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Evidentiality, Questions and the Reflection Principle in Tibetan: What do Children Learn when they Learn About Evidentiality?

Jill de Villiers

Jay L Garfield

1. Introduction

Evidential markings are generally taken to encode the type of evidence the speaker has for her statement. About a quarter of the world's languages mark evidentiality grammatically. (Aikhenvald 2004) Evidentiality has attracted attention in developmental psycholinguistics because its developmental track has the potential to reveal when children can attend to the sources of belief in others. This is because the mastery of evidentiality seems to require understanding how someone else knows what he knows and therefore taking the epistemic perspective of others. This capacity in turn seems to require understanding others' states of mind.

Ayhan Aksu-Koç (Aksu, 1978; Aksu-Koç 1988) pioneered the study of children's acquisition of evidentials. She studied the development of the markers in Turkish that differentiate direct and indirect knowledge, and how these interact with tense. Her insight that this development might connect in important ways to the child's developing Theory of Mind interested the child development research community in evidentials. She recognized that analyzing spontaneous discourse is only one method for finding out what children know.

Subsequent researchers owe her a great debt of gratitude.

The acquisition of mental state verbs has been tightly linked to the cognitive developments that support the acquisition of theory of mind in the preschool years (Shatz, Wellman & Silber, 1983; Bartsch & Wellman, 1997; Astington & Baird, 2005; de Villiers & de Villiers, 2000; Milligan, Astington and Dack, 2007). The acquisition of evidentials promises to be revealing for the same reasons: if these morphemes encode information about abstract mental states, then children must have complex theory of mind skills in order to understand and to use these morphemes correctly.

The development of the ability to appreciate another's point of view or beliefs is complex. Infant studies using eye gaze, differential looking and offers of assistance suggest that very young children are differentially affected by whether a person they are watching acts in a way appropriate to that person's previous experience or not; but children seem not to respond correctly to questions about false beliefs until around age 4. This raises questions regarding whether infants are sensitive to beliefs, to intentions, or to something even more basic, and whether eye gaze and other such implicit measures recruit the same processes recruited in verbal report and other explicit responses (Southgate, Senju & Csibra, 2007, Perner & Ruffman, 2005; Baillargeon, Scott & He, 2010; Low & Perner, 2012, Low & Watts, 2013; Fenici, 2013, 2014).

There is an array of devices in language the understanding of which requires attention to someone else's point of view. Articles, pronouns, tense adjectives, adverbs and deictic locatives all shift in denotation depending on the

speaker, and children must learn the use of these terms from observing how they are used by someone whose perspective they do not share (see de Villiers, in preparation). Children appear to master the spontaneous use of these deictic forms by age 4. It is therefore plausible that children's facility with implicit perspective taking--demonstrated in infancy through eyegaze, and through the gradual mastery of deixis—is in place well before the capacities measured by the standard false belief tasks in Theory of Mind research.

Evidentials may be acquired in the same way that spatial deictic terms are acquired across languages (see discussion in de Villiers & Garfield, 2009). Evidentiality is harder than deixis because it is not simple position in space that governs the perspective shift, but the appropriate alignment of event situations, time, and information access. Evidentials are always egophoric: an evidential encodes the evidence the *speaker* has for her statement.¹ Nonetheless, to acquire the meanings of evidentials from the speech around her, the child must figure out not only the point of view of the speaker, but also how other people got their knowledge, and must map that information onto the morphemes. Thus, acquisition of the evidential system seems to occupy a special place in the inventory of perspectival semantics, more complex than spatial deixis, but perhaps less demanding than the understanding the contents of another's false belief.

¹ But see Schenner (2010) for an interesting discussion of shifts in egophoricity in embedded context and in questions. We return to questions below.

