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PHONOLOGICAL UNITS

Words are made up of sequences of distinct **phonological units** called **consonants** and **vowels**. Some consonants and vowels sound the same wherever they occur within a word, and have a single pronunciation. Others have more than one way of being pronounced, depending on the surrounding sounds. The various pronunciations of a phonological unit conditioned by its position are called its **allophones**.

Phonological units are indicated by double slashes (/ /), and their allophones by square brackets ([]). The corresponding Turkish alphabetical symbols are indicated by inverted commas (‘ ’). Long vowels and doubled consonants are indicated by a following colon (:).

1.1 CONSONANTS AND VOWELS

1.1.1 CONSONANTS

The consonants in Turkish differ from each other in terms of whether they are **voiced** or **voiceless**, their **point of articulation** and their **manner of articulation**. The voiced/voiceless contrast is the most prevalent one in processes involving phonology and word structure (2.1, 6.1.2).

Voiceless consonants

/p/

/t/

/k/

/c/ (‘k’)

/tʃ/ (‘ç’)

/f/

/s/

/ʃ/ (‘ş’)

/h/

Voiced consonants

/b/

/d/

/g/

/dʒ/ (‘g’)

/dʒ/ (‘c’)

/v/

/z/

/ʒ/ (‘j’)

/ɣ/ (‘ğ’)

/m/
 /n/
 /ʎ/('I')
 /l/
 /r/
 /j/('y')

1.1.1.1 Consonants and their allophones

The following factors affect the pronunciation of particular consonants in certain environments:

- (i) **palatalization** (producing a consonant with the tongue against the hard palate) affects the velar consonants /k/, /g/ and /ʎ/, and the glottal consonant /h/ in front vowel environments
- (ii) **aspiration** (producing a consonant with force) affects the voiceless plosives /p/, /t/, /k/, /c/, and the voiceless affricate /tʃ/
- (iii) **bilabialization** (producing a consonant by bringing the lips together) affects the voiced labio-dental consonant /v/ and to a lesser extent, its voiceless counterpart /f/

The descriptions below regarding the pronunciation of consonants in 'word-final position' apply only to those cases where a word is followed by a pause or uttered in isolation. Otherwise, the pronunciation of a word-final consonant is, in most cases, conditioned by the initial sound in the following word. For example, /p/ which is described below as aspirated at the end of a word or before a vowel sounds so only if it is followed by a pause or a word beginning with a vowel. If it is followed by a word starting with a consonant it is an unaspirated /p/. In other words, the 'p' of *tupa* 'stopper', *Tip Ansiklopedisi* 'Encyclopaedia of Medicine' and *tip* 'medicine' (pronounced in isolation) are all aspirated, whereas the 'p' in *tupki* 'just like' or in *Tip Dergisi* 'Journal of Medicine' is unaspirated.

Another point about pronunciation concerns two identical consonants that occur next to each other. Such clusters are pronounced with a delayed release as in *attım* [at^h:ım] 'I threw [it]' (as opposed to *atım* [at^hım] 'my horse') and *kaç çocuk* [k^haʃ:odʒuk^h] 'how many children' (as opposed to *kaç okul* [k^haʃokul^h] 'how many schools').

The consonants of Turkish and their allophones are given below. Where the phonetic symbol is different from the orthography, the latter is indicated in brackets (e.g. /tʃ/ ('ç')).

/p/ [p] *şapka* 'hat', *aptal* 'stupid', *kitapçı* 'bookshop', *iplik* 'thread'

[p^h] *para* 'money', *pirinç* 'rice', *pırasa* 'leek', *top* 'ball', *ip* 'rope', *kapak* 'cover', *ipek* 'silk'

[p] is an unaspirated voiceless **bilabial plosive** which occurs before a consonant. [p^h] is an aspirated voiceless bilabial plosive which occurs before vowels or in word-final position.

/b/ [b] *bebek* ‘baby, doll’, *bora* ‘gale’, *biz* ‘we’, *ebe* ‘midwife’, *öbek* ‘group’, *abla* ‘elder sister’

[b] is a voiced bilabial plosive. It does not occur in word-final position except in a few loan words such as *rab* ‘(the) Lord’, *rob* ‘robe’ and *ab* ‘water’, and is rare in syllable-final position.

/t/ [t] *katla-* ‘fold’, *saatçi* ‘clockmaker’, *etnik* ‘ethnic’, *atki* ‘scarf’

[t^h] *tarak* ‘comb’, *tirşe* ‘aquamarine’, *türev* ‘derivative’, *etek* ‘skirt’, *otuz* ‘thirty’, *ütü* ‘iron’, *inat* ‘insistence’, *it-* ‘push’

[t] is a voiceless unaspirated **denti-alveolar plosive** which occurs before a consonant. [t^h] is an aspirated dental plosive which occurs before a vowel or in word-final position.

/d/ [d] *dere* ‘stream’, *dam* ‘roof’, *doğru* ‘correct’, *diz* ‘knee’, *dümen* ‘wheel’, *kadın* ‘woman’, *badem* ‘almond’, *ödün* ‘compromise’, *adlı* ‘named’

[d] is a voiced denti-alveolar plosive. It does not occur in word-final position except in a few words such as *ud* ‘lute’, *had* ‘limit’, *ad* ‘name’, most of which are borrowed, and is rare in syllable-final position.

/k/ [k] *bakla* ‘broad beans’, *sıkma* ‘squeezed’, *okşa-* ‘caress’, *parkta* ‘in the park’

[k^h] *kafa* ‘head’, *sıkı* ‘tight’, *doruk* ‘zenith’, *sok-* ‘push in’, *kazak* ‘sweater’

[c] *ikna* (*et-*) ‘convince’, *ekle-* ‘add’, *eksi* ‘minus’

[c^h] *keçi* ‘goat’, *kömür* ‘coal’, *iki* ‘two’, *sök-* ‘dismantle’, *bölük* ‘squadron’, *erk* ‘power’

[k] is a voiceless unaspirated **velar plosive** which occurs at the end of a syllable containing a **back vowel** (one of /ɪ/, /a/, /o/ or /u/) and before a consonant. Its aspirated counterpart [k^h] occurs before a back vowel and in word-final position following a back vowel. [c] and [c^h] are voiceless **palatal plosives** which occur with **front vowels** (one of /e/, /i/, /ö/ or /ü/). [c] occurs at the end of a syllable containing a front vowel and before a consonant, and its aspirated counterpart [c^h] occurs before a front vowel and in word-final position following a front vowel. The palatalization of [c^h] is more pronounced when it follows /i/ or /ü/ and occurs at the end of a word, as in *yörük* ‘nomad’ or the final ‘k’ in *küçük* ‘small’.

An even more palatalized version of [c^h] occurs before palatalized back vowels in some loan words, as in *kağıt* ‘paper’, *kufi* ‘Cufic’, *katip*, ‘clerk, secretary’, *mahkum* ‘prisoner’. Note that [c^h] in these instances constitutes a separate phonological unit (/c/),

as it contrasts with [k^h]: *kar* [k^haʃ] ‘snow’ and *kâr* [c^haʃ] ‘profit’.

