

a Western Tucanoan language, in which there is an auditory evidential morpheme *-ko*, but no visual evidential (Strom 1992:90). A second example is Koasati (Kimball 1991:160), a Muskogean language, which has an auditory evidential *-hawa/-ha* but no visual evidential.³

Even though general sensory evidentials are not the main focus of the present study, they are relevant for a variety of reasons. Firstly, visual evidentiality is undoubtedly the most natural and unmarked interpretation of direct evidentials. When a speaker uses a general direct evidential, it is usually assumed that he/she was an eyewitness to the event and other sensory evidence is marked separately.

Secondly, as mentioned above, general direct evidentials are fairly common among the world's languages. For instance, Southeastern Tepehuan (Totonacan, Willett 1991:162) has a particle *dyo* which can refer to all types of sensory information: visual, auditory, and other sensory evidence. Hixkaryana, a Southern Carib language (Derbyshire 1979:143), has grammaticalized the absence of an overt indirect evidential as the marker for direct sensory evidence. In other words, zero is the marker for direct evidence in Hixkaryana.

It would appear, however, that the most common form of direct evidentiality is in the form of a direct/indirect evidentiality opposition within the verbal system. This can be found, among others, in Haida, an isolate language (or, in other views, a Na-Dene language) from Alaska (Swanton 1911:247-8), many Kartvelian and Tibeto-Burman languages, and in the Eastern Finno-Ugric language Komi Zyryan (Leinonen 2000). Given that visual evidentials are often derived from a tense morpheme, as will be shown below, this makes general sensory evidentials very relevant for the present study. Their origins will be discussed in section

Finally, only *grammaticalized* visual evidentials will be considered. It will be taken for granted here that every language has lexical means to show that the information regarding the action described was obtained visually. The most obvious way of course is a verb with the meaning 'to see.' However, as will be discussed below, visual evidentials are not usually grammaticalized from a 'see'-verb (the apparent exception being Maricopa).⁴ Because it has been claimed in the literature that visual evidentials do derive from 'see'-verbs, a section will be devoted to some typical non-visual uses of the verb 'to see' crosslinguistically, based on the WALS data.

Table A shows the languages in the database which have pure visual evidentials. As can be seen, most of these languages are located in North and South America. This raises the suspicion that the presence of a visual evidential is an areal feature. While this is probably true, since evidential systems tend to be borrowed easily (see Aikhenvald and Dixon 1998 for a discussion on Amazonian languages and evidentiality) However, there are a fair number of languages that fall outside this area. Because the main concern of this paper is the grammaticalization of visual evidentials, this idea is not pursued here.

Table A
Languages with a visual evidential in the language database

Language	Family	Source
Kashaya Pomo	Pomoan, Hokan	Oswalt 1986
Northern Pomo	Pomoan, Hokan	O'Connor 1992
Southeastern Pomo	Pomoan, Hokan	Moshinsky 1974

Eastern Pomo	Pomoan, Hokan	McLendon 1975
Wintu	Wintun, Penutian	Pitkin 1984
Hupa	Pacific Coast Athabaskan	Goddard 1911
Kato	Pacific Coast Athabaskan	Goddard 1911
Maricopa	Yuman, Hokan	Gordon 1986
Tuyuca	Eastern Tucanoan	Barnes 1984
Barasano	Eastern Tucanoan	Jones and Jones 1991
Tariana	N. Arawakan	Aikhenvald and Dixon 1998
Sanuma	Yanomam	Borgman 1990
Apalai	Carib	Koehn and Koehn 1986
Ika	Chibchan, Aruak	Frank 1990
Pirahã	Paezan, Mura	Everett 1986
Jamamadi	Brazilian Arawakan	Derbyshire 1986
Akha	Lolo-Burmese	Thurgood 1986
Fasu	Kutubuan, New Guinea	Loeweke and May 1980

Some of these language descriptions provide insufficient information to analyze the respective visual evidentials. They are given here for the sake of completeness.

In Apalai, a Carib language from Guyana (Koehn and Koehn 1986:119), the particle *puh(ko)* is used for eyewitness reports, as in sentence (3) below. Its etymology is unknown. It is not related to any other word, as far as I can tell. It is not a deictic form, or a tense/aspect marker, nor is it obviously related to a verb ‘to see’, which is *ene-* (Koehn and Koehn 1986:46).

- (3) otato puhko ke eroh-noko nae.
how:many VIS POL work-CONT 3:be:PRES
‘How many did you see working?’ (p. 119)

Jamamadi, a Brazilian Arawakan language, has a pair of morphemes *-maro* (fem.)/*-mari* (masc.) which are said to denote visual evidentiality (Derbyshire 1986:525). The origins of these morphemes are unknown and only one example is given:

- (4) yome oda-ra kiyoa-maro-ni
 jaguar us-OBJ follow-VIS-COM
 ‘The jaguar followed us.’

The Fasu Visual evidential is a complex form, consisting of both a pre- and suffix, as can be seen in example (5a) (Loeweke and May 1980:71). The Visual evidential contrasts with the other evidentials, which are suffixal only (5b-c). It is not clear to me what the explanation might be but note that the Visual evidential is the only one without a tense or aspect morpheme.

- (5) a. a-pe-re
 VIS-come-VIS
 ‘I see it coming.’

- b. pe-ra-rakae
come-CUST-AUD
'I hear it coming.'
- c. pe-sa-rakae
come-PAST-QUOT
'I heard someone say that he came.'

A further language, Pirahã, a Mura language spoken in Brazil, has a visual evidential which does not appear to fall into any of the major patterns discussed in this paper. Pirahã has a suffix *-xáagahá* which is glossed as "observation" in Everett (1986:298-9). The etymology of this suffix according to Everett is *-xaagá* 'be' plus *-há* 'complete certainty'. The transition from certainty to visual evidence appears to be the inference "I am completely certain because I saw it with my own eyes." The following sentence is typical (p. 299):

- (6) hoagaixóai hi páxai kaopáp-i-sai-xáagahá
H. 3 fish species catch.by.mouth-EPEN-NOMIN-VIS
'Hoagaixóai is fishing for *páxai* (with a hook and line).'

4. Visual evidentials from tense morphemes

Having demonstrated that direct evidentials can arise pragmatically from tense morphemes, we will now look at fuller evidential systems, ones that have more than one level of direct evidentials. A similar situation holds with respect to visual evidence. Evidence by seeing is the default evidential. It will be used wherever possible. In other words, the use of any other evidential entails that the action was not seen. The visual evidential in large systems serves the same function as the direct evidential in a simple two-way opposition. It is therefore not surprising that visual evidentials can have the same origin as a direct evidential, namely a (past) tense morpheme.

Languages with a specific visual evidential are rarer than languages that have a simple direct – indirect evidential split. This may point to the hypothesis that large evidential systems develop from smaller ones and that an original direct evidential narrows its range to just visual evidence through the addition of specialized nonvisual sensory evidentials, as shown in (16). Because of the addition of a nonvisual sensory evidential, the original direct evidential is reanalyzed as a visual evidential.

(16) *Stage I: Simple system*

<i>Direct evidential</i>	Indirect evidential
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Stage II: add a second direct evidential

<i>Direct evidential</i> > <i>Visual evidential</i>	Nonvisual evidential	Indirect evidential
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This scenario appears plausible, given that visual evidentials have a common source with direct evidentials. Unfortunately there is to my knowledge little data that would support it. The languages that possess both visual and nonvisual sensory evidentials (Table A) have not been analyzed to the extent that it is possible to decide the relative addition of visual and nonvisual evidentials to the system of evidentiality. The only language that could be cited in favor is Ika (Frank 1990), which has a Visual evidential from a tense morpheme (see below), but which appears to have no other direct evidentials.

