The meaning of the Bulgarian and Turkish evidentials

DRAFT

Anastasia Smirnova
Tufts University

Abstract

This paper discusses the meaning of the Bulgarian and Turkish evidentials. I argue that evidential forms in these languages have a rich semantic content: they encode the source of information, epistemic modality, and temporality. Ultimately, I show that the meaning of the Bulgarian and Turkish evidentials is not reducible to the meaning of perfect forms, from which the evidential forms are historically derived, and argue that evidentiality in Bulgarian and Turkish should be recognized as an independent category in its own right.

Key words: evidentiality, epistemic modality, temporality, Bulgarian, Turkish

1. Introduction

Evidentiality is traditionally defined as a category that encodes the source of information, i.e. report, inference or direct perception (cf. Willett 1988, Aikhenvald 2004). Bulgarian and Turkish are often analyzed as languages that grammatically encode the difference between direct and indirect information sources (cf. Jakobson 1957, Slobin and Aksu 1982). Thus, in order to express information acquired indirectly, i.e. through hearsay (1) or inference (2), the speakers of these languages use special evidential forms, such as valja-lo ‘rained’ in Bulgarian, morphologically a participle (PLE), and yağ-mış ‘rained’ in Turkish, where -miş is the evidential suffix, glossed as EVID.¹ Non-evidential indicative forms such as valja ‘rained’ (Bulgarian) and yağ-dı ‘rained’ (Turkish) are infelicitous in indirect evidential contexts in (1) and (2).²,³

(1) Reportative context: You just talked on the phone with your friend who lives in Chicago. She told you that it rained last week. When your office mate asks you what the weather was like in Chicago last week, you say:

a. Valjalo. / #Valja.
   rain.IMPERF.PAST.PLE / rain.IMPERF.3SG.PAST
   ‘It rained, [I heard].’

¹ The quality of vowels in Turkish affixes is determined by the vowel harmony rule (cf. gel-miş ‘reportedly, he has come’ but gör-müş ‘reportedly, he has seen’, from Yavaş 1980:v). In what follows, I cite the evidential suffix as -mIş, where I can be realized as /i/, /ı/, /u/ or ü/.


³ The source of information, i.e. report, inference, and direct perception, is specified in square brackets as [I hear], [I infer], and [I see], respectively. The tense on the verb encodes the temporal location of the speech time with respect to the time at which the speaker acquires the evidence. Past tense, as in I inferred, signals that the evidence acquisition time precedes speech time; present tense, as in I infer, means that the two times coincide.
b. Yağmur yağ-mış / #yağ-dı.  [Turkish]
   rain    rain-EVID / rain-PAST
   ‘It rained, [I heard].’

(2) Inferential context: You just arrived at your home town. The banks of the river are
overflowed. You infer that it rained heavily last week. When your friend calls you on the
phone and asks you what the weather was like in your home town last week, you say:
a. Valjalo.                     / #Valja.  [Bulgarian]
   rain.IMPERF.PAST,PLE / rain.IMPERF.3SG.PAST
   ‘It rained, [I inferred].’

b. Yağmur yağ-mış / #yağ-dı.  [Turkish]
   rain    rain-EVID / rain-PAST
   ‘It rained, [I inferred].’

The analysis of the Bulgarian and Turkish evidentials as markers of indirect information source
has been challenged in a series of works by Aronson and Friedman. One problem, pointed out by
Aronson (1967) and Friedman (1986), is that in Bulgarian non-evidential indicative forms can be
used to report non-witnessed events, as in (3a). Non-evidential -DI forms in Turkish, such as
yağ-dı in (3b), also frequently appear in contexts in which the speaker did not witness the event
she reports (cf. Johanson 2000:74, Slobin and Aksu 1982:196). This suggests that evidential and
non-evidential forms do not categorically distinguish between direct and indirect information.

(3) Indirect context: 10 years ago the area where you live was devastated by a historic rainfall
and the consequent flood. You weren’t in your hometown then but you know that the
aftermaths were catastrophic. Your house was flooded, and the government announced
the state of emergency in your area. Now you say about that event:
a. Valja bez da spira.  [Bulgarian]
   rain.IMPERF.3SG.PAST without SUBJ stop.IMPERF.3SG.PRES
   ‘It rained without stopping.’

b. Çok fena yağ-dı.  [Turkish]
   very heavily rain-PAST
   ‘It rained heavily.’

Another problem for the analysis of the Bulgarian and Turkish evidentials as indirect is that they
can appear in contexts that satisfy the definition of direct evidentiality. Thus, in (4) the speakers
directly perceive the event, yet they use evidential sentences to report their experience.

