11

Aspect and tense in evidentials

ANA ARREGUI, MARÍA LUISA RIVERO,
AND ANDRÉS SALANOVA

11.1 A tense-independent approach to evidentials

Traditionally, evidential categories are said to express information regarding the source of evidence for a proposition (e.g. Boas 1947; Jakobson 1957; Willet 1988; Chafe and Nichols 1986; Aikhenvald and Dixon 2003). Classifications of evidentials establish distinctions between, for instance, direct, reported, and inferred sources of evidence, speaker (un)certainty ("illocutionary" evidentials in Quechua (Faller 2002, 2011), Cheyenne (Murray 2010), and Japanese (McCready and Ogata 2007), and "modal" evidentials that indicate epistemic uncertainty, as in St'át'imcets (Matthewson et al. 2007)). From a morphosyntactic perspective, evidentials can be encoded by a wide array of categories, including particles, aspectual and temporal morphology, modals, verbs, and adverbs.

The goal of this chapter is to investigate the interaction between evidential categories and temporal anchoring. With this aim in mind, we compare Bulgarian, Mẽbengokre, and Matses, whose evidential systems seem to differ in the complexity of temporal dimensions. Bulgarian is a South Slavic language with a system of evidentiality morphologically infused by tense and aspect. Mẽbengokre is a Jê language in central Brazil whose evidential markers do not interact with temporal and aspectual categories. Matses, a Panoan language in the Amazon region in Brazil and Peru, has an evidential system with a high degree of temporal complexity described by Fleck (2003, 2007). We argue for an analysis of the interaction between temporal and evidential markers on the basis of Bulgarian, where the matter has long been studied. We extend our proposal to Mẽbengokre and Matses, which we discuss more briefly given the sparseness of the literature, and conclude that it provides a successful account for very varied evidential systems.

Temporal matters have attracted previous attention in the literature on evidentials (Nikolaeva 1999; Aikhenvald 2004; Fleck 2003, 2007; Speas 2010), but interest on
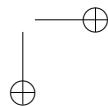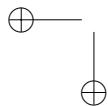
the topic has experienced considerable growth in formal semantics in recent years. Some analyses mainly in the context of Korean and Bulgarian argue that evidential constructions are in need of a particular temporal relation—an additional "evidential tense"—which takes the time of the acquisition of the evidence as evaluation time, and situates the described event in relation to the time the information was acquired (Lee 2011, 2013; Lim 2010; Koev 2011; Smirnova 2011, 2013).

In investigating the interaction of temporal, aspectual, and evidential categories in Bulgarian, Mẽbengokre, and Matses, we address questions such as the following: (a) To what extent do temporal categories affect the interpretation of evidentials? Can the temporal perspective of evidentials be displaced from the speech time? (b) To what extent do evidentials affect the interpretation of temporal categories? Does the interpretation of aspect and tense change in the scope of evidentials? Our conclusion is that temporal categories retain their usual interpretation in evidential contexts both in languages with evidential systems that seem independent from tense such as Mẽbengokre, and in systems where evidential markers are fused with temporal categories such as Bulgarian and Matses. There is no need to postulate an independent "evidential" system of temporal reference in these languages. Standard interpretations of temporal categories suffice to account for temporal dimensions in evidential constructions in a uniform manner in languages that, as we will see, have very different evidential and temporal systems.

Bulgarian, on the one hand, has rich tense and aspectual systems, and it is our view that aspectual morphology is crucial in signaling evidentiality. Matses also appears to encode complex relations by combining temporal and evidential markers. Bulgarian now counts amongst languages where it is claimed that tense displaces the interpretation of evidentials (Koev 2011; Smirnova 2011, ~~2014~~), and parallel claims exist about Matses (Fleck 2003, 2007). Mẽbengokre, on the other hand, has a relatively impoverished tense system. There is no formal literature on evidentials in this language, and no claims relating evidentials and tense. Our studies of the evidential systems of these languages support the following preliminary conclusions. Bulgarian, Matses, and Mẽbengokre are parallel insofar as temporal operators do not manipulate the time at which the evidence is acquired in evidentials. Both tense and aspect maintain parallel interpretations in evidential and non-evidential (indicative) contexts. Temporal operators in the scope of evidentials receive their usual speech-time anchored interpretation. These conclusions suggest that there is no need to postulate an independent "evidential tense" in Mẽbengokre, whose evidential particles are independent from tense or aspect markers, in Bulgarian, whose evidential verbal paradigm is infused by tense and aspect, or in Matses, whose evidential system seems based on complex interactions with temporal markers.

In our discussion, we simplify the interpretation of evidentials, and assume that evidential marking corresponds to an operator (EV) characterized as an

epistemic/evidential modal[1] within a situations framework in the sense of Kratzer (1989, 2011b), with the semantics in (1):

(1) $[\![\mathbf{EV}]\!]^c = \lambda p_{<s,t>}.\forall s'$: s' is compatible with the knowledge/evidence available in s^*, $\exists s$: $s<s'$ & $p(s)=1$ (where s^* is the utterance situation corresponding to c).

According to (1), EV is a universal modal quantifier over situations compatible with the particular body of knowledge/evidence available in the utterance context; i.e. its domain of quantification will only include situations in which everything that is known is true.[2] In combination with a proposition p, the modal will deliver truth iff all situations compatible with what is known in the utterance context include a situation in which p is true.

The structure of the chapter is as follows. In section 11.2 we discuss Bulgarian, arguing that its evidential system is rooted in aspect. Section 11.3 examines Mẽbengokre. Section 11.4 examines Matses, arguing that its evidential system also exploits aspect, which dispenses with the need for an extra temporal relation particular to evidentials. Section 11.5 concludes.

11.2 Bulgarian

The evidential system of Bulgarian, which Scatton (1983) labels the Renarrated Mood (RM), is infused with tense and aspect. Based on Arregui et al. (2014), in sections 11.2.1 and 11.2.3 we develop an analysis that assigns a major role to Viewpoint Aspect in capturing what appear to purely be its temporal relations, and also addresses its 'modal' relations. In section 11.2.4, we briefly compare our proposal to an alternative by Smirnova (2013), who argues in favor of additional temporal relations particular to evidentials defined in relation to the Evidence Acquisition Time (EAT). We show that our viewpoint hypothesis offers advantages over the EAT hypothesis, since it successfully captures the temporal relations adduced in support of EAT and also temporal and "modal" relations that fall outside of the scope of, and constitute problems for, EAT. We conclude that a successful account of the Bulgarian RM must crucially rely on aspect and not on temporal relations specific to evidentials.

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[1] The characterization of evidentials has been the subject of much debate. For e.g. Matthewson et al. (2007), McCready and Ogata (2007), von Fintel and Gillies (2010), and Lee (~~2010~~), they are modal. Arguments against this view are presented in e.g. Faller (2002, 2011) and Murray (2010).

[2] Following Izvorski (1997), this is the body of knowledge corresponding to what the speaker has evidence for, but we leave this aside. As noted, we make some simplifying assumptions (Gillies and von Fintel 2007; von Fintel and Gillies 2010, for discussion), and assume that EV is anchored to the utterance situation.

11.2.1 Introducing the Renarrated Mood

Bulgarian has a RM evidential verb paradigm illustrated in (2a–c), which, for simplicity, we translate into English with 'apparently.'