There is, however, evidence for an alternative scenario, shown in (17) below. This is the scenario where a morpheme for visual evidence is added after the other sensory evidentials are in place.

(17) *Stage I: no visual evidence*

<i>(Nonvisual) direct evidential</i>	Indirect evidential
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Stage II: add a visual evidential (from a tense morpheme)

Visual evidential	<i>Nonvisual evidential</i>	Indirect evidential
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Evidence for the scenario presented in (17) consists of a number of languages that have nonvisual sensory evidentials, but no visual. As mentioned in section 2 above, examples of such languages are Koasati, a Muskogean language (Kimball 1991), and Retuarã, a Western Tucanoan language (Strom 1994). This means that these two languages are in stage I of scenario (17), while most languages of Table A are in Stage II.

Whichever scenario turns out to be the correct one (and, indeed, they may both be), it entails the same mechanism: a reanalysis of a tense morpheme into a visual evidential.

Tuyuca

The Tucanoan family consists of some 25 languages spoken primarily in the Vaupés River region of the border area of Brazil and Colombia. Over the last fifteen years this family has gained a reputation for their extensive system of evidentiality. The best-described language in this respect, both semantically and morphologically is the Eastern Tucanoan language Tuyuca (Barnes 1984, Malone 1988). This language figures prominently in almost every discussion on evidentiality (see e.g. Palmer 1986, Willett 1988, among others). Tuyuca provides a good starting point for the present discussion. We will focus on the expression of visual evidentiality.

In Tuyuca, evidentiality is expressed obligatorily on the verb (and it is the only obligatory morpheme on the verb) depending on whether the action was perceived visually, non-visually, inferentially, or via a secondhand report. Because of the obligatory nature of this category, Tuyuca also has a category when the action described in the sentence is not based on any evidence at all. This category is called *Assumed* by Barnes 1984.

The evidentials in Tuyuca have different forms depending on tense, person and gender. There are evidentials for present and past tense (future tense morphemes are non-evidential). There are different forms for the third singular masculine, feminine, and inanimate. There is one form for third person plural. Forms for the first and second

person (both singular and plural) are the same as for third person singular inanimate. The paradigm of Visual evidentials in Tuyuca is shown in Table E:

TABLE E
The Visual evidential paradigm in Tuyuca (Barnes 1984:258)

	past	present
3 sg. masc.	-wi	-i
3 sg. fem.	-wo	-yo
3 pl.	-wa	-ya
3 sg. inan, 1/2	-wí	-a

Example (18) shows two sentences with visual evidentials. Evidentials can be added directly to the verb, as in sentence (18a). The visual evidential is used in (18a) to convey the notion that the speaker witnessed the event (playing soccer) personally. Sentence (18b) shows a case in which the action is in progress. In such cases, the visual evidential is not added to the main verb, but to an auxiliary verb *tii* (Malone 1988:127 claims this is from an old progressive construction with the verb ‘to do’, ‘*tii*’). The main verb is inflected only for gender and number of the subject of the sentence.

- (18) a. *díiga apé-wi.*
 soccer play-VIS:3SG:MASC:PAST
 ‘He played soccer (I saw him play).’ (Barnes 1984:257)
- b. *díiga apé-gí tii-i.*
 soccer play-3SG:MASC AUX-3SG:MASC:PRES
 ‘He is playing soccer.’ (Barnes 1984:259)

From Table E and the examples (18a) and (18b) we see that Tuyuca has evidentials where we would expect tense morphemes. These evidentials are obligatory, not optional as in most languages. This raises the possibility that visual evidentials in Tuyuca developed from pure tense morphemes. This hypothesis is supported by a number of facts, both language-internally and compared to Tucanoan as a whole.

Unlike past or present, there are future tense morphemes, also with person and gender distinctions (as in *apé-ídaki* play-FUT:3SG:MASC, Barnes 1984:267). Systems with future tense, but without pure past or present tense are highly unusual typologically.

A second argument can be drawn from the semantics of expressions with visual evidentials. The Visual evidential in Tuyuca is used not only to report on events witnessed personally, but also for cases in which strictly speaking a visual evidential cannot be used, namely:

The forms for the Present tense are less clearly cognate. In Carapana, the morpheme *-ya* is used for 1st, 2nd, and 3rd inanimate singular and plural (Metzger 1981:24) while in Tuyuca they are used for 3rd plural only. The other Tuyuca forms have no clear cognates in Carapana or Tucano. The present tense morpheme in Barasano, another related language which also functions as a visual evidential, as in example (20) which is used when the speaker is present at the event.

- (20) Barasano
 oko kedi-a-ha
 water fall-PRES-3
 “It is raining.” (Jones and Jones 1991:83)

The analysis for the Eastern Tucanoan languages is then that the Visual evidential paradigms developed out of tense morphemes. This accounts for the fact that they are an obligatory category on the verb. Evidentiality from tense/aspect morphemes appears to be limited to the Eastern Tucanoan branch. In other Tucanoan languages, for instance in Retuarã (Western Tucanoan, Strom 1992:90-1) we find a more traditional evidential system with just three morphemes: Quotative, Inferential, and Auditory. Strom mentions that they are infrequently used and optional. An example with the Auditory evidential *-ko* is shown in (21):

- (21) Retuarã
 dõʔõka yãbĩ yapua yãʔ-rĩ-ko-rape
 yesterday night tree fall-EP-AUD-PAST
 “Last night a tree fell. (e.g., I heard it from my house)” (Strom 1992:90)

As can be seen from example (21), the evidential *-ko* is expressed separately from the tense morpheme *-rape*, unlike the Eastern Tucanoan examples above.

Tariana

Tariana is a Northern Arawakan language spoken among the Eastern and Central Tucanoan languages in the Vaupés region (Aikhenvald and Dixon 1998). This language too has developed evidentials to denote visual evidence, and as is the case in Eastern Tucanoan, these morphemes correlate with tense. There are three Visual evidentials: a Present tense Visual *-naka*, a Recent Past Visual *-ka*, and a Remote Past Visual *-na*.⁷ This closely resembles the Eastern Tucanoan system in substance, and there is no doubt that the evidential system in Tariana is an innovation that was borrowed from the Eastern Tucanoan languages. The Northern Arawakan languages that are closest related to Tariana, e.g. Baniwa and Bare, have a more traditional evidential system (i.e., one evidential morpheme for each evidential category) or lack evidentials altogether.

Athabaskan *-niʔ*

The Athabaskan languages are not known for having large evidential systems. While it is true that they do not have the extensive system of a language such as Tuyuca, some do possess a richer system than usually acknowledged.

Like the other Athabaskan languages, San Carlos Apache (Western Apache; Edgerton 1963) is an aspect-prominent language. There are no tense morphemes present on the verb. There is, however, a clitic morpheme *-niʔ/-nʔ* which refers to “an action or condition in the past, known by participation or direct report.” (1963:122). An example is shown in (22):

- (22) ʔíitšo ntšààhíí-žą hik’èh ké hàdàg gònèèzihíí
 coat that.which.is.big-just and shoe upwardthat.which.is.long
 dààgòlíí-nìʔ
 they.exist-VIS
 ‘There were just overcoats and galoshes.’ (Edgerton 1963:119-20)

The use of the clitic *-niʔ* is justified because the speaker was a witness to the situation. This morpheme is a clitic because it can attach itself to any word class. In (23), it is attached to a demonstrative:

- (23) /ʔáínʔíí/
 ʔáí-nʔ-íí
 that-VIS-particular
 ‘That particular aforementioned one.’ (1963:118)

The morpheme *-niʔ* has cognates in other Athabaskan languages and it would appear that it is used for past tense reference, without evidential connotations. In Chiricahua Apache (Hojjer 1946:84), the clitic *-n* is glossed simply as “past tense” (no examples given).