How can evidentiality be learned? One possibility would be negative feedback from caregivers if the child misused an evidential. Yet evidentials present a classic problem of negative evidence in language learning: since the morphemes cannot themselves be denied (see Section 4), caregivers cannot directly correct children's evidential use. Second, caregivers do not in general correct young children's grammar (Marcus, 1993). Even if they did, if caregivers were to correct and produce their own evidential as a better example, that would not be a satisfactory model for the child as their two epistemic situations might not be identical: the child may see something that the adult has not seen. Imagine the perilous discourse of pronoun correction:

Child: "Pick you up!"

Mom: "No, pick YOU up" or "No, pick ME up"

On the other hand, it might be that the correct use of terms requiring perspective shift requires less of children than many have supposed; discourse may be sufficiently constrained that enough perspectives are shared between, say, mother and toddler, that full competence even with deictics is more apparent than real. The study of evidentials in both ordinary discourse and controlled experimental situations may shed light on this issue (see Uzundag, Tasci, Kuntäy & Aksu-Koç, 2015). Indeed as we will show below, Tibetan mothers often come to the rescue of young children by explicitly distinguishing the felicity conditions of the evidentials in conversation. Structured discourse may both make it difficult for children to make mistakes,

and give them clues about how to use the evidentials felicitously even before mastering the meaning of the evidential system.

Examining the semantics of evidentials and tracking the development of children's understanding of and competence in using evidentials also allows us to explore the boundary between pragmatics and semantics, a boundary. Evidentials seem to straddle. On the one hand, they are grammatical features and, like tense or modal operators, contribute to the meanings of the sentences in which they occur. On the other hand, they do not seem to contribute to the *truth conditions* of those sentences; instead they seem to contribute to *felicity conditions*, which fall on the pragmatic side of this boundary. This is no accident, and the answers to the developmental and semantic questions are intertwined. A situation semantics for evidentials will explain why, even though they are illocutionary operators, their force can be represented in a formal semantics that connects them directly to meanings. The semantics will also partially explain their otherwise puzzling developmental pathway.

2. Overview of the Tibetan Evidential System

Tibetan has a rich evidential system, representing a set of distinctions involving all of the known evidential types except hearsay, with two distinct types of inferential evidential. (Garrett, 2001) In Tibetan the main verb of most sentences is a form of the copula or a verb of existence. Tibetan evidentials are distinctive forms of the copula or the verb of existence; therefore evidentiality is a feature of virtually every Tibetan assertion or question. Tibetan represents

ego evidentials, direct perception evidentials, evidentials that mark inference from specific evidence, and evidentials that mark inference from general knowledge as well as non-inferential general knowledge evidentials.

Ego evidentials are marked with the verbs *yin* or *yod*.²

(1) *yin*: ego copula

Nga skyid po yin

I happy am (ego).

“I am happy”

(2) *yod*: ego possessive.

Nga la khyi zhig yod.

I LOC dog DET is (ego)

“I have a dog”.

These encode the fact that I know the truth of the sentence I am asserting just in virtue of *being me*. It is first person knowledge neither drawn from any particular perceptual evidence nor by inference.

Direct evidentials are marked by *‘dug*, *song* and *shag*.³

(3) *‘dug*: direct witnessed state.

Khong tshos ja btungs gyi ‘dug.

They tea drink (INSTR) IMP are (DIR).

“They are drinking tea.”

² All Tibetan spellings are rendered in the standard Wylie transcription system.

³ The specific grammatical and semantic distinctions between the various Tibetan evidential morphemes are explored in detail in Kalsang, Speas, Garfield & de Villiers, (2013).

(4) *song*: direct witnessed past action.

Khong tsho Lha sar phebs song.

They Lhasa (LOC) go (DIR PAST).

“They went to Lhasa.”

(5) *shag*: direct resultative

Bum pa bchag shag.

Vase broke (DIR resultative)

“The vase broke.”

Each of these encodes the fact that I know the truth of the sentence because I witnessed the state or event being reported. To use these felicitously I must be seeing the tea-drinking in (3), have seen their departure for Lhasa or their arrival there in (4), or have seen the pieces of the shattered vase in (5).