(4) Direct context: An hour ago it was sunny outside. As you exit the house, you see that it is
raining now. You are surprised. You say:
a. To valjalo!  [Bulgarian]
   it rain.IMPERF.PRES,PLE
   ‘It is raining, [I see]!’
b. Yağmur yağ-iyor-muş!

‘It is raining, [I see]!’

On the basis of similar examples, Johanson (2000:61) argues for Turkish that “the source of knowledge […] is not criterial; it is unessential whether the reception is realized through hearsay, logical conclusion or direct perception”.

Aronson (1967:87) proposes that the evidential-indicative opposition in Bulgarian should be understood in terms of the speaker’s epistemic commitment or ‘confirmativity’ (see also Friedman 1986, 2004). Indicative sentences are confirmative in that the speaker vouches for the truth of the information she reports. Evidential sentences, on the other hand, are non-confirmative. Under this analysis, contexts such as (3) license the indicative because the speaker is committed to the truth of the proposition $p$ ‘it rained’, even though she didn’t witness the event directly. On the other hand, contexts such as (4) license the evidential because the information reported in the conversation is surprising to the speaker and thus she cannot vouch for its truth.

In what follows, I re-examine the question about the meaning of evidentials in Bulgarian and Turkish against the backdrop of more recent work on evidentiality in theoretical semantics literature. In section 2, I discuss the epistemic component of the Bulgarian and Turkish evidentials. In section 3, I show that evidential forms in Bulgarian and Turkish grammatically encode the information source. Section 4 discusses the temporal contribution of the Bulgarian and Turkish evidentials. Section 5 concludes the paper. Ultimately, I show that evidential forms in these languages have tripartite meaning: they encode speakers’ attitude, as Aronson and Friedman have argued, but also the information source as well as temporal information.

2. The modal meaning of the Bulgarian and Turkish evidentials

2.1 Confirmativity and evidentiality

According to Aronson (1967) and Friedman (1986, 2004), evidentiality expresses non-confirmative meaning. Thus, evidential forms are predicted to occur in contexts in which the speaker reports information she believes to be false. This is a correct prediction for reportative contexts, such as (5). The analysis also correctly predicts the indicative, which encodes confirmativity, to be impossible in contexts such as (5). Indeed, the non-evidential forms valja ‘rained’ (Bulgarian) and yağ-di ‘rained’ (Turkish) are infelicitous in such a context.

(5) Reportative context, non-confirmative: You just came from a psychiatric clinic, where you visited your friend Eli. Eli told you that she lives on a planet called Nimbus and that it rained yesterday on Nimbus. When your friend inquires about the things Eli told you, you say:

a. Včera na Nimbus valjalo / #valja. [Bulgarian]
yesterday on Nimubs rain.IMPERF.PAST.PLE / rain.IMPERF.3SG.PAST

‘It rained on Nimbus, yesterday, [I heard].’

---

4 The sentences in (4) are pronounced with exclamatory intonation (‘!’). They are often referred to as (ad)mirative sentences (cf. Friedman 1982). I return to the question of intonation in section 4.
b. Nimbus-ta dün gece yağmur yağ-mış / #yağ-dı. [Turkish]
Nimbus-LOC last night rain rain-EVID / rain-PAST
‘It rained on Nimbus, yesterday, [I heard].’

Unlike reportative contexts, the commitment to the truth is required in inferential contexts: the evidential is infelicitous if the speaker believes that what she reports is false, as (6) shows.

(6) Inferential context, non-confirmative: The grass in the garden is wet. You first inferred that it rained heavily last night but then learned that it didn’t rain. The grass is wet because the sprinklers were on all night. When someone asks you what the weather was like last night, you say:
   a. #Včera valjalo. [Bulgarian]
yesterday rain.IMPERF.PAST.PLE
   ‘It rained yesterday, [I inferred].’

   b. #Dün gece yağ-mış. [Turkish]
   last night rain-EVID
   ‘It rained last night [I inferred].’

The same pattern is observed in direct contexts: evidential forms are infelicitous if the speaker believes that the information she reports is false, as the data in (7) show.

(7) Direct context, non-confirmative: You are visiting your friend on a movie set. You feel water drops, but you know that it is not raining: the water drops are generated by a rain machine. You say:
   a. #To valjalo! [Bulgarian]
it rain.IMPERF.PRES.PLE
   ‘It is raining, [I see]!’

   b. #Yağmur yağ-ryor-muş! [Turkish]
   rain rain-PROG-EVID
   ‘It is raining, [I see].’