/g/ [g] *gaz* ‘gas’, *gıdıkla-* ‘tickle’, *gocuk* ‘duffle coat’, ‘anorak’, *gaga* ‘beak’

[ʤ] *gez-* ‘stroll’, *giy-* ‘wear’, *göç* ‘migration’, *Ege* ‘Aegean’

[g] is a voiced velar plosive which occurs in syllables with the back vowels /ı/, /a/, /o/, and /u/. Its palatal counterpart [ɟ] occurs in syllables with the front vowels /i/, /e/, /ö/ and /ü/. /g/ does not occur in syllable-final or in word-final position except in loan words such as *program* ‘programme’, *psikolog* ‘psychologist’, *lig* ‘league’ and *katalog* ‘catalogue’.

A slightly more palatalized version of the sound [ɟ] can also occur before a palatalized back vowel in loan words, as in *yegane* ‘only’, *gavur* ‘infidel’ (derogatory), *dergah* ‘dervish convent’. Here [ɟʲ] belongs to the separate phonological unit [ɟʲ], which is a voiced palatal plosive.

/ɟʲ/ [ɟʲ] *biçki* ‘cutting out’, *saçma* ‘nonsense’, *içmeler* ‘springs’
 (‘ç’) [ɟʲʰ] *çene* ‘chin’, *çabuk* ‘quickly’, *çöp* ‘rubbish’, *uçuk* ‘pale’, *ölçü* ‘measurement’, *kılıç* ‘sword’, *ilgeç* ‘postposition’

[tʃ] is a voiceless **post-alveolar affricate** which occurs before a consonant. Its aspirated counterpart [tʃʰ] precedes vowels and also occurs in word-final position.

/tʃ/ (‘ç’) [tʃ] *caz* ‘jazz’, *cebir* ‘algebra’, *cuma* ‘Friday’, *cins* ‘type’, *acı* ‘pain’, *böcek* ‘insect’

[dʒ] is a voiced post-alveolar affricate. It does not occur in syllable-final position and rarely occurs in word-final position (e.g. *hac* ‘pilgrimage’ and *sac* ‘sheet iron’, mostly for purposes of distinguishing these words from words containing its voiceless counterpart /tʃ/, i.e. *haç* ‘cross’ and *saç* ‘hair’).

/f/ [Φ] *ufuk* ‘horizon’, *küfür* ‘curse’, *kof* ‘rotten’, *örf* ‘common usage’, ‘custom’
 [f] *fakat* ‘but’, *nefes* ‘breath’, *defter* ‘notebook’, *lif* ‘fibre’

[Φ] is a voiceless bilabial **fricative** which occurs in the pronunciation of some speakers before the rounded vowels /u/, /ü/, /o/ and /ö/ and to a lesser extent in word-final position following a rounded vowel. [f] is a voiceless **labio-dental** fricative which occurs elsewhere.

/v/ [ω] *tavuk* ‘chicken’, *kavun* ‘melon’, *havuç* ‘carrot’
 [β] *vücut* ‘body’, *vur-* ‘hit’, *ov-* ‘massage’, *döv-* ‘beat’
 [v] *virgül* ‘comma’, *vatan* ‘motherland’, *ev* ‘house’, *tava* ‘frying pan’

[ω] is a bilabial **glide** which occurs between two vowels where at least one of the vowels, usually the one following it, is rounded. [β] is a voiced bilabial fricative which also occurs with rounded vowels but only when it is not intervocalic (i.e. when it is in word-initial or syllable-final position). The difference between [ω] and [β] is very slight and is not audible in the speech of some speakers. [v], the voiced labio-dental fricative, occurs elsewhere.

/s/ [s] *sarı* ‘yellow’, *somurt-* ‘sulk’, *su* ‘water’, *süt* ‘milk’, *ısı* ‘heat’, *askı* ‘hanger’, *pas* ‘rust’

[s] is a voiceless denti-alveolar fricative.

/z/ [z] *zar* ‘dice’, ‘membrane’, *zehir* ‘poison’, *otuz* ‘thirty’, *doz* ‘dosage’, *uzun* ‘long, tall’, *azınlık* ‘minority’

[z] is a voiced denti-alveolar fricative.

/ʃ/ [ʃ] *işlek* ‘busy’, *şiiir* ‘poem’, ‘poetry’, *şarkı* ‘song’, *aşık* ‘lover’, *meşin* ‘leather’, *kaş* ‘eyebrow’, *güneş* ‘sun’

[j] is a voiceless post-alveolar fricative.

/ʒ/ [ʒ] *jüpon* ‘underskirt’, *jet* ‘jet’, *jilet* ‘razor blade’, *garaj* ‘garage’, *bej* ‘beige’, *Jülide* (a name), *ajan* ‘agent’, *ejderha* ‘dragon’

[ʒ] is a voiced post-alveolar fricative. It occurs in words borrowed from Indo-European languages, in particular from Persian and French.

/ɣ/ (‘g’) *soğuk* ‘cold’, *bağır-* ‘shout’, *eğik* ‘bent’, *dağ* ‘mountain’, *gittiğim* ‘that I went’

The so-called ‘soft g’ lacks a corresponding ‘consonantal’ sound in standard Turkish, although it is pronounced as a voiced velar fricative in some dialects. It behaves like a consonant when a suffix follows it (see 6.1.3), and is either inaudible as a consonant or may be pronounced as a palatal glide in the environment of front vowels and as a bilabial glide in the environment of rounded vowels. In particular:

(i) When it is in word-final or syllable-final position, it lengthens a preceding back vowel (*dağdan* [da:dan] ‘from the mountain’ and *sığ* [sı:] ‘shallow’), but may be pronounced as a palatal glide when following a front vowel (*eğlen-* [ejlæn] ‘have fun’).

(ii) Between identical back vowels it is inaudible (*sığınak* [sı:nak^h] ‘shelter’, *uğur* [u:ɣ] ‘good luck’).

(iii) Between identical front vowels it is either inaudible (*sevdiğim* [sevdi:m] ‘that I love’) or sounds like a palatal glide (*düğün* [düyün] ‘wedding’).

(iv) Between rounded vowels it is mostly inaudible but can also be pronounced as a bilabial glide *soğuk* ([souk^h] or [soʊuk^h] ‘cold’).

(v) Between a rounded vowel and an unrounded vowel it is mostly inaudible but can also be pronounced as a bilabial glide (*soğan* [soan] or [soʊan] ‘onion’).

(vi) ‘a+ğ+i’ sequences may either sound like a sequence of /a/ followed by /i/ or like a sequence of two /a/ vowels (*ağır* [aɪɣ] or [a:ɣ] ‘heavy’).

(vii) ‘ı+ğ+a’ sequences, on the other hand, are pronounced as sequences of /a/ followed by /ı/ (*sığan* [sıan] ‘[one] which fits’).

(viii) When ‘ğ’ occurs between an ‘e’ and an ‘i’ it is either inaudible or pronounced as a palatal glide [j], hence words with the sequences ‘e+ğ+i’ and ‘i+ğ+e’ can sound like words written with a ‘y’, as in *değil* [dejil] ‘not’ and *diğer*

[dijæɣ] ‘other’ (the former being similar to words *written* with a palatal glide, e.g. *meyil* ‘slope’). ‘e+ğ+i’ sequences may also sound like a sequence of two /i/ vowels, hence *değil* is often pronounced [di:l] in colloquial speech.

