The grammaticalization of evidentiality
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1 Evidentiality and information source
Evidentiality is a grammatical category with source of information as its primary meaning — whether the speaker saw the event happen (known as visual evidential), or heard it but didn't see it (nonvisual evidential), or made an inference based on general knowledge or visual traces (assumed evidential and inferential evidential respectively), or was told about it (known as reported, secondhand, or hearsay evidential). Languages may distinguish just firsthand and non-firsthand information, or have a special marker just for reported evidentiality. Non-firsthand evidential as a a separate category typically cover inferential and reported meanings (but is not a subtype of either inferential or reported evidential). In larger evidential systems, firsthand or visual evidential may contrast with non-visual, inferred, assumed and reported.¹

Evidentiality is a verbal category in its own right. It does not bear any straightforward relationship to the expression of speaker's responsibility, or attitude to the statement. Neither is evidentiality a subcategory of modality or a tense.²

The relationship between information source and grammatical evidentiality is comparable to that of time, as a category in the real world, and tense, as grammaticalized location in time. Evidentials as a separate grammatical category are found in about a quarter of the world's languages. As Boas (1938: 133) put it, 'while for us definiteness, number, and time are obligatory aspects, we find in another language […] source of information — whether seen, heard, or inferred — as obligatory aspects'.

In contrast, every language has ways of expressing how one knows things. This may be accomplished with lexical means — verbs referring to reports, claims, or perception, with adverbs, parentheticals, or with prepositional phrases. Speech report constructions indicate that the speaker knows something from someone else.

Alternatively, a non-evidential category may acquire a secondary meaning relating to information source. Conditionals may acquire overtones of uncertain information obtained through a non-firsthand source. This is the case in a number of Romance languages (see Squartini 2008 for a general pan-Romance perspective). In many Iranian languages, forms of past tense and perfect aspect develop overtones of a non-firsthand information source.

Participles and nominalizations may develop connotations of non-firsthand information. Passive participles in Lithuanian have overtones of hearsay or inference (see

¹ A systematic analysis of evidentials across the world is found in Aikhenvald (2006a,b) (see references there). Johanson and Utas (2000) contain case studies of smaller evidential systems. Jacobsen (1986) is a fine summary of work on, and recognition of, this category.

French linguists sometimes employ the term 'mediative' (see Guentchéva 1996).

² See criticism and further discussion in Aikhenvald (2006a), (2008), and also De Haan (1999), Lazard (1999, 2001).
Past participles in Mansi, from the Ob-Ugric branch of Finno-Ugric, have overtones of non-firsthand evidentials (Perrot 1996: 158). For each of these forms, information source is just one of their meaning extensions, a 'side-effect'. Categories and forms which have additional meanings to do with information source are known as 'evidentiality strategies'. Over time, the evidential meaning of an evidentiality strategy may become its primary sense. Evidentiality strategies are a frequent source for developing bona-fide evidential forms.

Grammaticalization of evidentials follows two general paths. Markers of evidentiality may develop out of grammaticalizing a lexical item: a verb, or, less frequently, a noun becomes a grammatical marker of information source within a closed system of choices. Alternatively, an evidential may evolve out of an evidentiality strategy, acquiring the status of a grammatical system in its own right.

2 From a lexical item to a grammatical evidential
Evidentials may come from grammaticalized verbs (§2.1), locative and deictic markers (§2.2) or members of other word classes (§2.3).

2.1 From a verb to an evidential
Different evidential specifications come from (A) verbs of speech, (B) verbs of perception, and, less frequently, (C) verbs of other semantic groups.

(A) VERBS OF SPEECH are a frequent source for markers of reported and of quotative evidentials. The reported evidential -ti- in Tsafiki, a Barbacoan language from Ecuador, is transparently related to the verb ti- 'say' (Dickinson 2000). Other evidentials in Tsafiki are visual, inferred, and assumed. The adverbial reported particle unnia in West Greenlandic is derived from verb stem unnir- 'say (that)' (Fortescue 2003: 301). The reported evidential suffix -lda in Lezgian, a Northeast Caucasian language, is the result of grammaticalization of luhuda '(one) says' (Haspelmath 1993: 148). The reported evidential di in Kham, a Tibeto-Burman language from Nepal, is connected to a verb of speech (Watters 2002: 296-300).

A verb of speech can be grammaticalized as a reported speech marker in the form of a third person form. The quotative particle hoa in Abkhaz is an archaic past absolutive of the verb 'say' (Chirikba 2003: 258-9; also see examples from Georgian in Harris and Campbell 1995: 168-72).

