Editorial

Karolina Grzech*, Eva Schultze-Berndt and Henrik Bergqvist

Knowing in interaction: An introduction

https://doi.org/10.1515/flin-2020-2041

Abstract: This article provides an introduction for the collection of methodologically oriented papers comprising this Special Issue. We define the concept of epistemicity as used in descriptive linguistics and discuss notions related to it – some well-established, some more recent – such as evidentiality, egophoricity, epistemic authority and engagement. We give a preliminary overview of the different types of epistemic marking attested in the languages of the world and discuss the recent developments in the field of epistemic research focussing on methodologies for investigating epistemic marking. In the second part of the paper, we focus on the more practical side of epistemic fieldwork; the types of data that can be used in documenting linguistic expressions of epistemicity and best practices for data collection. We discuss the experimental methods that are used in the description of epistemic systems, both those developed for this particular purpose and those adapted from other types of linguistic research. We provide a critical evaluation of those materials and stimuli and discuss their advantages and disadvantages. Finally, we introduce the contributions to the Special Issue, discussing the languages studied by the authors of the contributions and the fieldwork methods they used in their research.

Keywords: epistemicity, intersubjectivity, fieldwork, methodology, pragmatics

***Corresponding author: Karolina Grzech**, Department of Linguistics, Stockholm University, Universitetsvägen 10 C, Stockholm, 106 91, Sweden, E-mail: karolina.grzech@ling.su.se.
https://orcid.org/0000-0002-5295-8486
Eva Schultze-Berndt: School of Arts, Languages and Cultures, The University of Manchester, Samuel Alexander Building, Oxford Road, Manchester, M13 9PL, UK, E-mail: eva.schultze-berndt@manchester.ac.uk.
https://orcid.org/0000-0002-8506-0541
Henrik Bergqvist: Department of Linguistics, Stockholm University, Universitetsvägen 10 C, Stockholm, 106 91, Sweden, E-mail: henrik.bergqvist@ling.su.se.
https://orcid.org/0000-0001-6114-5527

1 Introduction

The notion of epistemicity in linguistics is related to how knowledge is encoded in language and grammar. Knowledge, in this sense, encompasses several related concepts including perceptual access, awareness, attention, and expectation; all of these are reflected in the grammar and lexicon of languages. Epistemicity in language is commonly exemplified by evidentiality and epistemic modality (Boye 2012; see also Palmer 2001), which are linguistic categories that signal the speaker's estimation of certainty (possibility/necessity) and the speaker's access to information, respectively (e.g. Plungian 2010). However, their use in discourse is to a large degree influenced by how knowledge is distributed between speaker and addressee, or even, in some cases, with respect to an entire speech community (Bergqvist 2017).

Claims of knowledge can be made on different grounds, e.g. perceptual access, deduction, general learned knowledge, or the memory of one's past involvement in an event.[1] Perceptual access can be visual, auditory, olfactory, or tactile. Internal (somatosensory) experience can be added to this list. Knowledge can also be obtained from the utterances of others, i. e. it can be based on verbal/signed reports. The claims of others often become part of our own claims, either modified or wholesale (cf. Evans 2012). The speaker's active involvement in an event can be used as a motivation for claiming knowledge, but involvement can also be claimed based on being affected by the outcome of an event or having an attitude towards it (see Bergqvist and Knuchel 2017). Another factor to consider is whether the knowledge is exclusive or shared with others, and if so, with whom (interlocutor, members of the speech community, unspecified). These diverse considerations related to claiming knowledge are encoded by grammatical categories such as epistemic modality, evidentiality, egophoricity, and engagement (Bergqvist and Kittilä 2020, see Section 2.1 for discussion), to name the most salient ones. The aim of this paper is to evaluate and discuss different ways of investigating these distinct grammatical categories and the perceptual, cognitive and social processes that they reflect.

1 From the point of view of neuro-biology, it has been demonstrated that seeing an action is neurologically distinct from the cognitive interpretation of the same action, thus lending support to a distinction between perception and cognition as a basis for claims of knowledge in language (see McClelland and Ralph 2015). The relation between seeing an action and performing it is neurologically related given the existence of mirror-neurons in all mammals (Gallese and Goldman 1998), but despite this neural overlap, there are compelling reasons to separate seeing from doing, something that also goes for linguistic forms encoding such distinct actions.

The investigation of the functions of epistemic markers in interaction is a relatively new and vibrant area of research. Until recently, notions such as epistemic authority or stance were used mainly in conversation-analytic research dealing with well-described languages such as English and Japanese (see Section 3.2). Lately, the research community has begun to consider notions beyond evidentiality and epistemic modality as being more central to the study of epistemic marking than previously thought (cf. e.g. Guentchéva 2018). For instance, a growing body of descriptions of epistemic systems from lesser-described languages shows that epistemic authority can be expressed morphologically (see Sections 2 and 4.1). Not only knowledge *per se* can be distributed among the discourse participants – tracking the distribution of epistemic rights and responsibilities is equally crucial for effective communication (Stivers et al. 2011).

These new theoretical developments, and a growing pool of naturalistic data coming from a variety of lesser-described languages, open new possibilities, challenges, and questions for the field of epistemic research. One such challenge is the need to account for different kinds of epistemic marking by means of systematic investigation, which requires the development of reliable methodologies. Given the strong connection between epistemic constructions and the context of the utterance, including the relationships between speakers, a thorough description and analysis of the linguistic correlates of epistemicity remains a substantial challenge. Up to now, efforts to develop methods and tools for studying epistemic markers have maintained a focus on the speaker's intentions and communicative strategies. At the same time, the role of the addressee and the epistemic relationship between the speech-act participants has not been given equal attention. Consequently, a significant discrepancy still exists between the attested complexity of epistemic systems across languages and the scarcity of tools and methods that are used for their description.

The present Special Issue aims to address this gap by bringing together a range of methodologically oriented studies of epistemic marking systems in a typologically diverse sample of languages, investigated from a functionalist perspective. While the volume's focus is on methodological issues, its contributions also address theoretical concerns connected to the specific languages under investigation. Some papers discuss more general theoretical issues, arguing that prior to embarking on fieldwork it is crucial to re-examine our implicit assumptions about how and in which contexts epistemicity is expressed in language. Others are oriented towards practical solutions for problems and issues encountered in a fieldwork situation, explicitly including approaches that did not deliver the intended results, since these can be as instructive as successful methods. Taken together, the papers of the present Special Issue provide a compendium of up-to-date, empirically grounded guidelines on how to conduct research on epistemic

marking in the context of situated language use. We focus on methods and tools that can be useful in a fieldwork setting, leaving aside the issue of laboratory-based tests and experiments.

This Special Issue thus aims to posit and propose answers to methodological questions that need to be addressed given the diversity of epistemic marking systems attested in the world's languages. Therefore, the research questions outlined below concentrate on, but are not limited to, methodological challenges in this field of research:

1. What kind of data do we need to make sure our analyses of epistemic markers reflect their communicative function in everyday language use?
2. How can we empirically test for inter-subjective components in epistemic marking systems?
3. How can we track knowledge states and social relationships of participants in elicitation tasks and in natural discourse?
4. What methods can we use to establish semantic distinctions within epistemic marking paradigms?
5. What methods can provide us with data for comparative studies of epistemic marking systems?
6. How culturally specific, or cross-culturally applicable, are individual tasks or stimuli?

Although our aim is to focus on methodologies and tools that can be effectively applied to epistemic fieldwork, we cannot ignore considerations related to the theoretical and descriptive underpinnings of epistemic research. In fact, the discussion of such issues is necessary if we aim to establish a common, theoretically informed starting point for formulating hypotheses related to epistemic marking, which in turn is required for choosing appropriate methods and tools for data collection. With this in mind, we outline the state-of-the-art in the field of epistemic research (Section 2). Following on from that, we discuss the recent development of methodologies of epistemic fieldwork (Section 3) and sketch some of the main issues that the field is currently facing, all broadly relating to the linguistic data appropriate for carrying out epistemic research (Section 4). Finally, we provide a brief summary of the contributions to this Special Issue (Section 5).

