuli* set (Evans et al. 2004) discussed in section 4.3 is a case in point. The consultants interpreted the depicted events not as real-life situations but as games. The results this delivered turned out to be useful for the purpose of my research but not for the original purpose they were created to serve. The misinterpretation problem was even more acute in some of the videos from the QUIS set (Skopeteas et al. 2006). One of them depicted an

event taking place in a bar, in which the intentions and behaviour of the protagonists were hardly interpretable without the knowledge of cultural norms related to dating in Western European student culture; consequently, it was simply unusable in rural Ecuador.

In line with what Cohn (2015; 2020) describes, the Upper Napo Kichwa consultants sometimes found it hard to interpret sequences of pictures, even when re-drawn to presumably fit the local ways of life. Even when I explicitly mentioned that pictures were meant as a sequence, they were often interpreted as separate events. Moreover, sequential interpretation was very easily disrupted. In QUIS Task 2 (Skopeteas et al. 2006) depicting various series of four events with the same agent, a change in the agent's facial expression was likely to disrupt the consultant's interpretation of the sequence of actions the character was performing. Picture sequences involving an agent and a patient were also consistently difficult to interpret, especially in the case of partially depicted actions such as a mother feeding a child, drawn as a woman reaching out with a spoon towards the child's mouth. Moreover, in line with Cohn's (2015) observations, the consultants involved in my study sometimes had difficulty understanding images framed in such a way as to only depict parts of individuals, e.g. a hand holding something. This could be due to the fact that interpreting comic-related conventions is not, as we often assume, a culturally universal capacity but requires proficiency developed through practice (cf. Cohn 2020).

A related issue is the influence of cultural factors on the interpretability of stimuli (San Roque et al. 2012: § 4.3.1). As mentioned in Section 4.1, I worked with an illustrator to re-draw certain stimuli from the QUIS set aiming to make them more easily interpretable for consultants. When we started the re-drawing, I had spent six months in Ecuador, but the illustrator had never been there and relied on me for the relevant cultural information. Conveying the degree of detail needed to accurately depict the simplest aspects of daily life in the Ecuadorian Amazon was much harder than I had previously imagined. These details included the size of baskets, canoes or pots, manners of handling basic tools such as machetes, preparing local foods, layout and design of houses, types of clothing or vegetation, etc. Another important issue was the depiction of body postures, gestures and facial expression in series of events so as to induce the intended interpretation. I only became aware of how significant the above were for interpretability after starting to use the stimuli with the consultants.

The discussion above touches on multiple issues that all relate to the same practical problem: how can researchers make sure that in situations they try to model with stimuli, the context they have in mind is the same as the one in their consultants' minds? This question is especially challenging in epistemic fieldwork, since "[i]n many cases the distribution of knowledge cannot be clearly determined

from the context and the analyst has to rely on his or her subjective judgement” (Gipper 2015: 216). A potential way to mitigate this problem is to run the stimuli before fieldwork with native speakers of a language we (the researchers) are proficient in (cf. Matthewson 2018), so as to ensure they are understood in the way we intended. However, this still does not guarantee cross-cultural interpretability nor does it model the possible influence of metalanguage on how the tasks will be interpreted in the field (cf. Zhornik and Pokrovskaya 2018). This last point is all the more important in epistemic fieldwork; having control over the epistemic nuances of the instructions can be crucial for how they are interpreted. In the ideal world, a native speaker of the language, familiar with the cultural and interpretative conventions used in the speaker community, would be actively involved in both the design and the administration of stimuli-based tasks, as well as in elicitation sessions.

Unfortunately, however, in many fieldwork contexts such a situation is still unattainable. As the Upper Napo Kichwa project demonstrates, if the researcher’s capacity to involve native speakers in the design and administration of stimuli is limited, an effective way to proceed might be to use interactive tasks in which the consultants themselves are in charge of how the interaction will develop. In Section 4.3, I discussed one such task based on the *Stolen Watch* video. The stimulus, used as a background, successfully prompted a high-stake interaction. Despite the fact that the setting in the stimulus itself was a western university, the situation involving theft and avoidance of responsibility was easy for the consultants to identify with since such issues are relatively universal across cultures. Moreover, the reliance on understanding the details of the film was of limited importance since only one issue – the identity of the thief – was relevant to the subsequent role-play. Other types of potentially successful tasks, involving joint problem-solving and decision-making, could be adapted from other disciplines, for example from psychology. Elisabeth Engberg-Pedersen (p.c.) uses one such test in her work on epistemic marking. She prompts consultants to discuss 15 items that would be essential for survival on a boat. This discussion could easily be adapted for any fieldwork context and has the potential of being highly engaging, eliciting argumentation and consensus-seeking strategies. Its other benefit is that it gives the speakers a clear interactional goal, not reliant on the interpretation of complex visual stimuli.

