

THE PLACE OF INFERENCE WITHIN THE EVIDENTIAL SYSTEM

1. Introduction. This paper is concerned with the evidential category of *inference*, which is the grammaticalized way of showing that the speaker makes his or her statement based on a deduction from facts, and not on a direct observation of the action itself. This evidential category will be referred to in this paper as the Inferential evidential. Examples from Tuyuca, an Eastern Tucanoan language (Barnes 1984:260), and Southeastern Tepehuan, a Uto-Aztecan language (Willett 1991:165) are shown in (1a) and (b), respectively. In sentence (1a), the act of rotting was not observed, but it is inferred from the available evidence. The evidence on which the inference is based can also be expressed overtly, as in sentence (1b).¹

- (1) a. *bóahōã-yu.*
 rot-INFER:OTHER:PAST
 ‘It rotted.’ (Said of a plant after pulling it up to examine it.)
- b. *Dáman dara-t vac dyi turasno.*
 shallow sit-PI INFERART peach
Pui’ cu-t va’ ia’ray gu jʰvʰl.
 Thus so-PI then fell ART wind
 ‘These peach trees must have been planted shallowly. That’s why the wind
 blew them over.’

In Tuyuca, as in many other languages, grammaticalized inference (and evidentiality in general) is expressed by means of verbal suffixes. In others, like Southeastern Tepehuan, particles are used to express inference.

In this study, I will examine the role inference plays within the general system of evidentiality. One of the most common assumptions in studies dealing with evidentiality is that the main distinction in evidential categories within a language is that of *direct* evidence - *indirect* evidence, actions personally witnessed by the speaker versus actions not witnessed by the speaker. It will be shown here that as a general category the inferential evidential has certain elements in common with both sensory evidentials (such as visual evidentiality) and with evidentials denoting secondhand information (the so-called quotative evidential). Languages can choose how they wish to treat the inferential evidential. Inferentials can consist of both direct and indirect evidence as these are commonly defined and an additional parameter is needed to analyze this evidential category.

This paper is structured as follows: section 2 introduces a framework for evidentiality based on two binary features, direct/indirect, and firsthand/secondhand. It is argued that one feature (in the literature usually referred to as direct/indirect) is not enough to account for the observed variation in evidential systems.

Sections 3-9 investigate the evidential systems of individual languages, with an emphasis of the behavior of the inferential category. Two languages are examined in great detail, Kashaya Pomo, and Tuyuca (sections 3 and 4 respectively) and the results are compared to several other languages. Section 5 deals with Hualapai, an unusual language in that there are only witnessed and inferential evidentials in the language.

These languages all have the feature direct/indirect as the underlying feature.

In sections 6-9 several languages are shown which have the other feature underlying their evidential system. Languages such as Patwin and Takelma base their system on a firsthand/secondhand opposition. Finally, section 10 tries to find a cognitive interpretation for the observed variation by arguing that the two basic features correspond to different components of evidentiality.

2. On the semantic composition of evidentiality. The category of evidentiality is usually defined in semantic terms, namely as the source of the information the speaker has for his or her statement (see e.g., Bybee 1985:184, Anderson 1986:274). However, there is also a syntactic/morphological component to evidentiality. While English adverbs such as *evidently* and *seemingly* are semantically evidential (they show that the action in the speaker's statement was not witnessed directly), they are not on the same level as many of the evidential morphemes discussed in this study. Therefore, other criteria are needed to distinguish grammaticalized evidentials from other morphemes with an evidential meaning but which are not grammaticalized.² While some criteria have been proposed in the literature (see Anderson 1986; De Haan 1997, 1999a), they are not universally accepted and most studies dealing with evidentials take a language-by-language approach to the problem of what constitutes a grammaticalized evidential. Consequently, there are very few typological studies dealing with specific evidential categories, with the exception of studies on the quotative (see Harris and Campbell 1995:168-72).

Most scholars define evidentiality by its semantic properties and this is done in

the present paper as well. The distinction that is usually made is that between *direct* and *indirect* evidence or between *firsthand* and *secondhand* evidence (these terms are usually synonymous but, as will be explained below, they are not interchangeable in this paper). That is, the information of the action described either comes from the speaker him- or herself (direct or firsthand) or the speaker received word of the action in the sentence through a second party (indirect or secondhand). See e.g., Givón (1982), Akatsuka (1985) and Willett (1988). In this paper, these two sets of terms will be used, but they refer to slightly different groupings of evidential meanings. The crucial difference between these sets is the placement of the inferential evidential.

Examples of direct evidence are *visual*, *auditory* and other sensory sources of information, as well as inferential evidence: *evidence after the fact* (e.g. traces of the action described, such as footprints in the snow as evidence of a human or animal passing by or bread crumbs as sole remaining evidence of the bread which once existed). Indirect evidence consists mainly of the quotative category, the category of hearsay, when the speaker has been told about the event he/she is describing by another person.

In the second division, firsthand/secondhand, the same evidential categories have a slightly different distribution. With firsthand knowledge, the speaker has sensory information about the event, with secondhand information, only evidence after the fact and hearsay, no sensory evidence. The difference between this characterization and the direct/indirect one is that with the firsthand/secondhand distinction the inferential category belongs to the secondhand evidentials, since when the speaker sees evidence after the fact, he/she was not present when the action took place and did not personally witness it.³ With secondhand information, the action described in the sentence typically

(but not necessarily) occurred in the past.

If we compare these two terminological sets, we see that the firsthand/secondhand distinction corresponds to the traditional division of evidential meanings (actions or events witnessed vs. nonwitnessed) while the direct/indirect division is a new proposal, according to which actions and events are classified as to whether the speaker has personal evidence or not.

Using these terms, we can classify evidential categories by means of two features, which will be called here [DIR], for the direct/indirect division, and [1ST], for the firsthand/secondhand division. Both features are binary in nature, i.e., both features can have a positive or a negative value.

The theoretical advantage we gain by introducing a second feature would appear to be very slim, since the only category that is affected by adding a second feature is that of evidence based on deduction, the inferential. This category is classified as [+DIR], but as [-1ST]. All the other categories, either visual, auditory, or hearsay, have the same value for both features. That is, the visual evidential is both [+DIR] and [+1ST], the quotative is both [-DIR] and [-1ST]. However, this analysis gives us the chance to group the inferential evidential with either sensory or quotative evidentiality, depending on which feature is considered more basic in the given language.

