Semantic Complexity of Evidentials: Some Typological Parameters*

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ABSTRACT.

Semantic analyses of evidentials across languages typically consider only unembedded occurrences and focus on describing the type(s) of source a given evidential marker can express. This paper aims to show that evidentials may additionally differ with respect to at least four semantic parameters that did not receive much attention in the typological literature so far: truth-conditionality, embeddability, shiftability and evidential concord.

1 Introduction

Evidentials are linguistic markers that indicate the type of the speaker's source of information, e.g. whether the speaker witnessed the described event himself (direct evidence), inferred it from other information (inferred evidence) or only heard about it from someone else (reportative evidence). Languages differ in the number and kinds of evidence types they distinguish grammatically, but these three types are the typologically most common ones (for comprehensive overviews cf. Willet (1988) and Aikhenvald (2004)). In some languages evidential marking is obligatory. For example, in Tariana, an Arawak language in northwest Amazonia, one out of an inventory of five evidential suffixes has to be attached to the main verb of every matrix clause (Aikhenvald 2004). In contrast, most European languages like English or German do not possess a fully grammaticalized system for expressing evidential distinctions. However, the possibility for the speaker to express his source of information is most probably a universal feature of human languages. For example, in German, there are both lexical and grammaticalized means of expressing evidential meanings. Among the lexical strategies are complement-taking predicates (e.g. *sehen* 'see', *sagen* 'say', *hören* 'hear') and adverbials (e.g. *angeblich* 'allegedly', *laut*, *so*, *zufolge* 'according to'). Among the grammatical strategies for expressing reportative meanings are mood (reportative subjunctive) and

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certain modals (*sollen* 'should' and *wollen* 'want'), as illustrated in (1).[1] In the following sections, reportative *sollen* will be repeatedly used to illustrate certain semantic properties of evidentials.

(1) a. Anna *soll* in Berlin gewesen sein
Anna should in Berlin been be
'It is said that Anna was in Berlin'

b. Anna *will* in Berlin gewesen sein
Anna wants in Berlin been be
'Anna claims that she was in Berlin'

Most descriptive grammars concentrate on describing the type(s) of source a given evidential marker can express. While this is an important first step towards a semantic analysis of evidential markers, it is by no means sufficient. In the following sections, four parameters will be presented that are crucial for any semantic analysis of evidentials, but they only come into view if we consider occurrences of evidentials in complex sentences. The semantic parameters to be discussed are the following: truth-conditionality in section 2, embeddability in section 3, shiftability in section 4 and evidential concord in section 5. Each section begins with a general characterization of the parameter and, if necessary, mentions criteria or tests for identifying its value for a given evidential marker. Unfortunately, it is not possible to then exemplify the possible values of the parameter by means of a comprehensive list of evidentials from various languages – simply because typological research did not focus on these issues so far. Hence I will resort to collecting the little that is known to date and finally determine the value of the parameter for German reportative *sollen* as a showcase.[2]

2 Truth-conditionality

In the descriptive typological literature, it is usually suggested that evidentials do not contribute to the proposition expressed, but only add the indication of the speaker's type of source as a non-truth-conditional meaning component. Sometimes non-truth-conditionality is even taken to be an analytic property of evidentials.[3] However, if we don't build in non-truth-conditionality in our definition of evidentials, the following empirical question arises:

[1] Both *sollen* and *wollen* can be used as reportative markers. The main difference between them is that *sollen* receives a subject-external interpretation (the source of the report is external to the sentential subject), while *wollen* receives a subject-internal interpretation (the source of the report is the sentential subject itself). This difference in subject-orientation is not specific to the evidential use of these modals, but also found in their circumstantial use.

[2] I will not attempt a formal semantic analysis of reportative *sollen* here. For an analysis within presuppositional discourse representation theory cf. Schenner (2008).

[3] For example in the following condition that is part of the influential explication of Anderson (1986, 274): "Evidentials are not themselves the main predication of the clause, but are rather a specification added to a factual claim about something else."

