

An aspectual proposal for evidentiality

Margit Bowler, UCLA

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1 Introduction¹

- This talk is on evidentiality, tense, and aspect in Kazan Tatar (Turkic, Russia).
 - **Evidentials:** Grammatical strategy by which languages encode the speaker’s “way of knowing” a proposition.
- (1) TARIANA (ARAWAKAN) (Aikhenvald 2004, 2)
Juse irida di-manika{-ka / -mahka / -nihka}
José football 3SG.NF-play-REC.P.VIS / -REC.P.NONVIS / -REC.P.INFR
‘José has played football {(we saw)/(we heard)/(we infer from visual evidence)}.’
- This talk has three goals:
 1. Convince you that the portmanteau tense/aspect/evidential (TAE) system of Tatar is interesting and puzzling for existing theories of evidentiality
 2. Propose a theory of the portmanteau TAE morphemes in Tatar in which their evidential meanings arise as a byproduct of their aspectual meanings, rather than by being hardwired into their semantics
 3. Show that markers of **prospective aspect** and **resultative** (or completive, or perfect...) **aspect** frequently have associated evidential readings, cross-linguistically

2 Basic Tatar data

- Tatar has a set of five verbal suffixes that appear to mark combinations of **tense, aspect, and evidentiality** (TAE).²

¹Thank you to my wonderful Tatar consultants, especially Sofia Mazgarova! Răxmät! Thank you also to Aygul Lyon for the Bashkir data; my advisers Yael Sharvit and Jessica Rett; Travis Major and Maura O’Leary for Tatar data discussion; and members of the UCLA Semantics Tea and American Indian Seminar.

²Following Turkicist convention, I use capital letters to indicate segments that are subject to phonological change (e.g. vowel harmony, voice/place assimilation). I use a Roman orthography for Tatar that primarily follows Turkish spelling conventions.

Times	Morpheme	Interpretation in semantically unembedded environments
Past	<i>-DI</i>	≈ past, direct evidence
	<i>-GAN</i>	≈ past, indirect evidence
Present	<i>-A</i>	≈ present (evidentially neutral; not addressed in this talk)
Future	<i>-(y)AçAK</i>	≈ future, “specific” evidence
	<i>-(y)Er</i>	≈ future, “non-specific” evidence

Table 1: Set of Tatar TAE suffixes.

2.1 Unembedded environments

- In unembedded environments, the TAE suffixes *-DI* and *-GAN* descriptively require:
 1. That the time of the described event precedes the utterance time
 2. That the speaker has direct (*-DI*) or indirect (*-GAN*) evidence for the scope proposition (Willett 1988; Aikhenvald 2004, 2018)

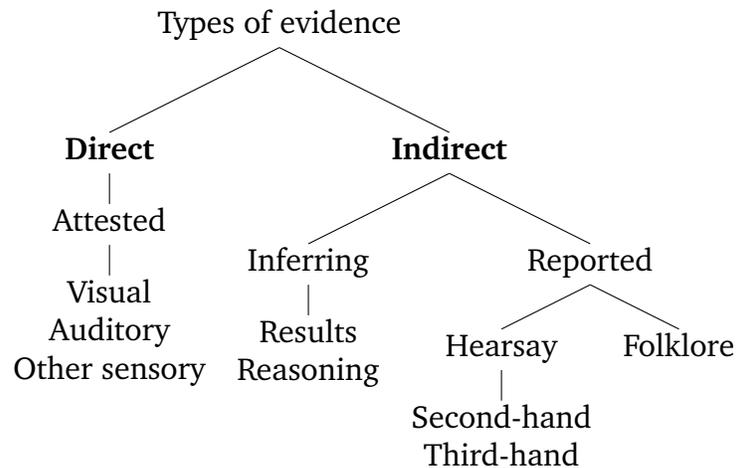


Figure 1: Types of evidence that can be grammaticalized in evidential systems (adapted from Willett 1988, 57).

(2) *-DI*: Past time + direct evidence

Context: The speaker saw Mansur get on a train to Moscow.

Mansur Mäskäü-gä {*bar-di* / #*bar-ğan*}.

Mansur MOSCOW-DAT go-DI / go-GAN

‘(I have direct evidence that) Mansur went to Moscow.’

(3) **-GAN: Past time + indirect evidence**³

a. **Inferential context:** The speaker found a train ticket in Mansur’s desk that is from Moscow.

b. **Reportative context:** Wäğıyz told the speaker that Mansur went to Moscow.

Mansur Mäskäü-gä {bar-ğan / #bar-dı}.

Mansur MOSCOW-DAT GO-GAN / GO-DI

‘(I have indirect evidence that) Mansur went to Moscow.’

- Conversely, in unembedded environments, the TAE suffixes *-(y)AçAK* and *-(y)Er* descriptively require:

1. That the time of the described event follow the utterance time

2. That the speaker have “specific” *-(y)AçAK* or “non-specific” *-(y)Er* evidence that the scope proposition will occur

(4) **-(y)AçAK: Future time + “specific” evidence**

Context: You are planning a party, and you have assigned your friends different things to bring. Your friend Güzäl is assigned to bring cookies to the party.