We have therefore two groups of languages, one for which [DIR] is the basic feature and one for which [1ST] is basic. The consequence this has for the evidential system is shown in (2) and (3), respectively:

(2) *Classification of evidential categories with [DIR] as basic feature*

Sensory [+DIR]

Inferential

Quotative [-DIR]

(3) *Classification of evidential categories with [1ST] as basic feature*

Sensory [+1ST]

Inferential [-1ST]

Quotative

We can compare this analysis of the grouping of evidential categories to previous ones. Willett (1988:57) argues that the evidential categories in languages typically fall into three broad categories. These categories, Attested, Reporting, and Inference, correspond to three of the four possible feature combinations. Willett's categories and the corresponding feature analysis is shown in (4) below:

(4)	<i>Willett's terms</i>	<i>feature analysis</i>
Direct	Attested	[+DIR, +1ST]
	Reporting	[-DIR, -1ST]
Indirect	Inference	[+DIR, -1ST]

Willett's Attested category corresponds to direct sensory evidentials, while Reporting and

Inference correspond to the quotative and inferential evidentials, respectively. The fourth logical combination, *[-DIR,+1ST], is of course impossible since a speaker can never have only non-sensory information of an event he or she witnessed personally.

Of course a speaker can have more than one source of information available (e.g., both visual and quotative), but in such cases in general only the evidential which expresses the most salient source will be used. This is the evidential which is higher on the evidential hierarchy, as explained in De Haan (1997) where I argued for treating evidential categories as forming a hierarchical system. This analysis is based on the observation that a speaker will typically use the highest possible evidential for which he or she has evidence. Evidential categories conform to the hierarchy shown in (5) below. Not all languages with evidentials grammaticalize all these categories and some languages make further distinctions.

(5) *Hierarchy of evidential categories*

Sensory > Inferential > Quotative

A speaker will use the leftmost (highest) evidential that can be used. He/she will try to use a sensory evidential whenever possible and only when there is no such evidence available, he/she will go down to the next level on the hierarchy, until a level is reached for which the speaker has the corresponding evidence.

It must be kept in mind that the use of an evidential is optional in most languages. The absence of an evidential in those languages can best be seen as either the absence of evidence or a choice on the part of the speaker not to express his or her evidence for the action described. In individual languages, the categories in (5) may again be subdivided.

The firsthand category, for instance, can be subdivided in visual - other sensory evidence. The secondhand category can be divided into evidence from another person or evidence obtained from a dream, as is the case in Kwakiutl (Boas 1911:496).

The evidential hierarchy with the greatest number of levels is found in the Eastern Tucanoan languages (an example is Tuyuca which will be discussed in section 4 below). In these languages there are typically two levels of sensory information (visual and nonvisual), an inferential, and a quotative. In addition, there is a level to denote absence of evidence because in these languages evidentials are an obligatory category and there must be some way of marking that the speaker has no evidence.

3. The evidential system of Kashaya. Kashaya Pomo, a Hokan language of Northern California, is a language with a rich evidential system. It has evidentials for all categories listed in section 2 plus a reduced system for modes other than the indicative. The data in this section are taken from Oswald (1961, 1986). Table 1 shows the evidential morphemes of Kashaya. I will restrict myself in this study mainly to those evidentials occurring in what Oswald (1986) calls spontaneous and responsive speech, which are used in everyday conversations (1986:33). They exhibit the greatest number of evidential distinctions.

 Table 1 about here

As can be seen in Table 1, Kashaya has two different sets of inferential markers. The first one is *-qa*, termed the Inferential I, and the second morpheme *-bi*, which Oswald

(1986) calls the Inferential II.⁴ The main difference between the two morphemes seems to be the fact that the Inferential II must cooccur with other morphemes and can cooccur with other evidential morphemes. It will be discussed below, together with the Inferential I. In order to properly assess the function of the Inferential category within the Kashaya evidential system, we need to contrast its range of meanings with those of the other evidential categories.

The first evidential category discussed in Oswalt (1986), the Performative, is represented by two morphemes. The distinction between these morphemes appears to be aspectual in nature.⁵

- (6) a. *qowá:qala*
qowaq-wela.
 pack-PERFORM.IPF⁶
 ‘I am packing.’
- b. *qowáhmela*
qowaq-mela
 pack-PERFORM.PERF
 ‘I just packed.’ (Oswalt 1986:35)

Sentence (6a) shows the imperfective Performative *-wela*, while (6b) shows the perfective Performative *-mela*. The Performative is probably not a true evidential category, because it is limited to first person subjects and it occurs only at the beginning

of a conversation, after which it is replaced by the Factual-Visual evidential.

The Factual-Visual evidential is represented in Kashaya by two morphemes which Oswald claims differ in aspect, although he calls the morpheme *-wa* Factual and the morpheme *-ya* Visual. Besides the aspectual difference, these morphemes also differ in that the Factual can be used to make generalizations and to facts that are common knowledge. The Visual can never be used that way (1986:36). The aspectual difference between these morphemes is shown in (7). An example of the Factual for facts of common knowledge is shown in (8).

- (7) a. *qowá:q^h*
qowaq-wa
 pack-FACT
 ‘(I see) he is packing.’
- b. *qowahy*
qowaq-ya
 pack-VIS
 ‘(I just saw) he packed.’ (Oswalt 1986:36)

- (8) *si^h ta=yachma* *cahno-w.*
 bird=PL:SUBJ sound-FACT
 ‘Birds sing’ (general statement about birds) or
 ‘(I see/saw) birds are/were singing.’ (imperfective action)

The Visual is used for “perfective or completed actions which the speaker knows to be true because he saw them happen.” (Oswalt 1961:244). From the description of the Visual, it appears that it can only refer to past, completed events.

The different uses of the Factual and the Visual morphemes are consistent with the hypothesis that these morphemes developed from aspectual morphemes. The Factual is used for typical imperfective situations (action in progress, general states, and only the Factual can cooccur with negative events), while the Visual typically occurs with perfective, completed events.

Turning to the Auditory suffix *-Vnna* now,⁷ this suffix signifies that the speaker has heard the action described in the sentence, but not seen it (1986:37). A typical example is shown in (9):

- (9) *momá:cin*
mo-mac-Vnna
 run-in-AUD
 ‘I just heard someone run in.’

The Auditory suffix is used only in those cases in which the action described was heard at

the moment it happened, and not in those cases in which the speaker heard about the action later from somebody else, in which case the Quotative (see below) would be used. Finally, and this is crucial for our argument, the Auditory suffix cannot be used in case the speaker perceived the action by other sensory means, smelling and tasting. These senses are covered by the next category, the Inferential.

The Inferential I *-qa* is used when there is no visual or auditory evidence available but when there is other evidence to support the statement. The speaker is aware of the evidence. Examples of the Inferential are shown in (10), from Oswald (1986:38,39):

- (10) a. *mu cohtoc^hq^h*
mu cohtoc-qa
 he leave-INFER.I
 ‘He has left.’ (Said on discovering that the person is no longer present)
- b. *kalikak^h dima: s’i-qa-c’-q^h.*
 book holding make-cause-self-INFER.I
 ‘He has had a picture taken of himself holding a book.’

The evidence for making the statement in sentence (10b) is the existence of the picture, which the speaker has seen. The speaker could not use the visual evidential, nor the auditory evidential because that would entail that the speaker has witnessed the act of picture taking itself either by visual or auditory means. The fact that the Inferential evidential is used shows that this is not the case.