For the pronunciation of ‘ğ’ in forms containing the future/participle suffix *-(y)AcAK*, see 8.2.3.3.

Note that vowel sequences formed as a result of an intervening ‘ğ’ are made up of two distinct syllables and are not diphthongs or long vowels. In these vowel sequences stress falls on the second syllable, provided that other conditions on word stress are met (see Chapter 4).

/h/ [ç] *hile* ‘trick’, *ihtimal* ‘possibility’, *Salih* (a name)

[x] *ihlamur* ‘linden’, *ahşap* ‘wooden’, *kahve* ‘coffee’, *sabah* ‘morning’

[h] *hala* ‘paternal aunt’, *horla-* ‘snore’, *ahır* ‘barn’

[ç] is a voiceless palatal fricative that occurs with front vowels in the following environments: before a front vowel, between a front vowel and a consonant, and after a front vowel in word-final position. When the vowel is /i/, the palatalization is more pronounced. [x], the voiceless velar fricative, follows a back vowel and precedes a consonant, or follows a back vowel in word-final position. [h], the voiceless glottal fricative, occurs before a back vowel. /h/ may be silent between two identical vowels, as in *pastahane* [p^hast^ha:ne] ‘bakery shop’ and *daha* [da:] ‘more’, or between a vowel (usually /a/) and a consonant, causing the preceding vowel to lengthen as in *kahve* [k^ha:ve] ‘coffee’ and *Ahmet* [a:met^h].

/m/ [m] *masal* ‘fairytale’, *mine* ‘enamel’, *müzik* ‘music’, *emin* ‘sure’, *kumar* ‘gambling’, *kambur* ‘hunchback’, *tarım* ‘agriculture’, *ekim* ‘October’

[m] is a bilabial **nasal**.

/n/ [n] *nasıl* ‘how’, *nine* ‘grandmother’, *on* ‘ten’, *ünlü* ‘famous’, *inek* ‘cow’, *sorun* ‘problem’

[ŋ] *yangın* ‘fire’, *banka* ‘bank’, *mangal* ‘brazier’

[ɲ] *engin* ‘boundless’, *dingin* ‘calm’

[n] is a dental nasal which occurs in all positions except when it is followed by /k/ or /g/. /n/ is realized as a velar nasal [ŋ] following a back vowel and preceding a velar plosive, and as a palatal nasal [ɲ] following a front vowel and preceding a palatal plosive.

There is no audible difference between ‘n’ and ‘m’ when either of these occurs before a labio-dental fricative (‘f’ or ‘v’). In such cases, the preceding ‘n’ or ‘m’ becomes slightly nasalized: *Enver* [ɛ̃væɾ] (a name), *amfi* [ãfi] ‘lecture room’.

/l/ [l] *leylek* ‘stork’, *lira* ‘lira’, *elli* ‘fifty’, *gül* ‘rose’, *ölüm* ‘death’

[ɬ] *oluk* ‘gutter’, *kalın* ‘thick’, *bal* ‘honey’, *pul* ‘stamp’

[l] is a palatalized post-alveolar **lateral** which occurs adjacent to front vowels, and [ɬ] is a velarized dental lateral which occurs adjacent to back vowels. /l/ generally gets assimilated with a preceding /n/ in fast speech, e.g. *kadınlar* ‘women’ may be pronounced [k^hadɪnnat̪] and *anla-* ‘understand’ as [anna].

The palatal sound [ɟ] can also occur adjacent to back vowels in loan words such as *lale* [la:le] ‘tulip’, *laf* ‘word(s)’, *ilah* ‘god’, *rol* ‘role’. Here it belongs to the phonological unit /l/.

/ɾ/ [r] *rahat* ‘comfort’, *renk* ‘colour’, *iri* ‘big’, *artık* ‘waste’, *oruç* ‘fasting’
 [ɟ] *tür* ‘type’, *ger-* ‘stretch’, *iksir* ‘elixir’, *kar* ‘snow’, *mor* ‘violet’

[r] is a voiced alveolar **tap** produced with the tip of the tongue touching the alveolar ridge. It occurs in initial and medial positions. Its devoiced counterpart [ɾ̥] occurs in word-final position. /ɾ/ is sometimes deleted in colloquial speech, in particular in the imperfective suffix *-Iyor* (see 8.2.3.3 for details) and in *bir* ‘a’, ‘one’. In the case of *bir*, this usually occurs when it is not stressed (*bir ev* [bi év] ‘a house’) but also sometimes when it is stressed (*bir daha* [bída:] ‘again’, *sadece bir ev* [sa:dedʒe bi év] ‘only one house’).

/j/ [j] *yer* ‘place’, *yogurt* ‘yogurt’, *yağ* ‘oil’, *ayak* ‘foot’, *oyun* ‘game’, *ayna* ‘mirror’, *kay-* ‘slide’, *huy* ‘disposition’
 (‘y’)

[j] is a palatal glide. The sequence ‘i+y’ can be realized as a long vowel, as in *iyi* [i:] ‘good’ and *diyeceğim* [di:ʒæm] ‘I will say’.

The **glottal stop** survives mainly in the speech of some elderly speakers, and is going out of usage. It is confined to words of Arabic origin, and mostly to those in which it is intervocalic (*saat* [sa’atʰ] ‘clock’, ‘watch’, *fiil* [fi’il] ‘verb’, *teessüf* [tʰe’es:üΦ] ‘sorrow’, *taarruz* [tʰa’ar:uz] ‘assault’). Note that an intervocalic glottal stop can also be pronounced as a long vowel (1.1.2.2).

1.1.2 VOWELS

Turkish has a very symmetrical vocalic system, consisting of the eight vowels /a/, /e/, /ɯ/ (‘ı’), /i/, /o/, /œ/ (‘ö’), /u/, /y/ (‘ü’). The symbols /ɯ/, /œ/ and /y/ will henceforth be replaced by their counterparts in the Turkish orthography, /ı/, /ö/ and /ü/ respectively. These vowels differ from each other in terms of the height of the tongue, the **roundedness** of the lips and the **frontness** of the tongue.

	High		Non-high (mid and low)	
	Rounded	Unrounded	Rounded	Unrounded
Front	ü	i	ö	e
Back	u	ı	o	a

In addition, Turkish has the long vowels /a:/, /u:/, /i:/ and /e:/ in loan words of Arabic and Persian origin.

1.1.2.1 Vowels and their allophones

Vowels can occur at the beginning and end of words, and between two consonants. In words of native origin, /o/ and /ö/ occur only in the first syllable (except for words which contain the imperfective suffix *-ıyor*, see 3.4 (vi) and 8.2.3.3).

Some general factors which affect the pronunciation of vowels are the following: the back vowels /a/, /o/ and /u/ are palatalized when following or preceding the palatal consonants /ç/, *ɟ* and /j/, which occur only in loan words. All vowels except /a/ and /o/ get lowered in word-final position.

/a/ [a] *kara* 'black', *aşı* 'vaccination', *kurak* 'arid', *algı* 'perception', *banka* 'bank'

[a] *laf* 'word(s)', 'banter', *lapa* 'mush', *alfabe* 'alphabet', *kağıt* 'paper'

[a] is a low, back and unrounded vowel. Its **fronted** allophone [a̟] occurs with the palatal consonants /ç/, *ɟ* and /j/ in loan words.

