

Overview

The **perfect aspect** (PERF) introduces a temporal relation between the reference time (RT) from tense and a past RT [1–2].

Although *-miş* is often analyzed as an unrestricted perfect marker [3–6, a.o.], its distribution does not support this characterization [see 7–8, for a similar view].

- ★ *-miş* is a **resultative perfect**, not an unrestricted PERF morpheme.
- ★ **Universal- and experiential-like** readings are derived compositionally through the interaction of **viewpoint aspect** and **temporal adverbials**.

Turkish lacks an unrestricted PERF morpheme

The syntactic distribution of *-miş*

The morpheme *-miş* can occupy more than one structural position within the clausal spine [4,9–10].

- High *-miş*: [_{EvidP} [_{AuxP} [_{AspP} [_{ModP} [_{VoiceP} ...] Mod] Asp] Aux] [_{Evid}] as in (1a).
- Low *-miş*: [_{TP} [_{AuxP} [_{AspP} [_{ModP} [_{VoiceP} ...] Mod] [_{Asp}] Aux] T] as in (1b).

- (1) a. Çayan ağlı-yor-muş. b. Çayan ağla-(*yor)-miş-ti.
Çayan cry-IMPV-MIS Çayan cry-IMPV-MIS-PST
'Çayan is crying, apparently.' 'Çayan had cried/*had been crying'

The difference between high and low *-miş* has been taken to be a structural ambiguity between a PERF or PRFV and an evidential marker [4, 9].

-miş ≠ An unrestricted PERF

- i. When *-miş* appears **above overt aspectual morphology** (1a), its interpretation is **uniformly evidential** [see 11–12].
- ii. In configurations where no independent diagnostics for syntactic height are available, the indirect evidential contribution of *-miş* is **not cancelable** (2).

- (2) Çayan önce-den Almanya'yı ziyaret et-miş. #Ben de
Çayan before-ABL Germany.ACC visit do-MIS 1SG too
o-nun-la-y-dı-m.
3SG-GEN-COM-AUX-PST-1SG
'Çayan visited Germany before, I hear/infer. #I was also there with him.'

- iii. In participial positions, *-miş* is **restricted to telic events** (3), unlike experiential or universal PERFs [e.g., 13].

- (3) a. bit-miş roman b. #gül-müş çocuk
finish-MIS novel laugh-MIS child
'the finished novel' Lit.: 'the laughed child'

- iv. *-miş* leads to an inference that the **result** of an eventuality holds at the **RT introduced by a when-clause** (4).

- (4) Kerim oday-a gir-diğ-in-de, Çayan saat-i-ni
Kerim room-DAT enter-NMLZ-3POSS-LOC Çayan watch-3POSS-ACC
kaybet-miş-ti.
lose-MIS-PST
'When Kerim entered the room, Çayan had lost his watch.'
↪ Çayan's watch was still missing.

We propose that aspectual *-miş* encodes a more-specified **resultative perfect semantics** [pace 14; see 13, for English resultative perfects].

Universal- and experiential-like readings in Turkish

If *-miş* only expresses a resultative perfect meaning, how do other perfect(-like) readings arise in Turkish?

No covert PERF morpheme in Turkish:

- Predictions of a covert PERF analysis: Experiential reading of (5a) should be available (e.g., the being-married eventuality is over).
- However, an **E-reading is only possible with the past tense -DI** (5b).

- (5) a. #Eylül (önce-den) evli-Ø. b. Eylül (önce-den) evli-y-di.
Eylül before-ABL married-AUX Eylül before-ABL married-AUX-PST
Int.: 'Eylül has been married' 'Eylül was married before.'
(before).'

In Turkish, readings which are similar to universal/experiential perfects in English arise via two semantic components [e.g., 1–2]:

- **Viewpoint aspect** (e.g., PRFV, IMPF)
- **Temporal adverbials** (e.g., *beri* 'since', *önce* 'before', *n kere* 'n times')

Universal perfect-like readings

Readings similar to English U-perfects (6):

Licensed by the **imperfective marker -(I)yor** + **durative temporal adverbials**, like *beri* 'since'.

- **Durative adverbials**: Require predicates that possess the subinterval property [e.g., 1].
- (6) Yeliz bu sabah-tan **beri** ağl-ı-yor #ama artık ağla-mı-yor.
Yeliz this morning-ABL since cry-IMPV but anymore cry-NEG-IMPV
'Yeliz has been crying since this morning, #but she isn't crying anymore.'

- Like an English U-perfect, the universal inference in (6) is **entailed**.
- Unlike English, *beri* 'since' in Turkish does not require PERF [cf. 1, 15].

Formal analysis of U-like readings

U-like readings stem from the interaction between:

- A **durative temporal adverbial**, like *beri* 'since' (7)

$$(7) \llbracket \text{beri bu sabah } \phi \rrbracket^{\text{S}^c} = \llbracket \text{since}_{\text{TUR}} \text{ this morning } \phi \rrbracket^{\text{S}^c} = \lambda t. \exists t' [\text{LB}(t', \text{this morning}) \& \text{RB}(t', t) \& \llbracket \phi \rrbracket^{\text{S}^c}(t')]$$

- An **imperfective aspect** (8)

$$(8) \llbracket \text{IMPF} \rrbracket^{\text{S}^c} = \lambda P. \lambda t. \exists e [t \subset \tau(e) \& P(e)]$$

Because *beri* is felicitous in the absence of PERF, we propose that it introduces a time interval t' whose left and right boundaries are specified (7).

