

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

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One topic that has sparked controversy in the study of the phonetics-phonology interface is the issue of sonority. At the core of the debate lies the criteria for categorizing a sound as a (non)sonorant; while some have represented this acoustic property on a hierarchy (c.f. Clements 1990; Kenstowicz 1994; Smolensky 1995, inter alia), others have adopted a stricter approach that advocates for a clear-cut distinction with respect to membership in the group of sonorants (c.f. Chomsky & Halle 1968; McCarthy 1998; Avery & Rice 1989; Botma 2011). Generally, phonotactic constraints and systematic morphophonemic alternations have been used to determine whether a sound is to be labeled a sonorant. In this paper, we present 5 different independently justified data points which demonstrate that even though the Turkish glide [j] shows the acoustic properties of sonorants, this feature seems to be opaque to phonological processes. We believe these observations are in line with an approach in which phonetic properties are not necessarily represented in the phonological system; in other words, we believe the data offer support for radically substance-free phonology (Odden 2006; Blaho 2008).

One of the first questions that needs to be addressed is whether the Turkish glide [j] is a vowel or not. The examples in (1) from Levi (2004) demonstrate that [j] does not trigger or undergo vowel harmony. Due to the assimilation of Turkish vowels in roundness and backness to the preceding vowel, we would expect [j] to block rounding in rounding in affixes sensitive to vowel harmony, thus yielding \*[koj-in] instead of [koj-un].

1.	<i>Nom.Sg.</i>	<i>Gen.Sg.</i>	<i>Gloss</i>	2.	<i>Nom.Sg.</i>	<i>Poss.Sg.</i>	<i>Gloss</i>
a.	[ip]	[ip-in]	‘rope’	a.	[jilan]	[jilan-i]	‘snake’
b.	[kiz]	[kiz-in]	‘girl’	b.	[kapi]	[kapi-si]	‘door’
c.	[jyz]	[jyz-yn]	‘face’	c.	[koj]	[koj-u]	‘cove’
d.	[son]	[son-un]	‘end’				
e.	[koj]	[koj-un]	‘cove’				

Another piece of evidence comes from possessive marking in Turkish. The examples in (2) illustrate that the possessive marker surfaces as *-si* when preceded by a vowel. However, word-final [j] aligns with consonants, rather than vowels, as the possessive marker surfaces without an initial *s*.

After establishing that the glide [j] in Turkish resides in the category of consonants, we present three sets of data that are independently motivated. The first involves word-final consonant clusters. Even though Turkish allows [+*sonorant*] [-*sonorant*, -*continuant*] consonant clusters word-finally, the [j] has not been observed in the [+*sonorant*] position (c.f. Erguvanlı-Taylan, 2015 for the full list). Despite the fact that some such words have recently been borrowed as loan words from English, such as [silajt] (slide), [lajk] (like), [tejp] (tape), and [fejkk] (fake), Turkish speakers generally add an epenthetic vowel between the glide and the final consonant, uttering [tejip] instead of [tejp].

In addition to consonant clusters, the phenomenon of h-deletion, the process by which a syllable-final [h] is deleted and the preceding vowel is lengthened, also provides insights into the phonological content of [j]. Mielke (2001) reports that it is possible for [h] to be deleted when the following syllable starts with a sonorant consonant, as in (3). However, in contrast to [l, m, n, r], [h] cannot be deleted when the following syllable starts with a [j], as illustrated in (4).

The last piece of evidence regarding the absence of the [+*sonorant*] feature in Turkish comes from the acoustic lowering of the mid vowel [e] when it is followed by a sonorant syllable-internally. Göksel and Kerslake (2004) mention that the non-high, fronted, unrounded vowel has three

3.	<i>Original</i>	<i>H-deletion</i>	<i>Gloss</i>	4.	<i>Original</i>	<i>H-deletion</i>	<i>Gloss</i>
a.	/fihrist/	[fi:rist]	‘index’	a.	/cahja/	*[ca:ja]	‘butler’
b.	/tehlike/	[te:like]	‘danger’	b.	/jahja/	*[ja:ja]	P.Name
c.	/mehmet/	[me:met]	P.Name	c.	/myhje/	*[my:je]	Place
d.	/køhnε/	[kø:nε]	‘fusty’				

allophones: [e, æ, ε]. According to Göksel and Kerslake (2004), [ε] occurs word-finally and [æ] occurs before /l/, /m/, /n/, /r/ where they are in the same syllable. Gopal and Nicholas (2017) empirically demonstrate that glides do not trigger lowering like other sonorants do, as shown in Figure 1. We further support this finding with data from 9 different native speakers of Turkish. The mean of the difference between the F1 and F2 values of the vowel is represented on the y-axis as *delta* in Figure 2. The high delta value observed in the production of the word *bey* ([bej]) corroborates the findings of Gopal and Nichols (2017).