This discussion shows that evidential forms in inferential and direct contexts require the speaker’s commitment (cf. (6) and (7)). Thus, they pattern with the indicative forms rather than with the evidential forms in reportative contexts (5). At first, these data seem to argue against the analysis of the evidential-indicative opposition in terms of epistemic commitment, as proposed by Aronson and Friedman. However, in the next section, I show that the contrast between the evidential and the indicative can be explained if we adopt a more fine-grained notion of commitment than the one proposed in Aronson (1967).

2.2 Epistemic commitment in evidential contexts: a modal analysis

The data in the previous section have shown that evidentials in inferential/direct contexts pattern
with the indicative forms as far as the speaker’s commitment is concerned. However, there is an
tuitive difference between the two. I argue that this difference boils down to the degree of
epistemic commitment. Specifically, I propose that the indicative forms are used in contexts in
which the speaker knows whether information she reports is true or false. The evidential is
infelicitous in such contexts, as the data in (8) show.

(8) Context: You know that it is raining right now. You say:
   a. Vali.                           / #Valjalo!  
      rain.IMPERF.3SG.PRES / rain.IMPERF.PRES.PLE
      ‘It is raining.’/#‘It is raining, [I inferred].’

      rain        rain-PROG / rain        rain-PROG-EVID
      ‘It is raining.’/#‘It is raining, [I inferred].’

Following Izvorski (1997) and Smirnova (2012), I propose that evidential forms in
inferential/direct contexts commit the speaker to the truth of the proposition she reports but this
commitment is weaker than knowledge. The key to understanding the strength of commitment
required for the felicitous usage of evidential forms is the data in (9), which show that the
distribution of the epistemic necessity modal must parallels exactly the distribution of the
evidential forms in (8).

(9) Context: You know that it is raining right now. You say:
   It is raining. / #It must be raining.

I argue that the parallel between the evidential forms and the epistemic necessity modal must is
not accidental; it indicates that the Bulgarian and Turkish evidentials have an epistemic modal
component as part of their truth-conditional meaning (cf. Izvorski 1997, Smirnova 2011, 2012).
Specifically, I propose that the proposition $p$ expressed by the evidential statement is evaluated
with respect to the belief worlds of the speaker (epistemic modal base), and in all worlds
compatible with what the speaker believes (universal modal force), the proposition expressed by
the evidential sentence is true (see Smirnova 2012). The analysis correctly predicts evidential
sentences to be infelicitous in inferential/direct contexts if the speaker believes that the
information she reports is false (in this case the proposition $p$ is false in the belief worlds of the
speaker), or if the speaker is non-committal (in this case the proposition $p$ is true in some but not
all belief worlds). Moreover, according to this analysis, evidential sentences are infelicitous in
contexts such as (8) because they violate the Gricean maxim of quantity: the speaker knows for a
fact that it is raining, yet she uses a weaker (modal) evidential statement to report this
information.

Further support for the modal analysis comes from the fact that the Bulgarian and Turkish
evidentials exhibit a modal subordination effect (cf. McCready and Ogata 2007). As shown by
Roberts (1989), modal sentences such as (10a) block anaphoric reference between an indefinite
noun phrase in the first clause (a thief), and the pronoun (he) in the second sentence. The
anaphoric reference is reestablished if the second sentence contains a modal (10b).
(10) a. A thief might break into the house. # He takes the silver.
   b. A thief might break into the house. He would take the silver.

The same effect is observed in evidential contexts, as the data in (11) and (12) show.

(11) Inferential context: You just came home and discovered that your house has been broken into. Besides your laptop, a tray of baklava is missing. There are baklava crumbs all over the floor. You inferred that the thief ate the baklava. Later you tell Maria:

a. V kăšti vleznal kradec. #Toj beše gladen. [Bulgarian]
   in house enter.PERF.PAST.PLE thief. He be.3SG.PAST hungry.
   ‘A thief broke into the house, [I inferred]. He was hungry.’

b. V kăšti vleznal kradec. Toj trjabva da e bil gladen. [Bulgarian]
   in house enter.PERF.PAST.PLE thief. He must.PRES SUBJ be be.PLE hungry.
   ‘A thief broke into the house, [I inferred]. He must have been hungry.’

