

## Phonological sonorant *z* in Turkish

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**Basic pattern and exceptions.** *e*, whose regular pronunciation is [e], is known to be lowered to [ɛ] preceding sonorants (*r*, *l*, *n*, *m*) in closed syllables in Turkish (e.g., [cemər] ‘belt’, [sɛl] ‘flood’, [ben] ‘I’, [cɛm] ‘evil’) (Erguvanlı-Taylan, 2015; Göksel & Kerslake, 2005; Gopal & Nichols, 2017; Kornfilt, 1997). However, the lowering of *e* before coda sonorants is not 100% surface-true. Thus, the lowering of *e* to [ɛ] fails to apply in some cases even though the triggering environment is met (compare [belge] ‘document’ vs. [helva] ‘halva’, [verəm] ‘tuberculosis’ vs. [kalem] ‘pen’, etc.). Despite not being a sonorant, the coda *z* also triggers *e*-lowering, but only in the aorist suffix *-z*<sup>1</sup> (e.g., *øl-mɛ-z* ‘die-NEG-AOR’) and the stem [pekmez] ‘molasses’. Elsewhere, the coda *z* fails to trigger *e*-lowering (e.g., [tez] ‘thesis’, [bez] ‘cloth’, [tʃømez] ‘rookie’, etc.). Since the lowering of *e* before a sonorant coda is not consistent, the cases of eR\$<sup>2</sup> where *e* is not lowered are treated as exceptions in the literature. *e*-lowering is also reported to occur unexpectedly before *z* (Dadan et al., 2024). The literature therefore posits a dual classification of exceptionality: the failure of lowering before a sonorant and its unsystematic application before *z*. If *e*-lowering in Turkish is phonological in kind, then its application must be exceptionless. In this study, I focus exclusively on the *e*-lowering triggered by a coda *z*.

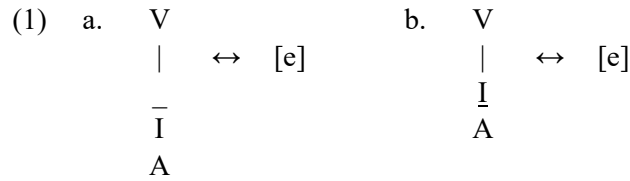
**Phonetics vs. phonology.** That Turkish *z* patterns with sonorants in terms of *e*-lowering is by no means unexpected. Phonological representation and phonetic expression are under no requirement of isomorphism; indeed, the phonological behavior of a segment frequently diverges from the expectations derived from its articulatory properties. There are fricatives which behave like glides in Argentine Spanish (Harris & Kaisse, 1999), a sonorant which acts like a stop in Quechua (Gallagher, 2019), the uvular fricative which acts like a rhotic in French (Chabot, 2019), and so on. The lowering effect of Turkish *z* represents precisely such a case. The phonological identity of an item is deduced strictly from its phonological behavior (Chabot, in press; Kaye, 2005). Phonetic identity, being a sibilant in the case of *z*, is non-diagnostic for the determination of its phonological status.

**Analysis.** I argue that there are two phonologically distinct *e*'s in Turkish. The two objects are phonetically indistinguishable from each other but differ in their phonological properties: one undergoes lowering and the other does not. Using Element Theory (Backley, 2011; Harris, 1990, 1994; Kaye et al., 1985), the representations are depicted in (1). The *e* that undergoes lowering is an unheaded expression with **I** and **A** as dependents (1a), whereas the *e* that does not comprises the head **I** and the dependent **A** (1b). If neither undergoes any phonological computation, both are mapped onto [e] at the phonology-phonetics interface.

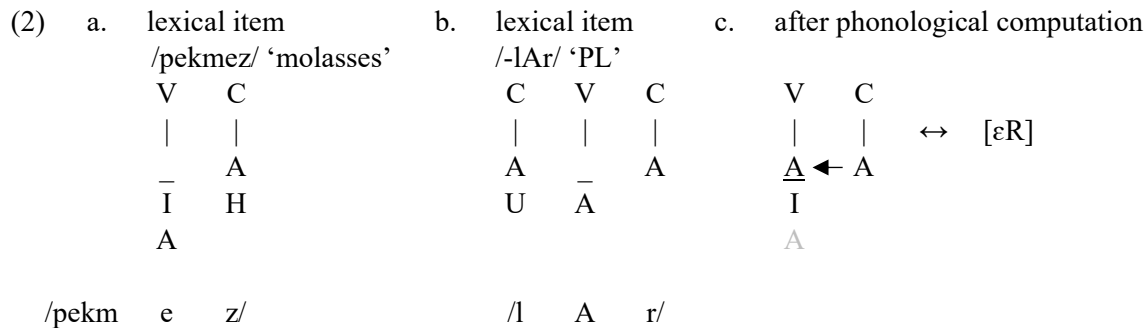
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<sup>1</sup> The aorist suffix is -(I/A)r. It takes a different shape, -z, when used after the negative suffix -mA except for 1SG and 1PL where it is zero.

<sup>2</sup> R denotes sonorants. \$ indicates a syllable boundary.



The difference between (1a) and (1b) is a lexical one, so it cannot be predicted which *e* is present in a lexical item until it is followed by a sonorant coda. The lowering effect on *e* is achieved by **A** spreading from a sonorant coda (including *z*) to the closest vowel on its left. This follows from the constraint that **A** spreads only as a licenser (Börtlü, 2025). The element structure in (1a) is therefore a possible target for **A**-spreading whereas (1b) is not, since the latter already has a head and head-switching is forbidden in Turkish (Charette & Göksel, 1994).



Considering all the Turkish vowels, **A** has two possible landing sites. One is the head position of the vowel in (2a) and the other is that of the vowel in the plural suffix -lAr<sup>3</sup> (2b). The output of **A**-spreading is given in (2c), where the spreading is marked with an arrow. After **A**-spreading, the two instantiations of **A**, one head and one dependent (in gray), are conflated into a single head (cf. Zdziebko (2015)) and the result, |A (I)|<sup>4</sup>, is interpreted as [ε] at the phonology-phonetics interface. A final question is why a sonorant spreads its **A** only in coda position. In Strict CV terms, an intervocalic consonant is governed by a full nucleus, inhibiting its melody-sharing, whereas a coda is ungoverned, so **A**-spreading is free to apply.

#### References

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<sup>3</sup> The underspecified suffix-vowel A, which of course is not limited to the plural suffix -lAr, is conventionally symbolized this way to denote its alternation between [a] and [e]. **A** spreads from a sonorant coda and **I**-spreading is due to vowel harmony, yielding |A (I A)|.

<sup>4</sup> Based on the acoustic measurements by Dadan et al. (2024), **A** as a head can be taken to correspond to a high F1 value.