2 Epistemicity in language

This section focuses on epistemicity in language and grammar. We discuss the linguistic categories that are related to epistemicity and the notional domains they

correspond to. Subsequently, we provide an overview of the place of epistemic marking in grammar.

2.1 A broad view of epistemicity

Epistemic marking, as the linguistic correlate of epistemicity, reflects how knowledge states are expressed and tracked by the discourse participants. Therefore, epistemicity in this broad sense includes, apart from evidentiality and epistemic modality, categories such as 'egophoricity' (Floyd et al. 2018; Knuchel 2015; Tournadre and LaPolla 2014) and 'engagement' (Evans et al. 2018a, 2018b). It also relates to notions such as 'intersubjectivity' (e.g. Bergqvist 2016, 2018; Gipper 2014, 2015; Hengeveld 2017; Kärkkäinen 2006; Modicom 2012; Traugott 2012; Verhagen 2008; Zlatev et al. 2008) and 'stance' (e.g. Du Bois 2007; Heritage 2012a, 2102b).[2]

The newly coined term 'engagement' is used to label linguistic expressions that encode (a)symmetries in the knowledge of the speech-act participants, i. e. the speaker has knowledge of event *e* and assumes that the addressee does not, versus the speaker has knowledge of event *e* and assumes that the addressee does too (Evans et al. 2018a). A canonical system of grammaticalised engagement marking thus only distinguishes between non-shared (asymmetrical) and shared (symmetrical) access to events. Such a system can be found in the Arawako-Chibchan language Kogi (Bergqvist 2016; Evans et al. 2018b; Knuchel, this volume), which has a set of prefixes on auxiliary verbs distinguishing between non-shared and shared access in addition to assigning 'epistemic authority' (the right to know or claim, cf. Heritage and Raymond [2005]; Kamio [1997]; Stivers et al. [2011]) to the speaker or the addressee.[3]

The category of engagement can therefore be distinguished from evidentiality, which indicates the speaker's mode of access to an event (cf. Plungian 2010: 17). *How* knowledge of an event was acquired is only *implied* by markers of engagement, whereas *who* knows about the event is explicitly *encoded* in such forms. However, both categories can show a close formal relationship in that markers can simultaneously encode mode of access and exclusive vs. shared access. This is attested for example in the Nambikwaran language Lakondê (Telles and Wetzels 2006: 244), in the New Guinea Highlands language Duna (San Roque and Loughnane 2012), and in a number of Quechuan varieties (Hintz and Hintz 2017;

2 Yet other notions could be listed alongside these more or less familiar labels, such as 'viewpoint' (Dancygier and Sweetser 2012), and 'multiple perspective' (Evans 2005).

3 Bergqvist (2016) refers to the allocation of epistemic authority using the term 'perspective'. Kogi thus features engagement markers that encode either speaker perspective (speaker authority), or addressee perspective (addressee authority).

Table 1: Notional domains and epistemic categories.

Notional domain	Corresponding linguistic category
(Perceptual/cognitive) mode of access	Evidentiality
Judgement of probability based on knowledge/belief	Epistemic modality
Involvement/Epistemic authority/primacy	Egophoricity
Shared versus non-shared access/Epistemic authority/primacy	Engagement

see below). The formal relationship could be taken to suggest a conceptual relationship: the qualification of the speaker's belief, perceptual access, or involvement in the talked-about event is a means for claiming or deferring epistemic authority. The former can be achieved, among other means, by using markers of direct, sensory access, and the latter by assigning epistemic authority to someone else (e.g. reported speech) or by signalling reduced access to the event in question (e.g. non-sensory access/uncertainty [Bergqvist 2017]). It follows that the definition of evidentiality need not be restricted to the speaker's mode of access to information but should be broadened to take into account the perspective of the addressee (see Bergqvist 2017 for a discussion).

The above discussion shows that while the notional domains of epistemic meaning are conceptually distinct, the same cannot be said for the corresponding linguistic categories. Bergqvist and Kittilä (2020) argue that notional domains pair with the linguistic categories they were proposed to reflect. Some of these correspondences are illustrated in Table 1 below:

In line with the above observations, we define epistemic marking as constructions and forms that serve to position the 'epistemic origo' (the speech-act participant who is the source of the epistemically marked proposition) with respect to events in terms of knowledge, belief, accessibility, and involvement. In order to communicate effectively, interlocutors need to monitor each other's knowledge and attention as well as negotiate epistemic rights and responsibilities. However, the precise definition and internal structure of the domain of epistemicity in language is less clear than the neat presentation given in Table 1 suggests. The relationship between notions such as epistemic authority, egophoricity, engagement, evidentiality, and epistemic modality remains debated and/or elusive.[4] For

4 An example of a problematic issue which emerges from the previous discussion is the status of epistemic authority. In some languages it can be a notional domain corresponding to engagement of egophoricity but in others (see e.g. Grzech 2016 for Upper Napo Kichwa) it can be a category in its own right.

this reason, we have a challenge for those embarking on epistemic fieldwork: when identifying and describing "new" systems or re-evaluating ones already described, it is advisable to only use the categorical labels as indicative of the general direction of research, not as boundaries delimiting one's field of investigation.

An illustrative example of what this means in practice comes from research on evidentiality within the Quechuan language family (see also Grzech 2020). Despite the dominant view that Quechuan languages have three evidential enclitics encoding direct, inferential/conjectural and reportative evidence, since the beginning of the XXI century researchers have identified a host of new semantic distinctions within the evidential systems of that language family. These include 'best possible ground' evidentiality in Cuzco Quechua (Faller 2002), relevance of exclusive and shared knowledge in several varieties in Peru (e.g. Hintz and Hintz 2017; Howard 2012), and meanings related to addressee perspective or epistemic authority in the Amazonian varieties spoken in Ecuador (cf. Grzech 2016, 2020; Nuckolls 1993, 2012). The Quechuan system is still referred to as evidential in the literature, but the available empirical evidence suggests that this label might have been prematurely applied (or that the systems of different Quechuan varieties differ in important ways). Many of these new findings, especially those concerned with the intersubjective nature of the markers, appeared in studies based on interactional data (Grzech 2016; Hintz and Hintz 2017). Collecting such data could have been considered superfluous if the researchers had assumed from the outset that the only semantic distinctions they needed to look for in the system were distinctions based on individual speakers' (perceptual, or other) mode of access to events, as the label "evidential" would suggest. The Quechuan example has implications beyond the individual language family. If a system that was previously perceived as relatively homogenous across the language family exhibits so much diversity upon closer inspection, this should also lead us to reconsider how we arrive at hypotheses related to markers that appear to encode epistemic values. This holds not only for evidential systems but for all other types of epistemic marking.

Let us consider the different issues that may be relevant once we examine a specific epistemic parameter that we hypothesise to be relevant for the definition of a given marker. The case discussed above is that of evidentiality, which most traditional research classifies as encoding values related to type of evidence for an event (e.g. Aikhenvald 2004) or speaker's mode of access (e.g. Cornillie 2009). As we have already seen in the discussion above, however, the notion of access raises a number of issues. We might need to consider whether access to the event, or evidence for it, is available to the speaker alone or if it is assumed to be shared with others (Hintz and Hintz 2017). The hierarchies of the different modes of access might also give rise to different degrees of corresponding epistemic authority

(Grzech 2016) depending on the strength of claims to knowledge, which, in turn, can result from perception, internal states, or general life experiences (Kamio 1997: 18). Another notional domain that is notoriously difficult to pin down to a specific linguistic category is the domain of speaker (or addressee) involvement. It is considered central for the encoding of egophoricity (cf. Floyd et al. 2018), but participation in an event is also a mode of access, and in fact, many evidential systems described to date include 'participatory' evidentials in the repertoire of forms (Garrett 2001; Kalsang et al. 2013; Sandman 2018; San Roque and Loughnane 2012; for a recent overview see San Roque et al. 2018).