An evidential can come from a derivation based on a verb of speech. In Udihe, a Tungusic language (Nikolaeva and Tolskaya 2001: 461), one of the variants of the reported evidential, gum(u), could be an old passive form of the verb gun 'say'. Another variant, gun-e-i, is a habitual present participle of the same verb.

Reported evidentials hardly ever come from grammaticalized verbs other than speech verbs (they can come from other sources, as we will see below).

(B) VERBS OF PERCEPTION give rise to markers of visual and non-visual sensory evidentiality. In Maricopa, a Yuman language (Gordon 1986) the visual evidentiality suffix has developed from the lexical verb 'see'. In Wintu (Schlichter 1986: 49; Pitkin 1984: 148), the non-visual sensory evidential nEr goes back to a passive form based on the verb 'hear' (followed by the inferred evidential). Non-visual marker -mha in Tariana goes back to the verb -hima 'hear,'
feel', while the present visual -nuka, -naka is related to the first person singular form of the verb -ka 'see'.

A verb of perception may give rise to a quotative evidential. In Biansi (Tibeto-Burman) the past nonfinite form of run 'cause to hear' marks quoted speech (Trivedi 1991: 26). In Shibacha Lisu (Yu 2003) all evidentials come from grammaticalized verbs: the visual evidential comes from the verb 'see', the nonvisual and the reported come from the verb 'hear' (following different paths of phonological change), and one inferred evidential comes from the verb 'listen'. This is an example of an etymologically heterogenous system.

(C) VERBS OF OTHER SEMANTIC GROUPS can develop into various evidentials. The non-visual evidential in Hupda and in the closely related Yuhup (both from the Makú family) is the result of grammaticalization of the verb 'produce sound' (Epps 2005: 628).

Verbs meaning 'seem, be perceived, feel' often participate in developing non-visual evidentials in East Tucanoan languages (see Aikhenvald 2003). Desano uses a compounded verb kari- 'seem' to indicate 'that the speaker obtained his information from senses other than the visual' (Miller 1999: 65). According to Malone (1988: 132), the Tuyuca non-visual present marker could have evolved from 'a relic auxiliary verb 'seem' or 'be perceived'. In all these cases, grammaticalization must have taken place in compounded verbs.

Verbs referring to location and existence may give rise to inferred and assumed evidentials. The inferred evidential ʔəl in Wintu (Schlichter 1986: 52) goes back to a verbal element meaning 'exist' (cf. §3, on the development of copulas into evidential markers). In Hupda, one inferred evidential comes from a grammaticalized verb meaning 'be located inside something else', and the other comes from the verb 'exist' (Epps 2005: 632, 638-40).

Grammaticalization of a verb as an evidential may involve a change in its status, from main to secondary verb, rather than transforming it into a bound morpheme. The secondary verb awine/awa 'seem' in Jarawara now marks inference as part of a complex predicate. It is likely to go back to a biclausal construction involving the verb -awa- 'see, feel', which later on fused into one predicate (Dixon 2003: 184-5).

2.2 From a deictic or a locative to an evidential
The source of evidence is established by the speaker at a specific time and place. This is similar to tense, which can be present, past or future in relation to the time of speaking. Just like tense, evidentials can be considered deictic in character (as shown by Jakobson 1957). It is thus hardly surprising that primarily deictic elements may evolve into evidentials. The source for the 'assumed experiential' evidential -ɂəl in Wintu is the proximal demonstrative root -ɂE 'this' and a derivational suffix -l (Pitkin 1984: 175). The primarily hearsay, or reported, particle re or e in Sissala, a Gur (Voltaic) language spoken in Burkina Faso, developed from the locative demonstrative re-'here', 'this' (Blass 1989: 303). In Hakha Lai (Sino-Tibetan: Peterson 2003: 416), inferred evidentials go back to demonstrative pronouns. A similar example from Lega, a Bantu language, was discussed by Botne (1995).

Locative and directional markers also give rise to evidentials. The inferential -lam in Meithei is an erstwhile directional suffix (Chelliah 1997: 224). Its directional meaning, lost from modern Meithei, survives in many other Tibeto-Burman languages. This suffix comes from the grammaticalization of a Proto-Tibeto-Burman noun *lam 'road, way'. The auditory evidential marker -ke in Euchee, an isolate from North America, is cognate with the locative suffix ke meaning 'yonder', 'way over there' (Linn 2000: 318). According to Linn, the semantic connection between the two has to do with distance: 'the action is so far away that it can only be heard and not seen'.
2.3 Nouns, and other word classes, as sources for evidentials
Grammaticalized nouns may give rise to evidentials. In Xamatauteri, a Yanomami variety (Ramirez 1994: 170), the reported evidential hora comes from an erstwhile incorporated noun meaning 'noise'. The reported evidential -hima- in Piro, an Arawak language from Peru, comes from a noun meaning 'sound' (Matteson 1965: 127). The marker of the non-visual sensory evidential in Northern Samoyedic languages Nganasan, Nenets and Enets goes back to a noun meaning 'voice'. The reported particle omen in Basque also occurs as a noun meaning 'rumour, fame, reputation' (Jacobsen 1986: 7).