Güzäl peçeniye al-ıp {kil-äçäk / #kil-er}.

Güzäl cookie take-IP come-ACAК / come-ER

‘Güzäl will (definitely) bring cookies.’⁴

(5) **-(y)Er: Future time + “non-specific” evidence**

Context: You are planning a party, and you’ve asked all of your friends to bring things to contribute. Your friend Güzäl has a delicious chocolate chip cookie recipe that she usually brings to parties. (You haven’t specifically asked her to bring the cookies, nor has she told you that she will bring them.)

Güzäl peçeniye al-ıp {kil-er / #kil-äçäk}.

Güzäl cookie take-IP come-ER / come-ACAК

‘Güzäl will (possibly) bring cookies.’

★ **Problem: “Specific” and “non-specific” evidentiality are not cross-linguistically robust evidential categories** (as documented by Willett 1988; Aikhenvald 2004, 2018).

- **Puzzle about evidentiality:** “As Aikhenvald (2004) has shown, markers of evidentiality rarely distinguish between more than four evidential categories, and the categories are strikingly consistent across languages” (Kalsang et al. 2013, 519).

³Young and middle-aged Tatar speakers do not permit a mirative interpretation of *-GAN*; I therefore do not attempt to account for any mirative usage in my analysis. This appears to be a point of generational variation; Tatar consultants in their 80s reported that *-GAN* is felicitous in mirative contexts.

⁴When asked for glosses of Tatar expressions containing *-(y)AçAK* or *-(y)Er*, my consultants frequently respond with English expressions of epistemic necessity or possibility, respectively. This was a major red herring in my initial analysis of the Tatar data. *-(y)Er(p)* expressions are not equivalent to expressions of epistemic possibility, despite their glosses. When asked to compare *-(y)Er(p)* and $\diamond p$ expressions, my consultants report that $\diamond p$ expressions make a weaker claim about the future event.

- We could imagine all kinds of evidential systems that aren't documented: markers of evidence obtained through written sources, markers of evidence obtained by phone call, markers of evidence obtained by internet, and so on.
- Furthermore, portmanteau tense/aspect and evidential morphemes (with similar evidential meanings) are observed in many other languages (Neo-Aramaic, Plains Cree, among many others; see §5).

★ **Questions this data raises:**

1. **Why are tense/aspect and evidentiality morphologically linked in Tatar (among many other languages)?** Theoretical explanation?
2. Why aren't "non-standard" evidential systems observed? Any theoretical account for the kinds of evidential systems that we do observe?

3 Theoretical background

- Historically speaking, two major theories of evidentiality:
 1. **Evidentials as speech act modifiers:** [Faller \(2002\)](#)
 - Evidentials operate at a level of meaning higher than the proposition, and deal with the communicative intentions of the speaker
 - Speech acts include sincerity conditions ([Searle and Vanderveken 1985](#)); for plain assertions, the speaker must believe the proposition they assert (i.e., [Grice 1975](#)'s maxim of quality)
 - Evidentials are functions from speech acts to speech acts; they modify sincerity conditions to include evidential requirements
- ★ **Tatar TAE suffixes are not speech act modifiers:** TAE suffixes can be embedded; when they embed, they can be interpreted relative to the matrix subject and not the speaker (more embedding data is in §5.1 of the Appendix)
 - (6) **Swimming fan context**
Speaker: "Non-specific" evidence
Matrix subject: "Specific" evidence
 Läylä is watching an Olympic swimming event. She is a huge fan of competitive swimming, and knows the statistics about all of the swimmers. She believes that Michael Phelps has trained the best out of everyone competing at the Olympics this year: his diet, practice regimen, etc. are all impeccable. She tells you he will definitely win. However, you have no strong opinion about his ability to win. Later, you tell someone else:

- a. ✓ *Läylä [Michael Phelps ciñ-eçek-∅ dip] äyt-te-∅.*
Läylä [Michael Phelps win-ACAK-3SG COMP] say-DI-3SG
 ‘Läylä said that Michael Phelps will (definitely) win.’
- b. # *Läylä [Michael Phelps ciñ-er-∅ dip] äyt-te-∅.*
Läylä [Michael Phelps win-ER-3SG COMP] say-DI-3SG
 ‘Läylä said that Michael Phelps will (possibly) win.’
 (Speaker’s comment: “This means that [Läylä] is not 100% sure that he will win.”)

2. Evidentials as epistemic modals: Izvorski (1997)

- Evidentials are underlyingly epistemic necessity modals plus a presupposition that the speaker has indirect evidence for the scope proposition

(7) Epistemic modal schema for evidential expressions:

- a. Assertion: $\Box p$ in view of the speaker’s knowledge state
- b. Presupposition: Speaker has indirect evidence (for p)

- ★ **Tatar TAE suffixes are not epistemic modals:** Their evidential interpretation disappears in some (but not all) embedded environments (more embedding data is in §5.2 of the Appendix)

- (8) a. **Direct evidence context:** Mansur tells you that he accompanied Läylä to the train station yesterday and watched her get on a train to go to Kazan. You express Mansur’s report of what Läylä did yesterday.
- b. **Indirect evidence context:** Mansur finds a receipt for a train ticket to Kazan in Läylä’s desk. He tells you that he infers that Läylä went to Kazan. You express Mansur’s report of what Läylä did yesterday.