The other senses are expressed with the Inferential I as well (Oswalt 1986:38):

(11) *cuhni: muʔt'a-q^h.*

bread cook-INFER.I

‘[I smell that] bread has been cooked.’

Oswalt states that sentences such as (11) do occur, although they are perceived as being rather unspecific. It is more common to add a separate verb to denote that a sensation is involved. In this case, one could add the verb *mihšew* ‘to smell’ to be more specific. In this case we are of course no longer dealing with a grammaticalized evidential. Nevertheless, the existence of sentences such as (11) proves that sensory evidence such as taste and smell can be expressed by means of a grammaticalized evidential. The fact that this is the Inferential is significant.

As mentioned above, Kashaya has another suffix besides *-qa* for the inferential category, namely *-bi* called the Inferential II. Its precise status with respect to *-qa* is uncertain. In Oswalt (1961:243), the difference is described in semantic terms: “*-qa* is the preferred suffix when the evidence is discovered soon after the action or is incontrovertible, but *-bi* Inferential may be used in such cases and also when the inference takes more involved reasoning.” He gives the following pair (1961:243):

(12) a. *sinamq^h*

drown:INFER.I

‘He must have drowned.’⁸

- b. *sinam ʔbiw*⁹
 drown:INFER.II:ABS
 ‘He must have drowned.’

Even though the two sentences are identical in their translation, they have different implications. Sentence (12a) can be used if “... the speaker saw the body cast up on a beach or floating in the water, or saw the capsized boat in which the person spoken of had been sailing. But the latter evidence is getting into the range in which *-bi* would be preferred.” (1961:243). Sentence (12b) is appropriate with the same evidence “or because the person was known to have gone out sailing and was long overdue in returning.” (1961:243). The semantic difference between the Inferential I and II appears to be very small at best. Comparing sentence (12b) which uses the Inferential II with (10a) which uses the Inferential I, one gets the idea that the two are very similar semantically. Both would appear to involve the same kind of reasoning.

In Oswald’s 1986 analysis of the evidential system, the analysis is different. The difference between the two Inferential morphemes is taken to be distributional in nature rather than semantic (1986:41). The *-bi* suffix of the Inferential II can never be verb-final but it must always be combined with another suffix, which can be another evidential. An example is shown in (13), Oswald (1986:41):

- (13) *du ʔku-bi-na* *cohtoc*^h *-q*^h
 finish-INFER.II-SS leave-INFER.I
 ‘He must have finished and left.’ (the work is done and he is no longer here)

Sentence (13) is a biclausal sentence in which both actions are being inferred. The subordinate clause (the first one) contains the same-subject marker *-na*, hence the use of *-bi*, while the Inferential is the final suffix in the main clause, and therefore *-qa* (which regularly changes into *-q^h*) is appropriate there. From a semantic point of view, there appear to be no difference between the two Inferential morphemes and they will be treated in this paper as two different morphemes of one semantic category, inference.

The last category discussed here is the Quotative *-do*. It is used when the speaker has neither witnessed the action, nor has direct evidence to infer the action. He relies on information from others. The most natural usage of the Quotative is in narratives which describe events from a long time ago and of which the narrator can have no direct information. Oswalt only gives examples for the Quotative in narratives, but he implies that it can be used in everyday speech as well. One such example of the Quotative in the Responsive mode is (1986:41):

- (14) *meʔ mu mi: sikuhtimeʔ=yac^h ma ʔi-do-m ʔul.*
 but that there drinking=people be-QUOT-RESP already
 ‘But I was told the ones that drink are already there.’

The Quotative can only be used if the speaker has heard about the event described from someone else. Crucially, it cannot be used if the speaker has evidence for the action in the sentence. If there is any evidence, the Inferential category suffix (either *-qa* or *-bi*) must be used.

Each of the evidential categories discussed here corresponds to a level on the evidential hierarchy, shown in (4) above (The Inferential I and II are grouped together.). Since Kashaya has four distinct semantic evidential categories (Visual, Auditory, Inferential, and Quotative), there are four levels of the hierarchy in Kashaya. In (15) below, each level is associated with the appropriate feature analysis.

(15) *Feature analysis of Kashaya hierarchy*

	description	feature analysis
Level 1	visual evidence factual events	[+DIR,+1ST]
Level 2	auditory evidence	[+DIR,+1ST]
Level 3	other sensory evidence inferential evidence	[+DIR,+1ST] [+DIR,-1ST]
Level 4	secondhand evidence	[-DIR,-1ST]

The crucial level for determining which of the features is the basic one is Level 3, which is occupied by the Inferential which is used for both [+DIR,+1ST] evidence (sensory evidence) and [+DIR,-1ST] evidence (inference). The feature with the same value in both cases is direct, and its value is [+DIR] in both cases.

The evidential system of Kashaya can therefore be summarized as follows: the feature [DIR] is the underlying feature of the system and the Inferential is grouped with the sensory evidentials. This is based on the fact that some sensory evidence (e.g., smell) is expressed with the Inferential and not with the other sensory evidentials. We can therefore divide the Kashaya evidential system in spontaneous speech as follows:¹⁰

(16) *Summary of the Kashaya evidential system***Sensory**

Visual	-ya/-wa	
Auditory	-Vnna	[+DIR]

Inferential

Inferential (I/II)	-qa/-bi	
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Quotative

Quotative	-do	[-DIR]
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4. Tuyuca. Tuyuca is an Eastern Tucanoan language spoken in the Vaupés River region of Brazil and Colombia. One of the characteristics of the Eastern Tucanoan branch is a large evidential system (Barnes 1984, Malone 1988). Barnes' (1984) description of the Tuyuca evidential system is the best description of evidentials in an Eastern Tucanoan language and this evidential system is shown in table 2.

 Table 2 about here

This evidential system has three parameters: there is a tense distinction, a distinction according to person, and five evidential categories. The tense distinction is between past - present. There is a separate future tense, but this exhibits no evidential distinctions. There are four distinct forms for person: 3 sg. masc. 3 sg fem., 3 pl., and a single form for all other persons. The five evidential categories are called by Barnes Visual, Nonvisual, Apparent (corresponding to the Inferential), Secondhand (what is called here the Quotative), and Assumed (1984:258). These three parameters gives us a total of forty

possible combinations but not all of them are actually attested. For instance, there are no forms for the present tense of the Secondhand category. In addition to the morphemes shown in table 2, there are also interrogative evidentials, but those will not be treated in the present study.

We will now turn to a discussion of the individual categories. The Visual category is of course used for events which the speaker saw personally. An example is shown in (17), Barnes (1984:257):

- (17) *dīiga apé-wi.*
 soccer play-VIS.3SG.MASC.PAST
 ‘He played soccer (I saw him play).’