Tibetan distinguishes two kinds of indirect or inferential evidentials, which we call *specific inference* and *general inference* evidentials. Specific inference is marked by *yod sa red* or *yin sa red*:

(6) *yod sa red* (specific inference)

bKra shis las kung nang la yod sa red.

Tashi office in is (SPEC).

“Tashi is in his office”

This utterance would be felicitous if, and only if, I have some specific piece of evidence that indicates Tashi’s presence, such as his umbrella in the hall and the light on in the office.

General inference is marked by *yod kyī red*:

(7) *yod kyi red* (general inference)

bKra shis las kung nang la yod kyi red.

Tashi office in is (GEN).

“Tashi is in his office”

This sentence would be felicitous in a case where I neither can see Tashi in his office nor have specific evidence that he is there, but can deduce that he is there from more general knowledge. I might utter this when I know that it is his office hour, or when all staff are in their offices.

Finally, Tibetan allows a general knowledge (sometimes called neutral) evidential. This is marked by *red* (copula) or *yod red* (existence):

(8) Neutral

yod red.

Bod la gyag mang po yod red.

Tibet (LOC) yak many are (NEUTRAL)

“There are many yaks in Tibet”.

(9) Neutral

red.

gYag nag po red.

yak black are (NEUTRAL)

“Yaks are black”.

These sentences are felicitous because they report general knowledge, for which no specific evidence is cited.

3. Evidentiality and Acquisition Challenges

Studies of the acquisition of evidentials across languages reveal four noteworthy phenomena. First, evidentials appear in spontaneous speech around age 2 years (Aksu, 1978), Korean (Choi, 1991; 1995) and Tibetan (de Villiers, Garfield, Gernet-Girard, Roeper & Speas, 2009). Second, when production is elicited in controlled conditions, children do not demonstrate control until 4 years of later, and show earlier control of direct evidentials than of indirect evidentials (Aksu-Koç, 1988; Ozturk & Papafragou, 2007, de Villiers et al 2009). Third, comprehension of the meaning of evidentials in controlled circumstances is not reliable until after age 4 (see also Aksu-Koç and Alici (2000), Ozturk and Papafragou 2007; Papafragou, Li, Choi and Han, (2007) with Korean; Kyuchukov & de Villiers (2009) with Bulgarian and Romani). Fourth, children seem to understand that if one has directly seen something one has knowledge about it (the information conveyed by direct evidentials) at around the same age across languages, *viz.*, about age four years. This conceptual understanding arises later than the correct use of direct evidentials in ordinary speech.

One might argue that the unnatural controlled experimental task does not reflect the demands of ordinary conversation. The oddness of the task, and not a failure to master evidentials, one might contend, may be responsible for errors; hence, children might know the meanings of the evidentials at an earlier age than that suggested by experimental data, but their competence might be masked by the sophisticated task demands of the experiments. We address this possible objection in our own experimental work reported below.

Our samples of conversation between Tibetan mothers and their young children reveal how easy it would be to claim full competence for the child speaker with evidential markings even in the absence of genuine mastery. The frequencies of evidential use are massively weighted towards the ego and direct evidentials, with inferential forms being very rare from the mothers. In the development of direct evidentials, the demonstrative *'dug ga* is used almost always with a demonstrative gesture to elicit shared attention on a focal object (like the English *look!*). This draws a child's attention over time not only to the object of shared attention, but to the fact that *'dug* is being used to reflect the fact that something can be seen by the speaker. This demonstrative construction probably plays a crucial role in scaffolding the direct evidential meaning.

The harder distinction is that between *yod sa red* and *yod kyi red*, the *indirect evidentials*. But the fact that *'dug* is established helps here, too. Whenever *yod sa red* is felicitous, there is always some *other* state of affairs — the relevant evidence — for which a *'dug* statement is felicitous. If we consider the spontaneous dialogues between Tibetan mothers and their children (see Table 1 for illustrations), we can see that the mother uses a specific inferential evidential for a broad claim, and backs it up with a statement marked by the direct evidential about visible signs justifying the inference. Hearing conjunctions of claims like these provides good information for the child about the warrants for inference. These pedagogical dialogues reveal the adult's

sensitivity to clarifying the reasoning for the child, and in the process reveal the particular felicity conditions for specific indirect evidentials versus direct evidentials.