(2)   a. Ivan **svirel**   na piano.
         Ivan **play.RM** on piano
         'Apparently, Ivan plays/played the piano.'

      b. Ivan **izjal**   tsjalata   banitsa.
         Ivan **eat.RM** whole.the cheese   pie
         'Ivan apparently ate the whole ~~cheese pie.~~'

      c. Ivan **bil**   **izjal**   tsjalata   banitsa.
         Ivan **be.RM** eat.Pple whole.the cheese   pie
         'Ivan has/had apparently eaten the whole ~~cheese pie.~~'

   The RM has been a topic of considerable attention in the Bulgarian tradition (e.g. ~~Andrejèin~~ 1944; Maslov 1959; Pašov 1989, 2005), was brought to the attention of the linguistic public by Roman Jakobson (1957), and has attracted recent interest in formal semantics (Izvorski 1997; Sauerland and Schenner 2007, 2013; Koev 2011; Smirnova 2011, 2013).

   The RM is used in reports where the speaker has not witnessed the described events (e.g. Maslov 1959), and can also express inferential meanings (e.g. Izvorski 1997; Smirnova 2011, 2013; Koev 2011). By contrast, the Indicative Mood is usually understood as based on direct evidence justifying belief, and serves for generally accepted truths.

   The RM exhibits a paradigm of tenses (e.g. Scatton 1983; Pašov 1989, 2005; Rivero 2005) partially illustrated in Table 11.1 for 3rd person masculine singular forms, and can allude to present, past, and future.

TABLE 11.1 The indicative and the evidential paradigms

	Indicative Mood	Renarrated Mood
Present '(he) writes, is writing'	*piše*	*piše-l*
Imperfect '(he) was writing, etc.'	*pišeše*	*pisa-l*
Aorist '(he) wrote'	*pisa*	
Present Perfect '(he) has written'	*e pisal / pišel*	*bi-l pisal / pišel*
Past Perfect '(he) had written'	*beše pisal / pišel*	

RM forms are characterized by participles (Pple) with L-morphology. Some RM 1st/2nd person forms overlap in morphology with Indicative Present Perfects. The received view, however, is that the two paradigms contrast in the 3rd person, with RM (2a) lacking the *be*-auxiliary ~~in~~ Present Perfect (3).[3]

(3) Ivan **e**   **svirel**   na piano. Indicative Present Perfect
     Ivan be.Present play.~~Ppl~~ on piano
     'Ivan has played the piano.'

A syncretism important for our purposes is that only two RM forms compete with the three simple tenses in the Indicative. That is, the traditional imperfective participle *pišel* and the perfective participle *pisal* of the RM compete with Indicative Present *piše* '(He/she) writes, is writing,' Aorist *pisa*, roughly 'He/she wrote,' and Imperfect *pišeše* with the interpretations in Arregui et al. (2014). In section 11.2.2 we argue that such a syncretism indicates that the (semantic) system behind morphological "tenses" in the RM depends on Viewpoint Aspect (Smith 1991), and is crucially driven by the opposition labeled Imperfective (IMPF) vs. Perfective (PERF).

11.2.2 *Viewpoint in the RM*

To justify Viewpoint Aspect as a driving force in the RM, we begin with the connection between morphology and semantics in RM participles. As to morphology, we adopt a traditional position. Table 11.1 shows that RM *pišel* and *pisal* are identical in form to the two participles available to Indicative Present Perfects. Given such an identity, we consider RM *pišel* a tenseless morphologically imperfective (imp) form and RM *pisal* a morphological perfective (pf) form, parallel to Indicative participles. We characterize RM *pišel* as semantically imperfective (IMPF), making it aspectually parallel to the (semantically imperfective) Indicative Imperfect *pišeše*. RM *pišel*, imperfect *pišeše*, and present *piše* oppose Indicative aorist *pisa* and perfective RM *pisal*, which we characterize as semantically perfective (i.e. PERF).

Following Arregui et al. (2014), we propose that imperfective RM *pišel* reflects the presence of a modal imperfective operator IMPF, which quantifies universally over situations identified by a "modal base" MB, as in (4):

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[3] Both RM morphology and semantics have proven controversial. For Pašov (2005: 190), RM forms and Indicative Present Perfects have evidential meanings, but such meanings differ. RM patterns without 3rd person aux are reportative: (2a–c). Present Perfects with a 3rd aux display an inferential reading among other interpretations: (3). By contrast, for Izvorski (1997) and Smirnova (2011, 2013) the RM has both reportative and inferential readings. For Friedman (1986, and related work), (a) Present Perfects have a "non-confirmative" reading in reportative contexts, (b) 3rd person present auxiliaries are optional, and (c) Bulgarian lacks an independent evidential system. In our view, the RM and the Indicative Mood are morphologically distinct in several tenses including futures. Reportative readings are not under dispute in the RM, and they prove sufficient for our claims, so we omit discussion of inferential readings.

(4) $\llbracket \textbf{IMPF} \rrbracket^c = \lambda P_{<l,<s,t>>} . \lambda s. \forall s': MB_\alpha(s)(s') = 1, \exists e: P(e)(s') = 1,$
defined only if there is a contextually or linguistically determined salient modal base (MB) of type α.

IMPF in (4) quantifies over situations corresponding to a given MB (technically, an accessibility relation), and in combination with a predicate of events P claims that all situations s' compatible with the relevant MB include a P-event. According to this proposal, flavors in imperfective readings are due to the different MBs available to IMPF. In Bulgarian, those MBs are identical in the RM and Indicative systems, but are hosted by different morphologies. IMPF is hosted by present and imperfect tense inflections in the Indicative, and by imperfective verb stems such as *pišel* in the RM.

The flexible semantics of IMPF in (4) allows temporal reference to be past, present, or future. Thus, imperfective *pišel* in (5) may be felicitously disambiguated towards the past (5a), the present, or the future (5b,c), by deictic adverbs.

(5)   (Spored   dobre osvedomeni iztočnitsi,)
(According.to well   informed   sources,)

    a. . . . Ivan **pišel**   kniga včera.
       . . . Ivan write.RM.imp book   yesterday
       '. . . Ivan was writing a book yesterday.'

    b. . . . Ivan **pišel**   kniga dnes.
       . . . Ivan write.RM.imp book   today
       '. . . Ivan {a. was/is in the process of writing a book today / b. was supposed to be writing a book (later) today}.'

    c. . . . Ivan **pišel**   kniga utre.
       . . . Ivan write.RM.imp book   tomorrow
       '. . . Ivan was (supposed to be) writing a book tomorrow.'

An instance with IMPF in the (non-evidential) Indicative is (6), where an adjunct clause disambiguates the matrix verb in the imperfect tense towards the past.

(6)   Kogato Petar **vleze**   v stajata,   Ivan **pišeše**   kniga.
When   Peter enter.Aorist in room.the, Ivan write.Imperfect book
'When Peter entered the room, Ivan was writing a book.'