Apart from visual evidence, this category can also denote that we are dealing with general statements and common knowledge statements, as can be seen in (18), from Barnes (1984:259):

- (18) *ānā wāmek̄ti-yo.*
 Ana is.named-VIS.3SG.FEM.PRES
 ‘She is named Ana.’

The Nonvisual evidential category is used when the speaker has other sensory information about the described event. This evidence can be auditory, but it can also be evidence form taste, smell and touch. This is illustrated in (19a) and (b) below. In (19a)

an auditory event is shown, while (19b) shows that the sense of smelling is also rendered by the same evidential category. In either sentence, the implication is that the event was not seen. In this respect, Tuyuca differs from Kashaya in which nonvisual, nonauditory evidence is expressed with the Inferential while in Tuyuca, this evidence is combined with auditory evidence to form a Nonvisual sensory evidential.

- (19) a. *mutúru* *bʰsɨtɨ*
 motor roar-NONVIS.3SG.MASC.PAST
 ‘The motor roared.’
- b. *yoáro* *susúhã-ta*
 long:way smell-NONVIS.3PL.PAST
 ‘They smelled (of liquor) a long way off.’ (Barnes 1984:260)

The next category is the Inferential evidential, which Barnes calls the *Apparent* evidential (1984:260). It is used when the speaker draws conclusions from available evidence. It occurs mainly in the past tense but present tense forms are available for non-first persons. Examples are shown in (20) (repeated from (1a) above) and (21) below. The inferential evidential is used in (20), from Barnes (1984:260), to show that the act of rotting itself was not witnessed by the speaker, but that from the evidence (the rotted plant) the inference was clear. In sentence (21), from Barnes (1984:261), the inferential is used because the speaker does not have direct sensory evidence for the statement, but he can only infer that the subject is crazy from her behavior. The evidential is in the present

tense because the state described is ongoing.¹¹

(20) *bóahōã-yu.*

rot-INFER:OTHER:PAST

‘It rotted.’

(Said of a plant after pulling it up to examine it.)

(21) *yéego nii-hio.*

crazy be-2/3FEM:INFER:PRES

‘(Apparently) you are crazy.’ (Said to a woman whose manner was very odd.)

The quotative evidential is used in legends and for recent reports from a secondhand source. Since the action described cannot be simultaneous with the time at which it is relayed, there are no present tense forms for this category. Example (22) comes from Barnes (1994:326):

(22) *ñee-bia-to-hã-yigʔ.*

grab-close-trap-EMPH-QUOT:3:SG:MASC:PAST

‘He grabbed (the flea) and trapped it (in his mouth).’

The last category, termed the Assumed (Barnes 1984:262) is used whenever the speaker has no specific evidence for the actual event or state. Evidentiality is an obligatory category in Tuyuca, but since statements can be made which are not based on any kind of evidence, the Assumed denotes that the statement is not based on evidence of any kind.

The Assumed category is appropriate in case the event is habitual. An example of this is shown in (23) in which the speaker has no evidence that fields are being cut at the time, but from previous experience the speaker knows that fields are cut at that time (Barnes 1984:262):

(23) *wesé tãnãra tii-kúa.*

field new cut-3PL:ASSUM:PRES

‘They are cutting new fields.’ (The speaker was off in the city, but knew that the people in the rain forest would be cutting fields at that time.)

If we divide the evidential system of Tuyuca in levels, similar to the method employed for Kashaya (see (16) above), we get the feature analysis shown in (24). From this system, we can not so easily determine the basic feature that underlies the system. This is due to the fact that the Inferential evidential is only used for inferred events, or [+DIR,-1ST] evidence. Nonvisual, nonauditory sensory information is combined with auditory information in Tuyuca, while it is combined with inferential information in Kashaya.

(24) *Feature analysis of Tuyuca evidentials*

	description	feature analysis
Level 1	visual evidence	[+DIR,+1ST]
	general knowledge	
Level 2	auditory evidence	[+DIR,+1ST]
	other sensory evidence	[+DIR,+1ST]
Level 3	inferential evidence	[+DIR,-1ST]
Level 4	secondhand evidence	[-DIR,-1ST]

Based on the analysis shown in (24), we can postulate two different basic features, since all levels have one unique feature analysis, unlike the Kashaya level 3, which had two feature sets. Depending on whether we take [DIR] or [1ST] as basic, we obtain two different divisions. Those are shown in (25a) and (b) below. The Assumed category has no [DIR] or [1ST] feature associated with it because the function of this category is to show that there is no evidence on which the speaker bases his or her statement.¹²

(25) *Division in the Tuyuca evidential hierarchy*

a. *[DIR] as the basic feature*

Sensory

Visual

Nonvisual [+DIR]

Inferential

Apparent

Quotative

Secondhand [-DIR]

No evidence

Assumed

b. *[1ST] as the basic feature***Sensory***Visual* [+1ST]*Nonvisual*

Inferential*Apparent* [-1ST]**Quotative***Secondhand*

No evidence*Assumed*

Based on the discussion so far, either analysis could be adopted because the Inferential in Tuyuca is not used for any type of sensory information, as was the case with the Kashaya system. There is some indication, however, that the analysis shown in (25a) must be preferred and that [DIR] is the underlying feature. This evidence comes from those cases in which an unexpected evidential is used.

As mentioned by Barnes (1984:263), sometimes a Visual evidential is used, even though this is not really warranted because the speaker has not visually witnessed the action taking place. Barnes discusses the case of a man claiming that a jaguar had killed his dog, using a Visual evidential, even though the act of killing was not witnessed visually. He had heard his dog yelp, however, and later he saw evidence of the killing, namely the marks on the ground where the jaguar had dragged the dog off. The reason for the appearance of the Visual evidential is given as (Barnes 1984:263):

“If the man had never seen any evidence of the killing, he would have reported the incident using a nonvisual evidential since he heard the dog yelp as he was being killed. If he had seen the marks on the ground but never heard anything, he would have used an apparent evidential. But the combination of hearing the event and seeing the evidence resulted in his using a visual evidential.”

Only the Inferential and not the Quotative evidential combines with the Nonvisual this way. From this we can conclude that [DIR] is the basic feature in Tuyuca, since this allows us to group the Inferential with the sensory evidence. They are both [+DIR]. If [1ST] were taken to be the underlying feature of the Tuyuca system, it would be hard to explain why a [-1ST] evidential (the Inferential) can combine with a [+1ST] one (the Nonvisual).

5. Hualapai. Hualapai, a Yuman language spoken in Arizona (Watahomigie *et al.* 1982), is unusual among languages which have grammaticalized evidentiality in that there are no quotative evidentials, but only evidentials for what Watahomigie *et al.* refer to as witnessed and deduced events, corresponding to sensory and inferential evidentials, respectively.¹³ In the terminology used in this paper this means that there are only grammaticalized evidentials for sensory and inferential information. The same morphemes are used for both visual and inferential evidence. There are two evidential morphemes, *-o* and *-(a)w*. moreover, there are two places within the verbal complex where evidentials can occur.