Ideally, methods of eliciting epistemic marking would align with a typology of epistemic systems outlining all relevant parameters. In other words, they would proceed from an onomasiological approach that looks for all the ways in which a given epistemic value can be expressed in the grammar or in discourse. However, this would require an inventory of the cross-linguistically possible epistemic distinctions as well as all the discursive, prosodic and morphosyntactic means by which they could be encoded. Such an approach might be unrealistic, especially since a typology of possible epistemic distinctions is only in its infancy. Particularly the notional domains of (shared/non-shared) knowledge distribution and epistemic authority are relatively new additions to the repertoire of epistemic parameters. Therefore, while we keep in mind the proposed/attested distinctions in our discussion of methodological tools (especially in Section 4), we make no claim to exhaustiveness.

2.2 The place of epistemic marking in grammar

The traditional, narrow approach to epistemic phenomena assumes that, for a language to have a fully-fledged epistemic system, it should have a paradigm of grammatically obligatory markers encoding epistemic values (cf. Aikhenvald 2004). However, morphological non-obligatoriness of a given form is not tantamount to the communicative non-obligatoriness of expressing certain epistemic values in discourse (Mira Ariel, p.c., 24.08.2019; Mushin 2013). Recent descriptions of epistemic systems show that epistemic marking can be integrated into the structure of the language in a variety of ways. Figure 1 provides an illustration of this diversity.

Note that the position near the more discourse-conditioned end of the spectrum need not inversely correlate with the degree of grammaticalisation of the epistemic markers. According to Boye and Harder (2012), grammatical meaning is not necessarily obligatory, but rather discursively secondary. A 'discursively secondary' expression does not constitute the main point of the utterance. Rather,

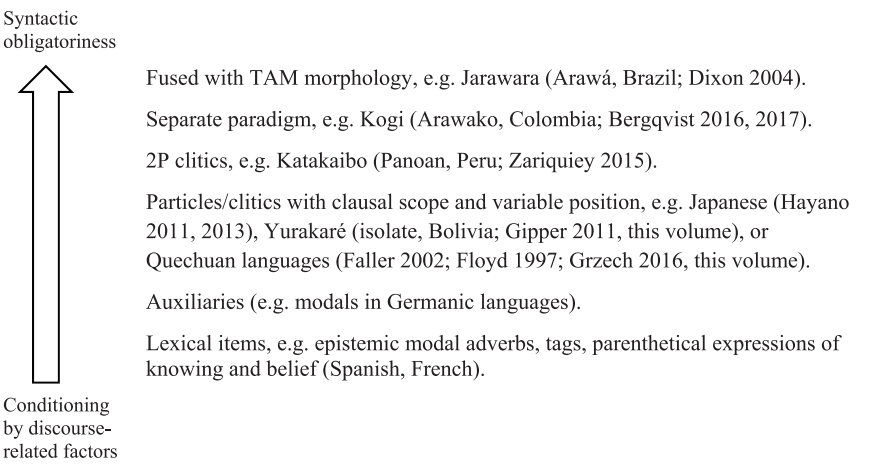

Figure 1: Types of cross-linguistically attested epistemic marking.

it "must have a functional or notional property that makes it enhance the functional potential of an accompanying expression in relation to which it is secondary" (Boye and Harder 2012: 68). The expression of discursively secondary meanings is a common feature of epistemic marking systems, irrespective of how they are formally encoded. The degree of grammaticalisation of epistemic marking as diagnosed on the basis of formal criteria such as coalescence, paradigmaticity and obligatoriness is less important for their adequate description than whether or not they contribute at-issue content to utterances (cf. Faller 2006; McCready and Ogata 2007; Waldie et al. 2009).

Given the diversity of ways in which epistemic marking can be encoded in the grammar, morphosyntactic properties of epistemic markers need to be made explicit in their description. Linguistic descriptions should also recognise that markers with different formal properties can co-exist in a single language, can exhibit interesting patterns of (in)compatibility, and can jointly contribute to the negotiation of epistemic rights and the discursive construction of shared knowledge. Until recently in the study of lesser-known languages, there has been a tendency to overlook the markers at the less obligatory/less grammaticalised end of the spectrum. Apart from obviating a significant portion of the possible diversity of epistemic systems, this approach also has another consequence. Under the assumption that a fully-fledged epistemic system is necessarily expressed by a grammatically obligatory paradigm, it could be regarded as sufficient to describe the grammatical contexts in which the marking occurs, and potentially, for the

sake of negative evidence, to elicit contexts in which using an epistemic marker would be ungrammatical.

However, if we acknowledge the possible structural complexity of epistemic systems, we are likely to provide a much more thorough description of the place of such systems in the grammar of a given language. Especially in the case of systems on the discourse-motivated end of the spectrum in Figure 1, the following issues should be acknowledged as relevant for an accurate and thorough description of epistemic markers:

- Interaction of epistemic marking with other areas of grammar. This includes the distribution of epistemic marking with respect to markers of person or TAM categories and sentence type (e.g. declarative vs. interrogative);
- Syntagmatic combinations of different epistemic markers in a language: epistemic authority markers, epistemic modals, mental verbs – for example, we might ask whether epistemic authority markers can appear in conjectures which also include an epistemic possibility modal;
- Relation to the structure of linguistic interactions: likelihood of occurrence of epistemic marking in a given place in the conversational sequence;
- Frequency and distribution of individual epistemic markers in natural discourse.

The above list is not meant to serve as an exhaustive guide for linguists starting work on epistemic marking in lesser-spoken languages; rather, we intend it as a suggestion as to what aspects of the language could potentially help disentangle some of the semantic and pragmatic complexity of epistemic marking. We are also aware of the practical limitations facing researchers. Only in an ideal world would they have time and resources to attend to all of the above issues. However, we think that it is important to point out as many relevant issues as possible, so as to make sure that we do not disregard any of them if they surface in a language under study.

3 Investigating epistemic marking: State-of-the-art

This section summarises the methodological developments in the field of epistemic research. This cannot be done in isolation from the field's theoretical advances, but discussing those is not our main goal here. Readers interested in the theoretical aspects of the development of epistemic research can find more comprehensive overviews of the discipline elsewhere (e.g. Aikhenvald 2018b; Boye 2012; Evans et al. 2018a, 2018b; Foolen et al. 2018b, Guentchevá 2018; San Roque

et al. 2018, among others). There is also an ample body of publications regarding epistemic systems in individual languages which sometimes detail their interactional functions and potentially inter-subjective semantics. Many of them are referenced throughout this paper and the other contributions in this volume. Such studies also discuss the methods used in the process of studying epistemic marking systems, but, to our knowledge, a systematic overview like the one provided in this Special Issue does not yet exist in the field.

3.1 Current developments in the field of epistemic research

Epistemic markers in a wider sense (including non-obligatory markers) are notably absent from the more standard volumes on grammar-writing (Ameka et al. 2006; Payne 1997; Shopen 2007) and handbooks for field linguists (Bowern 2008; Chelliah and De Reuse 2011). Such publications focus on describing morpho-syntax, paying little attention to semantics and even less to pragmatic phenomena. This underlies the scarcity of methodological resources, which sets the field of pragmatic fieldwork apart from closely related semantic fieldwork, where the work on methodology has been developing dynamically over the last two decades. The article *Methodology of semantic fieldwork* (Matthewson 2004) has established a common baseline in the methodology of semantic research in the field. A more recent development is the overview of different research questions and how they can be approached in the field in the contributions to Bochnak and Matthewson (2015). In 2019, a new open-access journal *Methods of Semantic Fieldwork* was launched.[5] Pragmatic fieldwork is, in comparison, severely under-resourced, and we hope that this contribution will pave the way for a change.

