An Investigation into the Nature of the Turkish Glide [j]

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Introduction

The status of glides has never been entirely clear in the literature. The debate was centered around whether glides are consonants or vowels. Durand [2] argues that they are vowels in non-syllabic disguise whereas Straka [7] argues that they are consonants showing evidence of increased effort in production. In SPE, Chomsky and Halle argued that they are neither consonants or vowels using binary values as [−*consonantal*, −*vocalic*] [5]. Recently, Levi [6] highlighted that there is more than one type of glide covering all of the previous permutations and introducing new typological permutations. However, Levi does not propose a comprehensive classification for Turkish glides, and specifically [j].

Problem & Motivation

Even though the phonetic characteristics of the Turkish glide [j] seem to justify its placement in the group of [+*sonorant*] sounds at first glance, its phonological behavior does not align with other sonorants.

This study aims to lay the groundwork for our future phonetic research on Turkish glides.

The phonological behaviour of [j]

→ First question to settle: Is [j] a consonant?

- **Vowel Harmony Blocking:** Turkish [j] does not trigger vowel harmony. In 1, the vowel in the genitive suffix -In inherits the roundness and backness features of the preceding vowel. However, as is evident in (1e), harmony bypasses [j], and I takes on the features of [o] instead.

		Nom.Sg.	*Gen.Sg*	*Gloss*
(1)	a.	[ip]	[ip-in]	‘rope’
	b.	[kɨz]	[kɨz-ɨn]	‘girl’
	c.	[son]	[son-un]	‘end’
	d.	[koj]	[koj-un]	‘cove’

Adapted from Clements and Sezer [1]

- **Triggering Floating Consonant:** Some suffixes have floating consonants that surface after vowel-final stems. One example is the possessive marker -(s)I. As shown in (2), [j]-final stems do not align with vowel-final stems as they do not trigger the floating consonant -s in the suffix -(s)I.

		Nom.Sg.	*Poss.Sg*	*Gloss*
(2)	a.	[boru]	[boru-su]	‘pipe’
	b.	[jɨlan]	[jɨlan-ɨ]	‘snake’
	c.	[koj]	[koj-u]	‘cove’
	d.	[koj]	*[koj-su]	‘cove’

→ Follow-up question: Is [j] a sonorant?

- **Consonant Clusters in Coda:** Turkish permits certain consonant clusters in coda position, including combinations of a sonorant and non-sonorant [3]. However, [j] is not felicitous in the available sonorant position. It only appears in loan words, and even then, a vowel is inserted between [j] and the following consonant (e.g. [tejp] becomes [tejip]), with the exception of very recent loan words, like [lajk] meaning ’to like’ in the context of social media.

(3)	a.	[+*sonorant*] + [−*continuant*, −*sonorant*]	e.g. [dørt] ’four’ and [kaɾp] ’heart’
	b.	[+*sonorant*] + [+*continuant*, −*sonorant*]	e.g. [marʃ] ’anthem’ and [harf] ’letter’
	c.	[−*sonorant*] + [−*sonorant*]	e.g. [aʃk] ’love’ and [kask] ’helmet’

- **H-Deletion:** Syllable-final [h] is optionally deleted in Turkish when the following syllable starts with a sonorant consonant. While [h] is deleted before /l/, /m/, /n/, and /r/, the deletion of [h] before /j/ yields ungrammaticality.

(4)	a.	/fihrist/	~ [fiːrist]	‘index’
	b.	/tehʌike/	~ [teːʌike]	‘danger’
	c.	/mehmet/	~ [meːmet]	proper name
	d.	/fihrist/	~ [fiːrist]	‘index’
	e.	/cahja/	↛ *[caːja]	‘butler’

- **Mid Vowel Lowering:** Göksel Kerslake (2005) report that the allophones of Turkish /e/ are [e, æ, ɛ]. [ɛ] occurs word-finally and [æ] occurs before tauto-syllabic /l/, /m/, /n/, /r/, but not before [j]. Gopal and Nicholas (2017) instrumentally confirm that [j] does not trigger lowering. We carried out a similar study with data from 9 Turkish speakers, and our results fully align with these two studies.

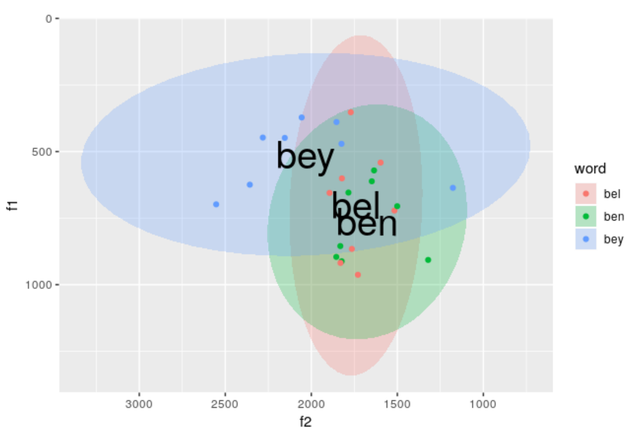

Figure 1: Participants’ distribution of /e/. *bey* represents a pre-glide position, *ben* represents a pre-nasal position, and *bel* represents a pre-liquid position.

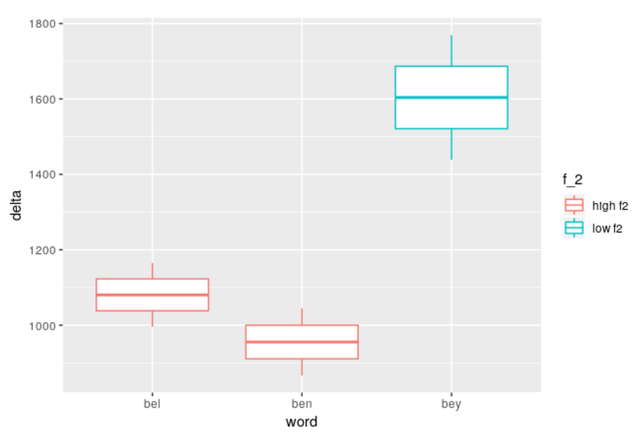

Figure 2: Mean $\Delta F_{F1,F2}$ values. The central rectangles span from the first to third quantiles.

Figure 3: The entire vowel space of a 20-year old Turkish speaker from Istanbul taken from Gopal and Nichols [4].

Conclusion

The phonological processes provided here demonstrate that the Turkish glide [j] must be a consonantal non-sonorant. We propose two possible solutions: (i) [j] is (phonologically) underspecified for sonority, or (ii) [j] is actually a fricative in disguise. The former would provide evidence for a theory in which phonetic properties are not necessarily represented in the phonological system. The latter was born out of a preliminary phonetic survey which suggests that [j] does have some friction, at least in certain environments. While it is clearly realized as an approximant between vowels, we found that its harmonics-to-noise ratio significantly decreases syllable-finally.

References

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