Table 1 Examples of Tibetan mother's use of indirect (inferential) evidentials in natural samples

Example 1:

kyod rang gyi cho cho coolie rgyugs ga phyin *yod sa red* gzugs po la nag po god '*dug* you <genitive> brother labourer became is (*specific inference evidential*) body <locative> black dirt is (*direct evidential*)

'Your brother looks like a laborer; he has black dirt on his body'.

Example 2:

phun tsok yang so rus '*dug* co yang so rus '*dug* Youngling slob gra la cong tso

mngar mo kyang kyang bza' sdad kyi *yod sa red*

Phuntsok <possessive> tooth rotten is (*direct evidential*) he <possessive> tooth rotten is (*direct evidential*). Youngling school <locative> kid <plural> sweet over and over eat <present continuous> is (*specific inference evidential*) 'Phuntsok's teeth are rotten and his teeth are also rotten. Youngling school kids are always eating sweets'.

We have argued (de Villiers et al. 2009) that the understanding of evidentials is established through a series of contrasts, just as phonological distinctions are mastered. The child represents increasingly subtle and abstract distinctions between epistemic situations. The earliest evidentials to be mastered (both productively and expressively) are the ego and direct evidentials in virtue of their frequency in mother-child speech and the concreteness of their meanings, and the distinction between these evidentials emerges first (in the

fourth and fifth years). The distinction between direct and indirect evidentials appears next (at about age 6), but involves a conflation of the two indirect evidentials. The more difficult distinction between the two kinds of indirect evidentials does not emerge until approximately 9-10 years of age. We will show that this developmental track reflects the relative complexity of the meanings of the different kinds of evidentials.

4. The Semantics of Evidentials

There are many ways to say that there is a mouse over there in Tibetan: A speaker who says *rtsi rtsi pha gir 'dug* is asserting that there is a mouse over there, and indicating by the use of *'dug* that she saw it. Or she could say *rtsi rtsi pha gir yod sa red* when she directly sees mouse footprints in the dust, but not the mouse itself. On the other hand, by uttering *rtsi rtsi pha gir yod kyi red*, she indicates that she knows the presence of the mouse by inference of a more general sort, e.g. the mouse is there at this time every day. Finally, she could say this expressing general knowledge by saying *rtsi rtsi mang khrul di la yod red*. The truth-conditions of these statements are the same, but their implicatures are very different. Evidentials, as we have pointed out, encode pragmatic or illocutionary information; they do not contribute to truth-conditions (unlike epistemic modals or propositional attitude verbs).

Tibetan evidentials are also grammatically unlike propositional attitude verbs in that they do not assign case, and are unlike epistemic modals in that they are felicitous (indeed mandatory) in conditions of known truth or falsehood and do not weaken assertoric force. Finally, evidential force cannot be denied.

To deny a sentence asserted with evidential force is to deny its asserted content, not to deny the felicity of the evidential.⁴ These three properties of evidentials locate them semantically squarely among illocutionary operators, operators that have felicity-conditions, but not truth-conditions, that contribute implicature and force to an assertion, but do not directly assert content. They are hence *pragmatic* operators. Nonetheless, evidentials are highly restricted in meaning. As Speas (2010) has argued, the kinds of evidentiality encoded across the world's languages is tightly constrained, and those constraints appear to be systematic, determining a set comprising only direct, inferential, hearsay and ego meanings. Evidentials are hence, unlike most other pragmatic operators, syntactically mandatory and semantically regimented.