- The left boundary of t' is the complement of *beri* [see 15], and its right boundary is the RT from tense (9).

$$(9) \llbracket \text{PRS} \rrbracket^{\text{S}^c} = \lambda p. \exists t' [t' = t_c \& p(t')]$$

$$(10) \llbracket (6) \rrbracket^{\text{S}^c} = \llbracket \text{Yeliz since}_{\text{TUR}} \text{ this morning cry-IMPV} \rrbracket^{\text{S}^c} = \exists t' [t' = t_c \& \exists t'' [\text{LB}(t'', \text{this morning}) \& \text{RB}(t'', t') \& \exists e [t'' \subset \tau(e) \& \text{cry}(e, \text{Yeliz})]]]$$

Experiential perfect-like readings

Readings similar to English E-perfects (11):

Expressed via **past tense morphology** + **inclusive temporal adverbials**, like *önce* 'before' or *n kere* 'n times'.

- **Inclusive adverbials**: No subinterval property requirement [e.g., 1].
- (11) Kerim (önce-den) **üç kere** Almanya'yı ziyaret et-ti ama şu
Kerim before-ABL three time Germany.ACC visit do-PST but that
an-da Fransa'da-Ø.
moment-LOC france.LOC-AUX
'Kerim has visited Germany three times (before), but he is in France right now.'

- Continuations expressing the eventuality's completion are felicitous.
- Thus, (11) mirrors an English E-perfect.

Formal analysis of E-like readings

E-like readings stem from the interaction between:

- An **inclusive temporal adverbial**, like *önce* 'before' (12)

$$(12) \llbracket \phi \text{ önce} \rrbracket^{\text{S}^c} = \llbracket \phi \text{ before} \rrbracket^{\text{S}^c} = \lambda t. \exists t' [t' < t \& \llbracket \phi \rrbracket^{\text{S}^c}(t')]$$

- **PRFV** (13) under the **past tense** (14)

$$(13) \llbracket \text{PRFV} \rrbracket^{\text{S}^c} = \lambda P. \lambda t. \exists e [\tau(e) \subseteq t \& P(e)]$$

We adopt our semantics for *önce/before* from [16].

- *önce* encodes precedence between a past time and the RT from PST (14).

$$(14) \llbracket \text{PST} \rrbracket^{\text{S}^c} = \lambda p. \exists t' [t' < t_c \& p(t')]$$

$$(15) \llbracket (11) \rrbracket^{\text{S}^c} = \llbracket \text{Kerim before Germany visit-PST} \rrbracket^{\text{S}^c} = \exists t' [t' < t_c \& \exists t'' [t'' < t' \& \exists e [\tau(e) \subseteq t'' \& \text{visit}(e, \text{Kerim}, \text{Germany})]]]$$

Theoretical implications and future directions

Though not encoded by *-miş*, readings that resemble U-/E-perfects can arise via:

- **Temporal adverbials (e.g., *beri* 'since' in Turkish)**: Independently introduce times with specified boundaries, akin to an XN-theoretic PERF [1–2, 17].
- **Viewpoint aspect**: Determines how eventualities are related to those times.

Future directions: How does cross-linguistic variation in PERF-like meanings reflect differences in the division of labor b/w aspect and temporal modification?

Acknowledgments & References

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References: [1] Iatridou, S., Anagnostopoulou, E., & Izvorski, R. (2001). *Observations about the form and meaning of the perfect*. [2] Pancheva, R. (2003). *The aspectual makeup of perfect participles and the interpretations of the perfect*. [3] Slobin, D. I., & Aksu, A. A. (1982). *Tense, aspect and modality in the use of the Turkish evidential*. [4] Kornfilt, J. (1997). *Turkish*. [5] Izvorski, R. (1997). *The present perfect as an epistemic modal*. [6] Taylan, E. (2001). *On the relation between temporal/aspectual adverbs and the verb form in Turkish*. [7] Arslan-Kechriotis, Z. C. (2006). *'Perfect' in Turkish*. [8] Bowler & Ozkan, ms. *Turkish -miş does not contribute (English-type) present perfect*. [9] Göksel, A., & Kerslake, C. (2005). *Turkish: A Comprehensive Grammar*. [10] Keleşir, M. (2021). *Matters of size ... Turkish, Turkmen, and Noghay*. [11] Şener, N. (2011). *Semantics and pragmatics of evidentials in Turkish*. [12] Meriçli, B. S. (2016). *Modeling indirect evidence*. [13] Mittwoch, A. (2008). *The English resultative perfect and ... the simple past tense*. [14] Demirok, Ö., & Sağ, Y. (2023). *Are There Aspectless Tensed Clauses in Turkish?*. [15] von Stechow, K., & Iatridou, S. (2019). *Since since*. [16] Krifka, M. (2010). *Before and After without coercion: comment on the paper by Cleo Condoravdi*. [17] McCoard, R. (1978). *The English perfect: Tense-choice and pragmatic inferences*.