The same is true for Navajo (Sapir and Hoijer 1967:67,114), where the clitic *-niʔ* is glossed as “past tense”. An example is shown in (24a). There is a possible related clitic in Navajo, *-ni/-n* (thus, without final glottal stop), which is glossed by Sapir and Hoijer (1967:114) as “certainly, for a fact”. It therefore marks speaker assertion. Given the close semantic relation between past tense, visual evidence, and speaker assertion, it is quite possible that the two clitics are related. An example of the certainty clitic is shown in (24b).

- (24) Navajo
 a. siciʔ dišníí-nìʔ
 my.daughter I.told.her-PST
 ‘I told my daughter.’
 b. ʔàkot’éélá dišníí-nì
 in.that.fashion I.spoke-ASSERT
 ‘I certainly spoke in that fashion.’ (Sapir and Hoijer 1967:114)

From the few isolated examples given it is impossible to make any determination whether the clitic *-ni?* is restricted in Navajo to situations the speaker witnessed personally.

Outside of the Southern Athabaskan area this clitic is also attested. It occurs in Chipewyan as *-ni* (Li 1946:420), see example (25a). The form *-ni* also occurs in Hare Slave (Rice 1989:417), but as a separate particle, as in (25b):

- (25) Chipewyan
 a. xaunelten-ni
 one.is.taught-PST
 ‘One was taught.’ (Li 1946:420)
- Hare Slave
 b.* gow’i ts’ε kedédee ni
 barrensto 3PL.went PST
 ‘About that time they went to the barrens.’ (Rice 1989:417)

From the data it would appear unlikely that *ni* in Hare Slave is restricted to personally witnessed events. There is another particle that would be more likely, namely *yilé* (Rice 1989:420-1). This particle, formally the perfective form of the verb ‘to be’, is also glossed as past tense and it is used with a verb in the imperfective or perfective mode to denote a completed action and with a verb in the optative mode to denote an unrealized action. Most of the examples given have a first person subject, as in (26), and this particle is therefore more apt to have a visual evidential component. It is more likely, however, that the choice of past tense particles in Slave is not dependent on the evidential status of the utterance.

- (26) rahéhdze yilé
 1SG.shout.repeatedly PST
 ‘I was shouting.’ (Rice 1989:420)

From the crosslinguistic data it would appear that past visual evidentiality in San Carlos Apache *-ni?* is an innovation because it seems to be absent in other Athabaskan languages. It is therefore similar to the development of the Tuyuca verb paradigm which also developed evidentiality as a secondary phenomenon. The obvious difference between Tuyuca and San Carlos Apache is that the Tuyuca morphemes are part of an intricate verbal paradigm while the San Carlos evidential is a (possibly optional) clitic which can be attached to any word class. Nevertheless, the semantic development is the same in both cases.

Ika

The suffix *-in* in Ika, an Aruak language functions as a visual evidential (Frank 1990:64-5,77). This suffix always has past time reference and indicates that the speaker has witnessed the action described in the immediate or recent past. The suffix *-in* contrasts with the particle *ni* ‘certainty’ which is used when the speaker did not witness the action involved, as can be seen in the following example (Frank 1990:77) where both (27b) and (27c) are possible answers to (27a).

- (27) a. win-naka u-zh-e
 3PL:SUBJ-come AUX-MED-Q
 ‘Did they come?’
- b. win-naka u-zh-in
 3PL:SUBJ-come AUX-MED-VIS
 ‘They came (and I saw it).’
- c. win-naka u-na ni
 3PL:SUBJ-come AUX-DIST CERT
 ‘They came (but I didn’t see it).’

Note the use of the deixis marker of distance, *-na*, in (27c) to denote that the speaker is removed from the action and the use of *ni* to denote that even though the action was not witnessed personally, it still is certain to have occurred. This is the opposite situation from what was seen so far. In Ika, the fact that an event or action was not seen which is marked, with a distant deictic morpheme. In other languages it is the visual evidential which is marked as proximal, in the vicinity of the speaker.

5. Visual evidentials from aspectual morphemes

This section examines some languages where visual evidentials occur in the verbal system, but do not come from tense morphemes but rather from aspectual morphemes.

The Pomo family

Pomo is a language family consisting of seven mutually unintelligible languages, spoken in Northern California. They are usually referred to by a geographical designation with the exception of Southwestern Pomo which is nowadays called Kashaya (Pomo), following the work of Robert Oswalt (1961).

The visual evidentials are cognate in all languages, according to Oswalt (1976:25) and the grammatical descriptions that have appeared since then would seem to bear that statement out. The two proto-morphemes which turned into visual evidentials are reconstructible as Proto-Pomo (PP) **-ya* and **-a*. These two morphemes are analyzed by Oswalt (1976:25) as already being visual evidential in the proto-language. This may be true, but that still leaves one to explain why there are two visual evidentials, especially since they have aspectual connotations. For reasons of space I will limit myself to two Pomoan languages, Kashaya Pomo and Northern Pomo. They have the most published information on the respective evidential systems. Descriptions of other languages, Eastern Pomo (McLendon 1975), Southeastern Pomo (Moshinsky 1974), and Central Pomo (Mithun 1999) do not discuss the evidential system in enough detail to warrant firm conclusions. However, from these descriptions it would appear that these languages do not deviate in their main points from the languages discussed here.

Kashaya Pomo is the best described Pomoan language as far as the evidential system is concerned (Oswalt 1986). Kashaya has a number of moods, which Oswalt calls the Spontaneous, Responsive, Narrative, and Remote moods. The present discussion is limited to the visual evidentials in the Spontaneous and Responsive mood. There is no

separate visual evidential in the other moods: visual, auditory, and inferential evidence is expressed by the same morpheme.

The Spontaneous mood is used “[w]hen a remark is spontaneous or prompted by the event or state being described (and not as part of a continuing discussion or conversation)” (1986:33). It is not marked by any special morpheme. The Responsive is used in conversation and is marked by means of the suffix *-m*. It is in these moods that we find visual evidentials, which are expressed by the morphemes *-ya* (from PP **-ya*) and *-wa* (from PP **-a*), as shown in (28a) and (28b) below:⁸

- (28) a. qowaq-ya
pack-VIS
'(I just saw) he packed.'
- b. qowaq-wa
pack-VIS
'(I see) he is packing.'
- (Oswalt 1986:36)

Even though both morphemes are glossed as Visual evidentials, this does not mean that they can be used interchangeably. The morphemes *-ya* and *-wa* form an aspectual pair: Whereas *-ya* is used to denote visually witnessed perfective events, *-wa* is used to denote witnessed imperfective actions (Oswalt 1986:36).

The analysis proposed here is that the aspectual meaning was present before the evidential meaning. This appears reasonable both in the light of the languages in the previous section and this avoids a discussion on how two visual evidentials could arise in the first place, which later conveniently were distinguished aspectually. There are two other pieces of evidence that point to that conclusion.

First, the suffix *-wa* is also used when the speaker wishes to express a general truth. This usage is quite normally expressed by imperfective aspect morphemes in a wide variety of languages. An example is shown in (29) below. This example is very similar to the Tuyuca example (19b).

- (29) s'ihta=yac^hma cahno-w
bird=PL.SUBJ sound-VIS
'Birds sing.'
- (Oswalt 1986:37)

Another clue pointing to the aspectual origins of the visual pair of morphemes is the neutralization of aspectual oppositions when the sentence is negative. In negative sentences, only the *-wa* suffix can be found. This is a very common development across languages and in most languages (like Russian), the imperfective aspect is used in negative sentences. It comes therefore as no surprise that *-wa*, rather than *-ya*, is used in negative visual sentences in Kashaya, as shown in (30).

- (30) qowaq-t^h-wa
pack-NEG-VIS
'(I see/saw) He isn't packing/he hasn't packed.'
- (1986:36)

morphemes in Pomo. Given that these morphemes would appear to be able to express tense notions, it is then very reasonable to assume that (past) tense morphemes can acquire a visual evidential interpretation.