The fact that learning the meanings of evidentials appears to be both part of ordinary first language acquisition and the learning of a complex set of pragmatic rules accounts for some of the puzzles surrounding their acquisition track. If mastery requires significant pragmatic expertise, one might well imagine that their acquisition would be slow. Moreover, as we argued above, the illusion of expressive competence can be explained by the fact that the felicity conditions for ego and direct evidentials are often shared by participants in a simple discourse, of the kind in which children often participate. But, is part of the difficulty in learning the evidential system due to the necessity to master

⁴ When a statement governed by an evidential is denied the denial must be read as a denial of the truth of the content of the assertion. When a statement governed by an epistemic modal or a propositional attitude verb is denied, on the other hand, one can deny the modal force of the fact that the relevant attitude obtains.

Theory of Mind in order to understand them? It is to this question that we will turn shortly. First however, it is useful to explore the semantics of evidentials.

Kalsang et al. (*op. cit.*), following Speas (2010) present a situation semantics (see Barwise and Perry 1983) for evidentials (See also Schenner 2010). This semantic framework explains the restricted set of permissible evidentials and demonstrates their systematic relation to one another. They show that the relative complexity of the Tibetan evidential system consists simply in its representing more of the permissible relations between situations that evidentials can encode than do many other languages. Kalsang et al. show that evidentials encode inclusion and accessibility relations between situations, not a primitive category of evidence. That is, while it appears that the phenomenon of evidentiality entails that *kinds of evidence* are semantic primitives, this is not the case.⁵

As Barwise and Perry and those who have followed them suggest, discourse itself forces an account of meaning in which situations are essential elements of a semantics. Three types of situations emerge as central to discourse semantics: the discourse situation in which the speaker and hearer find themselves; the evaluation situation; and the information situation. The first two are familiar from earlier situation semantic models and fall out naturally from the demands of evaluation. We need to distinguish the situation in which an utterance occurs from that which determines its truth or falsity. Evidentiality

⁵ Indeed, it would be surprising if it were. If such epistemological properties could be semantic primitives, what kind of property could not? And given the enormous range of types of evidence one could have for a proposition, why, if evidence type is a primitive, would the range of evidentials be so restricted in the world's languages?

calls our attention to the information situation, the situation from which evidence is drawn on the basis of which a sentence is evaluated. The set of possible relations between these situations determines the class of evidentials represented in natural languages. (For the details see Kalsang *et al.*, 2013)

The two relations between situations that determine the meaning of evidentials are inclusion and accessibility. A situation *S* includes a situation *S'* iff *S'* is a part of *S*. So, for instance, a situation in which you and I are talking includes a situation in which I am talking. So inclusion is analogous to the familiar subset relation. When we assert—or implicate—that *S* includes *S'* we are conveying the view that *S'* is a part of *S*. If I say something that encodes that information, and you believe me, you come to believe that *S* includes *S'*.⁶

The structures that determine the meanings of evidentials are important as they set the learning task for the child acquiring competence in an evidential language. Instead of basic facts about epistemology, the child needs to learn about inclusion and accessibility relations between situations. So, while it might appear that the evidential system requires the child to understand the contents of others' minds, it does not. With this apparatus in hand, we can explain the

⁶ Inclusion is different from accessibility. A situation *S* is accessible from another *S'* iff *S'* includes the information available in *S*. *S'* need not include *S* itself, but only the information present in *S*. Consider the situation in which you and I are talking and my diary is open to a page that tells me that I have a doctor's appointment tomorrow afternoon. Now consider the situation tomorrow afternoon when I am at the doctor's office. The present situation does not contain the future situation, but it contains information about it. So, tomorrow's situation is accessible from today's, even though not included in it. Note that neither the inclusion nor the accessibility relation requires reference to any inner mental or epistemic states: one could understand these relations (implicitly or explicitly) even if one had not mastered theory of mind.

difference between direct, indirect and ego evidentials in Tibetan. A direct evidential encodes the fact that the information situation includes the evaluation situation and is accessible from the discourse situation. That is, when I say

(10) Nga'i skyi sha za gi **'dug.**

My dog meat eat gen is (direct)

"My dog is eating meat."