Regarding perfectives, we propose that aorist inflectional morphology on Indicative *pisa* and perfective morphology on RM *pisal* do not reflect a modal quantifier over situations. Instead, we follow a traditional view according to which aorists/perfectives locate eventualities in the past with respect to Speech Time, with a PERF operator receiving the (simplified) temporal semantics in (7):

(7) $\llbracket \textbf{PERF} \rrbracket^c = \lambda p_{<s,t>} . \lambda s_s: s$ precedes s^* & $p(s) = 1.$

Given (7), PERF combines with a property of situations to restrict the domain of the function to situations that are past with respect to the speech situation (s*). An instance of PERF in an Indicative is the Aorist in (8).

(8) Ivan **pisa**   včera/   *utre.
     Ivan write.Aorist yesterday/ *tomorrow
     'Ivan wrote yesterday/*tomorrow.'

In section 11.2.3 we demonstrate that when IMPF is under the scope of the operator EV, the modal semantics in (4) suffice to derive both temporal and modal interpretations, and that PERF in RM *pisal* always situates events in the past, indicating that the event is over by Speech Time.

11.2.3 *Imperfectives vs. perfectives in the RM*

11.2.3.1 *Imperfectives*   Imperfective RM forms allow for reported events to be situated towards the past, present, or future, and also report on the modal dimensions of events that were interrupted or habitual.

In our proposal, different flavors in imperfectives depend on the identical MBs available to IMPF in the RM and the Indicative, so let us introduce some flavors of IMPF when embedded under EV, with examples borrowed or adapted from Arregui et al. (2014) and Rivero and Slavkov (2014).

A reading familiar in discussions of imperfectives is known as "ongoing"/ "processual." In (9a), imperfective RM *govorela*—a feminine participle that agrees with a feminine subject—reports on an eventuality ongoing in a (salient) past situation. We propose that here IMPF is interpreted in relation to an Ongoing MB (9c).

(9) a. (Spored   dobre osvedomeni iztočnitsi,) Maria **govorela**   s
        (According.to well informed   sources,)   Mary talk.RM.imp to
        priyatelya   si včera.
        boyfriend.the her yesterday
        '(According to well informed sources,) Mary **was talking** to her boyfriend yesterday.'

     b. [EV [IMPF [Maria **govorela** s priyatelya si včera]]]

     c. $[\![(9b)]\!]^c = 1$ iff
        $\forall$s': s' is compatible with the knowledge available in s*,
        $\exists$s: s< s' & $\forall$s": $MB_{Ongoing}(s)(s") = 1$,
        $\exists$e: e is an event of Maria talking to her boyfriend yesterday in s",
        where for any two situations s and s", $MB_{Ongoig}(s)(s") = 1$ iff s"<s.[4]

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[4] See Arregui et al. (2014) and Cipria and Roberts (2000) for further discussion. In (9c) we appeal to proper parts <, but remain agnostic regarding the advantage of using 'regular' parts ≤.

According to (9c), (9b) will be true iff in all situations compatible with what is known at the utterance situation there is some situation such that Maria is talking to her boyfriend (yesterday) throughout that situation. Depending on the "size" of s, this MB will result either in an interpretation in which there was an event of Maria speaking to her boyfriend in the past or in a continuous, 'repetitive', reading.

Deictic adverbs may disambiguate imperfective RM forms towards the past. Adjunct clauses with perfective RM forms such as *došla* in (10) have a similar effect. Again, perfective RM forms parallel Indicative Aorists (compare (10) to (6)).

(10) Kogato Olga **došla**   v   stayata, Mary **govorela**   s
     When   Olga enter.RM.pf in room.the Mary speak.RM.imp with
     priyatelya   si.
     boyfriend.the her.
     'Apparently, when Olga entered the room, Mary was talking to her boyfriend.'

Second, the "event-in-progress" reading of imperfectives familiar in non-evidential contexts is brought out in so-called "imperfective paradox" contexts with accomplishment Vs, and speaks of events that began but were interrupted in some past time. Imperfective RM participles may host such modal reading, as in (11), and involve the (simplified) MB in (12b), which appeals to events that continue in the situations quantified over.

(11) Šaxmatistăt   **pečelel**   igrata,   kogato bil   udaren po
     Chess.player.the win.RM.imp game.the when   be.RM hit.~~Pple~~ on
     glavata i   igrata   bila   prekăsnata.
     head.the and game.the be.RM interrupted.Pple
     'Apparently, the chess player **was winning** the game, when he was hit on the head and the game was interrupted.'

(12) a. [EV [IMPF [šaxmatistăt pečelel igrata]]]

   b. $[\![(12b)]\!]^c = 1$ iff

      $\forall s'$: s' is compatible with the knowledge available in s*,

      $\exists s$: s$<$ s' & $\forall s$": MB$_{Event-inertia}$(s)(s") = 1,

      $\exists e$: e is an event of the chess player winning the game in s",

      where for any two situations s and ~~s~~, MB$_{Event-inertia}$(s)(s") = 1 iff all the events that have actually started in s continue in s" as they would if there were no interruptions.

Third, another reading familiar in imperfectives is the generic/habitual type. A RM with such a reading is (13), with a MB based on characteristic situations, as in (14a,b).

(13) (Spored   dobre osvedomeni iztočnitsi,) Ivan **četjal**   ot
(According.to well informed sources,) Ivan read.RM.imp from
sutrim   do večer.
morning to evening
'According to well informed sources, Ivan used to read from morning to evening.'

(14) a. [EV [IMPF [Ivan četjal ot sutrim do večer]]]

b. $[\![(14a)]\!]^c = 1$ iff
$\forall s'$: s' is compatible with the knowledge available in s^*,
$\exists s$: $s < s'$ & $\forall s$: $MB_{Generic}(s)(s) = 1$,
$\exists e$: e is an event of Ivan reading from morning till evening in s,
where for any two situations s and s, $MB_{Generic}(s)(s) = 1$ iff s is a characteristic part of s.

We now conclude by reconsidering ambiguous (5b). This may report on a past or present event, but may also speak of a plan to write a book later today, as in (15a) (or also tomorrow, as in (5c)). In the last case, IMPF reports on past plans for events to happen today or tomorrow, appealing to "inertia situations" of a preparatory type (a modal dimension). Following Arregui et al. (2014), IMPF in (15a) is interpreted relative to a MB that identifies the domain of quantification in terms of situations in which plans are carried out, with the Logical Form in (15b), and the truth-conditions in (15c):

(15) a. (Spored dobre osvedomeni iztočnitsi,) Ivan **pišel** kniga dnes.
'(According to well informed sources,) Ivan was/is (supposed to be) writing a book (later) today.'

b. [EV [IMPF [Ivan pišel kniga dnes]]]

c. $[\![(15b)]\!]^c = 1$ iff
$\forall s'$: s' is compatible with the knowledge available in s^*,
$\exists s$: $s < s'$ & $\forall s$: $MB_{prep\text{-}inertia}(s)(s) = 1$,
$\exists e$: e is an event of Ivan writing a book (later) today in s,
where for any two situations s and s, $MB_{prep\text{-}inertia}(s)(s) = 1$ iff all the events that are in preparatory stages in s continue in s as they would if there were no interruptions.

According to (15c), (15b) will be true iff in all situations compatible with what is known in the utterance, there is a situation in which plans have been made for Ivan to write a book later today (no claim is made as to whether he actually did or not). Given the (simplified) definition of the MB in terms of continuations in which plans reach fruition, the situation where plans are made has to temporally precede the situation

of Ivan writing a book (in all the situations quantified over that are compatible with what is known).