Wintu

Wintu is a Penutian language spoken slightly to the north of the Pomoan area. As is the case with Pomo, there appear to be no tense morphemes and at least one aspectual morpheme has visual evidential interpretations.

In his grammar, Pitkin (1984) lists no less than three morphemes which he classifies as visual evidentials. These are shown in (34) below. It turns out that these three morphemes represent three different grammaticalization paths for visual evidentials. This discussion is based on Pitkin 1984, from which all data are taken.

- (34) *Visual evidentials in Wintu* (Pitkin 1984:146-8)
- | | |
|--------------|-------------------------------------|
| - <i>da</i> | ‘1st person, selfness’ |
| - <i>bEy</i> | ‘imperfective auxiliary verb’ |
| - <i>?el</i> | ‘demonstrative copula’ ⁹ |

In the visual evidential system, the morphemes *-bEy* and *-?el* are said to be in complementary distribution: *-bEy* refers to actions or events while *-?el* is used for states witnessed visually (p. 148). This might be an overstatement: among the examples Pitkin gives of verbs used with *-?el* are “sing”, “go (south)” (see the examples under (36) below), and “kill (a rattlesnake)” (p. 176). The morpheme *-?el* represents a different grammaticalization path and will be discussed in section 6 below.

Pitkin states that *-bEy* originates from a verb meaning ‘to be in a lying position’ which meaning it still has when it is used as a main verb. In this capacity it can take verbal suffixes including the evidential suffixes (see sentence (35c) below). The surface form of *-bEy* is *-bi(:)* before other evidential suffixes, and *biya-* elsewhere, e.g., as independent verb (p. 181). Besides its use as visual evidential, *-bEy* also serves as imperfective auxiliary, after which evidential morphemes may follow. Some examples are given in (35) below. Sentence (35a) shows *-bEy* as a visual evidential, while (35b) exemplifies *-bEy* as the marker of imperfective aspect. Sentence (35c) shows two forms of *-bEy*: as a main verb, and as an imperfective marker.

- (35) a. kupa-be:
chop.wood-VIS
‘(I see/have seen) he is chopping wood.’ (p. 183)
- b. ba: ?i-bi:-da
eat be-IPF-1SG
‘I am eating.’
- c. biya-bi-re:
lie-IPF-INF
‘I guess they are lying.’ (p. 182)

Sentence (35a) is interpretable according to Pitkin as denoting an event seen by the speaker. Note, however, that there is still a progressive, imperfective meaning present in (35a) showing that the aspectual reading is more basic and therefore presumably the older meaning. Example (35b) shows the Imperfective reading. Given that the subject is first person (see also section 7 below on *-da*), personal witnessing obviously plays a role.

Example (35c), is a nice case where both the main verb *bEy-* ‘lie’ (surface form *biya-*) and the grammaticalized form *bEy-* (as *bi-*) cooccur. Unfortunately, this example is not discussed by Pitkin. The morpheme *bi-* presumably has a progressive meaning, given the translation. However, it is remotely possible that this morpheme has visual connotations. The presence of the Inferential *-re:* precludes the interpretation of personal witnessing. However, an interpretation where the inference is based on some kind of visual evidence (besides witnessing the action itself), is not entirely out of the question.

The morpheme *-bEy* in Wintu fulfills a similar function to *-ya* and *-wa* in the Pomoan languages. The difference is that in Wintu there is no aspectual opposition within the visual evidential system. The perfective aspect morpheme *-suk* (derived from a verb meaning ‘to be in a standing position’) does not seem have any visual evidential features (p. 185-6).

6. Visual evidentials from demonstratives

The second major grammaticalization path is the one where visual evidentials have demonstratives as their source. The explanation for this path is that visual evidentiality is essentially deictic in nature: it places the speaker at or near the event.

A good example of this are certain Pacific Coast Athabaskan languages. Both Hupa and Kato have a visual evidential that Goddard (1911) gives as *-e*. According to Victor Golla (p.c.) the Hupa evidential at least is more accurately transcribed as *-ye:y*. Its origin is a deictic suffix which is still used as such in Hupa as well as the other Athabaskan languages. Its use as deictic suffix is exemplified in sentences such as *xahsya:-ye:y* ‘it [sun, moon] rose right there’ which contrasts with *xahsyay* ‘it rose, came up’ (example due to Victor Golla).

The rest of this section discusses some languages which have visual evidentials that show this path.

Wintu -ʔel

Besides the morpheme *-bEy* (see section 5 above), Wintu also has a Visual evidential which is derived from a demonstrative.

The morpheme *-ʔel* is glossed by Pitkin (p. 174-5) as a dependent copula. It can never be the main verb of a predication and is always dependent on the preceding verb in the VP. Its allomorphs are *-ʔele:* and *-ile:*. Examples are:

- (36) a. bo:s-ile
sit-VIS
‘(I saw) them sitting there.’
b. c’a:wa-be:s-ile:

<i>kimakili</i>	going away from speaker downriver.
<i>kimi</i>	toward speaker.

Table H
Past witnessed morphemes (Borgman 1990:169)

morpheme	gloss
<i>ke/kehe/kuhe</i>	immediate past (same part of day)
<i>kupi/köpi/kipi</i>	recent past (same 24 hour period, but not same part of day)
<i>kupili/köpili/kipili</i>	distant past (yesterday or before)

In the present tense (Table G), the visual evidential interacts with spatial deixis: the morpheme *ku-* is combined with a deictic marker which shows where in relation to the speaker the action took place. Examples are shown in (37a)-(d):

- (37) a. hi ti-nö a hīta ku-le.
stick CL-INST 3SG stand.upright PRES:WIT-near
'It is standing upright by means of a stick.' (p. 23)
- b. hi ai kutiata pö kalol(o)-a ku-lai.
this other canoe 3PL float-DUR PRES:WIT-obstructed
'There are other canoes floating here (beyond the trees).' (p. 166)
- c. kutiata a kā ku-lali.
canoe 3SG be.in.water PRES:WIT-upriver
'There is a canoe in the water (upriver).' (p. 167)
- d. olö kökö wani hole-a ki-mati
snake CL DEPR crawl-DUR PRES:WIT-away
'A snake is crawling away.' (p. 167)

The most common present visual evidential is *-kule* 'near speaker', which can be used with any verb. The other visual evidentials are more restricted in their use. It is also the visual evidential which developed more abstract meanings: *-kule* can be used when the act of witnessing is not strictly simultaneous with the moment of speech. This is shown in (38):

- (38) ĩ na töpö ku kule
REL like 3PL say PRES:WIT
'That is what they are saying.' (p. 166)

Sentence (38) was used in the context where the speaker had just come from a conversation in another house and reported on what was discussed. Strictly speaking, the immediate past morpheme had to be used.

Borgman does not discuss the composition of the visual morphemes in Sanuma. The most likely source of the visual evidential morpheme appears to be the verb *ku-* 'to be.' If this analysis is correct, then analysis of sentences with a visual evidential

- (42) M-iima-ʔyuu.
 2SG-dance-VIS
 ‘You danced (I know because I saw it).’

The connection between the Visual evidential *-ʔyuu* and the main verb *-yuu* is obvious. There is no doubt that the two are related and that the main verb is partly the source of the Visual evidential. But the evidential also contains the first person morpheme *-ʔ*. What is grammaticalized, then, is not the perception verb but rather the construction *ʔ + yuu* ‘I see’. The presence of the first person morpheme is reminiscent of similar constructions in Akha and (possibly) Wintu, discussed in the previous section. It is the first person morpheme that plays the most important role in the grammaticalization of the Visual evidential, and not the perception verb.