Mansur [Läylä-nen Qazan-ğa kit-ep bar-ğan-ın] äyt-te-∅.

Mansur [Läylä-GEN Kazan-DAT leave-IP go-GAN-ACC] say-DI-3SG

‘Mansur said Läylä went to Kazan.’

- Most importantly, neither the speech act theories nor the epistemic modal theories explain **why** the Tatar suffixes express both evidentiality and tense/aspect.

3.1 Evidence Acquisition Time (EAT)/Learning Time (LT) theories of evidentiality

- Recent EAT/LT theories of evidentiality **derive evidential meanings from underlyingly temporal, non-evidential semantics** (Lee 2011, 2013; Smirnova 2011, 2013; Koev 2011, 2017; Klose 2014).⁵
- EAT/LT theories posit an Evidence Acquisition Time/Learning Time (in addition to the basic temporal ontology from Reichenbach 1947):⁶

⁵These theoretical proposals are based on descriptive intuitions by Woodbury (1986), Nikolaeva (1999), Fleck (2007), and Kalsang et al. (2013).

⁶Theories differ with respect to whether they refer to Evidence Acquisition Times (EATs) or Learning Times

- ET = event time
 - RT = reference time
 - UT = utterance time
 - EAT/LT = time that the speaker acquired evidence for/learned the scope proposition
- Basic claim: Markers of indirect evidentiality are actually **relative tenses** (i.e., they locate the event time relative to a time other than the utterance time).
 - These relative tenses **place the event time prior to the EAT/LT**.
 - **Intuition:** Since the speaker acquired evidence for p after it happened, they therefore cannot have directly witnessed p (i.e., they must have indirect evidence for p).
 - Conversely, if the speaker's EAT/LT overlaps with the event time, then they can have direct evidence for it.⁷

(9) BULGARIAN (SLAVIC) (slightly modified from Koev 2011, 124)

Ivan celu-n-a-l *Maria.*
 Ivan kiss-PFV-3SG.PST-IND Maria
 ‘(I have indirect evidence that) Ivan kissed Maria.’

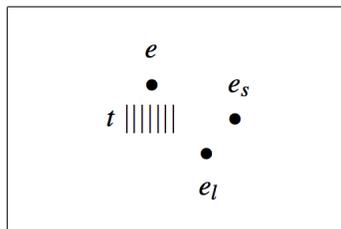


Figure 2: Diagram of basic EAT/LT proposal for indirect evidentiality, where e = event time, e_l = learning time, and e_s = utterance time (Koev 2011, 124).

- **Why I do not apply these theories to the Tatar TAE data:**

1. These theories cannot account for the evidential contrast observed in the future-oriented Tatar TAE suffixes (4)-(5).

In these expressions, the EAT/LT necessarily precedes the event time, and therefore cannot be manipulated to encode any evidential contrast (Figure 3).

(LTs). Lee (2011, 2013) and Smirnova (2011, 2013) refer to EATs, whereas Koev (2011, 2017) and Klose (2014) refer to LTs. Koev argues for LTs due to the availability of Bulgarian evidentials in what he terms “late realization” contexts (see Koev 2017, 4 for an example of such a context). (Tatar *-GAN* cannot be used in late realization contexts.)

⁷Some theories include a spatial component instead of/in addition to a temporal component, and posit that the overlap relation refers to the speaker's location in space with respect to the location of the event (Faller 2004, Koev 2017).

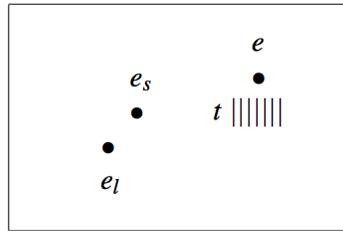


Figure 3: Only possible relation between learning time (e_l) and event time (e) in expressions describing future events.

2. The languages addressed by these theories (primarily Bulgarian and Korean) have separate tense and/or aspect marking in all of their evidential expressions (e.g. (9)); these authors therefore posit separate tense/aspect projections in addition to the evidential morphemes.

Tatar has no other tense/aspect marking; I therefore do not have morphological motivation to posit additional heads in the syntax.

3. EATs/LTs are not linguistically referred to.

4 My analysis: evidentiality as a byproduct of aspect

- I distinguish between event times, utterance times, and reference times (following e.g. Reichenbach 1947).
- I assume the following definitions of tenses versus aspects (Bohnenmeyer 2014):
 - **(Absolute) tenses:** Relate the event time to the utterance time
 - **(Viewpoint/grammatical) aspects:** Relate the temporal interval in which the event occurs to a reference time, such that the event is viewed as ongoing, completed, or in a **pre- or post-state**
- **Background on pre-states and post-states:**
 - Distinct from Aktionsart/lexical aspect (i.e., the inherent temporal structure of a predicate; Vendler 1957); I assume that all events can have pre- or post-states, depending on the context.⁸

⁸I follow the spirit of Nedjalkov (1988) in assuming that propositions can be trivially or non-trivially true in the post-/pre-states of events. Generally speaking, trivially true propositions are linked to the lexical semantics of the verb, whereas non-trivially true propositions are not (i.e., the post-/pre-state is coerced). I give an example of both trivially and non-trivially true propositions in (10).