I convey the following information: (a) The evaluation situation—that is, the situation that makes my sentence true (if it is true), the one in which Skye is eating beef—is a part of the situation in which I gain the information that he is doing so—the one in which I see him eating it; and (b) the information that he is eating meat is present in the situation in which we are talking, even if he and the meat are not.

An indirect evidential, on the other hand, encodes the information that the information situation is accessible from the evaluation situation, and that the information situation includes the discourse situation. That is, when I say

(11) Nga'i skyi sha za **yin sa 'red.**

My dog meat eat. is (indirect/specific)

"My dog is eating meat."

When I assert (11) I convey the following information (beyond asserting that my dog is eating meat): (a) In the evaluation situation—the situation in which Skye is eating beef—we find the information on the basis of which I make the claim (say, the sound of his chomping), and so the information situation is accessible from the evaluation situation; (b) the discourse situation is a part of the information situation. That is, the situation in which we are now talking is part

of the larger situation in which I have the information (the sound of the chomping) on the basis of which I assert that my dog is eating meat.

Finally, an ego evidential, encodes the assertion that the information situation includes both the evaluation and the discourse situations. So, when I say:

(12) Ngas mogs mogs mang po za song.

I (inst) momos many eat past (ego)

“I ate many momos.”

I convey the following information: (a) the situation on the basis of which I say that I stuffed myself with momos (my happy, sated state with the memory of momos) includes the situation that makes this true—that is, the present state is part of a broader temporal period an early stage of which had me gorging on momos; (b) that broader situation includes the situation in which we are now talking. It is bigger than both of them. After all, it is the situation in which I ate momos in the past and now remember them as I speak to you. (This is a very quick tour through the situation semantics of evidentials. For details, see Kalsang *et al.*)

The general knowledge evidential *red* encodes the fact that the discourse situation is as broad as can be: it includes both the evaluation and the information situation. So, when I assert:

(13) Bod la gyag mang po yod red.

Tibet (loc) yak many copula (neutral)

“There are many yaks in Tibet.”

I convey the information that in the situation in which we are now talking, it is simply true that there are lots of yaks there, and that we have this information. That is what common knowledge claims are like: we claim that we are in the situation where the claim is true and that anyone can come to know it.

So much for assertion. The important point here is that when we understand the structure of the meanings of evidentials, we see that there is no reason to expect that a child must master Theory of Mind in order competently to make or to understand assertions that carry evidential force. Nothing in their meaning makes reference to internal states or states of knowledge of particular persons. Instead, evidentials encode relations between discourse, evidence and evaluation situations. The difficulties facing the child are not those involved in learning about internal mental states.⁷ Moreover, the complexity of these distinctions can explain the specific developmental arc of evidential acquisition in Tibetan. But, as we shall now see, the grammar of questions in Tibetan adds a wrinkle.

5. The Reflection Principle for Questions

When asking a question in Tibetan, one uses the evidential that one expects the interlocutor to use in his reply, that is, the evidential one presumes to be felicitous for the interlocutor. Suppose I ask you:

⁷ This is not, of course, to say that competent users of evidentials are reflectively aware of the details of their semantics. Of course they are not. But that is not surprising. Most competent speakers of any language are incapable of providing a compelling formal semantics of their native language. But once we appreciate what evidentials mean, we see that there is no need in order to master them to have any knowledge—implicit or explicit—about the mental states of others.

(14) *bSod nams khong gi las kung nang la 'dug gas?*

Sonam he GEN office in is (DIR) QUEST

"Is Sonam in his office?"

The fact that I use *'dug* in my question reflects my anticipation of the felicity of *'dug* in your answer, even though I could not report Sonam's absence or presence using a direct evidential. Or, when I ask how you are doing today, as in

(15) *Khed rang bde po yin pas?*

You comfortable copula (ego) question

"Are you well?"

I anticipate that you will reply with the ego evidential *yin*, one I could never use when reporting how you feel.