(12) Context: same as (11):

a. Eve bir hırsız gir-miş. #O aç-tı. [Turkish]
   house.LOC one thief break.into-EVID He hungry-PAST
   ‘A thief broke into the house, [I inferred]. He was hungry.’

b. Eve bir hırsız gir-miş. O aç ol-muş ol-malı. [Turkish]
   house.LOC one thief break.into-EVID He hungry be-PLE be-must
   ‘A thief broke into the house, [I inferred]. He must have been hungry.’

The fact that the evidential forms in (11a) and (12a) block anaphoric reference between the indefinite noun phrase in the first sentence and the pronoun in the second sentence indicates that evidential forms in Bulgarian and Turkish have a modal component.

Consider now how the proposed analysis can be extended to account for the apparent lack of commitment in reportative contexts. Recall that in reportative contexts, the speaker can use the evidential felicitously without being committed to the truth of the information she reports.

(13) Reportative context: You just came from a psychiatric clinic, where you visited your friend Eli. Eli was hospitalized because of severe hallucinations and other psychological problems. When your friend inquires about the things Eli told you, you say:

a. Izvănzemnite í predložili rabota v kosmičeska laboratorija. [Bulgarian]
   aliens her offer.PERF.PAST.PLE job in space laboratory
   ‘Aliens offered her a job in a space lab, [I heard].’

---

5 In this example, -muş is a participial (PLE), not an evidential suffix. The participial -miş expresses post-terminality and does not have evidential meaning (Johanson 2003:276). The evidential and the post-terminal markers can even co-occur in one clause, as in gel-miş-miş ‘has/had reportedly arrived’ (Johanson 2003:281), where the first -miş is the participial suffix, and the second -miş is the evidential marker (cf. Cinque 2001:53).
b. Uzaylı-lar ona uzay labın-da bir iş teklif et-miş-ler. [Turkish]
alien-PL she.DAT space lab.POSS-LOC a job offer do-EVID-3PL
‘Aliens offered her a job in a space lab, [I heard].’

Faller (2002) and Matthewson et al. (2007) argue that the evidential does not have a modal component if it is felicitous in contexts in which the speaker knows that what she reports is false, as in (13). This diagnostics is based on the fact that modals are infelicitous in such contexts:

(14) #It must be raining, but it is not raining. (Faller 2002:193, (156b))

However, the pattern in (13) can receive an alternative explanation. The key to understanding the meaning of the evidentials in reportative contexts are sentences with propositional attitude verbs such as believe in (15).

(15) Ivan believes that it is raining, but it is not raining.

(15) is not contradictory, because the proposition $p$ expressed by the first conjunct (‘it is raining’) is true in Ivan’s belief worlds, while the proposition $\neg p$ expressed by the second conjunct (‘it is not raining’) is true in the speaker’s belief worlds. The same explanation can be applied to evidential forms in reportative contexts. Specifically, the proposition $p$ expressed by the evidential sentence in (13), is evaluated with respect to Eli’s belief worlds (epistemic modal base), and in all worlds compatible with what Eli believes, $p$ is true (universal modal force). This analysis correctly predicts that Eli, i.e. the original reporter, is committed to the truth of the proposition $p$. The commitment of the speaker is irrelevant in this case.

The analysis sketched in this section allows for a uniform treatment of evidentials in inferential, reportative, and direct contexts. All evidential forms have an epistemic modal component, i.e. they encode a universal modal force, and in all evidential contexts the proposition expressed by the evidential sentence is interpreted with respect to the belief worlds of the relevant epistemic agent, i.e. speaker’s belief worlds in inferential/direct contexts but the original reporter’s belief worlds in reportative contexts. The proposed analysis uses a more fine-grained notion of epistemic commitment than the one proposed in Aronson (1967). Nevertheless the analysis supports Aronson’s and Friedman’s original observation that evidential forms in Bulgarian and Turkish express the speaker’s attitude.

3. Information source

The previous section has shown that the Bulgarian and Turkish evidentials encode epistemic commitment, but do they encode the source of information? Friedman (1986:184-185) in his discussion of evidential forms in Bulgarian, Albanian, and Macedonian argues that “the forms under consideration do not mark the source of information or evidence, but rather the speaker’s attitude toward it. The question of whether the source of information was a report, deduction, direct experience, or something else is answered by the context in which the speaker’s choice of form occurs”. A corollary from this is that the distribution of evidential forms is insensitive to information source. However, the two pieces of evidence suggest otherwise.
First, cross-linguistic studies, such as Willett (1988), have shown that in many languages evidential forms can express inferences based on knowledge alone, i.e. in the absence of any observable evidence (cf. the inferential evidential $k’a$ in St’át’imcets, discussed in Matthewson et al. 2007)). However, the Bulgarian and Turkish evidentials are infelicitous in such contexts, as the data in (16) show. In order to express the targeted proposition, the speaker must use modal verbs such as *trjabva* ‘must’ (Bulgarian) and *olmali* ‘must’ (Turkish).