(2) *Given an evidentiality marker* EV *in a language* L*, is* EV *truth-conditional?*

This question cannot be directly answered by simply looking at various occurrences of a certain marker – we need a criterion for truth-conditionality. In the past, various tests for truth-conditionality have been proposed, among them embeddability in the antecedent of conditionals and under factive verbs, challengeability and scope interaction with propositional-level operators like negation (cf. e.g. Faller (2002)). None of these tests is without controversy, but embeddability in the antecedent of conditionals is often taken to be the most reliable.

Not too many evidential markers of the world's languages have been systematically tested for truth-conditionality, but the data available to date suggest that cross-linguistically, evidentials do not form a homogeneous class with respect to this parameter. On the one hand we find truth-conditional evidentials (e.g. in Bulgarian or Japanese), for which *semantic* accounts have been developed that typically treat evidentials as epistemic modals with an additional evidential presupposition (cf. e.g. Izvorski (1997), McCready and Ogata (2007), Matthewson, Davis, and Rullmann (2007)). On the other hand we find non-truth-conditional evidentials (e.g. in Cusco Quechua), for which *pragmatic* accounts have been developed that treat evidentials as illocutionary force modifiers (cf. e.g. Faller (2002)).

Let's have a look at our test case, German reportative *sollen*. It turns out that this element has both truth-conditional and non-truth-conditional uses. In its truth-conditional use it contributes to the proposition expressed and can be paraphrased as 'it is said that', as illustrated in (3a). In its non-truth-conditional use it does not contribute to the proposition expressed and can best be paraphrased by the parenthetical 'as it is alleged', as illustrated in (3b).

(3) a. Wenn es morgen regnen *soll*, müssen wir die Fahrräder abdecken
If it tomorrow rain should must we the bicycles cover
'If *it is said that* it is going to rain tomorrow, we have to cover the bicycles'

b. Die Dame müsste mindestens um zehn Jahre älter sein als
The woman must.SUBJ2 at least PREP ten years older be than
sie tatsächlich ist, wenn sie zu dem Bilde Modell gestanden haben
she actually is if she to the picture model stood have
soll
should
'The woman would have to be at least ten years older than she actually is, if she had acted as a model for this painting (*as it is alleged*)'
(Source: Vossische Zeitung, Morgen-Ausgabe 03.03.1903, S. 5-6)

This suggests that truth-conditionality is not simply a binary parameter that is set to either + or − in the lexical entry of every evidential. We have to allow for the possibility that a given evidential marker has both truth-conditional and non-truth-

conditional uses. (For an attempt to derive both uses of reportative *sollen* from a single lexical entry cf. Schenner (2008).)

3 Embeddability

The assumption, prevailing in the descriptive typological literature, that evidentials do not contribute to the proposition expressed, similar to epistemic modals or illocutionary force indicators, suggests that evidentials can only occur in root clauses. And indeed, for many languages it has been claimed that evidentials can not be embedded at all, e.g. by Aikhenvald (2004, 8.1.3) for Abkhaz, Eastern Pomo, Turkic languages, Baniwa, Fasu, Quechua and Panare. On the other hand, we do find isolated examples of embedded evidentials in the typological literature, but their status and semantics often remain unclear. We are facing the following general question:

(4) *Given an evidentiality marker* EV *in a language* L*, (under what circumstances) can* EV *occur in subordinate clauses?*

Cross-linguistic comparison is again difficult, because the acceptability of evidentials in subordinate clauses has not been systematically tested for most languages. Descriptive grammars typically keep silent about this question. The dominant assumption seems to be that in most languages evidentials cannot be embedded at all, or only in restricted, typically assertive contexts, e.g. under utterance predicates or certain mental state predicates (like *believe*).

