Open /æ/ vs. Closed /e/ in Turkish: Are they really predictable?
Semra Baturay Meral semra_baturay@yahoo.com

The Problem: It is widely assumed in Turkish grammar books that /e/ is realized differently depending on its phonological environment (Deny, 1941; Bilgegil, 1963; Lewis, 1967; Underhill, 1976; Kornfilt, 1996; Göksel and Kerslake, 2005): /e/ is realized as open [æ] before /r, l, m, n/ sounds in a closed syllable (1a) vs. (1b).

(1)   *Closed e*   *Open e*   *Closed e*
      a. t**ek** 'single'   b. t**em** 'theme'   c. **e**l 'hand'
         t**ef** 'tambourine'   b**en** 'I'   **e**n 'width'
         b**et** 'bad'   t**el** 'wire'   **e**m 'suck'
         n**ey** 'reed flute'   **er** 'soldier'

The problem is that [æ] may not always occur before /l, n, m/ even if it occurs before closed syllables as also observed in Çakır (1996) and Operstein and Kütükçü (2004) (1c). Moreover, the rule based accounts (Çakır, 1996; Operstein and Kütükçü, 2004) which provide a pattern for the distribution of [æ] by making reference to a set of complicated rules bring the problem of arbitrariness.

The Claim: The generalization that open /e/ occurs before one of /r, l, n, m/ does not seem to be correct: (i) Open /e/ is not predictable before /n/ and /m/. (ii) Its occurrence before /l/ depends on the existence of a preceding onset. (iii) Only /e/ before /r/ is predictable. I will discuss why /r/ and /l/ behave differently with respect to their effects on open /e/.

Theoretical background: In this study, I will analyze closed and open /e/ in the light of Government Phonology (GP) (Kaye, Lowenstamm and Vergnaud, 1985, 1990; Kaye, 1990). Different from previous rule-based explanations, the GP analysis provided here tries to explain the distribution of /e/ before /r, l, n, m/ in a more simplistic way by using constituent structure and elemental analysis, hence eliminating rules and allophonic variation. I assume that open */e/* is the combination of (A.I._) in terms of elemental structure.

Analysis: Open /e/ (A.I._) can occur before /r, l, n, m/ only in closed syllables. In the otherwise case, it is closed (2).

         Closed e
(2)   t**em**i   'theme+ACC'   t**el**i   'wire+ACC'
      b**en**i   'I+ACC'   **er**i   'soldier+ACC'
      d**er**i   'leather'

I propose that (A.I._) can occur before /r, l, m, n/ if they are not immediately followed by a non-p-licensed nucleus. The reason behind this is related to the weak versus strong onset licensing (Kaye, 1990). In strong onset licensing, a non-p-licensed nucleus creates a strong onset licensing as a result of which /r, l, m, n/ in the onset cannot establish a further relation with the preceding nucleus hosting /e/. This results in closed /e/. In weak onset licensing case, however, a p-licensed nucleus creates weak onset licensing as a result of which the onset establishes a further relation with the preceding nucleus hosting /e/. This results in open /e/.

         However, the explanation above only saves /e/ before /r/ given that there are examples where /e/ occurs before /l, n, m/ in closed syllables, but /e/ is still closed (3b).

              Open e   *Closed e*
(3)   a. **te**l   'wire'   b. **e**l   'hand'
         sen   'you'   **e**n   'width'
         tem   'theme'   **e**m   'suck!'
         ter   'perspiration'

The difference between (3a) and (3b) is that examples in the latter lack a preceding consonant. This brings another condition for open /e/: /e/ before /l, m, n/ is open if there is a consonant preceding it (3a). However, this new condition saves only /e/ before /l/ given that there are cases where the previous two conditions fail (4a). In those cases, open /e/ and closed /e/ before /n/ and /m/ are in free variation and totally unpredictable.

	Closed e		Open e	
(4)	a. n_em_	'moist'	b. t_em_	'theme'
	har_em_	'seraglio'	Ker_em_	Proper name
	r_en_de	'grater'	ef_en_di	'master'

Although /e/ occurs in a very similar environment before /n/ and /m/, it is closed in the cases given in (4a) but open in (4b). This requires us to provide extra stipulations about the distribution of open /e/ before /m/ and /n/. The picture so far is given in (5a-c).

(5)   a. Open /e/ occurs before /r/ unless /r/ is followed by a realized (non-p-licensed) nucleus.
b. Open /e/ occurs before /l/ unless /l/ is followed by a realized nucleus and (A.I._) is preceded by an empty onset.
c. Open /e/ before /m/ and /n/ is unpredictable.

(5a-c) indicate that open /e/ may not be predictable before /n, m/ suggesting that there are two */e/*s in Turkish vocalic inventory. Open /e/ before /l/ depends on both the preceding and following sounds, and open /e/ before /r/ depends on the absence of a p-licensed nucleus.

Conclusion & Discussion: The generalization that /e/ before /r, l, n and m/ sounds is open does not seem to be correct. Only /e/ before /r/ and partially /e/ before /l/ seem to be predictable. What makes /r/ so special that open /e/ occurs before it is always open, but not others? The elemental complexity provides some answers given that only /r/ has one single element (A), the others have complex elemental structure (/l/ is (A.?), /n/ is (A.L.?) and /m/ is (A.?.L)). This can be argued to follow from the complexity hierarchy of Kaye, Lowenstamm and Vergnaud (1990) in that a less complex elemental structure provides larger cases for the relation between the onset (/r/) and nucleus (open /e/).

The point of discussion for open /e/ before /l/ is related to the need for a preceding onset. Why is the existence of the preceding onset so important for open /e/ before /l/? The issue can be discussed in relation to the elemental complexity phenomenon above. A more complex elemental structure in the onset (/l/) requires more conditions to be satisfied in order to establish a relation with the preceding nucleus (open /e/).

References: ▪ Bilgegil, K. (1963). *Türkçe Dilbilgisi*. Ankara: Güzel İstanbul Matbaası. ▪ Çakır, M. C. (1996). *A Study on the Low, Front, Unrounded Allophone in Turkish*. Unpublished B.A. Thesis. Istanbul: Boğaziçi University. ▪ Deny, J. (1941). *Türk Dili Grameri*. Istanbul: Maarif Matbaası. ▪ Göksel, A. and Kerslake, C. (2005). *Turkish: A Comprehensive Grammar*. Oxford: Oxford University Press. ▪ Kaye, J. (1990). 'Coda' Licensing. *Phonology*, 7-2, 301-330. ▪ Kaye, J., Lowenstamm, J. and Vergnaud, J-R. (1985). The Internal Structure of Phonological Representations: A Theory of Charm and Government. *Phonology Yearbook* 2, 305-328. ▪ Kaye, J., Lowenstamm, J. and Vergnaud, J-R. (1990). Constituent Structure and Government in Phonology. *Phonology* 7:193-231. ▪ Kornfilt, J. (1996). *Turkish*. London: Routledge. ▪ Lewis, G. L. (1967). *Turkish Grammar*. Oxford: The Clarendon Press. Operstein, N. and Kütükçü, T. (2004). Türkiye Türkçe'sindeki /e/ Ünlüsünün Sesbirimcikleri Üzerine. *Dilbilim Araştırmaları* 2004, 29-50. Istanbul: Boğaziçi Üniversitesi Yayınları. ▪ Underhill, R. (1976). *Turkish Grammar*. Cambridge: MIT Press.