Members of other word classes can be reinterpreted and reanalyzed as evidentiality markers. The reported adverb 'they say' in Paumarí, an Arawá language, is likely to have developed out of the noun meaning 'news'; a cognate adverb subsequently grammaticalized as a 'reported' verbal suffix in the Madi dialect complex which includes Jarawara (Dixon 2003: 180).

Adverbial morphemes with epistemic meanings may develop into evidentials. The reported evidential in Wintu probably came from a morpheme meaning 'maybe, potentially' (Schlichter 1986: 50). In West Greenlandic, the inferential suffix -gunar- derives from a Proto-Eskimo morpheme meaning 'probably' (Fortescue 2003: 292; 299).

The process of grammaticalizing a verb, a noun, a demonstrative or a directional into an evidential involves change of categorial status of the form, and also crystallization of a meaning of information source as the primary sense. A similar process is at work when evidentiality strategies give rise to evidentials.

3 Evidentiality strategies as sources for evidentials
Evidential extensions of non-evidential categories (or evidentiality strategies) share their meanings with grammatical evidentials. Typical meanings of evidentiality strategies cover hearsay, inference, assumption and non-firsthand evidence. The development of evidentiality as a grammatical category out of essentially non-evidential forms involves reanalysis and reinterpretation, as corollaries of grammaticalization. 

Non-indicative modalities may develop overtones of uncertain and non-firsthand information, as does the conditional in French. They may then develop into non-firsthand evidentials. In Cree/Montagnais/Naskapi, an Algonquian language from Canada, conjunct dubitative forms have developed non-firsthand evidential meanings in contexts which prohibit the non-firsthand markers proper, for instance, under negation (see James, Clarke and MacKenzie 2001: 230; 254-7). Since the non-firsthand meaning “has become conventionalized as a new meaning for dubitative suffixes in appropriate contexts”, we hypothesize that an erstwhile evidential strategy is on its way towards becoming an evidential proper.

The development of a non-firsthand evidential may involve future, which — by its nature — is close to a non-indicative modality. A future clause typically includes an element of prediction concerning something unwitnessed and of subsequent lack of certainty. It can easily come to be associated with a description of events which the speaker has not witnessed personally, and of which they can only talk on the basis of an educated guess, an inference, an assumption, or hearsay. The non-firsthand evidential in Abkhaz and Circassian, two Northwest Caucasian languages, goes back to the future marker (Chirikba 2003: 262-4). The 'indirect' evidential in Hill Patwin, -boti/-beti (Whistler 1986: 69-71) comes from a combination of the auxiliary bo/be 'be (locational)' followed by the definite future suffix. Along similar lines, two non-sensory evidentials in Akha, a Tibeto-Burman language,
developed from future markers: 'assumptive' future and 'speculative' future (Thurgood 1986: 221-2).  

**Declarative and Indicative Modality** markers may give rise to direct and visual evidentials. In Shipibo-Konibo, the direct evidential -ra may have come from the declarative-indicative marker reanalyzed as an evidential at a later stage of language evolution (Valenzuela 2003: 43). In Tariana, an erstwhile declarative marker -ka (which survives in this function in closely related Arawak languages) was reanalyzed as recent past visual evidential (Aikhenvald 2003).  

**Perfect, Resultative, Past Tenses** and other forms with a completive meaning can acquire an additional, meaning of non-firsthand information. As Friedman (2003: 209) put it, 'both Balkan Slavic languages and Albanian developed evidential strategies using native past forms, and as the contextual variant meanings became invariant the strategies became grammaticalized'. The non-firsthand evidential in Turkic, Iranian languages, and in many Finno-Ugric languages originates in anterior and perfect forms (Johanson 2003: 287 and further references in Aikhenvald 2006a: 279-80). The non-firsthand evidential marker -shapan in Cree/Montagnais/Naskapi, goes back to a Proto-Algonquian perfect (James, Clarke and MacKenzie 2001: 247). Complex resultative constructions (involving perfective converbs and a copula 'be') gave rise to non-firsthand evidentials in Dargwa and Archi (Tatevosov 2001: 460-1).  