The morpheme *-o* can be used for witnessed and deduced events. although the position of *-o* differs depending on the interpretation. In its witnessed interpretation, *-o*

occurs sentence-finally, as shown in (26a). When it has an inferential interpretation, it is placed immediately after the verb root. This is shown in (26b).

- (26) a. *Jóhnach sma:kyunyo.*
John(a)-ch sma:-k-yu-ny-o
 John-SUBJ 3:sleep-SS-AUX-PAST-EVID
 ‘(I witnessed that) John slept.’ (Watahomigie *et al.* 1982:392)
- b. *Jóhnach wa:hm a:mokyuny.*
John(a)-ch wa:-h-m a:m-o-k-yu-ny.
 John-SUBJ house-DEM-by 3:go:by-EVID-SS-AUX-PAST
 ‘(I have evidence that) John went by the house.’

The sentence-final morpheme *-o* is actually a visual evidential. Non-visual evidence, including auditory evidence, is grouped with inferential evidence:

“When the speaker has not actually witnessed the event [i.e., visually -FdH], but has deduced the occurrence from some other evidence (e.g. some trace of the event such as some left-over food on the table, the wrinkled sheet on the bed, etc.; hearing the noise that sounds like someone playing; smelling something being cooked; and so on), the speaker may use the evidential marker *-o* just before the same-subject marker *-k*.” (Watahomigie *et al.* 1982:393-4).

Hualapai also has a general direct evidential *-(a)w* which is placed immediately after the

verbal root and can be used for both visual and other direct evidence. It collapses both visual and inferential *-o* into one morpheme. Examples are shown in (27a) and (b), Watahomigie *et al.* (1982:395):

- (27) a. *Jóhnach sálam gwe ma:wkwinny.*
John(a)-ch sal(a)-m gwe ma:-w-k-wi-ny
 John-SUBJ hand-with thing 3/3:eat-EVID-SS-AUX-PAST
 ‘John ate with his hands.’ (I have visual or inferential evidence)
- b. *Jóhnach Hwalbáy gwa:wawkiny.*
John(a)-ch Hwalbay gwa:w-aw-k-i-ny
 John-SUBJ Hualapai 3/3:speak-EVID-SS-AUX-PAST
 ‘John spoke Hualapai.’

The morpheme *-(a)w* cannot be used with all verbs, however. Verbs that cannot be combined with *-(a)w*, such as *swa:d-* ‘to sing’, must take the suffix *-o*. In such a case, *-o* can be interpreted as denoting either visual or inferential evidence, in spite of the fact that it immediately follows the root. Based on the discussion of sentence (26b), we would expect a sentence such as (28) below to only have an inferential interpretation, but it has a visual interpretation as well (Watahomigie *et al.* 1982:395).

- (28) *Jóhnach swa:dokiny.*
John(a)-ch swa:d-o-k-i-ny
 John-SUBJ sing-EVID-SS-AUX-PAST
 ‘(I have [visual or inferential] evidence that) John sang.’

To summarize, while the exact behavior of the evidential morphemes is quite complex, it is clear that both *-o* and *-(a)w* are used exclusively for direct evidence. Their feature analysis is shown in (29) below:

(29) *Hualapai evidentials*

Sensory		
<i>Visual</i>	<i>-o (sentence final)</i>	
<i>General</i>	<i>-o (following root)</i>	
<i>General</i>	<i>-a(w) (following root)</i>	
		[+DIR]
Inferential		
	<i>-o (following root)</i>	
	<i>-a(w) (following root)</i>	
<hr/>		
(none)		[-DIR]

The inferential is grouped with direct sensory evidentials in all cases. For this reason, the feature [DIR] underlies the Hualapai evidential system. Hualapai has grammaticalized only [+DIR] evidentials, which appears to be unusual among the world's languages.

6. Patwin. We will now turn to languages in which the basic dichotomy is one of firsthand information - secondhand information. In these languages, the inferential evidential is grouped with the quotative. The clearest cases of this are when the inferential and the quotative are expressed by one and the same morpheme, or when there are no grammaticalized firsthand evidentials in the language. In that case, the other evidentials are secondhand evidentials by default.

One language in which an evidential morpheme is used for quotative as well as inferential evidence is Patwin, a Penutian language of California (Whistler 1986). Although the evidential system of Patwin is not as fully developed as that of the languages previously discussed, it does have a number of different evidential morphemes for quotative evidence, such as the suffix *-ʔum* (1986:64), the particle *ʔupu* (1986:65), and the suffix *-bom/-bem* (1986:66), although not all morphemes occur in all dialects of Patwin.¹⁴

The morpheme which is of interest to us here is the morpheme *-boti* (*-beti*) of the Hill dialect of Patwin (1986:70). Whistler characterizes this morpheme as follows: “It seems to encompass a number of evidential types, including hearsay, logical inference, and inference based on circumstance and appearance. What these seem to share is a disclaimer to knowledge based on direct sensory evidence ...” (Whistler 1986:70). Its use is shown in (30a) and (b) below, which exemplify the inferential and quotative use, respectively (1986:70):

- (30) a. *ma-ne:n* *we:t* *tiwnana* *hara:-boti*.
 your-mother salt buy go-EVID
 ‘Your mother must have gone to buy salt.’
- b. *yirma* *hayba?a-boti pi*.
 leg:OBJ hurt-EVID he
 ‘(He told me) his leg hurts.’

Sentence (30a) was used to explain the mother's absence on the authority of inferential evidence while (30b) is quotative, as can be seen from the translation.

The use of *-boti* (*-beti*) contrasts with that of the auxiliary verb *bo(:)s*, which is used to denote visible evidence and which in its evidential sense is therefore clearly [+1ST] (1986:67-8). Its usage is shown in sentence (31), from Whistler (1986:68):

(31) *pi! pi! pi! me:m were:-be-s.*

there there there water come-VIS-s¹⁵

'Look! Look! Look! The water is coming!'

[said of a world flood about to roll in on the characters of a myth]

However, according to Whistler, the evidential usage of *bo:s* is secondary. It is also used to express continued action even when visibility does not play a role (1986:68). It is therefore actually questionable that *bo:s* is a full grammaticalized evidential in the sense of De Haan (1997). One of the criteria for fully grammaticalized evidentials is that morphemes must have the expression of evidence as their primary function. From the description in Whistler (1986:68), *bo:s* is primarily an aspectual morpheme and only secondarily an evidential. Visual evidentials quite commonly have their origins in tense or aspect morphemes (see De Haan 1999c for a discussion), and Patwin is an instance of a language in which the evidential interpretation has not yet taken over the aspectual meaning. The proposed analysis of evidentiality in Patwin is shown in (32):

(32) *Patwin evidentiality*

(Visual	<i>be:s</i>	[+1ST])
<hr/>		
Inferential		
	<i>boti</i>	
Quotative		[-1ST]
	<i>boti</i>	

In other words, the evidential *-boti* serves as a general [-1ST] evidential, and [+1ST] is the basic feature in Patwin.