/e/ [e] *sevgi* 'love', *ekim* 'October', *bez* 'cloth', *senin* 'your'

[ɛ] *ile* 'with', *küfe* 'large basket', *bale* 'ballet', *dene-* 'try'

[æ] *gel-* 'come', *ver-* 'give', *ben* 'I', *sen* 'you', *gizem* 'mystery'

The non-high, front and unrounded vowel /e/ has three allophones. Going from the highest, i.e. mid, to the lowest, these are: the mid, front, closed vowel [e], its lowered counterpart [ɛ], an open-mid, front vowel, and [æ], a low front vowel. [e] sounds like a shorter form of the vowel sound in the English word *late*, [æ] resembles a shorter form of the vowel sound in *bat*, and [ɛ] is between the two, with a sound similar to the vowel in *air* in English.

[æ] occurs before /l/, /m/, /n/, /r/ in instances where the sequences 'er', 'em', 'en' and 'el' are not followed by a vowel, as in *her* 'each, all', *gerdi* 's/he stretched', *kent* 'town', *pergel* 'pair of compasses'. [ɛ] occurs in wordfinal position. [e] occurs elsewhere. All three occur in words such as *gezegende* [gezegænde] 'on the planet', *perende* [perænde] 'somersault' (see also 2.5). Note that /e/ may be pronounced either as [e] or [æ] in a limited number of words before /l/, /m/ and /n/. Hence, some speakers pronounce *elbise* 'dress', *kendi* 'self' or *hem* 'both' with [e], others with [æ].

/i/ [i] *erik* 'plum', *iletişim* 'communication'

[I] *ilgi* 'interest', *deri* 'skin', *kedi* 'cat'

[I] is a higher-than-mid, front, unrounded vowel which occurs in word-final position. Its pronunciation resembles the vowel sound in *bit* in English. [i], which occurs elsewhere, is a front, high, unrounded vowel, a shorter version of the vowel sound in *beat* in English.

/ɯ/ [ɯ] *asıl* 'real', *kışla* 'barracks', *ılık* 'lukewarm', *kırmızı* 'red'

[ɯ] is an unrounded, high, back vowel.

- /o/ [o] **o** ‘he/she/it/that’, *bol* ‘abundant’, *otur-* ‘sit’, *kop-* ‘snap’, *protokol* ‘protocol’
 [ɔ] *lokum* ‘Turkish delight’, *rol* ‘role’

[o] is a mid, back, rounded vowel. Its palatalized counterpart [ɔ] occurs adjacent to /l/ in loan words. /o/ occurs only in the initial syllable in words of Turkic origin, but may appear in any syllable in loan words.

- /ö/ [ø] *göl* ‘lake’, *ölçü* ‘measurement’, *dökül-* ‘be spilt’, *sözlük* ‘dictionary’, *kuvöz* ‘incubator’,
şoför ‘chauffeur’

[ø] is a mid, front, rounded vowel. In loan words /ø/ can occur in any syllable, but like /o/ it appears only in the first syllable in native words.

- /u/ [u] *buluş* ‘finding’, *ufak* ‘small’, *koşul* ‘condition’
 [ʊ] *lut* ‘lute’, *blucin* ‘denims’, *lugat* ‘dictionary’, *kufi* ‘Cufic’
 [U] *bu* ‘this’, *kutu* ‘box’, *ordu* ‘army’

[u] is a rounded, high, back vowel which sounds like the vowel in the English word *truth*.

[ʊ] is its palatalized allophone, which occurs adjacent to the palatal consonants /ç/, /ʃ/ and /l/ in loan words. [U] is more lowered than [u] and occurs in word-final position. It is pronounced in a similar way to the vowel in *put* in English.

- /ü/ [ü] *üzüntü* ‘sadness’, *püre* ‘mash’, *süprüntü* ‘rubbish’, *ömür* ‘life’
 [Y] *üzüntü* ‘sadness’, *örgü* ‘knitted’, *sövgü* ‘curse’

[ü] is a rounded, high, front vowel. [Y] is more lowered than [ü] and occurs only in word-final position.

1.1.2.2 Long vowels

Long vowels occur in words borrowed from Persian and Arabic. These have two separate sources. They are either long vowels in the original language or they originally contained a glottal stop (1.1.1.1), which, together with the vowel that precedes it, has become a long vowel in Turkish. Sometimes long vowels are indicated by a circumflex (ˆ) in the orthography. Those long vowels which derive from an intervocalic glottal stop are usually written as two vowels. The list below provides a few examples without distinguishing between these distinct sources:

- /a:/ *matbaa* ‘press’, *kira* ‘rent’, *mavi* ‘blue’, *arif* ‘wise person’
 /u:/ *mevzu* ‘topic’, *suret* ‘copy’, *buse* ‘kiss’, *Numan* (a name)
 /i:/ *fil* ‘verb’, *ilan* ‘advertisement’, *sine* ‘bosom’, *Didem* (a name)
 /e:/ *teessüf* ‘sorrow’, *temin* ‘acquisition’, *tesir* ‘effect’

See 1.1.1.1 for the effect of ‘ğ’ and ‘h’ on preceding vowels, and 2.4 for vowel length under other circumstances.

1.2 THE DISTRIBUTION OF CONSONANTS AND VOWELS

In Turkish roots are predominantly monosyllabic, i.e. they contain a single vowel. There are no vowel sequences in Turkish, except in loan words (see 1.1.2.2).

The most common combinations of consonants (C) and vowels (V) are VC (*at* ‘horse’, *ol-* ‘be’, *in-* ‘descend’, *iş* ‘work’, *üç* ‘three’) and CVC sequences (*gel-* ‘come’, *bak-* ‘look’, *güz* ‘autumn’, *göl* ‘lake’). There are also CV sequences such as *bu* ‘this’, *şu* ‘that’, *su* ‘water’, *ne* ‘what’, *de-* ‘say’, but these are fewer in number and those which are nominals usually require an additional consonant (‘n’ or ‘y’) when they combine with suffixes (6.1.3). Other types are VCV sequences such as *ara-* ‘look for’, *ile* ‘with’, *öte* ‘far side’, and VCC and CVCC sequences such as *ört-* ‘cover’, *sert* ‘hard’, *genç* ‘young’. There is a single occurrence of a root which consists only of a single vowel, the word *o* ‘he, she, it, that’. This word requires a consonant when it combines with a suffix (6.2 (ii)).

In this book we treat the following words also as roots, although they have more than one syllable:

- (i) Loan words such as *hazır* ‘ready’, *kitap* ‘book’, *köşe* ‘corner’ and *otomatik* ‘automatic’. Some such words are derived forms in their original language but cannot be broken up into smaller units in Turkish.
- (ii) Words of Turkic origin which do not have a recognizable monosyllabic root in modern Turkish, such as *damar* ‘vein’, *ördek* ‘duck’, *eski* ‘old’, *ana* ‘mother’, *bekle-* ‘wait’, *oku-* ‘read’ and *çalış-* ‘work’.

In the overwhelming majority of cases, a word which contains more than one syllable in Turkish is a derived word (see 7.2). For the rules of syllabification in Turkish see p. xl.