As mentioned above, only very limited attention has been given to pragmatic phenomena in field methods volumes, which focus on phenomena such as deixis, speech acts, and presuppositions (e.g. Chelliah and De Reuse 2011: 416–421). Studying language-in-use has yet to receive systematic and detailed treatment in the literature for linguistic fieldworkers. Moreover, tools devoted specifically to studying complex epistemic expressions are virtually non-existent (but see Zeisler [2016] for a notable exception). Aikhenvald (2018a: 37–40) provides a fieldworker's guide to evidential systems, which, however, is restricted to listing potential parameters for the description of grammaticalised evidential markers and their interaction with other grammatical systems rather than discussing methods for obtaining the relevant data.

5 The journal can be accessed at https://ojs.library.ubc.ca/index.php/storyboards/about.

Despite a growing number of descriptions of complex epistemic marking systems (see references below), systematic methodologies for studying these phenomena are still in very early stages of development, at least in a setting where the researcher is not a native speaker of the language under study. The vast majority of the available methodological resources for investigating context-sensitive expressions such as evidentials are semantic rather than pragmatic in nature. Consequently, they tend to concentrate on the truth-conditionality of the markers and their morphosyntactic properties in terms of scope and embeddability. Until about a decade ago, fieldwork-based studies of evidential systems tended to focus on such methods (Faller 2002, 2006; McCready and Ogata 2007; Matthewson 2012; Peterson 2010; Waldie et al. 2009). The use of tools focussing on scope and embeddability in evidential research stemmed from the assumption that epistemic expressions can be either evidentials or epistemic modals. The aforementioned tests indeed allow for teasing apart evidentiality and epistemic modality. However, descriptions of epistemic systems which encode, rather than imply, shared vs. exclusive knowledge or access or similar intersubjective parameters (e.g. Bergqvist 2016; Gipper 2011, 2015; Grzech 2016; Hintz and Hintz 2017; San Roque and Loughnane 2012; Schultze-Berndt 2017; Zariquiey 2015; for an overview see Evans et al. 2018a, 2018b) have made it clear that testing the truth-conditionality, embeddability and scope of markers is no longer sufficient. Focussing on only these properties of epistemic markers does not account for the full range of semantic and pragmatic distinctions in such forms of epistemic marking. Adequate descriptions and analyses of epistemic meanings need to take into account the grounding of epistemic marking in the moment of utterance.

On the one hand, obtaining contextually grounded data has recently become easier than ever before. With widespread access to affordable, good-quality sound and video recording devices and a rise in the number of digital archives, linguistic documentation can now provide accessible and transparent records of all kinds of communicative practices, from ceremonial speech to private conversations. On the other hand, the methodological advances in the field lag behind its technological development, with methodologies for pragmatic fieldwork being developed on a case-by-case basis rather than in a comprehensive effort to respond to the new empirical findings in the field.

3.2 Research on epistemic marking in well- versus lesser-described languages

As outlined above, methodological resources for studying complex epistemic systems in lesser-described languages are still scarce. In well-known languages

such as English, on the other hand, stance-taking and the assignment of epistemic authority in conversations have been key topics in Conversation Analysis already for several decades (cf. Mushin 2013: 628–629). Research on these issues can be traced back to Labov's (1972) distinction between A-events (known to the speaker) and B-events (known to the addressee), and its application to therapeutic discourse in Labov and Fanshell (1977). The analysis of how the use of epistemic markers reflects the more permanent 'epistemic status' and the *ad hoc* 'epistemic stance' of speakers in interaction has been a thriving field of research (cf. González Condom et al. 2017; Heritage 2012a, 2012b; Heritage and Raymond 2005; Sidnell 2012; Sidnell and Stivers 2013, among many others). Studies have been based mostly on actual instances of language use, including everyday interactions between family members or friends (e.g. Morek 2015; Hayano 2011), playing video games (e.g. Piirainen-Marsh and Tainio 2014), conversations in institutional settings, such as doctor-patient interactions (where knowledge asymmetries can be taken to be the default [e.g. Ariss 2009; Landmark et al. 2015]) or business meetings (e.g. Asmuß and Oshima 2012).

Since the languages of the interactions tend to be well described, such conversational-analytic studies often focus on the pragmatic contribution of epistemic markers (of a grammatical or lexical nature) to the interaction, whereas their semantics can be presupposed. Methodological considerations in such studies, correspondingly, are mostly restricted to constraining the genre used by participants (González Condom et al. 2017) or the overall setting of a conversation but no other aspects of the context of the interaction. Drew (2018: 165) describes the conversation analytic approach with the following observation: "As analysts we study not what participants may or may not actually know, but *what they display to one another as knowing or not knowing, and sometimes how they come to know what they claim to know*" [original emphasis]. This approach presupposes that the linguistic means for displaying access/attitudes to knowledge or ownership of knowledge can be confidently identified and that their functions are fully understood. This can indeed be the case if the researcher is fully competent in the language under study. However, in situations where the researcher is not a native speaker, the analysis is likely to be restricted to what participants *actually* know (as stated explicitly), and/or have the right to know, as the added level of what they might want to *project to know* is beyond the researcher's intuitive grasp. Thus, the observation that epistemic marking can be employed in an interaction to achieve certain goals rather than to directly reflect claims to knowledge needs to be kept in mind in any empirical investigation of such markers, especially for languages in which the researcher is not fluent.

Another important difference between most descriptions of epistemic marking in Conversation Analysis and in language documentation, is the scope of

investigation that researchers might be aiming for, which we already hinted at in Section 2.1. A full description of a 'system' of epistemic marking – or even more broadly, a delineation of the full range of language-specific resources available for conveying epistemic stance, status and access – is not the primary concern of conversation analysts. Often, the range of epistemic means included in their analysis is derived directly from the data. Alternatively, the analysis may be devoted to a particular kind of epistemic marker (see below) – e.g. expressions of not knowing/not understanding (Lindström et al. 2016), or a hearsay evidential (e.g. Kim 2011).

Conversation analysts need not, or do not tend to, concern themselves with the issue of paradigmaticity. Researchers working on lesser-described languages, however, rarely have the luxury of being able to work on just one particular epistemic marker, in isolation from the paradigm in which it might occur, or from other forms and strategies of epistemic marking in the language. Being responsible for documenting not only the epistemic resources and strategies but also the entirety of the language system, language documenters are often obliged to take a more holistic approach also concerning themselves with the place of epistemic devices in the grammar of the language they describe. This kind of pressure may lead to a tendency to overlook the function of e.g. tags, less frequent discourse markers, and lexical means of expressing epistemic stance and commitment in fieldwork-based research (see also Section 2.2).

For example, researchers working on epistemic marking systems in lesser-spoken languages have often rigorously observed the divide between fully grammaticalised, obligatorily expressed evidentials ('evidentiality proper') and non-obligatory, pragmatically conditioned 'evidential strategies' (Aikhenvald 2004). This approach has been extended to the study of epistemic markers encoding categories other than 'source of evidence', e.g. markers of epistemic authority and engagement. Given limited resources and an inherited format for a standard descriptive reference grammar, grammatical descriptions have tended to focus on linguistic categories important for the grammaticality of sentences with much less emphasis on the semantic and pragmatic resources that contribute to the felicity of utterances in different contexts (see also Section 2). As observed by Mushin (2013: 636), "[l]anguages with relatively large numbers of evidential morphemes (…) tend also to be the ones for which little has been written on discourse functions." A standard fieldwork-based grammar would not be considered complete without a phonological sketch, a description of word classes and basic rules of clause formation and clause combining, but it often lacks a chapter on discourse marking or lexico-grammatical strategies for managing discourse. The above is not problematic when we study systems where epistemic categories are obligatorily expressed and perhaps fused with TAM marking. However, it becomes an issue

when we consider epistemic systems like many of the ones described in this volume: non-obligatorily expressed, more akin to discourse marking, and extremely context-sensitive. The problem becomes further exacerbated if the items in question are not very frequent in the data that the grammar is based on.