In brief, IMPF is encoded in imperfective RM participles such as *pišel* in (5) and (15), *govorela* in (9,10), *pečelel* in (11,12), and *četjal* in (14). The MBs available to this IMPF operator in Bulgarian cut across the Indicative vs. RM distinction, and include an Ongoing type, an Event-Inertia type, a Generic type, and a Preparatory-Inertia type. Such MBs account for temporal and modal flavors of imperfective participles in RM constructions.

11.2.3.2 Perfectives   As to perfective RMs, *vzela* in (16) is the RM counterpart of imperfective RM *vzimala*.[5] In the temporal semantics in (7), PERF combines with a property of situations to restrict the domain of the function to situations that are past with respect to the speech situation (s*). Thus, the perfective verb embedded under EV in (16) gives rise to past readings.

(16)   Maria (veče)   **vzela**   lekarstvoto.
       Maria (already) Pr.take.RM.pf medicine.the
       'Apparently, Maria (already) took the medicine.'

The proposal accounts for why PERF cannot combine with future-oriented adverbs in (17a–c).

(17)   a. *(Spored dobre osvedomeni iztočnitsi,) Ivan **pisal** kniga utre.
           '*(According to well-informed sources), Ivan wrote a book tomorrow.'

       b. [EV [PERF [Ival pisal kniga utre]]]

       c. $[\![(17b)]\!]^c = 1$ iff
           $\forall s'$: s' is compatible with the knowledge available in s*,
           $\exists s$: s$<$ s' & s precedes s* &
           $\exists e$: e is an event of Ivan writing a book tomorrow in s.

According to (17b,c), (17a) will be true iff in all situations compatible with what is known there is a situation that precedes the speech event that includes a situation of Ivan writing a book tomorrow. Given the incompatibility of the temporal specification, (17a) cannot be true and sounds contradictory.

In sum, taking a position that we dub a "Viewpoint hypothesis," we analyzed a variety of RM constructions, arguing that their temporal anchoring depends on aspect. Imperfective RM participles may lead to past or prospective readings in parallel to Indicative verbs in the Imperfect. By contrast, perfective RM participles are always past, like Indicative verbs in the Aorist. The temporal and the modal

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[5] Both perfective *vzela* and imperfective *vizmala* are prefixed participles. Thus, the IMPF-PERF viewpoint contrast does not crucially depend on absence/presence of prefixes (and see Rivero and Slavkov 2014 for relevant discussion).

flexibility available to imperfective RM participles are due to their IMPF operator. In particular, the temporal orientation of RMs is a side effect of the choice of modal flavor (accessibility relation) for this operator, without the need for extra temporal relations specific to the RM.

11.2.4 Dispensing with Evidence Acquisition Time (EAT)

The relation between temporal and evidential categories in Bulgarian has always concerned grammarians, and has recently been taken up by Smirnova (2012, 2013) and Koev (2011) under new lights. Smirnova in particular argues for a specialized tense for evidentials based on the Evidence Acquisition Time (EAT), characterizing the semantic contrast between the reportative RM forms in (18) and (19) as a difference in tense. Both are claimed to be imperfective, but (feminine) *pisala* in (18) is past, and (feminine) *pišela* in (19) is present. By contrast, we argued in sections 11.2.2 and 11.2.3 that *pisal/pisala* encodes PERF and *pišel/pišela* encodes IMPF, making them aspectually parallel to Indicative Aorist and Imperfect/Present tenses.

(18) Reportative context: Last month Ivan told you that Maria, your former class-mate, 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.
'Maria was writing a book, [I heard].'

(19) Reportative context: 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 #pisala/pišela kniga.
'Maria was writing a book, [I heard].'

Smirnova goes on to argue that (18) and (19) provide evidence in favor of tenses specific to evidentials. These tenses order the event reference time with respect to the time of acquisition of information (EAT), differing from Indicative tenses that establish an order relative to Speech Time. On Smirnova's view, past RM forms claim that the event reference time precedes the time the evidence was acquired, while present forms claim that the event reference time and evidence acquisition time coincide. Thus, *pisala* in (18) indicates that the reference time for the writing event precedes the time at which the speaker acquired the information about this event: i.e. it had happened before the speaker heard about it. By contrast, *pišela* in (19) claims that the reference time for the writing event overlaps the time at which the speaker acquired the information: i.e. it was ongoing when the speaker heard about it. Smirnova explicitly opposes (traditional) aspectual characterizations of the RM forms in (18,19), and instead favors a view in terms of tense.

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In section 11.2.2 and 11.2.3 we developed a proposal that relies on Viewpoint Aspect to capture temporal relations in the RM, without appealing to a specialized tense operator specific to evidentials. In this section, we argue that our proposal easily accommodates the RM patterns adduced in support of the EAT hypothesis, and offers the advantage of also accounting for RM patterns that run foul of the EAT hypothesis.

To motivate our claim, we first reconsider (18,19) from the perspective of our earlier proposals. Our claim is that it is possible to account for such RM examples within a view where *pisala* and *pišela* encode a semantic contrast between the viewpoint operators PERF and IMPF, without specialized tense operators appealing to EAT.

Smirnova provides an informal context for (18) that builds up the available information in several steps. We propose that such a context constitutes a body of information that makes salient a background where the described event culminated, not where the event was still in progress. That is, it presents the situation as "perfective" in a way roughly comparable to *Mary wrote a book and she (or somebody else) published it last year*, with a sequencing/advancing effect. Given this body of indirect information where the completion of the book is the salient dimension, a suitable reportative answer is with a perfective RM *pisala*, namely one that intuitively speaking encodes that the report is about an activity that has reached its end. By contrast, the context in (19) provides a body of indirect information that leaves the described event open, the traditional definition of imperfectivity, and this can be felicitously reported by means of an imperfective *pišela*, for example appealing to the Event-Inertia MB discussed in section 11.2.3.

Smirnova's proposal that RM *pišela* is a present form that indicates that the reported event was ongoing at the time the evidence was acquired is problematic. On this view, several interpretations familiar in the literature on imperfectives should be infelicitous when encoded in RM *pišela*, which is an incorrect prediction. To illustrate, (20) is a felicitous report of a writing activity that ceased, and thus could not be ongoing as the information was acquired. On Smirnova's approach, such an event should be reported with *pisala*—the form we consider perfective and not imperfective—which is not the case.

(20) (Minalata godina) Marija **pišela**/   #**pisala**   (kniga) no
     (Last.the year),   Maria   write.RMimp/ #write.RMpf (book) but
     sprjala   (da piše) prez   dekemvri.
     stop.RMpf (to write) during December
     'Apparently, (last year) Mary was writing a book but stopped (writing) in December.'

Examples of type (20) seem to lead to contradiction under the EAT approach. They would indicate that the activity had stopped in view of perfective *sprjala*, while also being ongoing while the evidence was acquired in view of *pišela*. Similar problems arise with 'imperfective paradox' examples of type (11), which display imperfective RM forms in the main clause: *Šaxmatistăt pečelel igrata, kogato bil udaren po glavata*

i grata bila prekăsnata. 'Apparently, the chess player was winning the game, when he was hit on the head and the game was interrupted.'