1.2.1 CONSONANT CLUSTERS

Consonant clusters, i.e. sequences of two different consonants, occur word-initially only in loan words. Some speakers insert one of the vowels /i/ or /ɪ/ in or before the cluster:

Alternative pronunciation

<i>spor</i> ‘sport’	[isp ^h oɾ, sip ^h oɾ]
<i>stil</i> ‘style’	[ist ^h il, sit ^h il]
<i>stres</i> ‘stress’	[sitres]
<i>tren</i> ‘train’	[t ^h iræn]
<i>psikoloji</i> ‘psychology’	[p ^h isch ^h olozi, p ^h isich ^h olozi]
<i>kral</i> ‘king’	[k ^h ırat]

<i>grev</i> ‘strike’	[grev]
<i>plan</i> ‘plan’	[p ^h ilan]

Consonant clusters are frequently found in word-final position, as in *ilk* ‘first’, *alt* ‘lower’, *sark-* ‘hang’, *kork-* ‘fear’, *zamk* ‘adhesive’, *renk* ‘colour’, *kart* ‘tough’, *üst* ‘top’, *aşk* ‘love’, *baht* ‘luck’, *teyp* ‘tape recorder’, *genç* ‘young’, *felç* ‘paralysis’, *bronz* ‘bronze’, *şans* ‘luck’, *alarm* ‘alarm’.

2

SOUND CHANGE PRODUCED IN THE STEM BY SUFFIXATION

There are a number of contexts where the addition of a suffix causes a change in the quality of the last consonant or vowel of a stem. Certain of these changes are confined to specific lexical items, whereas others occur as part of a general phonological process in the language. Those which occur only in certain words are:

- (i) A voiceless consonant alternating with its voiced counterpart, e.g. *kitap* 'book' but *kitabım* 'my book' (2.1)
- (ii) A single consonant alternating with its doubled counterpart, e.g. *sır* 'secret' but *sırrım* 'my secret' (2.2)
- (iii) A high vowel alternating with zero (i.e. absence of that vowel), e.g. *burun* 'nose' but *burnum* 'my nose' (2.3)
- (iv) A short vowel alternating with a long vowel, e.g. *zaman* 'time' but *zamanım* [zama:nım] 'my time' (2.4)

The changes which are part of a general phonological process are:

- (v) Final 'k' alternating with 'ğ' in nominals, e.g. *çocuk* 'child' but *çocuğum* 'my child' (2.1)
- (vi) [æ] alternating with [e], e.g. *ben* [bæn] 'I' but *benim* [benim] 'mine' (2.5)
- (vii) Final 'a', 'e', 'u' and 'ü' alternating with 'ı' or 'i', e.g. *de-* 'say' but *diyecek* 's/he will say' (2.6)

2.1 ALTERNATIONS OF VOICELESS/VOICED CONSONANTS:

'p'/'b', 't'/'d', 'k'/'g', 'k'/'ğ', 'ç'/'c'

In some stems ending in one of the voiceless consonants 'p', 't', 'k' and 'ç', this final consonant changes to its voiced counterpart before a suffix beginning with a vowel.

'p'	is replaced by	'b'
't'	is replaced by	'd'
'(n)k'	is replaced by	'(n)g'
'ç'	is replaced by	'c'
'k'	is replaced by	'ğ'

Some of these alternations take place in words borrowed from Arabic or Persian, where the word originally ends in a voiced consonant ('b', 'd', 'g' or 'c', as in *kitab* 'book'). As

Turkish does not have any of these consonants in final position (1.1.1) the final segment is devoiced in the bare form (hence *kitap*) or in syllable-final position (i.e. when followed by a suffix beginning with a consonant, e.g. *kitaptan* 'from the book'). The original voiced consonant is retained when it is followed by a suffix beginning with a vowel (e.g. *kitabım* 'my book'). Alternations in voiceless/voiced consonants also occur in many words of Turkish origin. Note that only some of the words which in their bare form end in a voiceless consonant are subject to change.

- (i) final 'p' → 'b'
dolap 'cupboard' *dolaba* 'to the cupboard'
cep 'pocket' *cebim* 'my pocket'
- (ii) final 't' → 'd'
kilit 'lock' *kilidim* 'my lock'
kanat 'wing' *kanadı* 'its wing'

There are relatively few nominal roots that undergo 't'/'d' alternation. The class of nouns ending in a non-changing 't' includes the large number of Arabic borrowings which end in the Arabic feminine suffix *-et/at*, such as *cumhuriyet* 'republic' → *cumhuriyetin* 'of the republic', and French loan words ending in 't', e.g. *bilet* 'ticket' → *biletim* 'my ticket', *ceket* 'jacket' → *ceketim* 'my jacket'.

- (iii) final 'n'+'k' → 'n'+'g'
renk 'colour' *renge* 'to the colour'
denk 'equal' *dengi* 'his/her/its equal'

'k' alternates with 'g' only when it is preceded by 'n' (otherwise it alternates with 'ğ'; see (v) below). Nouns of this form which have been borrowed in recent times from European languages do not normally undergo 'k'/'g' alternation:

- tank* 'tank' *tankı* 'his/her/its tank'
bank 'bench' *bankı* 'his/her/its bench'

- (iv) final 'ç' → 'c'
ağaç 'tree' *ağacı* 'his/her/its tree'
güç 'power' *gücün* 'your power'
taç 'crown' *taca* 'to the crown'

(v) While the scope of the aforementioned alternations is limited to particular words and is a lexical matter, the next alternation is a general rule which applies to nominals ending with 'k' when they are combined with a vowel-initial suffix. In such cases 'k' alternates with 'ğ'. Due to the pronunciation properties of 'ğ' (1.1.1.1) this process is also referred to as 'k'/'Ø' alternation.

- final 'k' → 'ğ'

<i>yaprak</i> ‘leaf’	<i>yaprağı</i> ‘its leaf’
<i>gök</i> ‘sky’	<i>göğe</i> ‘to the sky’
<i>otomatik</i> ‘automatic’	<i>otomatiğe</i> ‘(in)to automatic’

Note that only a final ‘k’ which is preceded by a vowel undergoes ‘k’/‘ğ’ alternation. Final ‘k’ alternates with ‘g’ when preceded by ‘n’ (see (iii) above), otherwise it remains as ‘k’ (eg. *zambak* ‘adhesive’ and *zambakı* ‘the adhesive’ (ACC)). ‘k’/‘ğ’ alternation also affects suffixes ending in ‘k’, such as *-DİK* (8.5.1.1), *-(y)AcAK* (8.2.3.3, 8.5.1.1) and *-mAK* (8.5.1.2):

<i>gelecek</i> ‘s/he’s going to come’	<i>geleceğim</i> ‘I’m going to come’
<i>aldık</i> ‘we bought’	<i>aldığımız</i> ‘the one/that we bought’

In the case of *-mAK*, ‘k’ also alternates with ‘y’:

almak ‘to buy’ *almaya/almağa* ‘(in order) to buy’ (also pronounced [aɫmija] or [aɫma:])

‘k’/‘ğ’ alternation does not affect words with long vowels (2.4). For example, *tebrik* ‘congratulation(s)’, where ‘i’ is originally long, does not undergo ‘k’/‘ğ’ alternation, hence, *tebriki* [tʰebri:cʰi] ‘his/her congratulation(s)’.