The connection between perfect (or anterior) in its resultative meaning and a non-firsthand evidential is a typologically widespread tendency. The result of an action or state, or of an action or state viewed as relevant for the moment of speech is reinterpreted as having the meaning of an inference based on visible traces, and other non-firsthand sources, such as assumption and hearsay. Once this range of non-firsthand meanings become the main meaning of the form, it can be considered an evidential.  

There is some evidence of perfectives or resultatives giving rise to evidentials in larger systems. The Tuyuca non-visual present marker may have evolved from an older perfect aspect construction (Malone 1988: 132). The emergence of the inferred evidential in Tariana involved the reanalysis of the anterior aspect marker -nhi accompanied by the visual evidential. Several past tenses may develop into different evidentials. In Kamaiurá, je 'reported' and rak 'attested' have clear cognates in past tense markers in other Tupí-Guaraní languages: the 'attested' evidential goes back to a recent past marker and the 'reported' to a remote past marker (Seki 2000: 344).  

**Participles and Other Deverbal Nominalizations** are often used as evidentiality strategies, with the meaning of non-firsthand or reported evidential. In Nenets (Perrot 1996) the non-firsthand ('auditive') forms come from nominalizations. The non-firsthand past in Komi is based on a past participle (Leinonen 2000: 421). In Lithuanian, the reported evidentials developed out of active participles (Gronemeyer 1997: 93).  

**Speech Complements** are another frequent source for evidentials. The development of an evidentiality marker out of a complementation strategy involves 'de-subordination' of an erstwhile subordinate clause. That is, a complement clause of a verb of saying acquires the  

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5 According to Metslang and Pajusalu (2002: 101), the reported evidential marker -na- in South Estonian originates in the potential mood.  

6 Also see McLendon (2003), for a putative link between 'indicative', 'factual' and 'direct' (or 'visual'), evidentials in Pomoan languages.
status of a main clause. Then, if the verb in such a dependent clause had a special form, this form takes on the status of a reported evidential. This scenario has been reconstructed for present reported evidentials in Standard Estonian (see Harris and Campbell 1995: 99; Wälchli 2000: 194-6). The original construction consisted of the main verb of speech or perception and an active participle in partitive form. Once the main verb is systematically omitted, what was a non-finite verb form occurs in a main clause. The only indication that the information comes from someone else is the present participle in partitive case. This form is now a reported evidential.

COPULA CONSTRUCTIONS can develop into evidential markers. In Patwin (Whistler 1986) the auxiliary (locational 'be') marks a 'direct' sensory evidential. In Jamul Tiipay (Yuman: Miller 2001: 193), the non-firsthand evidential derives from an auxiliary construction involving the verb 'be'. In Akha (Thurgood 1986: 218-21), 'nonsensorial' evidential particles developed from copulas. The reported enclitic -guuq in West Greenlandic probably arose from verbalizing affix -(ng)u- 'it is so that' and third person singular indicative inflection, that is 'be it so that' (Fortescue 2003: 301). The emergence of an evidentiality system in Lhasa Tibetan appears to have resulted from a variety of diachronic processes including reanalysis of the tense-aspect system and reanalysis of an original copula as an evidential marker: 'dug, an erstwhile existential copula, now marks 'actual visual knowledge' (DeLancey 1986: 205).

4 Grammaticalizing information source: a summary
Evidentials evolve from a variety of sources, including
• forms from open classes (mostly verbs, more rarely nouns) and from closed classes (deictic markers, pronouns, locationals); and
• reinterpretation and reanalysis of evidentiality strategies, whereby what was a secondary meaning for a grammatical device becomes its major meaning.

Language contact and areal diffusion provide a major motivation for developing an evidentiality system. This is the reason why grammaticalized evidentials are a feature of many linguistic areas, including the Balkans and the Vaupés River Basin.

Grammaticalization is a gradual process. In numerous varieties of Latin American Spanish, expressions involving <i>diz que</i>, literally, 'says-that', are on their way towards becoming a reported evidential with overtones of doubt and inference, similar to non-firsthand evidential in Turkic or Iranian languages. Travis (2006) describes partial grammaticalization of <i>diz que</i> in Colombian Spanish, where this expression partly maintains the status of a verb followed by a complementizer. In contrast, in Mexican Spanish, <i>dizque</i> is a grammatical particle with the meaning of reported speech and unreliable, non-firsthand, information (Olbertz 2007). This grammaticalization in progress is also — at least partly — motivated by contact with indigenous languages, past and present.

References

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7 For similar developments in Latvian and Lithuanian, see Wälchli (2000: 194-5).

8 A similar development of <i>dizque</i> in Amazonian Portuguese is discussed by Aikhenvald (2002); also see Olbertz (2005) for Ecuadorian Spanish, and Babel (2009) for the Spanish of southern Bolivia.


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