The difference between the full verb *yuu* ‘to see’ and the evidential suffix *-ʔyuu* shows up best in the behavior of these morphemes with negations. The full verb takes independent negation and aspect markers, while the evidential suffix does not. In (43a), the act of seeing is the salient part, is in the scope of the negation, and the full verb must be chosen. In (43b) (= (1)), the negation is in the scope of ‘seeing’ and the evidential is used. As can be seen, the full verb in (43a) has its own set of suffixes.

- (43) a. Marsh-m waly-ʔ-yuu-ma-k
 win:DUAL-DS NEG-1SG-see-NEG-ASP
 ‘I didn’t see them win.’
- b. Waly-marsh-ma-ʔyuu.
 NEG-win:DUAL-NEG-VIS
 ‘(I saw) they didn’t win.’ (Gordon 1986:85)

Thus, what is grammaticalized here is not the *see*-verb per se but rather the construction *I see*. In other words the speaker is explicitly part of the evidential. This means that we are in fact dealing with a variation of the grammaticalization pattern of the previous section, namely first person deixis. Unlike with Akha *-ŋa*, the first person morpheme cannot stand on its own and so the first person morpheme *-ʔ* is grammaticalized together with the perception verb. Under this analysis the perception verb is not the most significant part of the evidential, despite first appearances, but rather the first person morpheme. If this analysis is correct, then Maricopa is not an exception after all, but follows the general rule that visual evidentials are in the first place deictic in nature.

9. On the grammaticalization of *see*

In this section we will take a brief look at *see*-verbs. Having established that *see*-verbs do not really develop into visual evidentials, it is appropriate to discuss what they can turn into. A full discussion is beyond the scope of this paper; in English alone, the verb *see* has a large number of separate meanings, given the appropriate context. Nevertheless, some uses of *see*-verbs do touch on the main topic of this paper and deserve to be included here.

Meaning extensions of the English verb *see* range from ‘understand’ (in a sentence such as *I see*) to ‘try’ (in a context like *See if you can do that*). Extensions of meaning of see-verbs are quite common in other languages as well. To give but one example, in Ewe (Niger-Kongo, Kwa; Westermann 1970:138) the verb *kpɔ* ‘see’ has developed the meaning of ‘to have opportunity, time’, as in (44):

- (44) *nyemékpɔ ɖu nú haɖé o*
 ‘I have not seen eaten; I have had no opportunity of eating.’

Whether such extensions of meaning of see-verbs involve grammaticalization is debatable. The ‘try’ or ‘understand’ interpretations of English *see*, for instance, are only limited to specific contexts, such as imperative/hortative sentences (witness the ungrammaticality of a sentence such as **John sees if he can do that for John tries to do that*). Such usages of the verb ‘to see’ are construction-dependent and do not necessarily show that the verb *see* itself has been grammaticalized.

This is also true when we consider complement clause choice with perception verbs. It is well-known that perception verbs in many languages make a distinction between two types of complement clauses. This distinction can be said to roughly correspond between the direct vs. indirect evidential distinction. The examples here are from English, but many similar examples can be found in many languages.¹⁴ Examples of the different types of complement clauses are shown in (45), from Dik and Hengeveld (1991:240):

- (45) a. We saw him leave.
 b. We saw that he had left.

In sentence (45a) the act of seeing and the act of leaving are simultaneous, while in sentence (45b) the act of leaving precedes the act of seeing and, crucially, precludes simultaneity.¹⁵ In other words, sentence (45a) shows direct perception while (45b) shows inference of the event of leaving via indirect perception. Thus, a sentence like (45a) can be considered an example of a direct evidential construction while (45b) is an example of an indirect evidential construction.¹⁶

If we compare this construction with the apparent comparable case of Maricopa, we see that the main difference between these examples and the Maricopa example (42) is that in (45) the evidential distinction is not encoded in the verb itself, but in the choice of complement clause. In both sentences, the verb *see* refers to visual perception, but what is perceived is encoded in the second clause. In (45a) the subjects witness the actual departure, while in (45b) they merely see the aftereffects of the departure. It is therefore not the verb *see* that is grammaticalized, but rather the entire construction:

- (46) a. SUBJ see [V-inf ... *direct evidence*
 b. SUBJ see [that V-fin ... *indirect evidence*

This differs substantially from the Maricopa example, where the construction *I see* has entirely been grammaticalized as an affix. This shows that English *see* is not a real counterexample to the hypothesis that visual evidentials do not derive from perception

verbs. Only in specific constructions can the verb *see* be said to encode a direct/indirect distinction. At any rate, we are dealing with a biclausal structure which shows none of the clause reduction properties (see Harris and Campbell 1995, chapter 7 for a discussion on such properties, including a section on the emergence of quotative constructions) and it is clear that this case is not comparable to the Maricopa example.

We turn to an example of a language in which the *see*-verb has developed into something akin to a deictic morpheme. This language is Lower Grand Valley Dani, a New Guinean language of the Binanderan phylum (Bromley 1981). is an example of a language in which the *see*-verb has turned into a spatial deictic verb.

In Lower Grand Valley Dani, the main verb *ha-* ‘see’, besides operating as a perception verb, can also serve as an auxiliary verb with a locative meaning. This process is in many respects the reverse from what we have seen in section ..., where the development of deictic markers into visual evidentials was exemplified.

Examples of *ha-* as a main verb are shown in (47), from Bromley (1981:107):

- (47) a. hyyky¹⁷ ‘I saw you.’
 b. neeken-a
 2/1:saw-Q ‘Did you see me?’

As was mentioned above, when *ha-* occurs as an auxiliary, it takes on the function of location marker. With directional verbs, *ha-* “... refer[s] to seeing in the direction or over the distance specified” (Bromley (1981:109), no example sentences given). With certain other verbs the auxiliary denotes close proximity to a certain person, where the action expressed by the main verb occurs. Bromley takes the original meaning of this construction to be a physical one, where the action occurs on someone’s body. The connection between perception and deixis is not discussed, but is obvious from the examples given. Some of these examples are shown in (48), Bromley (1981:110):¹⁸

- (48) a. naik tale-neeikhe.
 my:tooth hollow:out-3/1:did
 ‘He dug (something) out of my tooth.’
 b. hesi juku-neeikhe
 mud:pigment color:change-3/1:did
 ‘He painted me with mud pigment.’

As an auxiliary, *ha-* can also be used when the action is not specifically located on someone’s body (as in example (49a) below), and even when the main verb expresses a non-physical event, as in (49b). These examples show that auxiliary *ha-* in these cases is grammaticalized (it has lost its independent status) as a general deictic morpheme:

- (49) a. kwe hv’-neeikhe.
 door open-3/1:did
 ‘He opened the door for me.’
 b. ettake epe’-neeikhe
 his:name think-3/1:did

‘He reminded me of his name.’

(Bromley 1981:111)

This section has shown that perception verbs such as *see* typically follow a grammaticalization path away from vision. They seem to become grammaticalized as the *consequence* of the perception, not the perception itself. Understanding is the consequence of seeing, hence this development in English. Only that what is in the immediate surroundings is visible, hence the grammaticalization of a *see*-verb into a deictic auxiliary in Dani.

10. Spatial deixis

In this section some languages that have extensive spatial deictic systems will be discussed. It will be shown that some languages display a striking similarity between these deictic systems and the evidential systems discussed in the previous sections. This strengthens the case for viewing evidentiality as a deictic category.¹⁹

Spatial deictic forms can be either based on fixed reference points (e.g., the cardinal points like *north*, or geographical features, such as *upstream*, *inland*) or on points relative to the speaker and/or hearer. A full deictic system is usually made up of a combination of these two possibilities. It is the latter which interests us here due to its obvious connections to evidentiality.

While languages such as English have a relative simple system of marking deixis with respect to the speaker, many languages have a far greater deictic system. Some of these deictic systems closely resemble evidential systems.