In order to determine whether and under which conditions German reportative *sollen* can be embedded in clausal complements, I conducted a small questionnaire study (20 native speakers of German, 25 test sentences). It turned out that the acceptability of embedded reportative *sollen* clearly depends on the type of the complement-taking predicate and is highest in reportative contexts (e.g. in complements of utterance predicates like *sagen* 'say' or *erzählen* 'tell'). It came as no surprise that embedding under direct perception predicates (e.g. *beobachten* 'watch' or *fühlen* 'feel') is not possible, since their semantics directly contradicts reportative *sollen*. But there are also more subtle effects that require a more involved explanation (e.g. embedding is possible under *wissen* 'know' but not under *überzeugt sein* 'be convinced').

4 Shiftability

Many of the semantic complexities of propositional attitude predicates are related to the fact that there are two possibly distinct perspectives available in their complement clauses: the perspective of the speaker and the perspective of the sentential

subject. Some expressions that seem to be speaker-oriented at first glance (especially if we restrict our attention to occurrences in root clauses), might turn out to be subject-oriented in clausal complements of attitude predicates. In English, indexical 'I' always refers to the speaker of the actual speech act, even in embedded contexts. In Amharic, things are different: if the first person pronoun is embedded under a verb of speech or thought, it can refer to either the speaker of the *actual* speech act, like in English, or to the speaker of the *reported* speech act. In the latter reading, the indexical is called *shifted* (cf. e.g. Schlenker (2003)).

Something quite similar happens with epistemic modals in English. In clausal complements of propositional attitude predicates, they are always shifted (cf. e.g. Stephenson (2005)). For example, in a sentence like *John thinks it must be raining*, it is not the belief worlds of the *speaker* that are claimed to entail that it is raining, but the belief worlds of *John*. We can expect to find parallel cases for embedded evidentials. Hence the following question arises:

(5) *Given an evidentiality marker* EV *in a language* L *that can occur in embedded contexts, (under what circumstances) can or need* EV *be shifted?*

Given that embedded evidentials have hardly been studied at all, as noted in the previous section, it comes as no surprise that very little is known about the shiftability of evidentials in various languages, the only exceptions being Tibetan (Garrett 2001) and Bulgarian (Sauerland and Schenner 2007). In Tibetan, evidentials can be embedded in assertive contexts (e.g. under verbs of speaking and thinking) and then invariably receive a shifted, i.e. subject-oriented interpretation, as illustrated in (6):

(6) a. yang.chen dge.rgan *red*
Yangchen teacher [ind cop]
'Yangchen is a teacher.' (*Speaker's* source: hearsay/inference)
(Garrett 2001, 13, ex.3)

b. bkra.shis kho dge.rgan *red* bsam-gi-'dug
Tashi he teacher [ind cop] think-[dir imp]
'Tashi$_i$ thinks he$_j$ is a teacher.' (*Tashi's* source: hearsay/inference)
(Garrett 2001, 211, ex.7b)

What about German reportative *sollen*? Does it receive a shifted interpretation in embedded contexts? There is no answer to this question, because it presupposes that reportative *sollen* means something like 'person x (speaker/subject) has reportative evidence for the proposition expressed', i.e. that it contains a component that is in principle shiftable: the person who has the reportative evidence. However, the meaning of German reportative *sollen* is not strictly speaker-oriented in the first place, but more rumor-like, translatable as 'it is said that' or 'it is rumored that'. This is demonstrated in example (7).

(7) Ich weiß, dass Albert von den Akten gewusst haben *soll*
I know that Albert of the files known have should
(a) $\neq$ 'I know that *I've heard that* Albert knew of the files'
(b) $=$ 'I know that *it is said that* Albert knew of the files'

If reportative *sollen* were clearly speaker- or subject-oriented, (7) would have to have the reading in (a) (since speaker and subject are identical in this example), but in fact only the rumor reading in (b) is available. The upshot is that not all evidentials are strictly speaker-oriented ('the speaker has evidence of type T') and thus susceptible to shifting; there are also evidentials that indicate the general availability of evidence ('there is evidence of type T').