In addition, the last example raises the issue of the role of adjunct clauses within evidential constructions, which Smirnova does not mention. When they are added as in (11), they specify temporal and modal relations internal to the structure under the scope of the EV operator. These relations replicate familiar behaviors of imperfectives and perfectives in non-evidential contexts, suggesting that extra relations such as EAT play no role in them.

The pattern in (20) represents a standard case in discussions of IMPF vs. PERF in the literature. However, Smirnova's views are also problematic when less standard interpretations are considered, as in those including modal dimensions in types such as so-called "habitual" and "futurate" imperfectives.

On the one hand, habitual readings do not easily fit within the EAT view, but are renarrated with imperfective participles, as in (13). Thus, we proposed a familiar analysis of the IMPF operator leading to generic/habitual readings embedded under the EV operator.

On the other hand, the idea that RM verbs such as *pišela* are present forms that indicate that the reported event was ongoing at the time at which the evidence was acquired cannot account for "futurate" examples such as (15a), *Spored dobre osvedomeni iztočnitsi, Ivan pišel kniga dnes* 'According to well-informed sources, Ivan was supposed to be writing a book (later) today.' In our approach, these are unproblematic with the analysis in (15b,c), where IMPF accesses the same preparatory inertia MB as in Indicative Imperfect verbs.

All the above correlations, then, are easily captured by our analysis where viewpoint IMPF is contained in imperfective (imp) RM participles and PERF in perfective (pf) RM participles, and where IMPF and PERF receive interpretations familiar in many languages. On our approach, no reference is made to the time the evidence was acquired in the RM, which is similar in this respect to the Indicative.

An advantage of the Viewpoint hypothesis is that it allows for a unified perspective on temporal systems that interact with evidentials in a crucial way, such as Bulgarian, and those that seemingly lack interactions, as in Mẽbengokre (section 11.3).

11.3 Mẽbengokre

11.3.1 *Evidentials*

Mẽbengokre modal or aspectual notions are expressed by optional left-peripheral particles or post-verbal elements, both in bold in (21):[6,7]

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[6] Abbreviations for Mẽbengokre are NFUT = non-future, NOM = nominative pronoun, PL = plural, V = finite verb, N = non-finite verb, WE = evidential, DJA = conjectural evidential. Morpheme boundaries are not indicated.

[7] Mẽbengokre data were collected by Salanova in the field unless otherwise indicated.
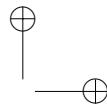
(21) Karinhô **nẽ**   ba   akôr   o**nhỹ**.
      tobacco NFUT 1NOM 3.blow.N sit.V
      'I am smoking some tobacco.'

Left particles include *nẽ* (nonfuture) in (21), *dja* (future), evidentials, frustratives (indicating an initiated but unaccomplished action), and completive and continuative aspect. Postverbal elements include items with progressive meanings such as *nhỹ* in (21), *nẽ* (result state), *mã* (prospective), *kadjy* (purposive), and manner modifiers.

   Left particles have a different morphosyntactic behavior from postverbal elements. While the latter combine with the nominalized lexical verb N (e.g. *akôr* in (21)), left particles may appear with all types of predicates, including non-nominalized V, as in (22) with *nẽ*.

(22) Kajtire **nẽ**   arỳm   mã   tẽ.
      Kajtire NFUT already away go.V
      'Kajtire has left already.'

   Mẽbengokre normally marks propositions that are learned through indirect evidence with *we*, called "hearsay evidential" in other work (e.g. Arregui et al. 2014). This particle can attach to any type of predicate, and seems to have no restrictions regarding co-ocurrence with other particles. We illustrate its various flavors, before we discuss its interaction with temporal markers.

   We is very frequent in narratives, where it often occurs in almost every sentence, as in (23a,b) from myths, and (24a,b) elicited with everyday contexts.

(23) a. Onija kàjkwa krax   kam **we** mẽ ari   ba.
          far   heaven beginning in   WE PL constantly stay
          'They lived, it is said, far away towards the beginning of heaven [i.e. the east].'

      b. Kam mẽ'õ   **we** arirẽnh'ã tẽn   **we** kẽn kam màt   kre
          so   someone WE hunting   went.and WE rock in   maccaw hole
          pumũ.
          see
          'So someone went hunting, it is said, and saw a macaw's nest on the side of a rock, it is said.'

(24) a. Gorotire nẽ   **we** kato.
          Gorotire NFUT WE win
          'Gorotire won [the tournament], it is said.'

      b. Mỳj kadjỳ nẽ   jã?– **we** mesa kadjy.
          what for   NFUT this?– WE table for
          'What is this for?– It is for the table, it is said.'
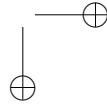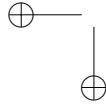
The primary use of *we* in narrative is hearsay, as in (23a,b). In elicited (24a,b), both hearsay and inferential readings are possible. If one controls contexts carefully, however, one may find clear instances where *we* could not be hearsay and has to be inferential, as in (25a,b).

(25) I am looking for Bep in his house. He is not around. His son-in-law has not seen him and does not know where he went, but notices that his gun is not where it normally is. He tells me:

    a. **We** bàkam tẽ.
       WE hunt go
       'Apparently he has gone hunting.'
       Or, if the basket is missing:

    b. **We** puru mã nẽ tẽ.
       WE garden to NFUT go
       'Apparently it is to the garden that he has gone.'

As expected, (25a,b) are equally fine in a hearsay use, i.e., in contexts where I have been told rather than inferred the proposition myself. We can therefore conclude that *we* may be used in both hearsay contexts and contexts of inference.

Our interest is in temporal matters, so we characterize *we* simply as an evidential operator as in (1) [EV]. Temporal markers provide information regarding the location of events relevant to the embedded proposition. Generally, evidentials in Mẽbengokre are speaker-oriented. They are often translated into Portuguese as propositional attitude verbs with first person subjects ('I believe that . . . ,' 'I heard that'), or with the evidential *diz que* of colloquial Portuguese and Spanish,[8] which may be both a hearsay and an inferential evidential.

One final evidential category of Mẽbengokre is the conjectural, which cannot be used as a reportative. A statement made on the basis of a belief in things happening according to a plan will be marked with the future particle *dja* in (26). In previous work, this particle has been glossed as future (a reading it also encodes) or irrealis (a term that is intended to cover both future and conjectural uses).

(26) Kajtire **dja** arỳm ũrũkwã kam bôx.
     Kajtire DJA already 3.house in arrive
     'Kajtire should have already arrived at his house.'

This usage is not unlike the conjectural use of the Spanish future (cf. Rivero 2014):

(27) Habrá llegado a casa.
     Will.have arrived to house
     'S/he has likely arrived home.'

---

[8] See Travis (2006) and Demonte and Fernández-Soriano (2013) for Spanish *dizque*.

Though it is possible to have both *dja* and *we* in the same sentence, the former will only get its non-evidential future interpretation in those cases. In other words, it is impossible to combine conjectural evidentiality with inferential or hearsay evidentiality in a single clause.

As far as we have been able to ascertain, it is impossible to combine conjectural *dja* with hearsay *we* (e.g. *dja* always gets a future interpretation if *we* is also present).