In many languages, a visible/invisible distinction is made in their demonstrative system. This happens for instance in Native American languages of the Pacific Northwest, such as Quileute and Salishan languages, in certain Australian languages and the Oceanic languages of New Caledonia. In (50) the definite demonstrative system of Yidin^y for humans and inanimates (Dixon 1977: 181) is shown.

(50)		<u>HUMAN</u>	<u>INANIMATE</u>
	‘this’	<i>yiŋɖu-</i>	<i>yiŋgu-</i>
	‘that’	<i>ŋuŋɖu-</i>	<i>ŋuŋgu-</i>
	‘far, invisible’	<i>yuŋɖu-</i>	<i>yuŋgu-</i>

Such deictic elements can extend their meaning to temporal relations as well. In Ouvea Iaaï (New Caledonia; Ozanne-Riviere 1997:96, citing Ozanne-Riviere 1976), some spatial deictic elements now denote temporal deixis as well:

(51)		<u>SPATIAL</u>	<u>TEMPORAL</u>
	<i>-ang</i>	near speaker	near in time
	<i>-e</i>	near hearer	near in time
	<i>-lee</i>	far from speaker and hearer	distant future
	<i>-jii</i> ²⁰	down; toward sea	past; introduces past relative clauses

In Cèmuhî (New Caledonia; Ozanne-Rivierre 1997:97; Rivierre 1980:156-7), the parameter of (in)visibility plays a role in spatial (and temporal) deixis:

(52)		<u>SPATIAL</u>	<u>TEMPORAL</u>
	<i>cè</i>	near speaker	present tense
	<i>ne</i>	distant, visible	
	<i>naa</i>	distant, invisible	future tense

The deictic systems of languages such as Yidin^y and Cèmuhî are strikingly similar to the evidential systems discussed in section 3 above. Whereas in languages such as Evenki, Turkish and Komi, the action is described with respect to the speaker's presence vs. absence, in languages such as Yidin^y and Cèmuhî objects are described with respect to their relation to the speaker.

Although they appear to be extremely rare, there are languages that, in addition to a distinction in (in)visibility, make an auditory distinction in their spatial deictic system as well. Already mentioned in section 5 is the case of the Mihilakawna dialect of Southern Pomo (Pomoan, Hokan; Oswald 1986:37), where the demonstrative *no-* 'that' is used for objects that are invisible but audible. (Pomoan languages in general make distinctions between visible and invisible objects).

The other example of a language with deictics for audible objects is Nyêlâyü (New Caledonian; Ozanne-Rivierre 1997:97-8), which is related to Cèmuhî, discussed above. Nyêlâyü has four deictic suffixes, as shown in (53):

(53)	<i>-ija</i>	near speaker
	<i>-êlâ</i>	distant, visible
	<i>-ili</i>	distant, invisible, audible
	<i>-imi</i>	absent, known

The system of deictic morphemes in Nyêlâyü corresponds to the usage of direct evidentials as described in sections 4-7. When a speaker uses an auditory evidential in a language such as Tuyuca, the implication is that higher evidence, i.e. visual, is not available. In other words, the action is portrayed as not visible but close enough to be audible. This is what obtains in the Nyêlâyü deictic system as well. When the morpheme *-ili* is used, the object is out of sight, but close enough to be heard. Obviously, the object must be capable of making a sound, hence the acceptability of *wang-ili* 'boat-AUDIB', but the ungrammaticality of **doo-ili* 'pot-AUDIB'. Similarly, an event has to be able to be heard in order for the auditory evidential to be used.

It is clear that evidentiality and deixis have a number of things in common, both in terms of their usage (both areas view their respective domain from the point of view of the speaker) and in terms of their origin. Evidentials, especially visual evidentials, are typically a secondary development and arise from deictic morphemes.

11. Conclusion

This paper argued for the development of visual evidentials from tense/aspect morphemes and from deictic morphemes. The motivation for both sources is essentially

the same: the establishment of a relation between the speaker and the action he/she is describing. A visual evidential places the speaker in the same deictic sphere as the action or event and as such fulfills deictic functions (see also Floyd 1999 for a discussion on the deictic role of evidentials in Wanka Quechua and De Haan 2001b for a discussion on inferential evidentials as hybrid deictic morphemes).

Because tense morphemes are deictic in nature (and the same goes for aspectual one in those languages where tense morphemes are lacking), the shift from temporal deixis to evidential deixis is easy to understand. Because speakers tend to describe what they are witnessing or have witnessed personally this can get pragmatically strengthened to the point where the verbal system has a direct/indirect distinction.

The same is true for those rare cases where a first person morpheme acts as a visual evidential. In that case the speaker is even more directly involved with the action. S/he is present in the action, something which is of the first person morpheme. This first person morpheme does not mark subject, something that can be clearly seen in examples (41) from Akha and (42) from Maricopa, where the subject is non-first. The first person morpheme then marks something else, namely the fact that the speaker was present when the action was played out (i.e., it marks visual evidence), and not necessarily that the speaker was an active participant.

The analysis presented here also explains the seemingly paradoxical absence of the development of visual evidentials from perception verbs. There is no reason for a perception verb to change into a visual evidential because there is no semantic motivation to do so. Both mean essentially the same thing: the action was perceived visually. There is no extra information conveyed in having the perception verb act as an independent or as a suffix/clitic. The actualization for the change is lacking and hence this explains why see-verbs are not a viable source for visual evidentials as they are defined in this paper.

REFERENCES

- Aikhenvald, Alexandra Y., and R.M.W. Dixon 1998. Evidentials and Areal Typology: A case study from Amazonia. *Language Sciences* 20:241-57.
- Aksu-Koç, Ayhan A. and Dan I. Slobin (1986). A Psychological Account of the Development and Use of Evidentials in Turkish. In Chafe and Nichols (eds.), 159-67.
- Anderson, Lloyd B. 1986. Evidentials, Paths of Change, and Mental Maps: Typologically Regular Asymmetries. In Chafe and Nichols, 273-312.
- Anderson, Stephen R. and Edward L. Keenan. 1985. Deixis, in Timothy Shopen, ed., *Language typology and syntactic description, Vol. III: Grammatical categories and the lexicon*. Cambridge: Cambridge University Press.
- Baker, Robin W. (1981). Komi Zyryan's second past tense. *Finnisch-Ugrische Forschungen*, Band XLV, 69-81.
- Barnes, Janet 1984. Evidentials in the Tuyuca Verb. *International Journal of American Linguistics* 50, 255-71.
- Bashir, Elena (1989). Inferentiality in Kalasha and Khowar. *CLS* 24, 47-59.
- Boeder, Winfried (2000). Evidentiality in Georgian. In Johanson and Utas (eds.), 275-328.
- Borgman, Donald M. 1990. Sanuma. In Derbyshire and Pullum (eds.), 15-248.
- Botne, Robert. 1995. The pronominal origin of an evidential. *Diachronica* 12, 201-21.
- Bromley, H. Myron. 1981. *A Grammar of Lower Grand Valley Dani*. Pacific Linguistics, Series C, No. 63. The Australian National University.
- Buder, Anja (1989). *Aspekto-temporale Kategorien im Jakutischen*. Wiesbaden: Harrassowitz Verlag.
- Bulut, Christinane (2000). Indirectivity in Kurmanji. In Johanson and Utas (eds.), 147-84.
- Caisse, Michelle. 1980. Northern Pomo Verbal Suffixes. In Redden (ed.), 39-47.
- Chafe, Wallace and Johanna Nichols, eds. 1986. *Evidentiality: the Linguistic Coding of Epistemology*. Norwood, NJ: Ablex.
- De Haan, Ferdinand (1999). Evidentiality and Epistemic Modality: Setting Boundaries. *Southwest Journal of Linguistics* 18, 83-101.
- De Haan, Ferdinand (2001a). The Cognitive Basis of Visual Evidentials. In Alan Cienki, Barbara J. Luka, and Michael B. Smith (eds.) *Conceptual and Discourse Factors in Linguistic Structure*. Stanford: CSLI Publications, 91-106.
- De Haan, Ferdinand (2001b). The Place of Inference within the Evidential System. *IJAL* 67, 193-219.
- DeLancey, Scott. 1997. Mirativity: the grammatical marking of unexpected information. *Linguistic Typology* 1.33-52.
- Derbyshire, Desmond C. 1979. *Hixkaryana*. *Lingua Descriptive Studies*, Amsterdam: North Holland Publishing Company.
- Derbyshire, Desmond C. 1986. Comparative Survey of Morphology and Syntax in Brazilian Arawakan. In Derbyshire and Pullum (eds.), 469-566.
- Derbyshire, Desmond C., and Geoffrey K. Pullum, eds. 1986. *Handbook of Amazonian Languages, Volume 1*. Berlin: Mouton de Gruyter.
- Derbyshire, Desmond C., and Geoffrey K. Pullum, eds. 1990. *Handbook of Amazonian Languages, Volume 2*. Berlin: Mouton de Gruyter.