(16) Inferential context: Every year in July, your hometown experiences heavy rainfall. You live abroad now. Based on what you know, you infer that it rained heavily in July this year, but you have no evidence. When someone asks you what the weather was like in your hometown in July, you say:

a. #*Valjalo. / Trjabva da e valjalo.*
   [Bulgarian]
   rain.IMPERF.PAST.PLE / must.PRES SUBJ be.3SG.PRES rain.PLE
   ‘It rained, [I inferred].’ / ‘It must have rained.’

b. #*Bu sene yine çok yağ-müş. / Çok yağ-müş ol-malı.*
   [Turkish]
   this year again a lot rain-EVID / a lot rain-PLE be-must
   ‘It rained heavily this year, [I infer].’ / ‘It must have rained a lot.’

Second, some languages treat dreams as a type of indirect information source; they can be narrated by using reportative evidential forms (cf. Aikhenvald 2004:380-381 on Cree and Modern Eastern Armenian). In Bulgarian and Turkish, however, evidential forms cannot be used to report dreams, as the examples in (17) show.

(17) Reportative context: This afternoon you had a dream in which your estranged sister, who lives in London, told you that it rained last night. When someone asks you what the weather was like in London last night, you say:

a. #*Snošti v London valjalo.*
   [Bulgarian]
   last.night in London rain.IMPERF.PAST.PLE
   ‘It rained in London last night, [I heard].’

b. #*Dün gece Londra-da yağmur yağ-müş.*
   [Turkish]
   last night London-LOC rain rain-EVID
   ‘It rained in London last night, [I heard].’

The data in (16) and (17) suggest that evidential forms in Bulgarian and Turkish must encode some restrictions on what information source they can express. I propose that evidentials in these languages can only occur in contexts in which the speaker acquires evidence that she classifies as *external*, i.e. as originating outside of her psychological world (cf. Smirnova 2012). On this analysis, inferences based on perceptual experience, reports from others, and direct perception of the event constitute external evidence. On the other hand, inferences based on knowledge (16), reports heard in a dream (17) as well as hallucinations are examples of *internal* information sources. The internal information source is not compatible with the meaning of the Bulgarian and Turkish evidentials.
4. Temporal meaning

Evidential forms in Bulgarian and Turkish have developed from old perfect forms. Thus, the evidential marker -miš in Turkish is historically related to the participial suffix -miš. (Johanson 2000:80). Similarly, in Bulgarian, the participial -l- forms, the hallmark of the evidential paradigm, have historically derived from the Common Slavic participle (Friedman 1986:171). Because of this historical heritage, it is often assumed that the temporal meaning of evidential forms is comparable to that of the past indefinite or perfect forms, i.e. that evidential forms have inherently past meaning (Friedman 1982, 1986). In what follows, I show that the Bulgarian and Turkish evidentials have distinct temporal meaning that is not reducible to the meaning of the past indefinite.

4.1 Evidential tense is relative

I adopt a neo-Reichenbachian temporal ontology, consisting of Event Time (ET), Speech Time (ST), and Reference Time (RT) (cf. Reichenbach 1947, Klein 1994). In this framework, the temporal meaning of non-evidential sentences in (18) is derived as follows.

(18) a. Šte vali dovečera / snoštì. [Bulgarian]
FUT rain.IMPERF.3SG.PRES tonight / last.night
‘It will rain tonight / #last night.’

b. Bu gece / #dün gece yağmur yağ-acak. [Turkish]
this night / last night rain rain-FUT
‘It will rain tonight / #last night.’

Tense encodes the relation between ST, i.e. the time at which the speaker utters the sentence, and RT, a contextually salient time whose reference can be established by a temporal adverb or inferred from the preceding discourse. In (18), RT is established by the temporal adverbs dovečera and bu gece ‘tonight’. The future tense encodes that RT is in the future with respect to ST (ST<RT). The imperfective grammatical aspect in (18a) specifies that the RT is included in the raining eventuality (RT ⊆ ET). From the two relations (ST<RT) and (RT ⊆ ET), it follows, that the raining eventuality is located in the future with respect to ST (ST<ET). The analysis correctly predicts that future tenses in (18) are compatible with temporal adverbs such as ‘tonight’, but not with temporal adverbs that refer to the time in the past of ST, such as ‘last night’.