Another difference between the conversation-analytical and the descriptive linguistic traditions is that, even if the meaning and function of the markers is the focus of investigation, studies dealing with better-studied languages can rely on larger corpora. They can also use either parallel corpora (the same texts, translated into a variety of languages, e.g. EUROPARL) or comparable corpora (not the same text but comparable in terms of genre, time of creation and number of words) for comparative research. For example, Aijmer and Simon-Vandenbergen (2004) use parallel corpora in order to narrow down the function of pragmatic markers related to expectation in Swedish, English and Dutch. In fieldwork-based research, the comparability of corpora is only possible on a smaller scale, if at all. Parallel corpora, apart from the ubiquitous Bible translations, are practically non-existent, although a 'parallax', (i. e. broadly comparable) corpus focussing on 'social cognition' is currently under construction (SCOPIC, see Section 4.2).

Thus, for several decades now, the study of epistemics in widely spoken languages – carried out mostly in the conversation-analytic framework – and fieldwork-based studies of evidentiality and other epistemic categories have existed side-by-side with virtually no interaction between them. The intellectual divide between conversation-analytic and fieldwork-based approaches to epistemic systems began to dissolve when, as mentioned above, fieldworkers started to notice that the use of epistemic systems is more often than not motivated by pragmatic factors, and also applied conversation-analytic methods in taking into account unfolding conversations (e.g. Gipper 2011, 2014, 2015, this volume). In recent years, the two traditions – that of describing "evidential/epistemic strategies" (e.g. Cornillie 2018; González Ruiz et al. 2016; Sidnell 2012) and "evidentiality/epistemicity proper" – have finally started coming together (e.g. Foolen et al. 2018b; Guentchéva 2018). With this Special Issue, we wish to contribute to the study of epistemic marking systems from a truly cross-linguistic perspective.

The research context is ripe for this type of contribution. Recent publications point to the benefits of different types of data for studying evidentiality (Kittilä et al. 2018) and other types of epistemic marking. They also recognise the fact that "special methodological awareness on the part of researchers" is needed if evidentiality and related categories are to be described and analysed in a meaningful way (Foolen at al. 2018a: 14). Consequently, this volume aims to contribute to the call for more research into the pragmatic and discourse aspects of the use of

epistemic marking, which "have so far been largely neglected in the theory of evidentiality" (Tournadre and LaPolla 2014: 259).

4 Epistemic fieldwork going forward: Data and methods

In this section, we focus on considerations relevant to fieldwork on epistemic marking. Firstly, we continue the discussion from Section 2 on the notional parameters that can possibly be relevant to epistemic systems. Secondly, we discuss the types of data on which we can base epistemic research. Finally, we build on the critical appraisal of methods developed to date, giving an overview of tools that can be used in epistemic fieldwork and providing their critical evaluation.

4.1 Types of data and epistemic fieldwork

In the community of researchers involved in fieldwork of epistemic marking systems, we note a consensus that we need to refer to corpora of naturalistic discourse in addition to any elicitation tools we use to test our hypotheses about epistemic systems (see Section 3.2). A balanced corpus used for epistemic research should be representative in the sense proposed by Himmelmann (1998: 178–182), that is, it should encompass discourse from different genres, with different degrees of spontaneity (see also the discussion of genre in Mithun, this volume). Such a corpus is most likely to reflect the breadth of epistemic licences that a speaker can take and it could potentially feature obligatory or customary uses of epistemic marking for certain rhetorical effects. Moreover, more so than in research on, e.g. morphosyntax or tense marking, a corpus aiming to be representative of the use of epistemics in a given speech community should contain data from a large number of speakers. Collecting similar types of interactions between a number of speakers is also useful for determining whether certain epistemic markers have a tendency to surface in a particular communicative situation, in a particular constellation regarding the social relations between interlocutors, or occur in a given place in the conversational sequence.

An alternative strategy, which is often more realistic in terms of the possible venues and scope of data collection, is using non-diverse corpora such as SCOPIC (see Section 4.2). As pointed out by Sonja Gipper (p.c., 20.03.2020), such corpora might be useful particularly if we are interested in individual differences between speakers. Data elicited with the *Family Problem Picture Task* (San Roque et al.

[2012], see Section 4.2) or Mastermind game (Silva and AnderBois [2016], see Section 4.2), deliver discourse types and actions that are mostly comparable across speakers. A balanced naturalistic corpus, on the other hand, may include, e.g. "a discussion from one speaker pair, a set of narratives from the other, instructional discourse from the next, etc." In case of such a corpus, "we cannot really compare the use of epistemic markers across speakers because they engage in different actions, and we will probably not be able to record each speaker in all situations" (Sonja Gipper, p.c., 20.03.2020).

Whichever of the two approaches described above we choose, they naturally lead to another important observation: meaningful fieldwork on epistemic marking systems requires the researcher to engage with the speech community in order to gain an awareness of how epistemic rights are distributed among individuals and the various social positions they occupy (temporarily or more permanently). From this, it also follows that researchers should watch out for the relationship between epistemic considerations and considerations of face and politeness, which might for instance prevent the speakers from using certain markers even in situations when they would apparently have sufficient epistemic ground to do so. Epistemic marking is a prime example of a phenomenon where morphosyntactic resources employed in speech cannot be considered in isolation from "the cultural knowledge, attitudes and practices of speakers" (Enfield 2002: 3). It follows that collaborative fieldwork models (cf. Dwyer 2006; Leonard and Haynes 2010; Mosel 2006; Yamada 2007) are particularly well-suited for carrying out fieldwork on epistemic marking.

Epistemic marking is so deeply grounded in the interactional context that in order to be analysed and described accurately it needs to be considered *in situ* in interaction and is thus likely to involve 'noisy' data. While this might be discouraging to some, we regard this both as a necessity and as a possibility for gaining a deeper understanding of how speakers choose to represent their own knowledge states and their assumptions about the knowledge states of others. However, this also poses a substantial challenge for the comparability and replicability of research results. It is not reasonable to expect that corpora of languages in which epistemic marking has been attested are comparable. On the other hand, comparing sets of hand-picked examples from different languages does not count as a rigorous methodology in comparative or typological research, either.

Some authors might argue that naturalistic data should have primacy in epistemic fieldwork (Aikhenvald 2018a: 7; Mithun, this volume). However, the motivation for this Special Issue is the question of what interactional elicitation stimuli might complement naturalistic data in providing robust and comparable evidence for epistemic distinctions and how they might achieve this. It follows that appropriate stimuli should not only elicit data relevant to semantic parameters

such as differences in information source, epistemic strength, etc. They should also target the relevant components of distribution of knowledge between interlocutors, i. e. privileged access based on perception/experience, involvement, rights and obligations or expertise, exclusive vs. shared knowledge or access to it (cf. Kamio 1997; Raymond and Heritage 2006; Stivers et al. 2011).

As mentioned above, an important challenge in developing relevant methods and tools is how to consider the influence of social factors in the analysis of epistemic marking systems/strategies. When accounting for the distribution and meaning of epistemic marking, how can we disentangle socio-cognitive considerations from perceptual and spatio-temporally grounded accessibility? The difficulty lies in combining the naturally occurring speech events with other types of data that would allow for delineating the aspects of interactional context that might influence how epistemic marking is used in a sound, informative and empirically-grounded fashion. We turn to the issue of devising such a methodology in the paragraphs below.

4.2 Elicitation methods in epistemic fieldwork

From the above considerations it becomes apparent that questionnaires alone, even those with ample situational context, are not likely to deliver data for an accurate analysis. As we have underlined a number of times in the preceding sections, context and communicative intention are all-important for the use of epistemic marking. Thus, the tools we use should involve speakers basing their claims on the same type of perceptual access to an event when talking to different speakers, negotiating joint action, and adopting different roles in interaction, e.g. that of an expert vs. that of a non-expert. Here, Drew's (2018) observation cited in Section 3.2 becomes relevant again: we should keep in mind that how speakers use epistemic markers might not always relate to what they *actually know*, but what they want to *present themselves as knowing*.