7. Takelma. The next language that will be discussed is Takelma, an extinct language whose genetic affiliation is uncertain but is commonly placed in the Penutian phylum. All data are from Sapir (1922).

In Takelma the Inferential and the Quotative are commonly expressed by one and the same form, a separate mode on the verb which is expressed by the mode-sign *-k^h* (Sapir 1922:162), followed by endings for subject.

The Inferential is one of six modes in Takelma, the others being the Aorist, Future, Potential, Present imperative and Future imperative. The Aorist serves for past (preterite), present and immediate future events while the Future refers to more distant events (1922:157). The same distinction can be found in the Imperative. The Potential “implies the ability to do a thing, or the possibility of the occurrence of a certain action or condition...” (1922:158). A sample paradigm of the Takelma verb *baxma-* ‘to come’ in all possible modes is shown in Table 3 below, from Sapir (1922:161-2). Table 3 shows

that the forms for the Inferential mode differ sharply from those of the other modes. Note that there is no separate form for the third person plural.

 Table 3 about here

As was mentioned above, the Inferential mode comprises both the inferential and quotative categories: “The inferential implies that the action expressed by the verb is not directly known or stated on the authority of the speaker, but is only inferred from the circumstances of the case or rests on the authority of one other than the speaker.” (Sapir 1922:158). The following sentence is given as illustration:

- (33) *mena yap'a domk^h wa-k^h*
 bear man kill-INFER:3SG
 ‘It is said that the bear killed the man.’
 ‘The bear evidently has killed the man.’

There are a number of puzzling aspects about the use of the Inferential mode. In certain cases it does not appear to have any inferential interpretation at all. For instance, the Inferential morpheme is used to negate the Future mode. The form *yanaʔ^h* ‘he will go’ has as corresponding negative the form *wede yanak^h* ‘he will not go’ (1922:199), in which the verb is in the Inferential mode. It would seem, therefore, that the Inferential mode has a wider usage than just the expression of inferential and quotative.

Although Sapir does not discuss it in any great length in his grammar, the accompanying text lists a purely Quotative suffix *-(i)hiʔ*, which apparently can be suffixed to any word class. Some examples are:

- (34) a. *naga-ihʔ*
 say:AOR:3SG-QUOT
 ‘He said, it is said.’ (Sapir 1922:291)
- b. *gane:-hiʔ...*
 and:then-QUOT
 ‘And then, it is said ...’
- c. *mi:-hiʔ...*
 now-QUOT
 ‘Now, it is said...’ (Sapir 1922:292)

Examples (34b) and (c) appear to be common ways to start a Takelma story.

Sapir (1922) lists only secondhand evidentials. There are no visual or other sensory evidentials and we can therefore analyze the Takelma evidential system as having [1ST] as its basic feature, making Takelma a language with only [-1ST] evidentials, giving us the system shown in (35) below:

(34) *Takelma evidentiality*

	(none	firsthand	[+1ST])												
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Inferential</td> <td style="width: 30%; text-align: center;">$-k^h$</td> <td style="width: 30%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td>Quotative</td> <td style="text-align: center;">$-k^h$</td> <td style="text-align: center;">secondhand</td> <td style="text-align: right;">[-1ST]</td> </tr> <tr> <td></td> <td style="text-align: center;">$-ihi?$</td> <td></td> <td></td> </tr> </table>				Inferential	$-k^h$			Quotative	$-k^h$	secondhand	[-1ST]		$-ihi?$		
Inferential	$-k^h$														
Quotative	$-k^h$	secondhand	[-1ST]												
	$-ihi?$														

8. Dutch. As discussed in De Haan (1999a, see also Palmer 1986), Germanic languages like Dutch, German, and Danish have developed evidentials from modal verbs. In Dutch, the modal verb *moeten* ‘must’ has acquired an evidential interpretation, which is shown in (35) below:

(35) *De film moet uitstekend zijn.*

the	film	must:3SG:PRES	excellent	be:INF
-----	------	---------------	-----------	--------

‘The film is said to be excellent.’

As was discussed in De Haan (1999a), the verb *moeten* in its evidential interpretation can have both a quotative and an inferential interpretation. Sentence (35) is appropriate in case the speaker has heard from somebody else that the movie is in fact a good one but also if the speaker has evidence, for instance if the speaker likes the director’s work in general or if the speaker has seen movie posters and decided it is a good movie on that basis.

Consequently, evidentiality in Dutch is arranged according to a firsthand - secondhand division. The verb *moeten* ‘must’ is always [-1ST] but can be either [+DIR] or [-DIR] depending on whether the interpretation is inferential or quotative, respectively.

Therefore, [1ST] is the underlying feature of the Dutch evidential verb. The Dutch evidential system is similar in appearance to the Takelma system shown in (34) above, with no firsthand evidentials.

9. Sherpa. In the Tibeto-Burman language Sherpa, inferentiality is patterned with the quotative in the past tense (Woodbury 1986). A contrast exists in the past tense between two suffixes, *-nok* and *-suŋ*. The former is used whenever the speaker has not witnessed the action personally while the latter does imply personal witnessing. Woodbury (1986:191) uses the terms -EXPERIENTIAL and +EXPERIENTIAL, respectively, which correspond to [-1ST] and [+1ST] in my terminology. Examples are shown in (36) below, from Woodbury (1986:193):

- (36) a. *jon-ki* *ti* *kuršij ti* *dzo-suŋ*
 John-ERG the chair it build-PAST:EXP
 ‘John built the chair.’ (I saw ...)
- b. *jon-ki* *ti* *kuršij ti* *dzo-nok*
 John-ERG the chair it build-PAST:NONEXP¹⁶
 ‘John built the chair.’ (I infer ...; I heard ...)

The firsthand - secondhand distinction is clearest in the past in Sherpa. The suffix *-nok* is also used to denote inference of a future event, in which case the speaker has evidence in the present for something he or she is going to do in the future (1986:196-7).

In the present tense, however, *-nok* is used as a habitual aspect marker to denote

experienced events (1986:190-3). A sentence such as (37a) below can only be interpreted as firsthand information, while the so-called gnomic aspect morpheme *-wi* (37b) denotes the absence of firsthand evidence:

[dot under d in daa]

- (37) a. *daa saa-p mi ti yembur-laa de-ki-nok*
 rice eat-NOMIN man he Katmandu-DAT stay-HAB
 ‘The man who is eating rice lives in Katmandu.’ (I see, have seen ...)
- b. *daa saa-p mi ti yembur-laa de-ki-wi*
 rice eat-NOMIN man he Katmandu-DAT stay-GNOM
 ‘The man who is eating rice lives in Katmandu.’ (It is known...)