- (10) Howard dirtied the kitchen.
- a. Trivially true: The kitchen is dirty.
 - b. Non-trivially true: Howard's girlfriend is mad at him.

- A number of other authors have assumed/motivated such a tripartite event ontology: Comrie (1976), Passonneau (1987), Moens and Steedman (1988), Webber (1988), Brandt (2005), Altshuler (2010), and Bohnemeyer (2014), among others.
- For example, Altshuler (2010): Semantics of the temporal location adverb *now*
 - * Proposes that *now* manipulates a state input to be a “consequent state” of a described event (focusing on sentences in which *now* co-occurs with past tense, e.g. *Mary was now beautiful*)
- Like Bohnemeyer (2014), I assume that events are preceded by **causally related pre-states** and are followed by **causally related post-states**: i.e., events in the pre-state will cause the event to occur, and events in the post-state are caused by it.⁹

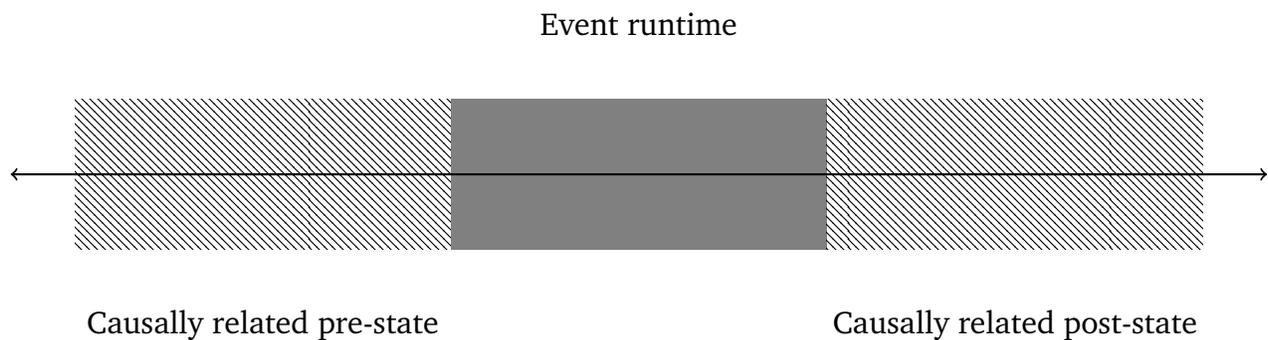


Figure 4: Temporal ontology that I assume.

- (11) John baked cookies.
- True in pre-state: John purchased the ingredients to bake cookies, i.e., John plans to bake cookies.
 - True in post-state: There are cookies in John’s kitchen.
- I propose that the Tatar TAE morphemes are underlyingly either **tenses or (view-point/grammatical) aspects**.

⁹I differ from e.g. Moens and Steedman (1988) and Webber (1988) in that I treat the event pre- and post-states as separate semantic objects themselves, rather than considering them part of the event.

I posit an additional definedness condition that the runtime of the pre-/post-states must immediately about the event runtime.

¹⁰Like the English present tense, Tatar -A is also compatible with futurate uses like (12).

(12) The Red Sox **play** the Yankees tomorrow.

Interestingly, -A can be used in a wider range of futurate contexts than the English present; it does not necessarily seem to require that the speaker be aware of a “plan” for the future event to occur (c.f. Copley 2009 on English).

TAE morpheme	Gloss	Abbreviation
- <i>DI</i>	past tense	PST
- <i>GAn</i>	resultative aspect	RESULT
- <i>A</i>	present tense ¹⁰	PRES
-(<i>y</i>) <i>AçAK</i>	prospective aspect	PROSP
-(<i>y</i>) <i>Er</i>	future tense	FUT

Table 2: Proposed underlying meanings of the Tatar TAE morphemes.

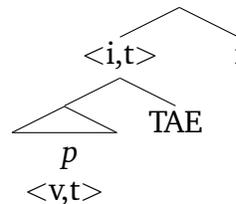
- This proposal **does not explicitly encode any evidential meaning in the semantics of the Tatar TAE morphemes.**
- I propose instead that their evidential interpretation is a **byproduct** of their temporal semantics, in the spirit of (but formally different from) EAT/LT theories of evidentiality (§3.1).

4.1 Denotations of TAE morphemes

- **Background assumptions:**

- Verbs combine with event arguments, i.e., intransitive verbs are of type $\langle e \langle v, t \rangle \rangle$.
- TAE morphemes combine high in the tree.
- The TAE morphemes are of type $\langle \langle v, t \rangle \langle i, t \rangle \rangle$; their time argument is saturated by a time that is represented extensionally in the tree; in matrix clauses, this is the utterance time.¹¹

(13)



- I do not include worlds in the following denotations, since I do not manipulate them. Worlds could be included with no negative effects.