Therefore, we postulate that the type of elicitation techniques that can deliver the best results in epistemic fieldwork are tools that elicit 'staged communicative events' (cf. Himmelmann 1998). Such events are interactive, but restricted to a certain topic introduced by the researcher, or centred on a simple action that the participants need to achieve together. Elicitation of such events, when successful, delivers fairly naturalistic data in which knowledge states and expectations of speakers can be quite easily controlled. In fact, for Himmelmann (1998: 185), recordings of staged communicative events constitute one of the pillars of well-executed language documentation, on a par with grammatical elicitation and unconstrained 'observed communicative events'.

Staged communicative events are not prototypically experimental from the point of view of experimental semantic and pragmatic research done in a laboratory setting. However, in a fieldwork situation, they are often the best possible approximation of an experimental research design. Despite only putting very limited constraints on participants and allowing relative communicative freedom, such tasks need to be carefully designed as well as planned and executed in accordance with an established and replicable procedure. Apart perhaps from interactive tasks based on the classic *Pear Story* video (Chafe 1980), collaborative, interactive tasks are a relatively new addition to the pragmatic research toolkit.

Elicitation strategies for epistemic markers specifically aim to pinpoint differences and overlaps between the access/knowledge/authority that may be attributed to the speech-act participants. A goal in developing such strategies is to tease these distinct, but overlapping, motivations apart. Tools for eliciting epistemic markers necessarily put the configuration and the roles of the speech participants at centre stage, possibly including the conductor of the elicitation task, bringing meta-level communication into the setting of the elicitation. Cultural and social parameters are also important in attempts to analyse the outcome of the task, e.g. identification of elicitation content and the dynamics between participants of the task. The tasks discussed both in this article and across the Special Issue are designed to produce expressions of report/quotation (speech, emotion, intention), different modes of access to information (e.g. conjectures vs. observations), knowledge states (assimilated knowledge; asymmetries between speech-participants), and evaluations of the likelihood of actions and events.

Researchers in field-based pragmatics have come up with a number of solutions that take the considerations regarding the complexity of epistemic systems into account when trying to elicit data in the field. They often use and/or adapt stimuli originally developed for other research purposes. For the possible benefits and shortcomings of this approach, see Gawne (this volume) and Grzech (2020). Schultze-Berndt (2017) also illustrates the potential relevance of such stimuli for the elicitation of epistemic authority marking.

The experimental tasks used for the study of epistemics to date include:

- Elicitation placed in a rich context (as used in current semantic fieldwork; see Section 3.1) specifying some of the epistemic parameters. This is the simplest of the tasks directed towards eliciting epistemically marked statements, akin to elicitation techniques used for other aspects of the language. Questionnaires geared towards epistemic judgements could be considered a subtype of this kind of research tool (Zeisler 2016).
- Narrative production tasks, both individual and collaborative. These can be based on storyboards such as the *Family Problem Picture Task* (see below), or tasks included in stimuli sets such as the *Questionnaire on Information*

Structure (QUIS, Skopeteas et al. 2006), short films such as the *Pear Story* etc. In this volume, these sorts of tasks are discussed by Gawne, Grzech, and Knuchel. Some researchers have also accompanied combined this type of tasks with elicitation of metalinguistic judgements, asking participants to clarify how they have interpreted the visual stimuli in the course of the experiment (cf. Kugler 2019). Narrative production tasks based on stimuli may also prompt consultants to produce staged dialogue within a narrative. This is often encouraged by researchers within the task design, but can also occur spontaneously as consultants carry out the tasks.

- Individual problem-solving tasks, e.g. using stimuli involving manipulation or identification of physical objects by a single speaker, such as *Shape Guessing* (Seifart 2003; see also Gawne, this volume) and the *Difference Task* (Enfield and De Ruiter 2003; see Gawne, this volume; Knuchel, this volume).
- Staged interaction tasks. Like the narrative production tasks, they can be based on stimuli. However, the difference is that they are meant to emulate interactions between speakers. Of particular interest for investigating markers of epistemic (a)symmetry are situations where disagreements and/or uncertainties of interpretation are likely – such as the visual illusions and magic tricks discussed by Gawne (this volume) and Grzech (2020). As previously mentioned, however, non-obligatory markers may be predominantly employed when the interaction is 'high stake', i. e., when it touches on social norms and relationships rather than the correct description of an unfamiliar prompt (see Section 4.3). Thus, staged arguments or accusations could be a valuable addition to the methodological toolkit. In this volume staged interaction tasks are discussed by Grzech.
- Matcher-director tasks: a subtype of staged interaction tasks involving one consultant who is directing the other in carrying out a simple task, for example drawing a route on a map or reconstructing an arrangement of objects. Examples are the various Space games developed at the Max Planck Institute for Psycholinguistics in Nijmegen (e.g. Levinson et al. 1992; Senft 2007; Wilkins 1993), Map tasks (e.g. Anderson et al. 1991), and more recent tasks adapted to virtual environments (Lum and Schlossberg 2014). These tasks normally involve a controlled imbalance of knowledge, where the image given to the director would differ in some details from that given to the matcher. In this volume, matcher-director tasks are discussed by Knuchel.
- Collaborative problem-solving tasks: a subtype of staged interaction tasks. This type of tool is well exemplified by tasks involving the *Family Problem Picture Task* storyboard (San Roque et al. 2012). Consultants are asked to agree on the order of the pictures in a story, which requires them to establish what happened in the story and in what order. This task has been used to create the

Social Cognition Parallax Interview Corpus[6] (SCOPIC, cf. Barth and Evans 2017): the first set of comparable corpora created with the objective of investigating epistemic phenomena. In this volume, the use of the *Family Problem Picture Task* is discussed by Gawne, Gipper and Knuchel. Board games (e.g. Mastermind, Silva and AnderBois 2016) could be considered a specific type of a problem solving task (see Gawne, this volume).

The classification above is tentative and serves the purpose of grouping the different stimuli so as to make their description clearer. However, it is by no means a taxonomy, and the different categories might also quite easily overlap, e.g. a narrative task or a staged communicative task could also involve elements of problem solving.

Each of the tools listed above has proven useful for eliciting epistemic expressions. However, not all of them have turned out to be equally suitable for all forms of epistemic marking. In the following section, we discuss the advantage and shortcomings of the tools.

4.3 Evaluation of stimuli

As researchers, we need to ask ourselves whether the stimuli we are using actually deliver data that is both useable and useful in our research. Therefore, we should not only reflect on the possible design of elicitation methods and tools that would allow us to test our hypotheses but also on whether such tools have fulfilled their desired function once applied in practice. While each of the contributions to this Special Issue does that for the respective methods they describe, in this section we propose some more general insights regarding the evaluation of stimuli in epistemic fieldwork.

First, then, we should discuss what it means for epistemic elicitation stimuli to deliver the desired results. In case of markers that are not obligatory for the grammaticality of sentences, it might be tempting to suggest that successful elicitation tools might be the ones that result in the speakers actually using the markers. In other words, researchers who adopt a marker-based approach (see Section 2.1), focussing on the analysis of epistemic marking when it occurs, would likely disregard data where the marking is absent as not being of interest. This can, however, be counter-productive for the analysis. As we point out in Section 2.2, the analysis of markers that are only used in pragmatically appropriate conditions cannot just be limited to the contexts in which the markers occur. It is equally

6 See also the project's website: https://scopicproject.wordpress.com/.

important for the researchers to understand in which contexts the markers do not occur, and why. Hence, using a stimulus which does not result in the speakers using the markers might be a useful diagnostic in and of itself, as long as one is able to establish why the markers were not used, despite the initial expectation that they would be.