Thus, in the past tense, Sherpa distinguishes between firsthand and secondhand evidence and encodes this by means of two verbal suffixes, *-suŋ* and *-nok*. The division can be summarized as follows:

- (38) a. *Sherpa evidentiality, past tense*
- | | | | | |
|--------------------|---------------------|-------------|------------|--------|
| Sensory | | | | |
| | <i>Experiential</i> | <i>-suŋ</i> | firsthand | [+1ST] |
| <hr/> | | | | |
| Inferential | | | | |
| | | <i>-nok</i> | secondhand | [-1ST] |
| Quotative | | <i>-nok</i> | | |

b. *Sherpa evidentiality, present tense***Sensory**

<i>Experiential</i>	<i>-nok</i>	firsthand	[+1ST]
---------------------	-------------	-----------	--------

Inferential

	<i>-wi</i>	secondhand	[-1ST]
--	------------	------------	--------

10. Conclusions: the role of the speaker. Evidentiality is a notional category which directly reflects the degree of the speaker's involvement (or lack thereof) in the action he or she describes. The various evidential categories described in this paper (Sensory, Inferential, Quotative) have different degrees of speaker involvement. As has been observed before (e.g., by Floyd 1996, 1997), there is a deictic component (presence - absence of speaker at the place of the action), as well as an opposition witnessed - not witnessed (by speaker) to evidentiality. These two components are reflected in the two features used in this paper.

When the speaker uses a sensory evidential, such as a visual or auditory evidential, he/she is showing that the action somehow took place in the vicinity of the speaker, within sight or earshot, so that the action takes place in the deictic sphere of the speaker. This is the reason for the [+DIR] feature. Since the action was also witnessed by the speaker, the other feature also has a positive value, [+1ST].

On occasion, both components of evidentiality are represented in the evidential morphemes of a language. A good example of the interplay between deixis and witnessing can be observed in Sanuma, a Yanomami language. In Sanuma, most visual evidentials consist of the morpheme *ku-* (or its allomorphs), which has the meaning "witness" (1990:165), plus a demonstrative morpheme that shows where the action takes

place (Borgman 1990:165-69; see also De Haan 1999c). Some examples are shown in (39). The most common visual evidential is *kule* (39a), which is a general visual evidential meaning ‘near speaker’. Others have more specialized interpretations, showing exactly where relative to the speaker the action is located (39b-d).

- (39) 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 pō 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 kã 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)

In all these examples, the speaker is witnessing the action described (as demonstrated by the use of the morpheme *ku-*), and the speaker uses a demonstrative or locational

morpheme to place him or herself in the sphere of action, and, to use a term borrowed from cognitive linguistics, to make him/herself into a reference point.

Quotatives do almost the exact opposite. They remove the speaker from the action by introducing another person who becomes responsible for the information. By using a quotative, the speaker disavows any responsibility for the truthfulness of the information because the information in the statement does not come from personal witnessing, nor is the action within the speaker's deictic sphere.¹⁷ Floyd (1996,1997), a study of the Wanka Quechua Quotative morpheme *-shi*, grounded in Langacker's theory of cognitive grammar, analyzes the various uses of *-shi* (which include pure reports, as well as the use in folktales, riddles, and challenges) as always involving an outside source. The speaker is not a reference point.

Inferentials are ambiguous in the role of the speaker. On the one hand, they have a certain level of personal involvement. When the speaker makes a statement based on visual evidence after the action occurred, he/she is involved at some level. For instance, in the Tuyuca sentence (20), repeated below, the speaker is drawing conclusions from visual evidence (the uprooted rotted plant). By virtue of this visual evidence, the speaker is therefor drawing him/herself into the deictic sphere of the action.

(20) *bóahõã-yu*

rot-INFER:OTHER:PAST

'It rotted.'

(Said of a plant after pulling it up to examine it.)

On the other hand, the speaker has not witnessed personally the action he/she is

describing, and as such inferentials are like quotatives. With the use of an inferential the speaker disavows any personal knowledge of the action or event and shows that he/she only became aware of it after the fact. Thus, the second message the inferential morpheme *-yu* conveys in sentence (20) above is that the speaker did not personally witness the action himself.

There are thus two conflicting forces at work in the inferential. By choosing which of the two features is basic, languages decide whether the deictic component or the witnessing component is the underlying factor that drives the evidential system. As we have seen, language like Kashaya Pomo and Hualapai highlight the deictic component, represented by means of the feature *direct*, [DIR]. They do this by making the inferential responsible for part of the sensory information, usually the nonvisual, nonauditory ones.

Other languages, such as Takelma and Sherpa, prefer to view the inferential as denoting an nonwitnessed event. In these languages, the feature *firsthand*, [1ST] underlies the evidential system, with inferentials being [-1ST]. The inferential evidential in such languages typically has a quotative (the quintessential nonwitnessed evidential) interpretation as well.

TABLE 1
KASHAYA EVIDENTIALS (OSWALT 1986:30)

Category	spontaneous	responsive	narrative	remote
Performative (imp.)	<i>-wela</i>	<i>-wa</i>	<i>-yowa</i>	<i>-miya</i>
Performative (perf.)	<i>-mela</i>	<i>-ya</i>	<i>-yowa</i>	<i>-miya</i>
Factual	<i>-wa</i>	<i>-wa</i>	<i>-yowa</i>	<i>-miya</i>
Visual	<i>-ya</i>	<i>-ya</i>	<i>-yowa</i>	<i>-miya</i>
Auditory	<i>-Vnna</i>	<i>-Vnna</i>	<i>-yowa</i>	<i>-miya</i>
Inferential I	<i>-qa</i>	<i>-qa</i>	<i>-yowa</i>	<i>-yowa</i>
Quotative	<i>-do</i>	<i>-do</i>	<i>-do</i>	<i>-do</i>
Inferential II	<i>-bi</i>	<i>-bi</i>	<i>-bi</i>	<i>-bi</i>

TABLE 2
TUYUCA EVIDENTIALS (BARNES 1984:258)

tense	person	Visual	Nonvisual	Apparent	Secondhand	Assumed
Past	other	<i>-wɨ</i>	<i>-tɨ</i>	<i>-yu</i>	<i>-yiro</i>	<i>-hĩyu</i>
	3 masc.	<i>-wi</i>	<i>-ti</i>	<i>-yi</i>	<i>-yigɨ</i>	<i>-hĩyi</i>
	3 fem.	<i>-wo</i>	<i>-to</i>	<i>-yo</i>	<i>-yigo</i>	<i>-hĩyo</i>
	3 pl.	<i>-wa</i>	<i>-ta</i>	<i>-ya</i>	<i>-yira</i>	<i>-hĩya</i>
Pres.	other	<i>-a</i>	<i>-ga</i>	---	---	<i>-ku</i>
	3 masc.	<i>-i</i>	<i>-gi</i>	<i>-hĩi</i>	---	<i>-ki</i>
	3 fem.	<i>-yo</i>	<i>-go</i>	<i>-hĩo</i>	---	<i>-ko</i>
	3 pl.	<i>-ya</i>	<i>-ga</i>	<i>-hĩra</i>	---	<i>-kua</i>

