

Göktuğ Börtlü, Selçuk Üniversitesi
Eugeniusz Cyran, Catholic University Lublin
Tobias Scheer, Université Côte d'Azur, CNRS 7320

Minimal word constraint in Turkish final devoicing

Basic pattern. Final devoicing in Turkish is more intricate a pattern than in other final devoicing languages (like German or Russian). Voiced fricatives never undergo this process (*kaz* "goose.Nom" - *kaz-i* "id. Acc"). In bisyllabic (or bigger) roots, word-final voiced stops afford a regular 2-way distinction: voiced (always devoicing) (1a1) vs. voiceless (1a2). Monosyllabic CVC roots show a 3-way distinction, though: in addition to voiceless Cs (1b3), voiced final Cs may (1b1) or may not devoice (1b2). Whether or not a CVC root undergoes final devoicing cannot be predicted: it is a lexical property of roots (e.g. Inkelas 1995). As was noticed by Inkelas & Orgun (1995: 779), CVCC monosyllables side with bisyllables: they show the same 2-way distinction (1c). Thus Inkelas & Orgun conclude that Turkish final devoicing is governed by a size restriction. We propose an analysis of this size restriction.

Three-way contrast. Followed by other authors, Inkelas & Orgun (1995) analyze the three-way distinction between voiceless, devoicing and non-devoicing CVC roots in terms of Laryngeal Realism (Iverson & Salmons 1995), as under (2). We subscribe. Non-devoicing stops are phonologically specified as such and therefore cannot devoice (2a: they bear L (or [voice])). By contrast, devoicing stops are neutral consonants C° (2b), which are unspecified for voicing: they undergo passive voicing when intervocalic, otherwise are voiceless. Finally, voiceless stops are phonologically specified as such (2c: they bear H (or [spread glottis])) and therefore cannot be passively voiced.

Analysis. The size restriction identifies as a minimal word constraint: words in Turkish must make at least 3 morae (codas moraic) or, in terms of Strict CV, bear two nuclei (Final Empty Nuclei extrametrical). When spelt out by themselves (i.e. without suffixes), roots that are too small (3a1) geminate their final consonant in order to meet the minimal word size (3a2). This gemination uses epenthetic syllabic constituents (grey-shaded under 3a2). When a suffix is added, as under (3a3), the minimal word size is met and no gemination occurs. The non-devoicing of CVC roots is then a consequence of gemination: geminates do not devoice (reminiscent of geminate integrity). What geminacy protects against is the phonological alteration of the consonant. In regular L systems with final devoicing, the L is removed in word-final position by a phonological process. This is disallowed when the consonant is a geminate, thus devoicing is blocked (4a1). In roots that meet the minimal word size, though, the L may be happily removed since here the C^L is not a geminate (4a2). Neutral C° (4b) is phonologically unspecified: it will receive passive voicing upon phonetic interpretation when followed by a vowel in the Acc, otherwise is pronounced voiceless. In regular H systems with final devoicing, the phonetic interpretation of C° word-finally is voiceless. A geminate C° as under (4b) is a case in point: unlike under (2a)/(4a1), no prime needs to be removed in order to get final devoicing (2b)/(4b). The pronunciation of a geminate C° is voiceless due to phonetic interpretation, whether simple or geminate. Finally, nothing happens to C^H (2c): it is pronounced voiceless, whether singleton or geminate.

Geminates. Turkish has lexical geminates (3b1), which are pronounced singleton in word-final position, though: *ha[tt]-i* (3b2) "line.Acc" - *ha[t]* (3b1) "id. Nom". Note that on our analysis size-driven gemination only occurs word-finally (3a2), where the geminate has the regular singleton pronunciation. Since the root-final C is not a geminate in the suffixed form (3a3), it is also a phonetic singleton here. Time permitting, we discuss suffix-initial stops.

Suffix-initial stops may either take on the voicing of the preceding segment (5a), or come with their own fixed voicing. In the latter case, stop clusters disagreeing in voicing are produced: [dʒk] under (5b1), [nʃg] under (5b2). If a C° were involved in clusters that disagree in voicing,

it should be passively voiced. Since this is not what we see, clusters disagreeing in voicing suggest that no C° is involved: both consonants are specified for voicing ($C^H C^L$ or $C^L C^H$). Stops like in $-tA / -dA$, though, are C° unspecified for voicing. Thus the behaviour of voicing assimilation supports that Turkish contrasts three types of stops: C^L , C^H and C° .

(1) basic pattern

a. bisyllabic or bigger roots

	Acc	Nom	gloss
1. voiced devoicing	kitab-i	kitap	"book"
2. voiceless	sepet-i	sepet	"basket"

b. monosyllabic CVC roots

1. voiced devoicing	tad-i	tat	"taste"
2. voiced non devoicing	sad ζ -i	sad ζ	"sheet metal"
3. voiceless	top-u	top	"ball"

c. monosyllabic CVCC roots

1. voiced devoicing	garb-i	garp	"West"
2. voiceless	ʃift-i	ʃift	"pair"

(2) laryngeal distinctions in Turkish

a. C^L phonologically voiced	no devoicing	sad ζ - sad ζ -i
b. C° phonologically unspecified	devoicing	tat - tad-i
c. C^H phonologically voiceless	voiceless anyway	top - top-u

(3) subminimal CVC roots

a. derived geminate to meet word minimality

1. lexical	2. Nom	3. Acc
C V C V	C V C V C V	C V C V
	↗	↖
C V C	C V C	C V C V

s a d ζ

[sad ζ]

[sad ζ -i]

b. lexical geminate

1. lexical / Nom	2. Acc
C V C V C V	C V C V C V
↗	↗ ↖
C V C	C V C

[hat]

[hatt-i]

(4) final devoicing as delaryngealization (C^L) vs. passive voicing (C°)

a. final C^L

1. subminimal roots

C V C V C V
↗
C V C L

s a d ζ

2. roots meeting the minimal size

C V C V C V	C V C V C V
C V C C L	C V C V C L

g a r b

k i t a b

b. final C°

subminimal roots

C V C V C V
↗
C V C $^\circ$

t a t

(5) suffix-initial consonants

a. suffix-initial C agrees in voicing with the preceding C

	C-	Nom	Acc	-tA/-dA	gloss
-tA/-dA "locative"	C ^L	sadʒ	sadʒ-i	sadʒ-da	"sheet metal"
	C ^o	tat	tad-i	tat-ta	"taste"
	C ^H	top	top-u	top-ta	"ball"

b. suffix-initial C has fixed voicing

	C-	Nom	Acc	-ken	gloss
1. always voiceless -ken "converb marker"	C ^L	sadʒ	sadʒ-i	sadʒ-ken	"sheet metal"
	C ^o	tat	tad-i	tat-ken	"taste"
	C ^H	aʃ	aʃ-i	aʃ-ken	"hungry"

	C-	Nom	Acc	-gil-ler	gloss
2. always voiced -gil-ler "as a whole"	C ^L	turunʃ	turundʒ-u	turunʃ-gil-ler	"citrus"
	C ^o	tat	tad-i	tat-gil-ler	"taste"
	C ^H	ʒet	ʒet-i	ʒet-gil-ler	"jet"

References

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