The research to date suggests that epistemic marking, when not syntactically obligatory, has a cross-linguistic tendency to occur in 'high-stake' interactions, that is, interactions in which the participants feel genuinely involved (cf. Grzech 2016, 2020; Schultze-Berndt 2017). Therefore, trying to elicit such markers by exposing speakers to simple, non-communicative tasks might not trigger their use at all, or less so than naturalistic exchanges would. The challenge, especially in fieldwork on lesser-known languages, is to know whether the use of a given stimulus has motivated the speakers to become involved in the interaction. This issue could potentially be resolved by using a procedure already applied in semantic fieldwork with storyboards (Matthewson 2018): testing the stimuli prior to fieldwork with speakers of more familiar languages. Such a test would allow us to check whether participants are reacting to the stimuli in the way we anticipated, and whether the type of interaction they engage in is the one we were hoping for. Pilot trials would not always allow us to predict how the stimulus would fare in the field, since its interpretation could also depend on culture-specific conventions and interpretations (cf. Cohn 2019). Nonetheless, they could help avoid certain interpretability errors. In the literature to date, the data and analyses based on the stimuli discussed in Section 4.3 highlight two aspects that are most relevant for successful epistemic elicitation. These are: (i) using tasks with content that is both personally and culturally relevant to the consultants so as to successfully engage them; (ii) being able to control for knowledge states of interlocutors to interpret the markers – or their absence – accurately.

Another issue, which requires looking at the different stimuli separately, is how successful they are likely to be in eliciting marking related to different kinds of epistemic parameters and distinctions. The comments offered here are not meant to be exhaustive, but they do address a number of attested parameters and issues of debate in the domain of epistemic marking.

One obvious parameter, considering well-known generalisations about possible evidential systems, is the manner of access to information. Tasks based on the presentation of objects, pictures, maps or videos all privilege visual access; they could therefore be complemented with tasks involving access through participation, auditory information, and reported speech. For example, a video in a narrative retelling task could involve protagonists reacting to auditory information.

A second well-known parameter is the interaction of epistemic marking with person (Bergqvist and Kittilä 2017; Sun 2018) and, intersecting with this, the

behaviour of epistemic marking in interrogatives (San Roque et al. 2017), where evidentials and egophoric markers frequently (but not universally) exhibit an origo shift from speaker to addressee. Interactive problem-solving tasks are more likely to trigger questions and other types of soliciting information than narrative tasks (unless the latter elicit dialogue within the narrative). Tools that trigger first person as well as third person narratives or reflections by participants on their previous or future actions (e.g. in interactive tasks) are likely to reveal asymmetries and constraints in the interaction of person and epistemic marking (see San Roque et al. [2012] for a discussion of the design parameters of the *Family Problems Picture Task*). One frequently mentioned phenomenon is an interpretation of surprise ('mirative') or less than voluntary participation when a conjectural evidential or non-egophoric marker is used with a first person subject (see Hyslop [2018b] and San Roque et al. [2018: 58–62] for recent discussions and references). The surprise factor could potentially be captured by, for instance, matcher-director tasks where stimuli used by the participants differ slightly. Involuntary behaviour, on the other hand, could be emulated with certain kinds of board games requiring both luck and handling of physical objects, e.g. pick-up sticks or Jenga.

A further parameter is the interaction of epistemic marking with temporality. Recent research on evidentials (e.g. Fleck 2007; Gipper 2014; Kalsang et al. 2013; Koev 2017) shows that epistemic distinctions can relate to the temporal (non-) coincidence of the speech event and/or the event of acquisition of information with the reported event. This observation may also explain why evidential marking is so frequently fused with tense/aspect marking (Bowler 2019). For example, Matses (Fleck 2007) has a complex system of inferential evidential markers with several temporal distinctions between the (i) time of information acquisition, (ii) time of the reported event, and (iii) time elapsed between the reported event and the speech event. Such contrasts will only be captured by tasks that include discussions of past and future events for which the event of obtaining evidence follows (e.g. observed results), is simultaneous with (e.g. direct observation), or precedes the reported event (e.g. intentions). Moreover, different tasks should ideally also capture whether the availability of evidence precedes or overlaps with speech time.

A related, though distinct parameter, is the time when shared information was acquired or how well it is integrated into the interlocutor's knowledge base. For example, some epistemic systems possess a marker of generally accepted shared knowledge[7] (e.g. Sandman [2018: 187–189] for Wutun; Mithun, 1999 for Central Pomo; Eberhard [2012: 149–150], Eberhard [2018: 349–355] for Maimandê). Other

7 As Hintz and Hintz (2017: 103) point out, general knowledge (marked as a fact) is fundamentally different from inference based on general knowledge or assumption.

markers may encode shared direct access overlapping with the speech situation, a shared conjecture based on available evidence, and shared information based on hearsay (all three are attested in Sihuas Quechua according to Hintz and Hintz [2017]). In Kurtöp, the contrast between exclusive and shared access is only available in the perfective aspect (Hyslop 2014, 2018a, 2018b). In Jaminjung/Ngaliwurru, in contrast, the (single) marker of shared epistemic authority can only be employed if perceptual access is available to the speech-act participants at the time of speech (Schultze-Berndt 2017). A similar marker encoding "current evidence shared by both speaker and listener" has been described for the Nambikwaran language Lakondê (Eberhard 2018: 344–345; Telles and Wetzels 2006: 244). The latter type of marker is relatively easily elicited with interactive tasks. Markers of generalised knowledge, on the other hand, are more likely to turn up in culture-specific contexts such as discussions of accepted cultural behaviour, general knowledge about the environment, or traditional narratives.

A subtle and rarely attested distinction is that between exclusive versus shared knowledge on the one hand, and epistemic perspective on the other. Bergqvist (2016) convincingly shows this distinction in Kogi. Distinct markers are used to encode speaker and addressee perspectives for exclusive or shared access to information. One constellation that calls for a marker of addressee-perspective with shared access is a situation where the speaker solicits the agreement of the addressee regarding an event that they are both involved in (see Bergqvist 2016).

Finally, a more general issue is the tasks' configuration. Configurational parameters that have been identified as relevant to epistemic elicitation tasks include (i) communicative styles and personalities of participants, (ii) the (a)symmetry relation between the participants in terms of social position and situation-specific knowledge, (iii) the role of the researcher, and (iv) the referential salience of the targeted contents/objects of the task. These parameters potentially affect the use of epistemic forms and as such are relevant to their analysis. The personal communicative style of a given participant will yield different discourses with different partners. This, in turn, will impact the presence and frequency of different epistemic markers in the elicited interactions such as collaborative problem-solving tasks (cf. e.g. Gipper, this volume). For instance, some speakers prefer to take the lead in solving a problem, while others choose to stay in the background. Such role preferences might at first glance appear inconsequential as to how the respective speakers phrase their claims to knowledge, but in fact they do have consequences for langugae use (see also Section 4.1). Epistemic markers are used as hedges and boosters in the negotiation of storytelling and narrative production and they are not used in the same way by all speakers. The second of the parameters cited above, the social (a)symmetry between participants, bears on the conversational strategies speakers might adopt and on how they express the

potential (a)symmetry in situation-specific knowledge. The asymmetry in social relations can be triggered by the participants' age, gender, or kinship relations, to name the most prominent factors determining social status. Thirdly, the researcher's presence must also be accounted for. When speakers are hesitant to claim knowledge of a piece of information, is this because they concede authority to the other participant(s), or to the linguist administering the task?

With reference to the parameter of referential salience, a clear aim for the design of a non-verbal elicitation task is to make the referential content of the elicited discourse transparent and predictable to the researcher. When a speaker references an object or an event in the task materials, it should be clear whether and how this object or event is accessible for other participants. The contents of a task may differ with respect to how objects or events are accessed by participants. Access may be direct, by identification based on visual information. It may also be based on a verbal report, or can be subject to inferences based on a depiction, as in the *Map task* or the *Family Problem Picture Task*. Another issue relevant to identification is whether the contents of a task are personally relevant to the speakers. If depicted events align with personal experience, then this may affect how speakers interprt and express their knowledge of such events.