11.3.2 Temporal markers in evidentials

As noted above, evidential *we* can co-occur with other particles. In (28), it co-occurs with the non-future tense *nẽ*:

(28)   Gorotire **nẽ**   **we**   kato.
       Gorotire NFUT WE win
       'Gorotire won the tournament, it is said.'

We follow Salanova (2013) in the claim that finite forms such as (28) include a category-forming v-head that projects below tense responsible for quantifying over events, as in (29) (modified for the situations framework):

(29) $[\![\mathbf{v}]\!]^c = \lambda P_{<l,<s,t>>} . \lambda s_s. \exists e: P(e)(s) = 1.$ (adapted from Salanova 2013)

The role of tense is to place restrictions on the temporal location of embedded propositions. We adopt a referential approach to tense according to which tense is a referential expression that picks out the topic situation the claim is about (see Kratzer 2011b; Arregui et al. 2014). As a situation "pronoun," tense is interpreted via the given variable assignment. The general pattern for the interpretation of topic situations pronouns is given in (30):

(30)   Where s_i is a pronoun ranging over situations,
       $[\![\mathbf{s_i}]\!]^c = g(i) = s_i$, where g is the variable assignment salient in c.

Tense features introduce presuppositions that restrict felicitous interpretations of the situation pronoun (situating the running time of the topic situation ($\tau\text{-}(s_i)$) in the past, present, or future, with respect to Speech Time). The Non-future tense in (28) is interpreted as in (31), so is restricted to non-future situations:

(31) $[\![\mathbf{nẽ_i}]\!]^c = g(i) = s_i$, where g is the variable assignment salient in c.
       Defined only if the variable assignment g salient in c is such that $\tau\text{-}(s_i)$ either precedes or overlaps Speech Time in c (i.e. if s_i is non-future with respect to Speech Time).

The EV operator corresponding to *we* takes propositional arguments so, following Heim and Kratzer (1998), we propose that an index abstracts over the tense pronoun to generate a property of situations embedded under the evidential, as in (32):

(32)
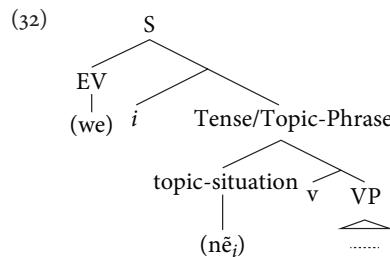
Given the above assumptions, (28) receives the (simplified) Logical Form in (33a) and the truth-conditions in (33b):

(33)   a. [we [nẽ [v [Gorotire kato]]]]

   b. $[\![(33a)]\!]^c = 1$ iff
   $\forall$s': s' is compatible with the speaker's beliefs in s*
   $\exists s_i$: $s_i < s'$ & $\exists$e: e is an event of Gorotire winning the tournament in s̶,
   defined only if s_i precedes s* or s_i overlaps s*.

According to (33b), the interpretation of (33a) will only be defined if $s_i < s'$ as the denotation of nẽ$_i$ is not future. If the interpretation is defined, the sentence will be true iff all situations compatible with the speaker's beliefs in the utterance situation include a non-future situation s_i in which there is an event of Gorotire winning the tournament. In this proposal, there is no interaction between the temporal specification of such an event and the temporal anchoring of the evidential, which is always evaluated in relation to the speaker's beliefs in the utterance context. In other words, the temporal operator locates the eventuality corresponding to the clause embedded under the evidential in relation to the utterance situation.

The intuitions reported by native speakers support the hypothesis that *we* scopes over *nẽ* in (33a), which can only be interpreted in terms of the speaker's current beliefs about a past event and not in relation to the speaker's past beliefs. That is, (33a) cannot mean that according to what the speaker used to believe, Djudjêkô is/was the winner (compare (33b) with the interpretations in non-evidential (21) and (22)).

In our view, Mẽbengokre provides another example of a system where there is nothing special about temporal operators in evidential contexts (as opposed to non-evidential contexts). In evidentials, temporal operators provide the temporal parameter for the location of the eventuality corresponding to the clause embedded under EV. The evidential itself is interpreted in relation to the utterance situation (current knowledge/evidence).

One corollary of our analysis is that the time of acquisition of evidence (EAT) has no status in the grammar of Mẽbengokre. In the case of direct evidence, EAT is determined pragmatically: by necessity, it has to coincide with the reference time, as

it is from that time that the speaker is "viewing" the event. In the case of indirect evidence, EAT is left undetermined. In Mẽbengokre, then, there is no way of modifying a proposition marked with evidential *we* to indicate the time of acquisition of evidence.

11.4 An apparent counterexample: Evidence Acquisition Time in Matses?

11.4.1 A Viewpoint "aspectual" hypothesis

A language with interesting interactions between tense and evidentiality is Panoan Matses (Fleck 2003, 2007; Munro et al. 2012). Fleck (2003, 2007) argues that the Matses sentences in (34a,b), which we label "Inferentials" from now on, are "double tense" constructions that support the postulation of a temporal relation particular to evidentials.[9]

(34) a. mayu-n   bëste-wa-**nëdak-o-**şh.
non.Matses.Indian-ERG hut-make-dist.past.inf- recent.past.exp-3
'Non-Matses Indians (had) made a hut.' [an old hut was discovered by the speaker a short time ago]   (Fleck 2007: (1a))

b. şhëktenamë   kuen-**nëdak-o-**şh.
white.lipped.peccary pass.by-distant.past.inf-recent.past-3
'White-lipped peccaries (evidently) passed by.' [old tracks were discovered a short time ago at a distant location]   (Fleck 2007: (1b))

Roughly, Inferentials are felicitous when describing events the speaker did not experience directly, but whose results the speaker can relate to the event so as to justify the deduction. Fleck tells us that (34a,b) encode both the time an inference was made (-**o**- as recent past) and the period between the inference, and the described event indicated by -**nëdak**- as a portmanteau morpheme that simultaneously encodes distant past and evidentiality.

Based on the rich materials and discussion of Fleck (2003, 2007), we would like to explore an alternative analysis for Inferentials. While we aim to dispense with the extra temporal relation particular to them, which bears a resemblance to EAT in Bulgarian, our proposal is deeply indebted to Fleck's.

Let us sketch our general idea. Oversimplifying, our morphology-rooted proposal consists in arguing that the Inferentials in (34a,b) are characterized by an overt morpheme for evidentiality that is independent from tense: -**ak**-. Such a morpheme encodes an EV operator, which scopes over two additional morphemes with, roughly speaking, "temporal" flavors: -**o**- and -**nëd**-. On the one hand, -**o**- is under the scope of inferential EV -**ak**-, and encodes the topic/reference time of the described event. On the other hand, -**nëd**- is a resultative also under the scope of EV, and

---

[9] Fleck labels (34a,b) "Recent experiential with a distant inferential."

establishes an aspectual-like relation with the topic/reference time. On this view, then, the complex temporal relations in Inferentials result from the interaction of topic-time and aspectual-like resultative morphemes under the scope of an evidential operator with its own distinct morphology.

Fleck proposes (2007: 589): "All evidential markers are portmanteau verbal inflectional suffixes that simultaneously mark evidentiality and tense." He analyzes constructions of type (35), which he labels Experientials, treating -**o**- as a marker for both evidentiality (experiential) and tense (recent past).

(35)   nid- **o**-   şh tumi-o.
       go-   rec.past.exp- 3   man's.name-abs
       'Tumi went.'