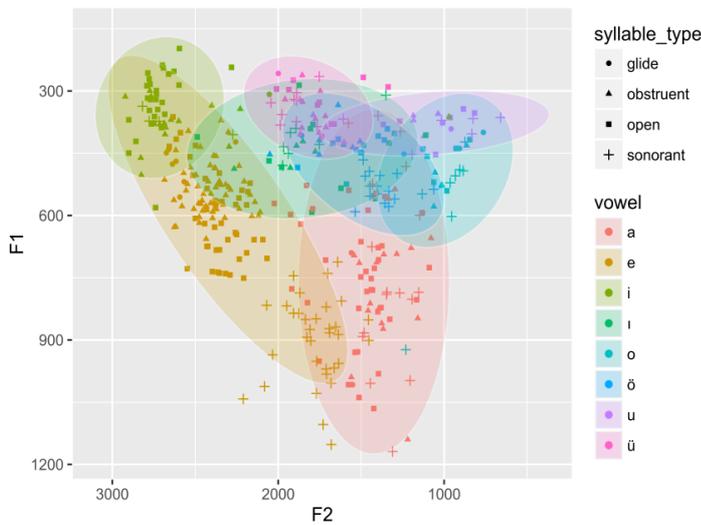


Figure 1: Vowel space of 20-year-old Turkish Speaker from Gopal and Nichols (2017)

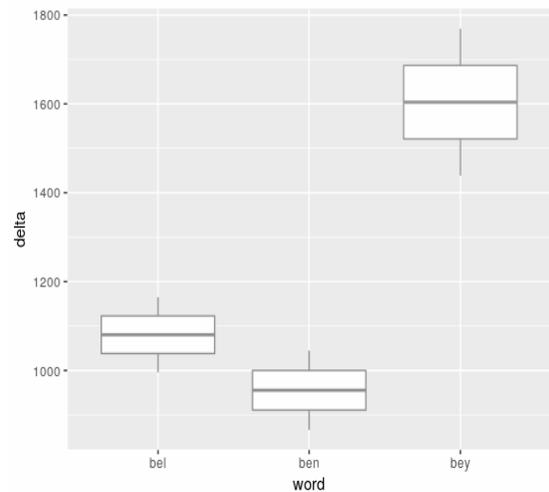


Figure 2: Mean of the difference between F1 and F2 values

Based on the data above, we can conclude that the consonant [j] does not align with other sonorants in terms of its behavior in phonological processes. We believe that future work can help in deciding on the true nature of the Turkish [j]. We propose two possible solutions: (i) what we called a glide in the data above, namely [j], is a palatal voiced fricative represented as [j], or (ii) the Turkish glide [j] is underspecified in terms of its sonorant feature. The former explanation aligns with other phonemes in Turkish as well. In Turkish, the distribution of the labiodental fricative [v] and the labiodental approximant [ʋ] is rule-governed. Further phonetic analysis can help identify whether or not this is the case for [j] and [j]. As for the former, we can argue that even though [j] is phonetically a sonorant, this feature is not represented in the phonological system of Turkish. This hypothesis indicates that there must be a phonological process in which Turkish fricatives are affected, but [j], whose sonority is underspecified, is not affected, as in the voicing-underspecified /v/ in Russian (c.f. Reiss 2018).

**Selected References:** [1] Taylan, E. E. (2015). The phonology and morphology of Turkish. Boğaziçi Üniversitesi. [2] Mielke, J. (2001). Explaining directional asymmetry in Turkish [h] deletion. [3] Göksel, A., & Kerslake, C. (2004). Turkish: A comprehensive grammar. Routledge. [4] Gopal, D. & Nichols, S. (2017). Sonorant-conditioned mid vowel lowering in Turkish. [5] Levi, S. V. (2004). The representation of underlying glides: A cross-linguistic study.