- Dik, Simon, and Kees Hengeveld. 1991. The hierarchical structure of the clause and the typology of perception verb complements. *Linguistics* 29, 231-59.
- Dixon, Robert M. W. 1977. *A Grammar of Yidin*. Cambridge: Cambridge University Press.
- Donabédian, Anaïd (1996). Pour une interprétation des différentes valeurs du médiatif en Arménien Occidental. In Guentchéva (ed.), 87-108.
- Drabbe, P. 1952. *Spraakkunst van het Ekagi*. 's-Gravenhage: Martinus Nijhoff.
- Dryer, Matthew; Martin Haspelmath; David Gil; Bernard Comrie, eds. (forthcoming). *World Atlas of Language Structures*. Oxford: Oxford University Press.
- Dwyer, Arienne (2000). Direct and Indirect experience in Salar. In Johanson and Utas (eds.), 45-59.
- Edgerton, Fay E. (1963). The tagmemic analysis of sentence structure in Western Apache. In Harry Hoijer (ed.) *Studies in the Athapaskan Languages*. Berkeley and Los Angeles, University of California Press, 102-48.
- Everett, Daniel. 1986. Pirahã. In Derbyshire and Pullum (eds.), 200-325.
- Fleischman, Suzanne (1989). Temporal distance: a basic linguistic metaphor. *Studies in Language* 13, 1-50.
- Floyd, Rick (1999). *The Structure of Evidential Categories in Wanka Quechua*. Dallas: Summer Institute of Linguistics and The University of Texas at Arlington.
- Frank, Paul. 1990. *Ika Syntax*. Studies in the Languages of Colombia 1. Dallas: Summer Institute of Linguistics.
- Franklin, Karl James. 1971. *A Grammar of Kewa, New Guinea*. Pacific Linguistics, Series C, No. 16 Canberra: Australian National University.
- Friedman, Victor (1986). Evidentiality in the Balkans: Bulgarian, Macedonian, and Albanian. In Chafe and Nichols (eds.), 168-87.
- Goddard, Pliny E. 1911. Elements of the Kato language. University of California Publications in American Archaeology and Ethnology 11.
- Gordon, Lynn. 1986. The Development of Evidentials in Maricopa. In Chafe and Nichols, 75-88.
- Guentchéva, Zlatka (1996). *L'Énonciation Médiatisée*. Louvain-Paris: Peeters.
- Halpern, A. M. 1946. Yuma. In Osgood, 249-88.
- Harris, Alice C. (1985). *Diachronic Syntax: The Kartvelian Case*. New York: Academic Press.
- Harris, Alice C., ed. (1991). *The Indigenous Languages of the Caucasus. Volume 1, The Kartvelian languages*. Delmar, NY: Caravan Books.
- Harris, Alice C. (1991). Mingrelian. In Harris (ed.), 313-94.
- Harris, Alice, and Lyle Campbell. 1995. *Historical Syntax in Cross-linguistic Perspective*. Cambridge: Cambridge University Press.
- Hoff, B.J. (1986). Evidentiality in Carib: Particles, Affixes, and a Variant of Wackernagel's Law. *Lingua* 69, 49-103.
- Hoijer, Harry. 1946. Chiricahua Apache. In Osgood, 55-84.
- Holisky, Dee Ann (1991). Laz. In Harris (ed.), 395-472.
- Holisky, Dee Ann; Rusudan Gagaa (1991). Tsova-Tush (Batsbi). In Harris (ed.), 147-212.
- Hopper, Paul; Elisabeth Closs Traugott (1993). *Grammaticalization*. Cambridge: Cambridge University Press.

- Johanson, Lars; Bo Utas, eds. (2000). *Evidentials*. Berlin: Mouton de Gruyter.
- Jones, Wendell, and Paula Jones. 1991. *Barasano Syntax*. Dallas: Summer Institute of Linguistics.
- Kimball, Geoffrey D. 1991. *Koasati Grammar*. Lincoln: University of Nebraska Press.
- Koehn, Edward, and Sally Koehn. 1986. Apalai. In Derbyshire and Pullum (eds.), 1986. 33-127.
- Koshal, Sanyukta. 1979. *Ladakhi Grammar*. Delhi: Motilal Banarsidass.
- Leinonen, Marja (2000). Evidentiality in Komi Zyryan. In Johanson and Utas (eds.), 419-40.
- Leinonen, Marja; Maria Vilkuna (2000). Past tenses in Permic languages. In Östen Dahl (ed.) *Tense and Aspect in the Languages of Europe*. Berlin: Mouton de Gruyter, 495-514
- Li, Fang-kuei (1946). Chipewyan. In Osgood (ed.), 398-423.
- Loeweke, E. and J. May. 1980. General Grammar of Fasu (Namo Me). *Workpapers in Papua New Guinea Languages* 27, 5-106.
- Malone, Terrell. 1988. The Origin and Development of Tuyuca Evidentials. *International Journal of American Linguistics* 54, 119-40.
- Matlock, Teenie. 1989. Metaphor and the Grammaticalization of Evidentials. *BLS* 15, 215-25.
- McLendon, Sally. 1975. *A Grammar of Eastern Pomo*. Berkeley: University of California Press.
- Menz, Astrid (2000). Indirectivity in Gagauz. In Johanson and Utas (eds.), 103-14.
- Metzger, Ronald G. 1981. *Gramática Popular del Carapana*. Bogotá: Instituto Lingüístico de Verano.
- Mithun, Marianne (1999). *The Languages of Native North America*. Cambridge: Cambridge University Press.
- Moshinsky, Julius. 1974. *A Grammar of Southeastern Pomo*. Berkeley: University of California Press.
- Nedjalkov, Igor. 1996. *Evenki*. London: Routledge.
- Nichols, Johanna (1994a). Chechen. In Smeets (ed.), 1-77.
- Nichols, Johanna (1994b). Ingush. In Smeets (ed.), 79-145.
- O' Connor, Mary Catherine. 1980. Some Uses of Case-Markings in Northern Pomo. In Redden (ed.), 48-58.
- O' Connor, Mary Catherine. 1992. *Topics in Northern Pomo Grammar*. New York: Garland.
- Osgood, C., ed. 1946. *Linguistic Structures of Native America*. New York: Viking.
- Oswalt, Robert L. 1961. *A Kashaya Grammar (Southwestern Pomo)*. Ph.D. Thesis, University of California, Berkeley.
- Oswalt, Robert L. 1976. Comparative Verb Morphology of Pomo, In Margaret Langdon and Shirley Silver, eds., *Hokan Studies*. The Hague: Mouton, 13-28.
- Oswalt, Robert L. 1986. The Evidential System of Kashaya. In Chafe and Nichols (eds.), 29-45.
- Ozanne-Rivierre, Françoise (1976). *Le iaai, language d'Ouvéa (Nouvelle-Calédonie)*. Paris: SELAF.