As stated above, we differ from Fleck in considering that evidentiality is marked by morphemes that are independent of temporal markers. In the case of (35), we consider -**o**- the same independent temporal marker of recent past also observed in (34a) and (34b). On our view, (35) is overtly marked only for tense, but not for evidentiality. Depending on analysis, (35) could (a) be semantically unmarked, implying direct perception as one option, or (b) contain a covert operator for (direct) evidentiality, whose denotation would differ from the one we later propose for -**ak**- in (34a,b).

11.4.2 *The structure of inferentials*

We propose that (34a) and (34b) are evidential constructions with the structure in (36), where an operator EV scopes over a tense/topic phrase (TP), a resultative phrase, and a VP that encodes event properties. Inferentials are interpreted in relation to the moment of speech, i.e. anchored on evidence available at the speech time.

(36)

```
              S
         ┌────────┴────────┐
        EV                 │
         │                 │
         i         Tense/Topic Phrase
               ┌──────────┴──────────┐
        topic situation      Resultative Phrase
               │               ┌──────┴──────┐
             (s_i)           Result_a       VP
```
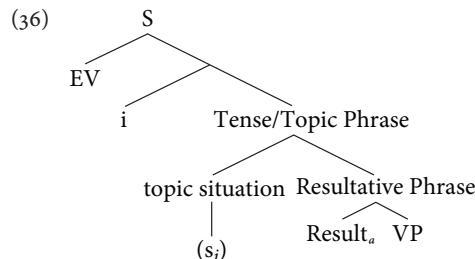
Let us add detail to (36). As mentioned in section 11.3 for Mẽbengokre (see the discussion concerning (30)), EV embeds a clause headed by a Tense/Topic head. This Tense head hosts a topic situation pronoun s_i that identifies the situation the claim is "about." The situation pronoun bears an index bound by a c-commanding index i, which generates a property of situations abstracting over the topic situation. Matses has several topic-situation pronouns partially mentioned later, and the features of each

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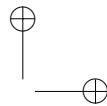
of those pronouns are treated as presuppositions. The Tense Phrase in (36) embeds
a Resultative Phrase identifying a result state. Temporal anchoring in result states is
also morphologically encoded in Matses, so this language also displays an inventory
of resultative-like morphemes/situation pronouns mentioned later.

11.4.3 Applying the analysis

With (36) in place, we illustrate in (37a–c) possible temporal combinations in Inferentials in addition to those in (34a,b):

(37)   a. şhëktenamë   kuen-**nëdak-onda**-şh.
           white.lipped.peccary pass.by-rec.past.inf-rem.past.exp-3
           'White-lipped peccaries (evidently) passed by.' [old tracks were discovered a
           long time ago at a distant location]   (Fleck 2007: (18b))

       b. şhëktenamë   kuen-**-ak--o**-şh.
           white.lipped.peccary pass.by-rec.past.inf-rec.past.exp-3
           'White-lipped peccaries (evidently) passed by.' [fresh tracks were discovered
           a short time ago at a distant location]   (Fleck 2007: (18a))

       c. şhëktenamë   kuen-**ak-onda**-şh.
           white.lipped.peccary pass.by-rec.past.inf-dist.past.exp-3
           'White-lipped peccaries (evidently) passed by.' [fresh tracks were discovered
           a long time ago at a distant location]   (Fleck 2007: (18d))

   Given (36), the morpheme templates we propose for (34a) and (34b) are given in
(38a) and (38b) respectively.

(38)   a. *Verb*   *Resultative* *Evidential* *Topic situation*
           1   2   3   4
           bëste.wa- **-nëd**-   **-ak**-   **-o**-   (+person)
           'hut.make'   Distant past   EV Recent past
       b. **kuen**-   **-nëd**-   **-ak**-   **-o**-   (+person)
           'pass.by'   Distant past   EV   Recent past

In our proposal,[10] Inferentials contain three independent layers of semantic and
morphological relevance to the analysis, with the evidential one being the only layer
that is systematically overt:

11.4.3.1 (i) The evidential operator in (36)   As stated, this systematically corresponds
to an overt morpheme **(a)k/(i)k**, which scopes over the two temporal-like elements
in the structure, which may be phonologically null. The evidential tells us what kind

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[10] Note that we differ from Fleck ┬and consider position [2] **nëd** in (38a,b) an (independent) distant
past resultative, with **ak** standing for EV. To repeat, we do not adopt the idea that evidentiality and tense
combine in a portmanteau morpheme.
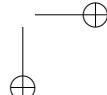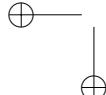
of indirect evidence is relevant/where the evidence is coming from. In Inferentials, it also involves reasons, causes, or results related to the event.

11.4.3.2 (ii) The topic-situation morpheme in (36) This morpheme treated as a pronoun ranging over situations adds a temporal dimension to the result state of the VP eventuality. In Matses, topic situations for different pasts are encoded by different morphemes or pronouns. The morpheme **o** in (34a,b) stands for a recent past, in contrast with **onda** in (37a) for a distant past. Another option is remote past **denne**, mentioned by Fleck but not illustrated here (the encoding of topic situations, however, can also be covert/phonologically null).

For recent past -**o**- in (34a,b), the interpretation is (39).

(39) $[\![o_i]\!]^c = g(i) = s_i$, where g is the variable assignment salient in c.
Defined only if $\tau\text{-}(s_i)$ is in the recent past of the speech time in c.

11.4.3.3 (iii) The resultative morpheme in (36) This item introduces a result state of a building event in (34a), or a ~~bird~~-passing event in (34b), and adds another temporal dimension to Inferentials. Similarly to tense pronouns, resultative morphemes may encode different pasts, and can also be null as in (37b,c) (Fleck also mentions forms for more remote pasts, which we omit).

Inspired by Parsons (1990) and Kratzer (2000), we propose to capture the second temporal-like relation in Inferentials by means of the Resultative Phrase in (36), with (40) providing the semantics for **nëd** in (34a,b):

(40) $[\![\mathbf{nëd}]\!]^c = \lambda p_{<s,t>}. \lambda s_s. \exists s'. p(s') = 1$ & $\underline{\text{distant-result}}(s')(s) = 1$.
Where for any two situations s and s', $\underline{\text{distant-result}}(s')(s) = 1$ iff s is a $\underline{\text{result}}$ of s' and $\tau(s')$ is in the distant past with respect to $\tau(s)$.[11]

According to (40), **nëd** takes as argument a property of situations p. It will provide as value a proposition true in a situation s iff (a) there is some situation s' such that p is true in s', (b) s is a result of s', and (c) the running time of s' $[\tau(s')]$ is temporally in the distant past with respect to the running time of s $[\tau(s)]$.

We do not provide a formal characterization of when a situation s is a result of a situation s', a complex issue. It should minimally be the case that s' temporally precedes s, but there will presumably be other constraints. The proposal in (40) can be understood as a "tensed" resultative characterizing distant results, with the constraint being that the running time of the result situation s $[\tau(s)]$ remotely/distantly precedes the running time of the situation corresponding to the VP eventuality.

With the above ingredients, let us compose the interpretation of (34b) repeated as (41) with the morphemic segmentation we assume.

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[11] For simplicity, we assume that the distant-result situation only holds between world-mate situations.