4.1.1 Prospective aspect (-(*y*)*AçAK*) and future tense (-(*y*)*Er*)

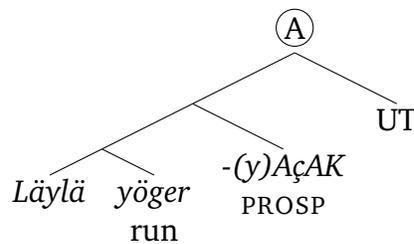
- Informally speaking, prospective aspects view events from their causally related pre-states.
- **Intuition:** If a speaker locates themselves in a state that they believe will eventually cause the event to occur, **this corresponds with increased speaker certainty about the event's occurrence.**

¹¹My current theory posits that aspects and tenses have the same semantic type. This is an unfortunate side effect of getting the semantics to work compositionally in embedded environments.

- I give a denotation for $-(y)A\check{c}AK$ ‘PROSP’ in (14), where:¹²
 - \gg denotes a causal relationship between s and e (notation from Bohnemeyer 2014)
 - I assume that this causal relation also conveys temporal precedence; i.e., if s causes e , s also temporally precedes e

(14) $\llbracket -(y)A\check{c}AK \rrbracket = \lambda p_{\langle v,t \rangle} \lambda i. \exists e[\exists s[s \gg e \ \& \ i \subset \tau(s) \ \& \ p(e)]]$
 “there exists an event e and a state s and s causes e ; the time i is located in the runtime of s and p is a property of e ”

(15) *Läylä yöger-eçek-Ø.*
 Läylä run-PROSP-3SG
 ‘Läylä will (definitely) run.’



(16) $\llbracket \textcircled{A} \rrbracket = \exists e[\exists s[s \gg e \ \& \ UT \subset \tau(s) \ \& \ run(e)(Läylä)]]$

“there exists an event e and a state s and s causes e ; the utterance time is located in the runtime of s and e is an event of Läylä running”

- **Propositions that could be true in the pre-state of Läylä running:**

- (17) a. Läylä says, “I will go running”
 b. Läylä puts on running clothes and shoes
 c. Someone orders Läylä to run

- Tatar speakers offer these kinds of propositions when asked for contexts in which (15) is felicitous; they describe them as “specific evidence” for the scope proposition.
- An aspectual analysis of $-(y)A\check{c}AK$ captures these facts **without positing a new evidential category**.
- The use of $-(y)A\check{c}AK$ ‘PROSP’ contrasts with $-(y)Er$ ‘FUT,’ which I propose is a future tense.

(18) $\llbracket -(y)Er \rrbracket = \lambda p_{\langle v,t \rangle} \lambda i. \exists e[i < \tau(e) \ \& \ p(e)]$

“there exists an event e ; the time i precedes the runtime of e and p is a property of e ”

- I account for the contrast in meaning between $-(y)A\check{c}AK$ and $-(y)Er$ in part through pragmatic competition between the two suffixes.

¹²I do not include any modal component in the denotations of these future oriented morphemes for simplicity. However, modality could be added without any negative effects. (See e.g. Klecha 2014 for convincing arguments for treating future tense as modal).

- According to the denotations in (14) and (18), $-(y)A\check{c}AK(p)$ expressions entail $-(y)Er(p)$ expressions: If the UT is located within a pre-state of the runtime of the event, the UT precedes the runtime of the event.
- When a Tatar speaker asserts $-(y)Er(p)$, the pragmatically strengthened reading is $-(y)Er(p) \ \& \ \neg -(y)A\check{c}AK(p)$, i.e., that the utterance time is not located in a causally related event pre-state.
- Since the speaker does not locate their UT within a causally related pre-state of the event, this makes a “weaker” claim about the future event.
- Since this strengthened interpretation of $-(y)Er$ is pragmatically derived through scalar implicature, we predict that it is cancellable. This prediction is borne out:

(19) **Casino context:**

- a. You and Güzäl are going to a casino in Las Vegas. You know that all the games are run by chance, and that you have no way of predicting whether you will win. You say:

Güzäl irtägä aqça ciñ-er-∅.

Güzäl tomorrow money win-FUT-3SG

‘Güzäl will (possibly) win some money tomorrow.’

- b. However, Timur knows how to rig the games, and will do so that she wins. He responds by saying:

Güzäl irtägä aqça ciñ-er-∅... Güzäl älbättä aqça ciñ-eçek-∅!

Güzäl tomorrow money win-FUT-3SG Güzäl of.course money win-PROSP-3SG

‘Güzäl will (possibly) win some money tomorrow... in fact, Güzäl will (definitely) win some money!’

4.1.2 Resultative aspect (-GAN) and past tense (-DI)

- Informally speaking, resultative aspects are the “mirror image” of prospective aspects; they view events from their causally related post-states.¹³

(20) $[-GAN] = \lambda p_{\langle v,t \rangle} \lambda i. \exists e[\exists s[e \gg s \ \& \ i \subset \tau(s) \ \& \ p(e)]]$

“there exists an event e and a state s and e causes s ; the time i is located in the runtime of s and p is a property of e ”¹⁴

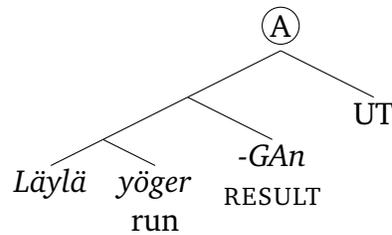
(21) *Läylä yöger-gän-∅.*

Läylä run-RESULT-3SG

‘(I have indirect evidence that) Läylä ran.’