Consider now the evidential future sentences in (19). Unlike the future indicative forms in (18), the future evidential forms in (19) are compatible with past and future temporal adverbials.

(19) Reportative context (Future: EAT<RT): According to the weather forecast that you heard two days ago: (i) it was supposed to rain last night; (ii) it was supposed to rain tonight:

a. Štjalo da vali dovečera / snoštì. [Bulgarian]
FUT.PLE SUBJ rain.IMPERF.3SG.PRES tonight / last.night
‘It will rain tonight, [I heard].’ / ‘It was supposed to rain last night, [I heard].’
b. Bu gece / dün gece yağmur yağ-acak-mış. [Turkish]  
this night / last night rain rain-FUT-EVID  
‘It will rain tonight, [I heard].’ / ‘It was supposed to rain last night, [I heard].’

The contrast between (18) and (19) can be explained if we assume that in evidential contexts tense is *relative*, i.e. it is interpreted not with respect to ST but with respect to some other contextually relevant time. I argue that this time is Evidence Acquisition Time (EAT), i.e. the time at which the speaker acquires the relevant evidence. In (19), EAT is the time at which the speaker hears the weather forecast; it is past with respect to ST (EAT<ST). Under this analysis, the future tense in evidential sentences encodes that the RT is in the future with respect EAT (EAT<RT). As shown in (20), this future temporal relation is compatible with situations in which RT precedes ST (RT<ST) and situations in which RT follows ST (ST<RT), which explains why both past and future oriented adverbials can be used felicitously in future evidential sentences.

(20) Future temporal relations in (19): EAT<RT

The relative tense analysis applies straightforwardly to past and present evidential sentences. (21) is an example of a past evidential context; it specifies that RT (last year) is in the past of EAT (last month). Only the form *pisala*, morphologically a past stem (aorist) participle (PAST), is felicitous in such a context in Bulgarian. The present stem (imperfect) participial *pišela* (PRES) is infelicitous in such a context.

(21) Reportative context (Past: RT<EAT): Last month Ivan told you that Maria, your former classmate, spent last year writing a book and that the book has just been published. You believe Ivan. Today, your friend asks you what Maria was doing last year. You say:
Maria pisala / #pišela kniga. [Bulgarian]  
Maria write.IMPERF.PAST.PLE / write.IMPERF.PRES.PLE book  
‘Maria was writing a book, [I heard].’

(22) is an example of the present evidential context; it specifies that EAT is co-temporal with RT (EAT=RT). Only the present stem (imperfect) participial is felicitous in such a context.

(22) Reportative context (Present: RT=EAT): Last month at the class reunion Ivan told you that Maria is busy writing a book. You believe Ivan. Today your old friend asks you what kept Maria from coming to the class reunion last month. You say:
Maria pišela / #pisala kniga. [Bulgarian]  
Maria write.IMPERF.PRES.PLE / write.IMPERF.PAST.PLE book  
‘Maria was writing a book, [I heard].’

---

6 The notion of EAT was anticipated in Friedman (1982), who observed that evidential sentences make an implicit reference to the report that occurred in the past. EAT was first formally defined in Lee (2011).
The data in (21) and (22) show that in Bulgarian the temporal information is manifested in the form of the evidential stem: the past stem (e.g., pisala) encodes the past temporal relation (RT< EAT), while the present stem (e.g., pišela) encodes the present temporal relation (RT=EAT). If the forms pisala and pišela encoded an aspectual opposition between aorist and imperfect, we would not expect to see the contrast in (21) and (22), since both contexts are aspectually uniform; they support an imperfective interpretation. Similarly, under the absolute tense analysis, in which the tense encodes the relation between RT and ST, the observed contrast between (21) and (22) remains unexplained, since in both contexts RT precedes ST. I conclude that the data in (21) and (22) provide further support the relative tense analysis.

Unlike Bulgarian, Turkish does not morphologically distinguish between the past and present relations in evidential sentences: the forms in (23) and (24) are morphologically identical. Nevertheless, under the assumption that meaning is compositional, I argue that Turkish evidential forms in (23) and (24) have two null morphemes, past and present, respectively.

(23) Reportative context (Past: RT<EAT): same as (21):

\begin{itemize}
\item Ayşe kitap yaz-iyor-Ø-muş.
\end{itemize}

[Turkish]

Ayşe book write-PROG-PAST-EVID

‘Ayşe was writing a book, [I heard].’

(24) Reportative context (Present: RT=EAT): same as (22):

\begin{itemize}
\item Ayşe kitap yaz-iyor-Ø-muş.
\end{itemize}

[Turkish]

Ayşe book write-PROG-PRES-EVID

‘Ayşe was writing a book, [I heard].’