4.4 Metalinguistic choices and metadata in epistemic fieldwork

Another important issue, related not only to epistemic fieldwork, but also to linguistic fieldwork in general, is the choice of which metalanguage to use. As different studies show, the choice of language in which the researcher addresses the consultants when conducting the tasks, as well as the language used in the tasks, can influence the research results (cf. Hanks 2009; Matthewson 2018; Zhornik and Pokrovskaya 2018). Especially in situations of well-grounded bi- or multilingualism, the consultants have a tendency to mirror structures from the dominant language in their response to elicitation stimuli if instructions regarding the tasks were given in this contact language or variety. The researchers should keep that in mind, especially when conducting elicitation tasks that require an extensive introduction or description of context, and they should acknowledge how this issue was solved when describing their research methodology.

The second important point is that epistemic fieldwork requires collecting, handling and storing very comprehensive metadata related to the participants' community roles, life experience, family relations and fields of personal and professional expertise. These kinds of metadata can be potentially highly sensitive, and particular attention should be paid to ethical considerations regarding

their collection, handling and storage, including archiving. Within each epistemic research project, procedures should be developed to ensure that the participants' privacy is respected even when the data to which such extensive metadata refers is available within open-access protocols in language archives.

In sum, as pointed out above, the factors that determine (or enable) the use of epistemic marking are complex. However, this complexity is no reason for using methods that can potentially deliver simpler results, as this would mean aiming for simplistic analyses to the detriment of their completeness. Rather, we should look at the documentation and description of epistemic marking systems as a collaborative, possibly diachronic enterprise. As the discussion above has shown, no single task or toolkit is likely to reveal the entire range of possibilities for marking evidence, epistemic rights, and epistemic asymmetries in a given language. Some phenomena, such as markers related to the personal sphere of the speaker, or markers that can encode acquisition of evidence that is temporally outside the speech context, prove altogether elusive to elicitation. In our view, however, these issues should not discourage field linguists from in-depth research into epistemic marking systems. We carry out our work as best we can at a given point in time, and given the resource and time constraints. but we thus ensure the best possible quality of data for the ensuing generations of both researchers and interested speakers. This approach is in line with good practice in language documentation, whereby a documentation should be durable and multi-purpose (Himmelmann 2006: 1).

Although we are guided – as it is impossible not to be in a fieldwork situation – by the methodologies stemming from language documentation and description, the aim of this volume is not only to provide tools for language-internal descriptions. By proposing a broad toolkit resulting from work on a variety of typologically and geographically diverse languages, we hope to achieve more. We hope that by drawing on this resource, fieldworkers will be able to collect epistemic data allowing for meaningful cross-linguistic comparisons and generalisations in the long term.

We believe that in a field of research as complex as this one, it is important to learn from our errors. Therefore, the contributors to the volume discuss not only the methods that were successful but also failures in collecting and analysing epistemic data, and reflect on possible reasons behind these failures.

5 Contributions to this volume

This Special Issue mostly includes studies from under-described languages, but one of the contributions also deals with a well-studied language, namely Swedish (Bergqvist, this volume). The studies we present are always firmly grounded in empirical research and in line with the observation that empirical investigation

needs to be conducted in a rigorous fashion in order to be informative and transferable to other relevant contexts. All papers therefore contribute to establishing the relevant methodology of analysing and collecting epistemic expressions both in "traditional" fieldwork contexts where the researcher is not a native speaker of the language under study and where only small fieldwork-based corpora are available, and in a more desirable situation where he or she is a native speaker, and/or where sizeable corpora already exist. Across the contributions, we aimed to describe the methodologies in great detail so as to ensure that they could potentially be replicated by researchers interested in undertaking epistemic fieldwork. Whenever relevant, the authors discuss the methods that proved to be successful as well as those that turned out not to serve the purpose for which they were designed.

The paper by Marianne Mithun provides a thorough discussion of the different types of data that can be used in documenting and describing epistemic systems and the varying methods for collecting such data. Drawing from her extensive experience of fieldwork on Central Pomo, a Pomoan language of Northern California, Mithun discusses the complexity of expressions that encode epistemic meanings in this language, including evidential suffixes, clitics and particles, as well as particles currently moving along the cline of grammaticalization. Mithun illustrates the complexity of the system(s) and recounts the challenges involved in documenting these markers, giving readers an insight into how a well-thought-through, collaborative research process can eventually elucidate even those systems that at first glance appear to be highly idiosyncratic.

The contribution by Lauren Gawne discusses tools used in eliciting evidential and epistemic distinctions encoded in the copula system of Lamjung Yolmo, a Tibeto-Burman language of Nepal. These tools range from storyboards to magic tricks. Both the design and the application of these tools is described in sufficient detail to ensure that the methods she used could be replicated in other settings and applied to other languages. The discussion also includes a frank appraisal of both the successful application of stimuli and the cases where the methods did no deliver the expected results.

The article by Sonja Gipper analyses two members of the paradigm of epistemic discourse markers attested in Yurakaré, an isolate spoken in lowland Bolivia. Gipper approaches the description and analysis of the markers from an interactional perspective, focussing on their distribution in the interactional sequence. The paper provides a detailed discussion of the methodology so as to make sure that the readers can fully understand the basis for the conclusions drawn by the author. Gipper uses problem-solving tasks to demonstrate that the markers she analyses vary in function depending on their position in the communicative sequence. Furthermore, she points out the individual differences

in the use of said markers. This latter finding suggests that researchers working on epistemic marking systems should be especially wary of hasty generalisations involving entire speech communities.

The contribution by Karolina Grzech discusses the methods of documenting and analysing epistemic authority markers in Upper Napo Kichwa, a Quechuan language spoken in the Ecuadorian Amazon. Grzech discusses the steps of the research process she applied to the description of the epistemic paradigm, which she first assumed to encode evidential values. She provides an overview of how her research aims and methods adapted to the gradually emerging findings regarding the complex epistemic semantics of the markers. She describes the different types of stimuli used in her fieldwork, almost all of which were developed to serve other purposes, such as studying information structure or narrative production. The paper conceptualises epistemic research design as a process that needs to constantly develop as new data are collected, and gives practical advice on researching epistemic marking in the context of collaborative fieldwork.

The paper by Dominique Knuchel discusses the epistemic distinctions encoded by verbal prefixes and demonstratives in Kogi, a Chibchan language spoken in Colombia. Knuchel analyses both these types of expressions as encoding values related to engagement (Evans et al. 2018a, 2018b). She investigates the forms expressing engagement on the basis on interactive elicitation tasks, including matcher-director tasks and joint construction of a narrative by participants. For each of them, the author provides a detailed discussion of both the procedure of applying the tasks and of the obtained results. She also discusses the social and cultural appropriateness of stimuli and the potential effects of these factors on linguistic fieldwork, including fieldwork on epistemic expressions.

The paper by Henrik Bergqvist is the only contribution to the volume that discusses a well-described language. Bergqvist focuses on the Swedish modal particles *ju* and *väl*, which he analyses as markers of engagement (Evans et al. 2018, Evans et al. 2018b). His contribution draws attention to descriptive and analytical issues that researchers face when attempting to define a linguistic category and describing the linguistic expressions of that new category. Bergqvist's contribution, focussing on the conclusions that can be drawn from the distribution and frequency of epistemic markers in the corpus, is also the only one in the volume to address methodological concerns in a situation where a researcher already has a corpus at their disposal. As such, it can be seen as complementary to the contributions discussing the different approaches to designing corpora for epistemic research and the methods of data collection.

Acknowledgements: We wish to express our thanks to the participants of the workshop *Knowing in Interaction* which took place during the 52nd annual

Conference of *Societas Linguistica Europaea* in Leipzig, Germany in August 2019. We also wish to thank Östen Dahl and the contributors to the Special Issue for their thoughtful comments on the earlier versions of this paper. Henrik Bergqvist and Eva Schultze-Berndt wish to acknowledge the support of the Swedish Research Council (project dnr. 2017-01969) and *Marcus and Amalia Wallenbergs Minnesfond* (MAW 2017.0081). Karolina Grzech would like to acknowledge the support of the Endangered Languages Documentation Programme (IGS0166).

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