¹³I do not describe -GAN as a “(present) perfect” for two reasons. First, the term “(present) perfect” has been historically used to describe a number of morphemes in Turkic without much theoretical scrutiny as to their temporal contribution. Second, -GAN patterns very differently from English present perfect expressions (on which most of our theories of the present perfect are based; see Bowler and Özkan 2017 for comparison of Tatar, Turkish, and English).

¹⁴This denotation is slightly simplified; I ultimately give a more complex denotation to account for its meaning in verbal nominalizations.



(22) $[[A]] = \exists e[\exists s[e \gg s \ \& \ UT \subset \tau(s) \ \& \ run(e)(Läylä)]]$

“there exists an event e and a state s and e causes s ; the utterance time is located in the runtime of s and e is an event of Läylä running”

- The propositions that are true in a causally related event post-state are the same kinds of propositions that can be described as “indirect evidence” for the scope proposition.
- **Propositions that could be true in the post-state of Läylä running:**

- (23) a. Läylä is wearing running clothes and looks tired.
 b. Läylä is out of breath.
 c. Läylä is sweaty.

- Tatar speakers offer propositions like in (23) when asked for examples of contexts that would license (21); in the evidential literature, these propositions would be termed “indirect evidence.”
- The use of *-GAn* contrasts with *-DI*, which I treat as a simple past tense:

(24) $[-DI] = \lambda p_{\langle v, t \rangle} \lambda i. \exists e[\tau(e) < i \ \& \ p(e)]$

“there exists an event e ; the time i follows the runtime of e and p is a property of e ”

- When reporting a past event like (25), Tatar speakers could choose to use either *-GAn* or *-DI*.

(25) **Broken vase context:** Timur is downstairs at home and his mother is upstairs. They both hear a crash somewhere downstairs and go to investigate. They find the family dog and a broken vase. Timur’s mother, thinking he might have witnessed the event, asks, “What happened?” Timur did not witness the event. He responds:

et vaza-nı bär-ep töşer-gän-Ø.

dog vase-ACC hit-IP drop-RESULT-3SG

‘(I have indirect evidence that) the dog knocked over the vase.’

- *-GAn/-DI* expressions differ from *-(y)AçAK/-(y)Er* expressions in that since the event occurred in the past, **the speaker could have directly perceived the event itself.**
 - Reverting back to evidential terminology: I assume that there are (only) two possible kinds of evidence that speakers can base their assertions on: direct and indirect.
 - That is, to felicitously report a past event, the speaker must have at least perceived either the event or its post-state.

- Furthermore, I assume that perception of an event provides better evidence for its occurrence than perception of its post-state (in the spirit of [Faller 2012](#)'s discussion of evidential hierarchies).
 - If we assume that Timur is obeying the Gricean maxims of quantity and quality, by using *-GAn* to report (25), Timur conveys that **the best evidence he has for the proposition is based (only) off of his perception of the post-state of the event.**
 - The resulting evidential reading is that he only has indirect evidence for the event.
 - I also derive the direct evidential reading of *-DI* pragmatically.
 - Like *-(y)AçAK* and *-(y)Er*, the denotations in (20) and (24) are such that *-GAn* entails *-DI*: If the UT is located within a post-state of the runtime of the event, then the UT follows the runtime of the event.
 - When a Tatar speaker asserts *-DI(p)*, the pragmatically strengthened reading is therefore *-DI(p) & ¬-GAn(p)*, i.e., they do not perceive the event post-state.
 - Since I argue that cooperative speakers must have perceived (at least) either the event or its post-state in order to make a felicitous assertion, this results in the interpretation that the speaker perceived the event itself.
 - * The resulting evidential reading is that the speaker has direct evidence for the event.
 - Since the evidential reading of *-DI* is pragmatically derived, we expect that it should be defeasible. This is borne out; speakers can use *-DI* in “high speaker certainty” contexts in which they did not perceive the event itself.
- (26) **High speaker certainty context:** You are discussing the TV schedule.
kiçä Titanik-nı tilivisor-da kürsät-te-lär, läkin min anı
 yesterday Titanic-ACC television-LOC show-PST-3PL but 1SG.NOM 3SG
qara-ma-dı-m.
 watch-NEG-PST-1SG
 ‘They showed Titanic on TV yesterday, but I didn’t watch it.’¹⁵
 (Speaker’s comment: “Television is a pre-programmed thing, so you know that they showed it. They have a schedule.”)

5 Conclusion: What this proposal does and does not do

- **What this proposal does not do:**
 - It does not account for languages with evidentials that are morphologically distinct from their tense/aspect systems (e.g. Cuzco Quechua ([Faller 2002](#)); Cheyenne ([Murray 2010](#)))

¹⁵The TAE morphemes scope above sentential negation.