We have argued that the child may control evidentiality with no real awareness of or attention to the mental states of others. Instead, they learn to identify the sets of situations and their relations that call for different evidentials. Do questions change this picture? In asking questions in Tibetan, one must suspend one's own perspective on situations and attend to the evidential one supposes felicitous for the interlocutor. This therefore requires more than what is necessary to learn to use the evidential in assertion. For that reason, asking questions in Tibetan seems more likely to require the kind of competencies in Theory of Mind that children achieve by four or five years. Therefore, even though mastering the situation semantics of some evidentials even for ordinary use is a protracted process, we expected that mastering appropriate use of questions might take even longer.

To address this question, we designed a game involving ordinary discourse, using puppets to simulate real life demands. The protocol is just a game of discourse with puppets, so it should come closer to ordinary linguistic demands. The events were acted out with puppets and boxes that represented locations such as a bus, a shop, a kitchen and so on. These props showed whether the puppets who were talking were in different positions with respect to access to crucial information about the events in the story. For example, in one story - see excerpt in Table 2 - one puppet is outside the cafe and does not have access to visual information about the event happening in the cafe. A second puppet did get to see what happened in the cafe. In that way we contrasted a character who was a direct witness, with someone who had to rely on inference. In other stories we had characters who reported on their own tastes (e.g. for tea) using ego-evidentials.

Table 2

I'd like you to meet my two puppet friends. This one is Tashi-la. He owns a shop that sells thangkas and works very hard. This one is named Dolma. She is Tashi's friend and she goes to school.

Tashi has been working all day in his thangka shop and now he is very tired and hungry so he has gone into a restaurant to get some momos and butter tea. He is now inside the restaurant. Dolma is walking home from school and has stopped outside the restaurant to talk to some friends. Two tourists walk by Dolma on their way into the restaurant and she overhears them say that they are really

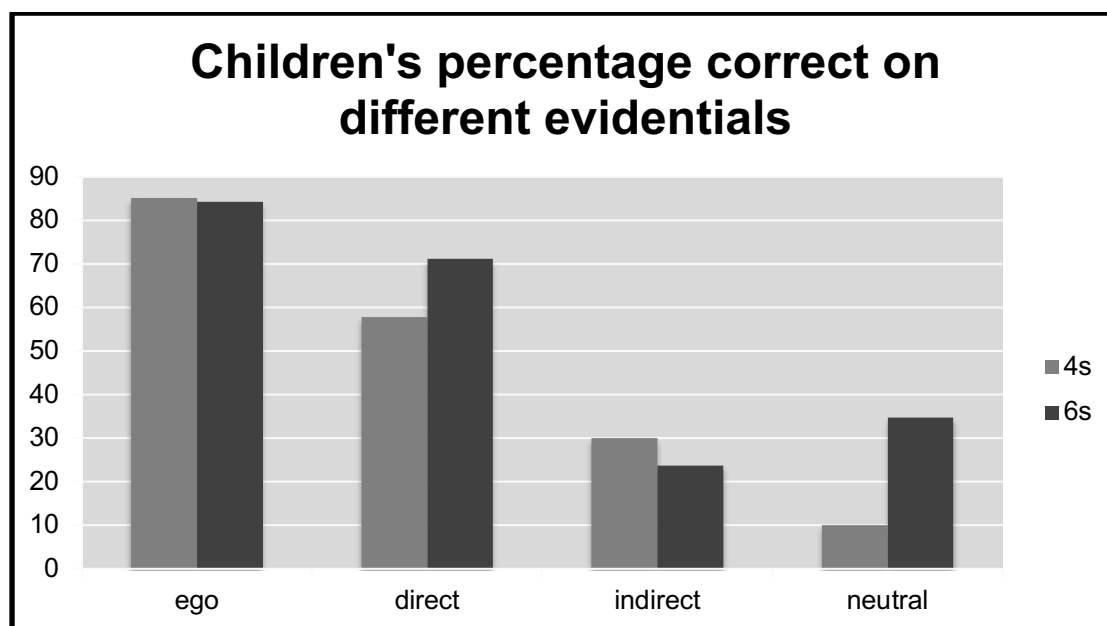
thirsty and need some lassi. The tourists go into the restaurant and sit right next to Tashi. They order big glasses of lassi.