There are certain categories to which alternations of voiceless/voiced consonants do not generally apply:

(a) Most monovocalic nominal roots are not subject to these changes:

<i>saç</i>	‘hair’	<i>saçım</i>	‘my hair’
<i>yük</i>	‘load’	<i>yüküm</i>	‘my load’
<i>top</i>	‘ball’	<i>topum</i>	‘my ball’
<i>at</i>	‘horse’	<i>atım</i>	‘my horse’

(b) The vast majority of verbal roots are not subject to these changes. A verbal root such as *kap-* ‘snatch’ retains its final consonant in suffixation, hence *kapın* ‘snatch!’, although the identical-sounding nominal root *kap* ‘container’ reverts to its original voiced consonant when a suffix beginning with a vowel is added: *kabın* ‘your container’. Similarly the verb *ak-* ‘flow’ retains its final consonant under suffixation (e.g. *akan* ‘flowing’) but the adjective *ak* ‘white’ may not (cf. *ağar-* ‘become white’, but *akı* ‘its white (part)’). There are only a few verbs that have a change in their final consonant when followed by a vowel-initial suffix:

<i>et-</i>	(auxiliary verb/‘do’)	<i>eder</i>	‘s/he does’
<i>git-</i>	‘go’	<i>gidiyor</i>	‘s/he is going’
<i>güt-</i>	‘cherish’	<i>güdecek</i>	‘s/he will cherish’
<i>tat-</i>	‘taste’	<i>tadınca</i>	‘upon tasting’

The only way to be sure whether a noun ending in ‘p’, ‘t’, ‘k’, or ‘ç’ is subject to alternation with ‘b’, ‘d’, ‘g’/‘ğ’ or ‘c’ is to look in a dictionary. Despite the fact that the nominals which do not undergo change outnumber those that do, the standard practice adopted in dictionaries is to take the pattern of change shown above as the norm, and to mark only those nouns which retain a final ‘p’, ‘t’, ‘k’, or ‘ç’. Thus *ağaç*, *çocuk*, *kitap* and *kağıt* (all of which undergo change) will be found without annotation, whereas *saç*, *top* and *millet* are presented in the form *saç* (-cı), *top* (-pu), *millet* (-ti).

2.2 ALTERNATIONS OF SINGLE CONSONANTS WITH DOUBLE CONSONANTS

In a small number of nouns ending in ‘b’, ‘t’, ‘d’, ‘k’, ‘l’, ‘s’, ‘z’, ‘m’ and ‘n’ the final consonant is duplicated when a vowel is attached to it. These are words borrowed from Arabic, which, in their original roots, have geminates, i.e. doubled consonants. In Turkish such words appear with a single consonant in their bare form or when followed by a suffix beginning with a consonant.

<i>hak</i> ‘right’	<i>haklar</i> ‘rights’	<i>hakkın</i> ‘your right’
<i>his</i> ‘emotion’	<i>histen</i> ‘of the emotion’	<i>hissi</i> ‘emotional’
<i>sır</i> ‘secret’	<i>sırlar</i> ‘secrets’	<i>sırrımız</i> ‘our secret’
<i>hat</i> ‘line’	<i>hatlar</i> ‘lines’	<i>demiryolu hattı</i> ‘railway line’
<i>zıt</i> ‘opposite’	<i>zıtsa</i> ‘if [it’s] the opposite’	<i>zıddı</i> ‘the opposite of it’

Some of these words keep their original double consonants when they combine with the auxiliaries *et-* ‘do’ and *ol-* ‘be’ (13.3.2): *hallet-* ‘solve’, *hallol-* ‘be solved’, *hisset-* ‘feel’. Others appear in nominal-verb compounds with a single consonant: *hak et-* ‘deserve’.

It should be noted that since bare stems do not give any indication that they end in geminates, such words have to be learned individually. Nouns belonging to this class are indicated in dictionary entries in the form *sır* (-rrı), *hat* (-ttı), *zıt* (-ddı). The form of any nominal-verb compounds derived from these words also has to be checked in a dictionary.

2.3 VOWEL/Ø ALTERNATION

There are a number of nouns in which the high vowel (‘ı’, ‘i’, ‘u’ or ‘ü’) of the final syllable in the bare form does not appear when a suffix beginning with a vowel is attached to the root (e.g. *isim* ‘name’ but *ismi* ‘his/her name’). Many of these are words of Arabic origin which do not have a vowel in this position. For example, the Arabic word *ism* ‘name’ does not contain a vowel between ‘s’ and ‘m’. In Turkish when such a word appears in its bare form an **epenthetic vowel** is inserted, hence the second ‘i’ in *isim*.

It is important to remember that this is not a general phonological process. It occurs in some words of Arabic origin and in a very few roots of Turkish origin. When such roots

combine with a stressable suffix (4.3.1) containing a high vowel, such as the accusative case marker *-(y)I*, there is invariably no epenthetic vowel in the inflected form. However, there may be variation among speakers regarding the inclusion of epenthetic vowels in words with a suffix containing a non-high vowel (such as the dative case marker *-(y)A*).

Root	Root+I (e.g. <i>-(y)I</i> (ACC))	Root+A (e.g. <i>-(y)A</i> (DAT))
<i>karn</i> 'belly'	<i>karnı</i>	<i>karna</i> or <i>karına</i>
<i>şehir</i> 'town'	<i>şehri</i>	<i>şehre</i> or <i>şehire</i>
<i>izin</i> 'permission'	<i>izni</i>	<i>izne</i> or <i>izine</i>

It is not possible to know without looking in a dictionary whether the final high vowel in the bare form of a root is epenthetic or not. Stems which look identical may differ in this respect:

<i>koyun</i> 'bosom'	→	<i>koynu</i> 'his/her bosom'
<i>koyun</i> 'sheep'	→	<i>koyunu</i> 'his/her sheep'
<i>nehir</i> 'river'	→	<i>nehri</i> 'the river' (ACC)
<i>Nehir</i> 'Nehir' (a name)	→	<i>Nehir'i</i> 'Nehir' (ACC)

If a root containing an epenthetic vowel is followed by an auxiliary verb beginning with a vowel (*et-* 'do' or *ol-* 'be' (13.3.2)), the epenthetic vowel does not appear, and the noun and verb coalesce into a single word:

<i>sabr</i> 'patience'	<i>sabrı</i> 'his/her patience'	<i>sabret-</i> 'be patient'
<i>kahr</i> 'distress'	<i>kahrı</i> 'his/her distress'	<i>kahrol-</i> 'be damned'

In the rare cases where a root with an epenthetic vowel is followed by an unstressable suffix (4.3.2) beginning with a vowel, e.g. the group 2 person marker *-(y)Im* (8.4), the epenthetic vowel is retained for purposes of stress; thus *nehrim* 'my river' but *nehirim* 'I am a river' (poetic).