- It does not account for languages that make fine-grained evidential distinctions between e.g. visual vs. aural evidence, as in the Tariana data in (1)¹⁶

- **What this proposal does:**

- Motivates the evidential readings of the Tatar TAE suffixes by appealing to their underlying aspectual meanings.
 - * Explains **why** evidentiality and tense/aspect are linked in Tatar
 - * Explains **why** the Tatar TAE morphemes have the evidential readings that they do, including the unusual evidential readings of the future oriented Tatar TAE data in (4)-(5)
 - * Does not require adding any additional theoretical machinery to the semantics of these morphemes to get their evidential readings, c.f. the LT/EAT theories; use of pre- and post-states is previously motivated in the literature

- I note that prospective and resultative/completive/perfect aspects are described in a number of typologically diverse languages.
- Interestingly, these viewpoint aspects are frequently described as requiring similar contexts as Tatar *-(y)AçAK* ‘PROSP’ and *-GAN* ‘RESULT,’ respectively, to be felicitous.
- Descriptively speaking, they appear to have **similar evidential requirements**.
- Viewpoint aspects in Turkic languages: Bashkir *-(y)AsAK*; Karachay *-GAN*; Kumyk *-GAN*, *-(A)žAK*; Tuvan *-GAN*, Uzbek *-Gän*, *-(y)äjäk* (Johanson 2000, Johanson and Csató 1998)

(27) BASHKIR (TURKIC)

- a. **Context:** You are a teacher. You assigned each student a different book to read. When discussing Alsu’s assignment, you say:

Alhu Vaina i Mir { uqı-yasaq-∅ / ?uqı-r-∅.
 Alsu War and Peace { read-PROSP-3SG / read-FUT-3SG }
 ‘Alsu will read *War and Peace*.’¹⁷

- Viewpoint aspects in non-Turkic languages: Neo-Aramaic languages of the Nineveh Plain (Coghill 2010); Syrian Arabic (Jarad 2014); Plains Cree (Wolvengrey 2006).

(28) NEO-ARAMAIC DIALECTS (slightly modified from Coghill 2010, 11) **Context:**

The speaker sees gathering clouds in the sky.

zi-lə ’āθə mətrɔ.

PROSP-L.3MS come.3MS rain

‘It’s going to rain.’ (lit. ‘Rain is going to come.’)

¹⁶This is also a shortcoming of EAT/LT theories of evidentiality.

¹⁷My Bashkir consultant reports that the use of *uqı-r* ‘read-FUT’ is not entirely unavailable in this context, but that *uqı-yasaq* ‘read-PROSP’ is strongly preferred.

- **Future directions:**

- Assess the applicability of this proposal to other Turkic languages.
 - * Preliminary observation (based on a 23 language sample) is that Turkic tense/aspect morphemes only have evidential readings if the language has tense/aspect pairs in both past and future, suggesting pragmatic competition is a factor.
- Continue building a typology of prospect and resultative aspects, cross-linguistically.

Thank you!

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Appendix: Embedding under attitude predicates

- Tatar (like many other Turkic languages) has two kinds of embedded clauses:
 - (i) full embedded CPs including the complementizer *dip*
 - (ii) embedded verbal nominalizations that host accusative case marking
- Like in other Turkic languages, there are significant differences in meaning between these two embedding strategies (see Özyıldız 2016 on Turkish). For simplicity, I solely embed under *äytergä* ‘to say.’

5.1 Embedded CPs under ‘say’

- All of the TAE suffixes in Table 1 can occur in embedded CPs.
- Their evidential interpretation is **maintained in these embedded constructions** (suggesting against adopting an analysis of evidentiality that applies at the speech act level, e.g. Faller 2002).
- Embedded past-oriented TAE suffixes **can be interpreted relative to the matrix subject (29a), or to the speaker (29b)**.

(29) Past-oriented TAE suffixes: Olympics attendee context

Speaker: Indirect evidence

Matrix subject: Direct evidence

Läylä went to the Olympics and saw Michael Phelps compete. She calls you and tells you he won; you did not see the race yourself. You then tell someone else:

- a. ✓ *Läylä* [*Michael Phelps ciñ-de-∅ dip*] *äyt-te-∅*.
Läylä [*Michael Phelps win-DI-3SG COMP*] *say-DI-3SG*
 ‘Läylä said that Michael Phelps won.’
- b. ✓ *Läylä* [*Michael Phelps ciñ-gän-∅ dip*] *äyt-te-∅*.
Läylä [*Michael Phelps win-GAN-3SG COMP*] *say-DI-3SG*
 ‘Läylä said that Michael Phelps won.’
 (Speaker’s comment: “It’s possible to say (29b) even if Läylä saw it happen, because you are the speaker reporting about Läylä.”)

- Embedded future-oriented TAE suffixes **can only be interpreted relative to the matrix subject**.