1. Ask Dolma what the tourists are drinking.
2. Now ask Tashi what the tourists are drinking.

We asked several questions. First, we wanted to adjudicate between two possibilities: (1) since this testing procedure mimics ordinary discourse, it might show that indirect evidentials are easier to understand, or acquired earlier than was apparent from our more metalinguistic tasks; or (2), it might be that children's productive mastery of appropriate evidentials might in fact be later, and more consistent with comprehension than was earlier apparent. Most importantly, we wondered whether, if the perspective taking demands are in fact higher for evidential use in questions, competence with all evidentials might be more difficult in this protocol, despite its being more naturalistic.

We tested 11 native Tibetan speaking children between the ages of 4 and 8 years, in Tibetan speaking communities in India. All were tested by a native Tibetan speaking research assistant who also had conducted other studies for us and was very well practiced in working with children. Each child was tested using the two protocols in Figure 1. All together the protocols called for a total of 10 use in questions, of 10 ego evidentials, 9 direct, 7 indirect, and 4 neutral evidentials. All responses were transcribed carefully by native speakers and coded for whether the child asked the question of the protagonist using the right evidential type.

Figure 1



A repeated-measures ANOVA comparing the percentage correct across the four types of evidential confirms that these are significantly different ($F=27.5$, [df 3,10] $p<.001$). Furthermore, across the children they are consistently ranked in the difficulty ordering: ego>direct>indirect>neutral (Kendall's W , $p<.001$).

Ego-evidentials were used correctly most often, as they are in ordinary speech. Direct evidentials were the next easiest, but they do seem more difficult in questions than in production, only reaching 70% for the older group of children. Indirect evidentials were quite difficult in this age range as expected, with very low use, and directs were used inappropriately instead. Neutrals were rare and were also most often replaced by direct evidentials.

Though this was a small study, these data are at least consistent with the claim that the reflection principle in questions places demands on the speaker beyond the requirements of ordinary egophoric use. Hence these forms may

indeed have Theory of Mind skills as prerequisite, but a good deal more investigation is necessary to confirm this.

6. Conclusion

Mastery of the evidential system is staged. Ego and direct evidentials are mastered relatively early. This is similar to the acquisition pattern of deictic terms. Spontaneous speech is heavily loaded towards these evidentials, and enough circumstances are shared between conversation partners that performance can look errorless even when comprehension is not fully in place. Indirect evidentials, however, which require an additional understanding of inference, are only acquired later. Understanding the entire evidential system thus entails more than simply syntactic and semantic development; an understanding of inference is essential as well. This is reflected by the fact that mothers using indirect evidentials in conversation with their children clarify their conditions of use by pairing them with statements with direct evidentials regarding the evidence that justifies the inference. Though the process of evidential acquisition is protracted, we do not see any need to invoke Theory of Mind skills - even implicitly represented- in the development of the production or comprehension of evidentials in assertion.

The reflection principle involved in Tibetan questions may be another matter. Anticipating others' epistemic states in order to ask questions is more difficult. The degree of difficulty of using evidentials in this context mirrors their order of difficulty in production and comprehension in assertion. This in turn, reflects their frequency in maternal conversation. But there appears to be an

additional lag in using the right forms in questions. This may be a sign that the reflection principle does require some representation of the other's epistemic state, necessary to resist the evidential appropriate for the self and to compute the right form for the listener to use in reply.

If this is correct, the late and complex acquisition of the ordinary use of evidentials in assertions reflect the need to understand a complicated situation semantics, not the need for ToM. On the other hand, mastery of evidentials in questions in Tibetan does require attention to and representation of others' epistemic states.

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