LING 313.02 Phonology and Morphology of Turkish

Problem Session: Midterm Review (Answer Key)

1 Natural classes

(a) Give the smallest description (place, manner, voicing; or height, backness, rounding) that picks out each group and no other sound of Turkish.

1. [ʃ ʒ t͡ʃ d͡ʒ] alveopalatal fricatives and affricates
2. [c cʰ ɟ] palatal stops
3. [i ɯ y u] high vowels = the possible vowels of an I-type suffix
4. [e ɛ ɑ] non-high unrounded vowels = the possible vowels of an A-type suffix

(b) List all the sounds of Turkish (allophones included) that fit each description.

1. voiceless fricatives [f ɸ s ʃ h ç x]
2. voiced stops [b d g ɟ]
3. [+round, −high] vowels [o ø]

2 Minimal pairs

bul pul tel del dil bil kel gel kıl kal kol kul göl gül kör kor

(a) Find four minimal pairs in which the two contrasting phonemes differ in exactly one feature. Write the phonemes and name the feature.

Any four, e.g.: pul/bul /p/–/b/ voicing; tel/del /t/–/d/ voicing; kel/gel /k/–/g/ voicing; dil/bil /d/–/b/ place; del/dil /e/–/i/ height; göl/gül /ø/–/y/ height; kol/kul /o/–/u/ height; kıl/kal /ɯ/–/ɑ/ height; kıl/kul /ɯ/–/u/ rounding; kör/kor /ø/–/o/ backness.

(b) Transcribe *kör* and *kor* narrowly. How many segments differ phonetically, and how many phonemically? Explain.

[cʰøɻ] vs [kʰoɻ]: two segments differ phonetically, but phonemically /køɾ/ vs /koɾ/ differ only in the vowel. [cʰ] and [kʰ] are allophones of /k/ chosen by the backness of the vowel, so they are not a separate contrast. (Compare /c/ in kâr, which is a separate phoneme because it occurs with a back vowel.)

3 Narrow transcription and syllable weight

Transcribe narrowly with syllable boundaries, mark each syllable L (light) or H (heavy), and name the allophonic rules you used.

	transcription	weight	rules
çatı	[t͡ʃʰɑ.tʰɯ]	L L	aspiration of syllable-initial stops and affricates
çelik	[t͡ʃʰe.licʰ]	L H	[l] and palatal [cʰ] with a front vowel; aspiration
ufuklar	[u.ɸuk.ɬɑɻ]	L H H	[ɸ] before/after a rounded vowel; unaspirated [k] syllable-finally; [ɬ]; final [ɻ]
çerezler	[t͡ʃʰe.ɾez.lɛɻ]	L H H	[ɛ] only in the syllable closed by a sonorant (not before [z]); [l] with a front vowel; final [ɻ]
kavun	[kʰɑ.βun]	L H	[β] before a rounded vowel
kahve	[kʰɑx.ve]	H L	/h/ → [x] syllable-finally after a back vowel

4 Harmony and other alternations

(a) The roots below are made-up Turkish words. Fill in the table in Turkish spelling. Some cells are given.

root	{-lAr} PL	{-DA} LOC	{-CI} 'person who…'	{-sIz} 'without'
turuş	turuşlar	turuşta	turuşçu	turuşsuz
gölüz	gölüzler	gölüzde	gölüzcü	gölüzsüz
melet	meletler	melette	meletçi	meletsiz
zıra	zıralar	zırada	zıracı	zırasız

(b) How many surface forms can each suffix have? Which property of the stem decides each one?

{-lAr}: 2 (fronting harmony). {-DA}: 4 (fronting harmony + consonant harmony). {-CI}: 8 (fronting + rounding harmony + consonant harmony). {-sIz}: 4 (fronting + rounding harmony).

(c) Study the bare and dative forms: kulak / kulağa 'ear' ekmek / ekmeğe 'bread' kök / köke 'root' burun / burna 'nose' davul / davula 'drum'. Why does /k/ disappear in *kulağa* and *ekmeğe* but not in *köke*? Give the URs of *burun* and *davul* and explain why only one of them loses a vowel.

Final /k/ of a polysyllabic noun is deleted before a vowel-initial suffix; *kök* is monosyllabic, so it keeps /k/. *burun* is /buɾn/: a high vowel is inserted when the word is in isolation or before a consonant, and it harmonizes ([u]). Before a vowel nothing is inserted: burna. *davul* is /dɑvul/ with a real vowel, so it never drops (davula, not *davla). A vowel-deletion rule would wrongly predict *davla.

5 Underlying forms and rule order

tɪp	tɪbba	‘medicine’	dolap	dolaba	‘cupboard’
his	hisse	‘feeling’	top	topa	‘ball’
esas	esasa	‘basis’			

(a) Give the underlying representation of each root. What in the dative form tells you this?

/tɯbb/, /hiss/, /esɑːs/, /dolɑb/, /top/. Before a vowel-initial suffix the root is not in the degemination/shortening/devoicing context, so the long consonant ([b.b], [s.s]), the long vowel ([e.sɑː.sɑ]) and the voiced stop ([do.ɫɑ.bɑ]) surface. *topa* keeps [pʰ], so top ends in /p/.

(b) Complete the derivations of the bare forms (“–” = rule does not apply). *his* is done for you.

	UR	degemination	vowel shortening	final devoicing	surface
his	/hiss/	his	–	–	[his]
tɪp	/tɯbb/	tɯb	–	tɯp	[tʰɯpʰ]
esas	/esɑːs/	–	esɑs	–	[e.sɑs]
dolap	/dolɑb/	–	–	dolɑp	[do.ɫɑpʰ]

(c) Apply final devoicing *before* degemination to /tɯbb/. What goes wrong? What order do we need?

Devoicing changes only the final consonant: /tɯbb/ → tɯbp. The two consonants are no longer identical, so degemination cannot apply: *[tʰɯbpʰ]. So degemination must apply before final devoicing.

6 Initial clusters in loanwords

Turkish does not allow word-initial consonant clusters, so a high vowel is inserted. For each word, write the inserted vowel and say which condition decides it.

plan	p[i]lan	C2 is the lateral [l] → always [i]
trafik	t[ɯ]rafik	C1 neither velar nor labial → unrounded; back like [ɑ]
gram	g[ɯ]ram	C1 velar → high back; unrounded like [ɑ]
bravo	b[ɯ]ravo	C1 labial → backness and rounding from the first vowel [ɑ]
slogan	s[i]logan	C2 is the lateral [l] → [i]
klima	k[ɯ]lima	C1 velar; this overrides the lateral condition, so not *k[i]lima

7 Stress

Imagine a made-up noun *kimar* ‘a kind of fruit’ and a made-up verb *kimar-* ‘to peel’.

(a) Transcribe narrowly with syllable boundaries and stress: *kimar* *kimarlar* *kimarlarda* *Kimarma!* ‘Don’t peel!’

[cʰi.ˈmɑɻ] [cʰi.mɑɾ.ˈɫɑɻ] [cʰi.mɑɾ.ɫɑɾ.ˈdɑ] [cʰi.ˈmɑɾ.mɑ]

(b) Why does the stress move in the first three forms but not in the last one?

Default stress falls on the last syllable, so it moves right each time a suffix is added. Negative -mA is pre-stressing: the stress falls on the syllable before it, so *kimarma* has non-final stress.