TABLE 3
PARADIGM OF THE TAKELMA VERB *baxma-* ‘TO COME’

	AORIST	FUTURE	POTENTIAL	INFERENTIAL
1 SG	<i>baxamt^heʔ</i>	<i>baxmat^he:</i>	<i>baxmat^heʔ</i>	<i>baxmak^haʔ</i>
2 SG	<i>baxamat^h</i>	<i>baxmadaʔ</i>	<i>baxmat^h</i>	<i>baxmak^hei:t^h</i>
3 SG	<i>baxaʔm</i>	<i>baxmaʔt^h</i>	<i>baxmaʔ</i>	<i>baxmak^h</i>
1 PL	<i>baxamik^h</i>	<i>baxmagam</i>	<i>baxmik^h</i>	<i>baxmak^hanak^h</i>
2 PL	<i>baxmat^hp^h</i>	<i>baxmathbaʔ</i>	<i>baxmat^hp^h</i>	<i>baxmak^hei:t^hp^h</i>
	PRESENT IMPERATIVE		FUTURE IMPERATIVE	
2ND SG		<i>baxma</i>		<i>baxmaʔk^h</i>
1ST PL		<i>baxmabaʔ</i>		----
2ND PL		<i>baxmanp^h</i>		----

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NOTES

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² Besides the English adverbs *evidently* and *seemingly*, other words in English with an evidential meaning but without grammaticalization are the perception verbs (such as *see* and *hear*) and the modal verb *must*. It has been claimed that these verbs show some signs that they are moving in the direction of becoming grammaticalized evidentials, but they are not grammaticalized in the sense of this paper. On the perception verbs see De Haan (1999c) and on the verb *must* see De Haan (1999a).

³ For a different treatment of these features, see Barnes (1984).

⁴ In Oswald (1961), the inferential I evidential is called *Circumstantial*, while the Inferential II is called *Inferential*

⁵ In the Kashaya examples, the first line (if present) is the surface form, the second line the morphological analysis.

⁶ The following abbreviations are used in this paper: ABS-absolutive; AOR-aorist; ART - article; ASSUM-assumed evidential; AUD-auditory; AUX-auxiliary; CL - classifier; DAT - dative; DEM-demonstrative; DEPR - depreciatory; DUR - durative; EMPH-emphatic; ERG - ergative; EVID-general evidential; EXP-experiential evidential; FACT-factual evidential; FEM-feminine; GNOM - gnomic tense; HAB - habitual aspect; INF-infinitive; INFER-inferential evidential; INST - instrumental; IPF-imperfective aspect; MASC-masculine; NONEXP-nonexperiential evidential; NONVIS-nonvisual evidential; OBJ-object; PAST-past tense; PERF-perfective aspect; PERFORM-performative; PI - past imperfective; PL-plural; POSS - possessive; PRES-present tense; QUOT-quotative

evidential; RESP-responsive mode; SG-singular; SS-same subject; SUBJ-subject; VIS-visual.

⁷ The symbol *-V* is a phonological device denoting a zero vowel after another vowel, and various vowels depending on the preceding consonant (Oswalt1986:31).

⁸ Despite the English translation with a modal verb, the Kashaya original does not show a diminished belief in the truth of the proposition. For a comparison of evidential and epistemic (judgement) modals see De Haan (1999b).

⁹ The Inferential II must always be followed by another suffix, see below. The suffix *-w* is taken by Oswalt (1986:42) to be the Absolutive. The Absolutive has many functions (Oswalt 1986:32). It can be used as the citation form of the verb, as gerund, or active and passive participle. Furthermore, it is used when the source of the information is unknown, for example when isolated sentences are elicited from English.

¹⁰ In this schema, the bold categories are the abstract categories of the evidential hierarchy of (2) above, while the categories in normal print are the language-specific categories, in this case specific to Kashaya.

¹¹ The Inferential is rare in the present tense in Tuyuca because one usually only becomes aware of the action after it has occurred. Barnes (1984:261) only lists habitual and durative actions and events. There is no present tense Inferential (Apparent) in Tuyuca because “[a] speaker either states what he considers to be facts about himself, which requires the visual evidential, or he reports how he feels, which requires the nonvisual evidential.” (1984:261).

¹² In order to account for the Assumed category in Tuyuca, we would need an extra feature, showing the presence versus absence of evidence. The Assumed category would

be -evidence, while the others are all +evidence. The reason for the existence of the Assumed category is the fact that evidentiality is an obligatory category in Tuyuca. Given the typological rarity of morphemes whose only function it is to show absence of evidence, we are justified in adding an extra feature for such rare cases.

¹³ Other languages in which there are no grammaticalized quotative evidentials are Hupa, a Pacific Coast Athabaskan language (Goddard 1911, Victor Golla, p.c.), and Imbabura Quechua (Cole 1983).

¹⁴ In addition, Whistler (1986:69) mentions a number of other morphemes which he glosses as evidential but which are probably epistemic modal morphemes, based on his discussion. They are *-mther/-muther* ‘might’, *-mte/-mute*: ‘must have [in irrealis clauses]’, *-mʔa/-muʔa* ‘confident inference’, *-monʔa* ‘inferential based on appearance’.

In many cases, there is not enough data available to decide whether a given morpheme is evidential or epistemic in nature (1986:72-3). It is very likely that some of these morphemes could be considered evidentials. For example, the morpheme *-monʔa* looks like it could be an evidential. It is derived from a full verb *monʔa* ‘to do like’ plus the auxiliary *-ʔa* ‘to have’ (1986:73) which is certainly a plausible derivation but as Whistler himself mentions, the data is too limited to determine whether *-monʔa* is an evidential morpheme or not.

¹⁵ The *-s* suffix is the unmarked tense morpheme of the Declarative mood (Whistler 1986:63).

¹⁶ Woodbury (1986:193) glosses the suffix *-nok* as INFERENTIAL even though *-nok* also

includes hearsay as one of its meanings. Because it is argued here that inference and quotative are separate categories, I keep them distinct in the glosses and use NONEXP(ERIENTIAL) to contrast *-nok* with *-suŋ*, which is glossed as EXP(ERIENTIAL). A separate quotative inflection does exist as well in Sherpa, which Woodbury does not discuss (1986:193).

¹⁷ This does not necessarily mean that information received from another person is a priori less reliable. That this is not the case is shown by languages such as Wanka Quechua (Floyd 1996:931-5), and Kashaya Pomo (Oswalt 1986), who explicitly claim that the quotative evidentials in the respective languages do not reflect a diminished belief in the truth of the information. See also De Haan (1999b) for a general discussion on evidentiality and epistemic modality.