2.4 SHORT/LONG VOWEL ALTERNATIONS

In a number of stems which have 'a', 'u' or 'i' in the final syllable, these vowels are replaced with their long counterparts /a:/, /u:/ and /i:/ when a suffix beginning with a vowel is attached:

<i>meram</i> 'plight'	<i>mera:mını</i> 'your/his/her plight' (ACC)
<i>hukuk</i> 'law'	<i>huku:ken</i> 'legally'
<i>zaman</i> 'time'	<i>zama:nım</i> 'my time'
<i>zemin</i> 'ground'	<i>zemi:ni</i> 'the ground' (ACC)

As in gemination (2.2) and in most cases of epenthesis (2.3), the alternation of short vowels with their long counterparts occurs in words of Arabic origin, in this case those which originally contain a long vowel. These words have to be learned individually, as there is no indication in the roots that they contain a long vowel. This process can also take place across word boundaries when such words are followed by an auxiliary verb beginning with a vowel (*et-* ‘do’ or *ol-* ‘be’ (13.3.2)):

merak ‘curiosity’ *mera:k et-* ‘be curious’
emin ‘sure’ *emi:n ol-* ‘be sure’

Short/long vowel alternation does not affect proper nouns that are derived from common nouns with long vowels:

murat ‘wish’ → *mura:du* ‘his/her wish’
Murat ‘Murat’ (a name) → *Murat’ı* ([murat^hI] or [muradI]) ‘Murat’ (ACC)

2.5 æ/e ALTERNATION

[æ], which is a lowered allophone of /e/, does not occur in environments where it is followed by a consonant+vowel sequence (1.1.2.1). In cases where a stem or suffix has [æ] but is followed by a consonant+vowel sequence as a result of (further) suffixation, this [æ] is replaced by [e]:

gel- ‘come’ [jæ] [jældim] ‘I came’ [jelis] ‘s/he comes’
evler ‘houses’ [evlæɾ] [evlærde] ‘in (the) houses’ [evlerim] ‘my houses’
sen ‘you’ [sæn] [sænde] ‘on you’ [senin] ‘your’

2.6 ALTERNATION OF ‘a’, ‘e’, ‘u’ AND ‘ü’ WITH ‘ı’ AND ‘i’

In the spoken language, some suffixes which conjoin to a stem by means of the consonant ‘y’ (6.1.3) may affect the pronunciation of a preceding ‘a’, ‘e’, ‘u’ or ‘ü’. The presence of ‘y’ often causes these vowels to be pronounced as ‘i’. Alternatively, ‘a’ and ‘u’ can be pronounced as ‘ı’. The suffixes that most commonly cause such a change are the suffix *-(y)AcAK* (8.2.3.3, 8.5.1.1), the participle suffix *-(y)An* (8.5.2.1), the adverbial suffix *-(y)IncA* (8.5.2.2) and the combination of the optative suffix with the 1st person optative marker: *-(y)AyIm* (8.2.3.1, 8.4). In the case of the verb roots *de-* ‘say’ and *ye-* ‘eat’, the change is reflected in the orthography:

de- ‘say’ *di-yen* (say-PART) ‘(the one) who says’
ye- ‘eat’ *yi-yecek* (eat-FUT) ‘s/he will eat’

In most cases, however, only the pronunciation is affected:

<i>atla-</i> ‘jump’	<i>atlayan</i> (jump-PART) ‘(the one) who jumps’, pronounced [atˈlaːyan], [atˈɭjan] or [atlijan]
<i>özle-</i> ‘miss’	<i>özleyince</i> (miss-CV) ‘upon missing’, pronounced [özˈleːjindʒe] or [özˈliːndʒe]
<i>oku-</i> ‘read’	<i>okuyacak</i> ‘s/he is going to read’, pronounced [okˈh uɟzakˈh] or [okˈh iɟzakˈh]
<i>üşü-</i> ‘be cold’	<i>üşüeyim</i> ‘let me be cold’, pronounced [üşiːm] [üşijejim]

Note that the effect of ‘y’ on a previous vowel can result in the violation of vowel harmony (e.g. [atliyan] above).

Inflectional suffixes which end in ‘a’ or ‘e’ also tend to be affected by a following ‘y’. For example, the vowel of the negative suffix *-mA* is usually replaced (in pronunciation) with a high vowel when followed by a suffix beginning with ‘y’:

atlama- ‘not jump’ *atlamayabiliyorum* (jump-NEG-PSB-IMPF-1SG) ‘I [may or] may not jump’, pronounced [atlamajabilijorum]/[atlamıjabilijorum]/ [atlamijabilijorum]

The imperfective suffix *-(I)yor* has a similar effect on the final ‘a’ or ‘e’ of the stem it attaches to; see 8.2.3.3.

3

VOWEL HARMONY

Vowel harmony is a phonological process which determines what vowel will appear in all but the first syllable of a word. In roots with more than one syllable, the second vowel harmonizes with the first one:

kabak ‘marrow’ *etek* ‘skirt’
uzak ‘far’ *ipek* ‘silk’

Similarly, when a suffix is attached to a stem, it harmonizes with the properties of the vowel in the preceding syllable, irrespective of whether the stem is of native or foreign origin:

kuş-lar ‘birds’ *ev-ler* ‘houses’
puma-lar ‘pumas’ *otobüs-ler* ‘buses’

After describing the types of vowel harmony in 3.1, we discuss how vowel harmony operates in suffixes (3.2) and in roots (3.3). In 3.4 exceptions to vowel harmony are given.

3.1 TYPES OF VOWEL HARMONY

As a result of vowel harmony, only the following sequences are permissible in native Turkish words:

	‘a’	can only be followed by	‘a’ or ‘ı’
<i>Back vowels</i>	‘ı’	can only be followed by	‘a’ or ‘ı’
	‘o’	can only be followed by	‘a’ or ‘u’
	‘u’	can only be followed by	‘a’ or ‘u’
	‘e’	can only be followed by	‘e’ or ‘i’
<i>Front vowels</i>	‘i’	can only be followed by	‘e’ or ‘i’
	‘ö’	can only be followed by	‘e’ or ‘ü’
	‘ü’	can only be followed by	‘e’ or ‘ü’

Vowel harmony in Turkish is a combination of two kinds of harmonization process. One of these is **fronting harmony**, which is the assimilation of a vowel with the vowel in the preceding syllable in terms of frontness. A front vowel can only be followed by a front

vowel and a back vowel can only be followed by a back vowel, as in *aç-ıl-dı* ‘[it] was opened’, *güç-tü* ‘[it] was difficult’, *böl-üm* ‘part’, *düş-en* ‘falling’.

The other type of harmony process is **rounding harmony**, which is the assimilation of a vowel with the vowel in the preceding syllable in terms of roundedness. Unless it is in the first syllable of a word, a rounded vowel occurs only when it is preceded by another rounded vowel. (For exceptions see 3.3.) Roundedness is thus a property which is copied from the rounded vowel of the previous syllable. This process only affects suffixes and clitics with high vowels. Some examples are *üz-ül-dü-nüz* ‘you became sad’, *sor-ul-ur* ‘it is asked’, *öv-ün-dük* ‘we boasted’.

The vowels ‘o’ and ‘ö’ only occur in the initial syllable of a word, except in loan words such as *lodos* ‘south-westerly gale’, *otobüs* ‘bus’ and *protokol* ‘protocol’.

3.2 VOWEL HARMONY IN SUFFIXES AND CLITICS

A handful of exceptions aside (see 3.4), vowel harmony operates in all suffixes and clitics, irrespective of whether these are attached to words of native or foreign origin. In terms of vowel harmony, there are two types of suffix in Turkish, I-type and A-type. In this chapter, we use the term ‘suffix’ as a cover term for suffixes proper and clitics (Chapter 11).