The assumption that Turkish has a null present tense morpheme is rather uncontroversial. As Yavaş (1980:9, 10) observes, in the absence of the past morpheme (-\textit{DI}) or future morpheme (-\textit{y}E\textit{cEk}), the unmarked verb form receives the present tense interpretation:

(25) Yavaş (1980:9), ex. (2a)

\begin{itemize}
\item John New York Times-ı oku-yor.
\end{itemize}

John New York Times-ACC read-PROG

‘John is reading the New York Times.’

A null past morpheme in the evidential paradigm can be motivated as follows. As the above discussion has shown, evidential tense is relative, i.e. the eventuality denoted by the evidential form is interpreted with respect to EAT, not with respect to ST. Yet, the past tense morpheme -\textit{DI} is absolute: “the anteriority denoted by -\textit{DI} is always with respect to the speech time” (Yavaş 1980:11). Thus, there must be another morpheme, such as the null morpheme postulated in (23), that expresses anteriority in relative contexts. This assumption is also needed to explain the temporal meaning of sentences with propositional attitude verbs such as (26), in which the tense on the embedded verb is interpreted relative to the time denoted by the attitude verb ‘not know’.
(26) Adopted from Yavaş (1980:155), ex. (41) with modified glosses

Reading 1 (PRES): ‘The professor doesn’t know that the students are reading his book.’
Reading 2 (PAST): ‘The professor doesn’t know that the students (have) read his book.’

(26) is ambiguous in that the eventuality of book reading can either overlap with the professor’s attitude time (this interpretation requires the present tense on the embedded verb ‘read’) or it can be past with respect to the attitude time (this interpretation requires the past tense in the embedded verb ‘read’). The presence of a null morpheme, ambiguous between the present and the past interpretation, explains both readings.

To summarize, the discussion in this section has shown that evidential forms can encode future, present, and past temporal relation between EAT and RT, i.e. they function as relative tenses. Thus, the meaning of evidential forms cannot be reduced to anteriority.

4.2 Restriction on the temporal location of EAT

According to Friedman (1986), evidential sentences make an implicit reference to the report that occurred in the past. Indeed, in the examples discussed so far, EAT precedes ST. But is the temporal configuration (EAT<ST) required in evidential sentences? The data in (27) show that evidential forms cannot be used felicitously if ST precedes EAT, i.e. if the speaker makes an evidential statement before she acquires the relevant evidence.

(27) Reportative context (ST<EAT): you suspect that Maria/Ayşe is writing a book, but you have no evidence. Next week you have a meeting with Maria’s/Ayşe’s sister, a good friend of yours. You plan to ask her whether Maria/Ayşe is writing a book. Today, when someone asks you what Maria/Ayşe does, you say:

a. #Maria pišela /#štjala da piše kniga. [Bulgarian]
   Maria write.IMPERF.PRES.PLE/ FUT.PLE SUBJ write.IMPERF.3SG.PRES book
   Intended: ‘Maria is writing a book, [I will hear].’

b. #Ayşe kitap yaz-iyor-muş / #yaz-acak-miş. [Turkish]
   Ayşe book write-PROG-EVID / write-FUT-EVID
   Intended: ‘Ayşe is writing a book, [I will hear].’

However, EAT does not have to be restricted to the past. In fact, the evidential construction is felicitous in contexts in which the speaker acquires the relevant evidence as she speaks, i.e. when EAT coincides with ST (EAT=ST), as in (28) (cf. also Friedman 1982:154). Importantly, when EAT=ST, the evidential sentence is obligatorily pronounced with exclamatory intonation, marked as ‘!’.

7 Sentences such as (28) are often analyzed as (ad)mirative, i.e. as expressing surprise on the part of the speaker. However, it is important to realize that the meaning of (28) or (4) for that matter cannot be reduced the expression of surprise. Both (4) and (28) are evidential sentences and as such they express epistemic modality, temporality, and external information source, direct perception and inference, respectively.
Inferential context (EAT=ST): Maria/Ayşe spends a lot of time writing but she never tells you about her work. You have just discovered a first chapter of an unauthored manuscript on her desk. Looking through the manuscript, you realize that Maria/Ayşe is writing a book. You say:

a. Maria pišela kniga! / #Maria pišela kniga. [Bulgarian]
   Maria write.IMPERF.PRES.PLE book / Maria write.IMPERF.PRES.PLE book
   ‘Maria is writing a book, [I infer]!’

b. Ayşe kitap yaz-iyor-muş! / #Kitap yaz-iyor-muş. [Turkish]
   Ayşe book write-PROG-EVID / book write-PROG-EVID
   ‘Ayşe is writing a book, [I infer]!’