- Ozanne-Rivierre, Françoise (1997). Spatial References in New Caledonian Languages. In Gunter Senft (ed.) *Referring to Space: Studies in Austronesian and Papuan Languages*. Oxford: Oxford University Press, 83-100.
- Palmer, Frank R. 1986. *Mood and Modality*. Cambridge: Cambridge University Press.
- Pitkin, Harvey. 1984. *Wintu Grammar*. Berkeley: University of California Press.
- Redden, James E., ed., 1980. Proceedings of the 1980 Hokan Languages Workshop. Southern Illinois University Occasional Papers on Linguistics 9. Carbondale: SIU.
- Rice, Keren (1989). *A Grammar of Slave*. Berlin: Mouton de Gruyter.
- Rivierre, Jean-Claude (1980). *La Langue de Touho (Nouvelle-Calédonie)*. Paris: SELAF.
- Sapir, Edward; Harry Hoijer (1967). *The Phonology and Morphology of the Navaho Language*. Berkeley and Los Angeles, University of California Press.
- Schlichter, Alice. 1986. The Origin and Deictic Nature of Wintu Evidentials. In Chafe and Nichols (eds.), 46-59.
- Smeets, Riëks, ed. (1994). *The Indigenous Languages of the Caucasus, Volume 4: North East Caucasian Languages, Part 2*. Delmar, NY: Caravan Books.
- Strom, Clay. 1992. *Retuarã Syntax*. Dallas: Summer Institute of Linguistics.
- Swanton, John R. 1911. Haida. In Franz Boas, ed., *Handbook of American Indian Languages*, Bureau of American Ethnology Bulletin 40, Part 1, pp. 205-282.
- Thurgood, Graham. 1986. The Nature and Origins of the Akha Evidentials System. In Chafe and Nichols, 214-222.
- Van den Berg, Helma. 1995. *A Grammar of Hunzib*. Lincom Studies in Caucasian Linguistics 1 Munich: Lincom Europa.
- Watahomigie, Lucille J.; Jorigine Bender; and Akira Y. Yamamoto. 1982. *Hualapai Reference Grammar*. Los Angeles: American Indian Studies Center, UCLA.
- West, Birdie. 1980. *Gramática Popular del Tucano*. Bogotá: Instituto Lingüístico de Verano.
- Westermann, Diedrich. 1930. *A study of the Ewe language*. London: Oxford University Press.
- Willett, Thomas L. (1988). A Cross-Linguistic Survey of the Grammaticization of Evidentiality. *Studies in Language* 12, 51-97.
- Willett, Thomas L. 1991. *A Reference Grammar of Southeastern Tepehuan*. Dallas: Summer Institute of Linguistics.
- Windfuhr, Gernot L. (1982). The verbal category of inference in Persian. In *Monumentum Georg Morgenstierne II. (Acta Iranica 22)*. Leiden: Brill, 263-87.

NOTES

¹ Anderson (1986:305) states: “Specifically VISUAL evidentials are actually quite rare. Perhaps this is because the most common evidence is visual and thus need not be specifically noted.” This leads into a circular argument: why then does Maricopa have a visual evidential?

² Direct evidence contrasts with *indirect* evidence refers to information about actions or events which the speaker did not witness personally but which he or she was told about after the action occurred. This type is generally called the *quotative*, *reportative*, or *hearsay* evidential. The final major evidential category is that of *inference*. The speaker draws the conclusion that a certain action has occurred based on evidence available to him/her. This type of evidentiality is very common based on the WALS data. Indirect evidentiality plays no role in this study.

³ One could argue that visual evidentiality is marked in Retuarã and Koasati by default, i.e., if no other evidential is present then we must be dealing with visual evidence. Even though this position has been argued for in the literature (e.g., Schlichter 1986:54 for Wintu), this is not a priori correct. It presupposes that evidentiality is obligatorily marked in these languages and this is not necessarily the case. Although the absence of an indirect evidential can be grammaticalized as a direct evidential (cf. the case of Hixkaryana), this does not mean that this is a necessary process. It can simply mean that the speaker does not want or need to give evidence for his or her statement. In terms of the present discussion, this means that visual evidentiality is not (yet) salient enough to eclipse the original meaning (either temporal or aspectual). In the WALS sample, the majority of languages only have indirect evidentials. This does not mean that absence of indirect evidentials entails that the speaker has direct evidence.

⁴ Unlike quotatives which are typically derived from a verb with the meaning ‘to say.’

⁵ Barnes states (p. 263) that the Inferential cannot be used in example (15a) since this would imply seeing the evidence. However, in the accompanying explanation to sentence (15a), it is explicitly stated that evidence for making the statement, namely the burned field, is seen. So it is not exactly clear why the Inferential cannot be used in (15a).

⁶ The *-wa/-wa* morpheme in Tucano and Carapana refers to masculine and feminine plurals only. For inanimates, the *-wɨ* morpheme is used.

⁷ It is not stated to what time frame the Remote Past belongs to.

⁸ Oswalt (1984:36-7) calls the *-ya* suffix the Visual and the *-wa* suffix the Factual. I have chosen not to follow his practice because both suffixes have the expression of visual evidentiality as their primary meaning. Labeling them differently might cause confusion.

⁹ The form *-?el* is also used as a kind of inferential evidential. According to Pitkin (1984:148), the two are distinct.

¹⁰ Aikhenvald and Dixon (1998) argue that evidentiality in the Yanomami language family is an independent development from the system that developed in Tucanoan. However, the Yanomami languages closest to the Tucanoan area, Xamatauteri and Sanuma, possess a larger evidential system than the other Yanomami languages. This may be due to diffusion, as Aikhenvald and Dixon claim.

¹¹ In certain contexts the *ku-* morpheme is dropped. It is dropped optionally when it is preceded by a negation, and obligatorily dropped when it occurs in a relative clause (Borgman 1990:169).

¹² The combination *-da-da* does occur with another meaning of *-da*, namely as an intensifying suffix (p.136-7). The word *le:n* ‘past time, ancient’ gives rise to *le:n-da* ‘yesterday’, which then yields *len-da-da* ‘a long time ago.’ Pitkin speculates that *-da* ‘1SG’ is derived from this intensifying morpheme.

¹³ There are actually four different visual evidentials in Akha. The form of an evidential in Akha depends on whether it refers to nonpast or past events, and whether the information is expected or unexpected. In the visual paradigm, all four suffixes are based on *ŋa* so that there is no problem for our analysis. The suffix shown in sentence (19) is the suffix for nonpast, unexpected information (Thurgood 1986:218).

¹⁴ The literature on perception verbs and their complements is extremely large. For an overview see Dik and Hengeveld 1991.

¹⁵ Dik and Hengeveld refer to the sentences in (10.1) as *Immediate Perception* and *Mental Perception*, respectively.

¹⁶ A similar argument can be made for the verb *hear*, which can in much the same way refer to both auditory events (direct evidentiality) and quotative events (indirect evidentiality).

¹⁷ The verb stem *ha-* combines with subject and object prefixes and undergoes extensive phonological changes, depending on the subject and object prefix combination (see Bromley 1981:108 for an overview).

-k- is a morpheme signaling the so-called Factive mode.

¹⁸ All examples given for this meaning of the auxiliary are examples with a 3SG subject and a 1SG object. This may be due to elicitation techniques, but given that see-verbs carry with them

¹⁹ This is not meant to be an exhaustive treatment of the category of deixis. See Anderson and Keenan 1985 for more details.

²⁰ This is an example of a deictic morpheme based on geography, not on the speaker.