The toolkit discussed in this paper, although it ultimately proved successful in describing the epistemic paradigm in Upper Napo Kichwa, only included a few tasks designed specifically for work on epistemic expressions. The addition of several tasks explicitly designed for work on epistemics could improve the quality of the data I was able to obtain in my fieldwork. One such task was discussed in the preceding paragraph. Another potentially useful task, also designed by Elisabeth

Engberg-Pedersen, was a forced-choice task in which speakers would have to choose between the different epistemic markers in a specifically defined context (Elisabeth Engberg-Pedersen, p.c.). Such a task could be highly effective in providing negative evidence regarding the markers' semantics as long as the researcher has a good grasp of the contextual elements that can prompt the use of the markers.

Another issue I did not sufficiently appreciate when conducting fieldwork was that the control over a setting of language use does not necessarily mean conducting elicitation or stimuli-based tasks. Another way of collecting controlled data is being able to select the material that will form part of the naturalistic corpus. Such a selection could play a crucial role in (dis)confirming our hypotheses at an early stage. For instance, if we have reasons to believe that the paradigm we study marks epistemic authority, before designing and applying stimuli to prove this, we could collect comparable samples of naturalistic speech. This could for instance involve monitoring how a certain speaker talks about the same topic with people with a roughly similar experiential base and social status, as opposed to someone who is higher or lower on the social hierarchy – a shaman or a child, respectively – or someone with more and less experience in the given matter. Having recorded such interactions, we could then compare the use of the relevant markers, their ratios and frequencies, giving us strong arguments for rejecting or accepting our initial hypotheses and for formulating new ones. At the same time, it would be less labour-intensive than designing stimuli-based tasks aimed at emulating similar conversations in the elicitation setting, as well as more useful from the point of view of representative language documentation.

6 Conclusions

In this paper, I have discussed the methodology used for the description and analysis of the epistemic marking system of Upper Napo Kichwa. I mentioned that at the outset of the project I assumed that the system was evidential in nature, and how the realisation that this hypothesis was false affected both the theoretical assumptions and practical methods used within the project. I discussed the different types of data and methods of obtaining them and critically evaluated their usefulness for an adequate description of a complex epistemic marking system. Finally, I extrapolated from the project, providing suggestions and recommendations for research on under-described epistemic marking systems. The discussion developed in the article pointed to several key issues that I believe to be crucial for the accurate description and analysis of any epistemic marking. In this concluding section I bring them up once more.

First and foremost, I have repeatedly mentioned that just one type of data is insufficient to capture the potential complexity of an epistemic system. Although this point might sound trivial, the issue lies not in just using the different data types (elicitation, stimuli-based and naturalistic data), but in making sure that each of these data types is used with the objectives it is best suited for and at an appropriate point during the course of the project. Ideally, the results obtained from these different sources should be compared and contrasted. This would provide the researcher with the opportunity for project-internal triangulation of results, lending credibility to the resulting analysis.

Secondly, I have discussed the crucial role of context in how epistemic marking is used. I insisted that the relevant aspects of context in epistemic research are not limited to the situational context and the co-occurring speech (or ‘cotext’). It is equally important to consider the joint life experience of participants, their status as experts within a particular field, their epistemic relationship, or how they might manipulate their use of epistemic marking in a given situation to achieve a certain communicative goal. The exact nature of the relevant parameters will vary from one epistemic system to another. Thus, the relevant aspects of context should ideally be established on the basis of how markers are used rather than being brought into the field as a catalogue of pre-established parameters.

Lastly, as I hope to have shown, it is particularly important that we approach the epistemic marking we try to analyse with a thorough knowledge of the other systems described to-date but without a pre-established idea about the kind of marking we will encounter. As shown by the example of the Upper Napo Kichwa project, even epistemic marking in language families that seem to have been thoroughly analysed might turn out to encode meanings we have not anticipated.

Abbreviations

1	1st person
2	2nd person
3	3rd person
ABL	ablative
ACC	accusative
ADD	additive
AG	agentive
ANT	anterior
ANTIC	anticausative
AUX	auxiliary
CIS	cislocative
COR	co-reference
CAUS	causative

CONT	continuative
COP	copula
D	distal
DAT	dative
DIM	diminutive
HORT	hortative
ID.REF	identity of reference
IMP	imperative
INF	infinitive
INT	interrogative
INTER	interjection
LIM	limitative
LOC	locative
NEG	negation
NMLZ	nominaliser
OBJ	object
P	proximal
PL	plural
PROG	progressive
PST	past
PTCL	particle
Q	question
SG	singular
SWREF	switch-reference
TOP	topic

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