(41) şhëktenamë   kuen- **nëd-**   **ak- o-**   şh.
      white.lipped.peccary pass.by- distant.past- evidential- recent.past-3
      'White-lipped peccaries (evidently) passed by.' [old tracks were discovered a
      short time ago]

On the above view, (41) has the structure in (42), and the truth conditions in (43).

(42)
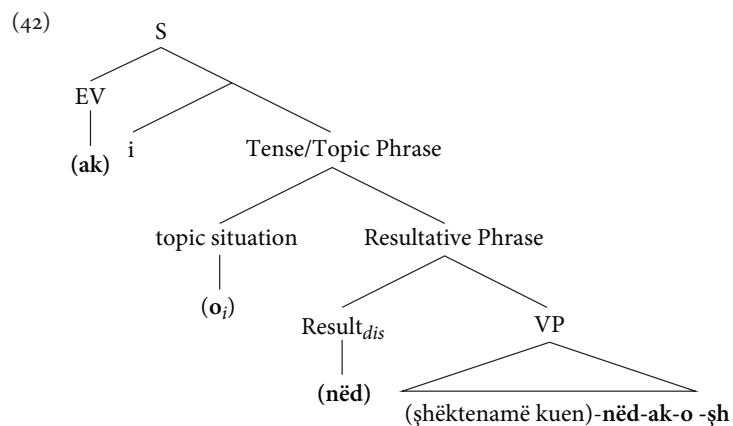
(43) a. [**ak** [i [o$_i$ [**nëd** [şhëktenamë kuen]]]]]
      b. $[\![(43a)]\!]^c = 1$ iff
          ∀ə: ə is compatible with the knowledge/evidence available in s*,
          ∃s:s<ə & ∃s'.white-lipped peccaries pass by in s' & <u>distant-result</u>(s')(s) = 1,
          defined only if τ-(s) is in the recent past of the speech event in c.

According to (43b), (43a) is true iff every situation ə compatible with the knowl-
edge/evidence available at the speech time (s*) includes a situation s (s<ə) such that
there is a situation s' in which white-lipped peccaries pass by and s is the distant result
of ə (i.e. s is the result of ə, and ə temporally is in the distant past of s). The truth-
conditions are only defined if the temporal location of s is in the recent past of the
speech event in c.

   Now consider (37a) repeated in (44a). It contains the distant past topic-situation
marker -**onda**- instead of recent past -**o**- in (34a,b). The analysis is (44b,c).

(44) a. şhëktenamë   kuen- **nëd** -   **ak-**   **onda**- şh.
          white.lipped.peccary pass.by-distant.past- evidential- distant.past-3
          'White-lipped peccaries (evidently) passed by.' [old tracks were discovered a
          long time ago]
      b. [**ak** [i [**onda**$_i$ [**nëd** [şhëktenamë kuen]]]]]

c. $[\![(44b)]\!]^c = 1$ iff
   ∀s: s is compatible with the knowledge/evidence available in s*,
   ∃s:s<s & ∃s.white-lipped peccaries pass by in s & <u>distant-result</u>(s)(s) = 1,
   defined only if τ-(s) is in the distant past of the speech event in c.

Given our proposals, Inferentials include both an eventive component (hut-building, bird-passing) and a stative/resultant component (the state of the hut having been built, the prints on the ground having been made), and each is assigned a different time interval. In (36), the resultative head mediates between the VP and the topic time, functioning as a kind of aspectual projection reminiscent of a resultative perfect. In morphology, temporal resultant relations are encoded in position [2] in (38a,b).

In our analysis, the evidential operator in Inferentials is always an overt independent morpheme: **ak**. However, the temporal morphemes for TP and RP in (36), or positions [4] and [2] in (38a,b), may be headed by null items (under specifiable conditions). To briefly illustrate, consider Inferential (45a) (=Fleck 2007: (1a)) with our morphemic segmentation (45b). This represents a case where the Resultative Phrase lacks phonological content, so evidential -**ak**- attaches to the verb, and is followed by topic-situation -**onda**.

(45)   a. Mayu-n   bëste-<mark>wa-</mark>   ak- onda- şh.
          non.Matses.Indian-ERG ~~hut-make~~-rec.past- ev- dist.past -3
          'Non-Matses Indians (had) made a hut.' [a recently made hut was discovered by the speaker a long time ago]

       b. *Verb*   *Resultative* *Evidential* *Topic situation*
          1   2   3   4
          bëste.wa- Ø -   -**ak**-   -**onda** (+person)
          'hut.make' Recent past EV   Distant past

We can now briefly compare our analysis with Fleck's (2007) proposal (Fig. 11.1).
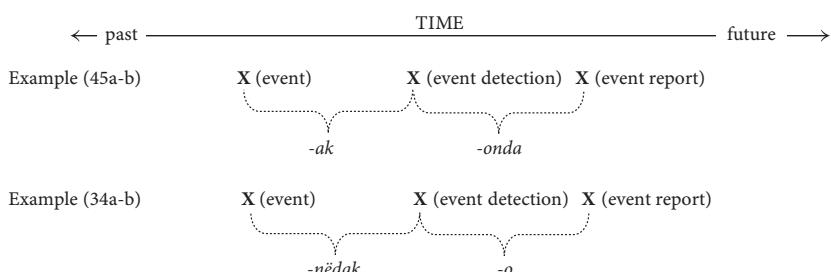

FIG. 11.1 'Temporal reference points for the suffixes that Fleck labels "inferential" and "experiential" respectively (see Fleck 2007: 590, table 1)'
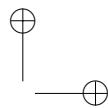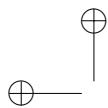
The main difference between the two proposals is that we contemplate three relations while Fleck contemplates only two. First, our analysis proposes a resultative relation encoded in an independent temporal-like morpheme that can be phonologically null in (45a,b) or overt in (34a,b). Second, it identifies an independent evidential marker **ak** in all Inferentials. Third, it identifies a topic-situation morpheme that provides the result-state situation as the "clue" for detecting the event given what we know; this corresponds to Fleck's "detection." The topic-situation pronoun can be **onda**, a distant past with respect to Speech Time, or **o**, understood as a recent past.

In sum, Matses Inferentials contain an overt evidential morpheme **ak** independent from tense markers; this corresponds to EV in (36) and semantically scopes over the construction. Second, they also display a temporal morpheme for a result state/topic time for the described event; this corresponds to TP in (36), is overt for distant and remote pasts, and can be covert for recent pasts. Third, Inferentials display a Resultative morpheme—RP in (36)—which interacts with the topic situation morpheme, encodes temporal information, and may also be overt or covert under specifiable conditions.

11.5 Conclusion

Our goal in this chapter has been to investigate the interpretation of temporal markers in evidentials. There has been much recent interest in the semantics of evidentials, and proposals have been made that temporal operators have special "evidential-specific" interpretations in evidential contexts. We have argued against this view on the basis of three languages with very diverse evidential and temporal systems. Our overall hypothesis is that temporal operators retain their usual interpretation in evidential contexts. A careful analysis of the role of tense and aspect, paying particular attention to the richness of aspectual interpretations, can account for cases in which temporal interpretations appear to shift in evidential contexts without positing an independent "evidential-specific" paradigm.

Acknowledgments