(30) **Future-oriented TAE suffixes: Swimming fan context**

Speaker: “Non-specific” evidence

Matrix subject: “Specific” evidence

Läylä is watching an Olympic swimming event. She is a huge fan of competitive swimming, and knows the statistics about all of the swimmers. She believes that Michael Phelps has trained the best out of everyone competing at the Olympics this year: his diet, practice regimen, etc. are all impeccable. She tells you he will definitely win. However, you have no strong opinion about his ability to win. Later, you tell someone else:

- a. ✓ *Läylä* [*Michael Phelps ciñ-eçek-∅ dip*] *äyt-te-∅*.
Läylä [*Michael Phelps win-ACAĀK-3SG COMP*] *say-DI-3SG*
 ‘Läylä said that Michael Phelps will (definitely) win.’
- b. # *Läylä* [*Michael Phelps ciñ-er-∅ dip*] *äyt-te-∅*.
Läylä [*Michael Phelps win-ER-3SG COMP*] *say-DI-3SG*
 ‘Läylä said that Michael Phelps will (possibly) win.’
 (Speaker’s comment: “This means that [Läylä] is not 100% sure that he will win.”)

- I summarize the interpretation of the TAE suffixes in embedded CPs in [Table 3](#).

TAE suffix	Unembedded interpretation	Evidential interpretation in embedded CPs under ‘say’
-DI	past, direct evidence	Matrix subject / speaker
-GAN	past, indirect evidence	Matrix subject / speaker
-A	present (evidentially neutral)	n/a
-(y)AçAK	future, “specific” evidence	Matrix subject
-(y)Er	future, “non-specific” evidence	Matrix subject

Table 3: Interpretation of TAE suffixes in CPs embedded under *äytergä* ‘to say.’

- **Theoretical proposal, in brief:**

- TAE morphemes embedded under *äytergä* ‘to say’ can either remain in the embedded clause or scope out above the matrix TAE morpheme.
- When they remain low, embedded TAE morphemes are interpreted de dicto relative to the matrix subject.
- When they scope out of the embedded clause, the TAE morphemes are interpreted de re relative to the speaker.
- Future oriented TAE morphemes cannot scope out; they must remain low and be interpreted relative to the matrix subject.

5.2 Embedded verbal nominalizations under ‘say’

- **Only two of the five TAE suffixes (-GAN and -(y)AçAK) can occur in embedded verbal nominalizations** (among other semantically embedded environments, including relative clauses and adverbial clauses)
- ★ **Problem: -GAN and -(y)AçAK do not appear to form a natural class with respect to their evidential or temporal meanings.**
- GAN ≈ past, indirect evidence
 - (y)AçAK ≈ future, “specific” evidence
- However, this distributional observation can be accounted for if **only aspectual suffixes** (not tense suffixes) can occur in verbal nominalizations.
 - In these expressions, **the TAE morphemes no longer contribute any evidential reading** (suggesting against adopting an account of evidentiality that hardwires evidential semantics into the meaning of the morphemes, e.g. [Izvorski 1997](#)).¹⁸

(31) Past-oriented TAE suffixes

- Direct evidence context:** Mansur tells you that he accompanied Lâylä to the train station yesterday and watched her get on a train to go to Kazan. You express Mansur’s report of what Lâylä did yesterday.
- Indirect evidence context:** Mansur finds a receipt for a train ticket to Kazan in Lâylä’s desk. He tells you that he infers that Lâylä went to Kazan. You express Mansur’s report of what Lâylä did yesterday.

Mansur [Lâylä-nen Qazan-ğa kit-ep bar-ğan-ın] äyt-te-Ø.
 Mansur [Lâylä-GEN Kazan-DAT leave-IP go-GAN-ACC] say-DI-3SG

‘Mansur said Lâylä went to Kazan.’

¹⁸The actual picture of this data is somewhat more complex: -GAN always loses its evidential interpretation in verbal nominalizations. However, -(y)AçAK retains its evidential reading only in relative clauses, which are also formed using verbal nominalizations. I do not currently have an account for why this is the case.

(32) **Future-oriented TAE suffixes**

- a. **“Specific” evidence context:** Mansur is Lâylâ’s boss, and is sending her to Kazan next week. He has already purchased tickets for her to go there. You express Mansur’s report of what Lâylâ will do:
- b. **“Non-specific” evidence context:** Mansur overhears a colleague saying that Lâylâ will go to Kazan next week, and tells you this. He does not know about any particular plans of hers, and he has no reason to think that this colleague is an authority on Lâylâ’s actions. You express Mansur’s report of what Lâylâ will do:

Mansur [Lâylâ-nen Qazan-ğa bar-açağ-ın] äyt-te-∅.

Mansur [Lâylâ-GEN Kazan-DAT go-ACAĞ-ACC] say-DI-3SG

‘Mansur said that Lâylâ will go to Kazan.’

- I summarize the availability and interpretation of the TAE suffixes in embedded verbal nominalizations in [Table 4](#).

TAE suffix	Unembedded interpretation	Availability in verbal nominalizations under ‘say’
-DI	past, direct evidence	*
-GAn	past, indirect evidence	✓ (no evidential meaning)
-A	present (evidentially neutral)	*
-(y)AçAK	future, “specific” evidence	✓ (no evidential meaning)
-(y)Er	future, “non-specific” evidence	*

Table 4: Availability and interpretation of TAE suffixes in verbal nominalizations embedded under *äytergä* ‘to say.’

- **Theoretical proposal, in brief:**
 - Only aspectual morphemes can occur in verbal nominalizations.
 - The nominalization process existentially binds the open time argument of the embedded clause, making it unable to be interpreted relative either to the matrix subject or the speaker.
 - As a result, no evidential interpretation arises.