5 Evidential Concord

It has been observed that two co-occurring modal elements of the same type and quantificational force can give rise to so-called *modal concord*, i.e. a reading where the semantics seems to contain only one modal operator (cf. Geurts and Huitink (2006), Zeijlstra (2007)). Unlike negative concord, modal concord is optional, hence there is both a cumulative and a concord reading available for a sentence like (8) (from Geurts and Huitink (2006)).[4]

(8) You may possibly have read my little monograph about it
(a) concord reading: possible(you have read it)
(b) cumulative reading: possible(possible(you have read it))

The question arises whether a similar effect can be found with evidentials:

(9) *Given one or more evidentiality markers* $\text{EV}_1, \ldots, \text{EV}_n$ *in a language* L*, can two or even more instances of these markers occur in the same clause or sentence? If yes, does a cumulative or a concord interpretation result?*

Languages with grammatical evidentials usually do not allow more than one evidential to occur in the same clause. However, we can test whether an evidential can receive a concord reading in the scope of a suitable complement-taking predicate. For example, Matthewson, Davis, and Rullmann (2007, 44–46) show that reportative *ku7* in St'át'imcets can receive both a concord and a cumulative reading, if it occurs embedded under an utterance predicate.

In order to test German reportative *sollen* for concord readings, we can use another reportative strategy in the same clause. Among alternative reportative strategies in

[4] Another related phenomenon is sequence of tense, where the embedded past tense can but need not be interpreted. All of these phenomena are of grammatical nature, distinct from purely stylistic devices like pleonasm and hendiadys.

German are the reportative subjunctive (i.e. certain uses of Konjunktiv I), reportative parentheticals (*sagt Anna* 'Anna says') and reportative adverbials (*angeblich* 'allegedly', *laut*, *so*, *zufolge* 'according to'). If multiple evidential expressions occur in one clause, as in (10), a concord interpretation is not only possible, but usually more prominent than a cumulative interpretation.

(10) a. Anna *soll* *angeblich* krank sein
Anna should allegedly sick be
Cumulative reading: 'it is said that it is said that Anna is sick'
Concord reading: 'it is said that Anna is sick'

b. Anna *soll* *laut* Bea krank sein
Anna should according.to Bea sick be
Cumulative reading 1: 'it is said that Bea says that Anna is sick'
Cumulative reading 2: 'Bea says that it is said that Anna is sick'
Concord reading: 'Bea says that Anna is sick'

Evidential concord is possible with more than two evidential expressions, as illustrated in (11a) with three reportatives, but there are limitations: there is no full concord reading for (11b) with four reportatives.

(11) a. Anna, $sagt_i$ Bea, $soll_i$ $angeblich_i$ gestern angekommen sein
Anna, says Bea, should allegedly yesterday arrived be
'Bea says, Anna arrived yesterday' (full concord reading)

b. Anna, $sagt_j$ Bea, $soll_i$ $laut_i$ Cynthia $angeblich_i$ gestern angekommen sein
Anna, says Bea, should according.to Cynthia allegedly yesterday arrived be
= 'Bea says: according to Cynthia: Anna arrived yesterday'
≠ 'Bea and Cynthia say: Anna arrived yesterday'

6 Conclusion

The main goal of this paper was to motivate more detailed investigations of the semantics of embedded occurrences of evidentials. Descriptive grammars of languages with evidentiality systems typically focus on describing the type(s) of source a given evidential marker can express and only consider unembedded occurrences. However, as argued in the previous sections, evidentials may differ semantically with respect to at least four parameters that are usually neglected in typological studies: truth-conditionality, embeddability, shiftability and evidential concord. Future research has to focus on two central and interrelated goals: one is to systematically (re-)investigate evidentiality systems across languages with an eye on these four semantic parameters, the other is to develop formal semantic analyses

that are capable of explaining the semantic properties we find and possible correlations between them by more fundamental grammatical principles.

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