These data show that in order to use the evidential sentence, the speaker must have acquired the relevant evidence or be in the process of evidence acquisition. This generalization offers a new perspective on the relation between perfect tenses and evidentiality. In the previous literature, it has often been assumed that the morphology of the perfect is utilized to express evidential meaning because of the semantic relation between evidentiality and the perfect: “the semantic similarity…between perfect and inferential lies in the fact that both categories present an event not in itself, but via its results” (Comrie 1976:110; see also Slobin and Aksu 1982:190). However, a closer look at the data shows that the relation between evidentiality and the perfect is less straightforward. First, speakers can acquire indirect evidence about the event that is still ongoing. Thus, the smell from the adjacent apartment can trigger an inference that your neighbor is currently baking baklava. Second, the Bulgarian and Turkish evidentials are not limited to non-witnessed contexts but can express direct perception of the event.

In light of this discussion, I would like to consider an alternative explanation that takes into account the temporal meaning of evidential sentences, and, specifically, the fact that EAT cannot be future with respect to ST. Within the “extended now” framework (cf. Dowty 1979), the perfect introduces an interval with respect to which the eventuality denoted by the verb is temporally located. The left boundary of the interval is determined by temporal adverbs such as, e.g., since Tuesday, or by any other contextually salient time, while the right boundary is constrained by the tense of the copula. In the present perfect, the right boundary is identified with ST. Under this analysis, the present perfect introduces a non-future temporal interval. Crucially, the location of EAT in evidential sentences is also restricted to a non-future temporal interval, whose right boundary is identified with ST. From this perspective, the historical connection between the evidential and the perfect in Bulgarian and Turkish might be due to the fact that the present perfect provides an appropriate temporal frame, i.e. a non-future interval, within which the time of evidence acquisition can be instantiated. Importantly, however, the eventuality denoted by the evidential sentence is not restricted to the past.

4.3 Evidentiality and the perfect tenses

Despite the historical connection between the perfect tenses and evidentiality, the two categories are distinct both morphologically and semantically. Consider, for example the future evidential
forms in (19) and compare them to the future perfect forms in (29).

(29) a. Do utre šte e valjalo. [Bulgarian]
by tomorrow FUT be.3SG.PRES rain.PLE
‘By tomorrow, it will have rained.’

b. Yarın yağmur yağ-mış ol-acak. [Turkish]
tomorrow rain rain-PLE be-FUT
‘(By) tomorrow, it will have rained.’

The morphological composition of (19) and (29) is clearly different. Thus, the future evidential form in Bulgarian consists of the future marker in the evidential form plus the subjunctive marker da and a finite verb form (cf. štjalo da vali ‘will rain’), while the future perfect consists of the future morpheme and the perfect form (cf. šte e valjalo ‘will have rained’). Note also that the future evidential form is morphologically distinct from the present perfect (e valjalo ‘have rained’). If we assume that evidential meaning is expressed by the (present) perfect paradigm (Friedman 1982), the very existence of the future evidential forms in (19) remains unexplained.

The evidential forms also differ from the perfect tenses in terms of their semantics. In (29), the future tense locates the RT in the future with respect to ST (tomorrow), and the participial morphology shifts the eventuality of raining to the past. On the other hand, the evidential morphology does not have any such past-shifting effects; in (19), the evidential locates the raining eventuality in the future with respect to Evidence Acquisition Time. This comparison shows that despite the historical connection, the perfect and evidentiality in contemporary Bulgarian and Turkish have different temporal meanings (cf. also Izvorski 1997). This discussion suggests that evidential forms cannot be treated as a special usage of the perfect.

**Conclusions**

This paper has shown that the Bulgarian and Turkish evidentials have tripartite meaning: they have a modal component, an information source component, and a temporal component. The proposed analysis shows that the meaning of evidential forms in these languages is not reducible to the meaning of the past indefinite or perfect. Based on this, I have argued that evidentiality in Bulgarian and Turkish should be recognized as an independent category in its own right.

**Acknowledgments**

I thank Rumen Iliev and Tanya Ivanova-Sullivan for their help with the Bulgarian data, and Rabia Ergin-Somer and Murat Yasavul and for their help with the Turkish data. I am grateful to Krasimira Aleksova for comments. All remaining errors are my own responsibility.

**References**