3.2.1 VOWEL HARMONY IN I-TYPE SUFFIXES

The vowels of I-type suffixes are high, but they get their other features (i.e. frontness and roundedness) from the preceding vowel. Fronting and rounding harmonies determine whether the vowel in this type of suffix will be ‘i’, ‘ı’, ‘ü’, or ‘u’ when affixed to a particular word. For example, a stem with a front unrounded vowel combines with the form which contains the front unrounded vowel ‘i’, and a stem with a back rounded vowel combines with the form with the back rounded vowel ‘u’. When an I-type suffix is attached to a root or stem:

‘ı’ is selected if the preceding vowel is ‘ı’ or ‘a’	‘i’ is selected if the preceding vowel is ‘i’ or ‘e’
<i>kız-ın</i> ‘your daughter’	<i>diz-in</i> ‘your knee’
<i>baş-ın</i> ‘your head’	<i>el-in</i> ‘your hand’
‘u’ is selected if the preceding vowel is ‘u’ or ‘o’	‘ü’ is selected if the preceding vowel is ‘ü’ or ‘ö’
<i>burn-un</i> ‘your nose’	<i>yüz-ün</i> ‘your face’
<i>kol-un</i> ‘your arm’	<i>göz-ün</i> ‘your eye’

Examples of I-type suffixes are the genitive suffix *-(n)ın*, *-(n)in*, *-(n)un*, *-(n)ün*, the accusative suffix *-(y)ı*, *-(y)i*, *-(y)u*, *-(y)ü* and the evidential/ perfective suffix *-mış*, *-miş*, *-muş*, *-müştü*. The consonants and vowels in brackets are deletable (6.1.3). Capital letters indicate alternating sounds (6.1.2).

Stem	I-type suffix	Forms	Stem+I-type suffix
<i>çay</i> ‘tea’	<i>-(I)m</i> (1SG.POSS)	<i>-m</i> , <i>-ım</i> , <i>-im</i> , <i>-um</i> , <i>-üm</i>	<i>çay-ım</i> ‘my tea’

<i>su</i> ‘water’	<i>-lı</i> (ADJ)	<i>-lı, -li, -lu, -lü</i>	<i>su-lu</i> ‘watery’
<i>güzel</i> ‘nice’	<i>mi</i> (INT)	<i>-mı, -mi, -mu, -mü</i>	<i>güzel mi</i> ‘is it nice’
<i>sor-</i> ‘ask’	<i>-DI</i> (PF)	<i>-dı, -di, -du, -düş, -ti, -tu, -tü</i>	<i>sor-du</i> ‘s/he asked’

3.2.2 VOWEL HARMONY IN A-TYPE SUFFIXES

The vowels of A-type suffixes are unrounded and non-high, but are variable in terms of whether they are back or front. The choice of the appropriate vowel in an A-type suffix depends on whether the vowel in the syllable preceding it is front or back. A stem with a front vowel combines with the ‘e’ form of the suffix; a stem with a back vowel combines with the ‘a’ form. A-type suffixes are only affected by fronting harmony. The roundedness or unroundedness of the preceding vowel does not affect them. When an A-type suffix attaches to a root or stem:

‘a’ is selected if the preceding vowel is ‘a’, ‘ı’, ‘ö’ or ‘u’ ‘e’ is selected if the preceding vowel is ‘e’, ‘i’, ‘ö’ or ‘ü’

<i>hava-dan</i> ‘from the air’	<i>ev-den</i> ‘from the house’
<i>kız-dan</i> ‘from the girl’	<i>biz-den</i> ‘from us’
<i>yol-dan</i> ‘by the road’	<i>göl-den</i> ‘from the lake’
<i>şun-dan</i> ‘of this’	<i>tür-den</i> ‘of the type’

Examples of A-type suffixes are the plural suffix *-lar, -ler*, the dative suffix *-(y)a, -(y)e*, the conditional suffix *-sa, -se* and the future marker *-(y)acak, -(y)ecek*.

Stem	A-type suffix	Forms	Stem+A-type suffix
<i>tür</i> ‘type’	<i>-lar</i> (PL)	<i>-lar, -ler</i>	<i>tür-ler</i> ‘types’
<i>yık-</i> ‘destroy’	<i>-ma</i> (NEG)	<i>-ma, -me</i>	<i>yık-ma</i> ‘don’t destroy’
<i>gelenek</i> ‘tradition’	<i>-sal</i> (ADJ)	<i>-sal, -sel</i>	<i>gelenek-sel</i> ‘traditional’

3.3 VOWEL HARMONY IN ROOTS

Vowel harmony operates in native roots, e.g. *kabak* ‘marrow’, *oda* ‘room’, *uzak* ‘far’, *erik* ‘plum’ and *inek* ‘cow’. With only a few exceptions (3.4 (i)), fronting harmony occurs in all native roots.

As for rounding harmony, again the majority of native words display this, but there are a few cases where the vowel in the second syllable is rounded despite the fact that the preceding vowel is not. This is usually the result of an intervening labial consonant (‘p’, ‘b’, ‘f’, ‘v’ or ‘m’): *savun-* ‘defend’, *tavuk* ‘chicken’, *kabuk* ‘shell’, ‘skin’.

3.4 EXCEPTIONS TO VOWEL HARMONY

(i) A few native roots, such as *anne* ‘mother’ and *elma* ‘apple’, and stems which contain invariable suffixes, such as *kardeş* ‘sibling’ are non-harmonic.

(ii) Compounds (some of which are written as a single word, see Chapter 10) are non-harmonic: *bugün* ‘today’, *keçiboynuzu* ‘carob’, *Karagöz* (a shadow theatre character).

(iii) Loan words often violate the rules of vowel harmony, e.g. *kitap* ‘book’, *kalem* ‘pencil’, *lale* ‘tulip’, *penaltı* ‘penalty’, *fasulye* ‘bean(s)’, *marul* ‘lettuce’, *masum* ‘innocent’, *jaluzi* ‘Venetian blind’ and *lobi* ‘lobby’.

(iv) The vowel of a suffix may get harmonized as a front vowel even where a loan word does not have a front vowel in the last syllable:

<i>hakikat-siz</i>	(truth-ADJ)	‘disloyal’
<i>bahs-i</i>	(topic-ACC)	‘the topic (ACC)’
<i>harb-in</i>	(war-GEN)	‘of the war’
<i>kalp-ler</i>	(heart-PL)	‘hearts’

This happens regularly in loan words that end in a palatal ‘l’:

<i>gol-ü</i>	(goal-3SG.POSS)	‘his/her goal’
<i>etol-den</i>	(scarf-ABL)	‘from the scarf’
<i>hal-im</i>	(condition-1SG.POSS)	‘my condition’

Loan words that behave in this way appear in the dictionary as *hakikat(-ti)*, *gol(-lül)*, etc.

(v) Suffixes and prefixes of foreign origin are invariable:

-izm: *Şamanizm* ‘Shamanism’
 -en: *tamamen* ‘completely’
 anti-: *antidemokratik* ‘antidemocratic’
 bi-: *bihaber* ‘unaware’, ‘ignorant’

(vi) A few native suffixes, or parts of suffixes, are invariable:

- (a) The second vowel in the bound auxiliaries *-(y)Abil*, *-(y)Iver*, *▽-(y)Agel*, *▽-(y)Adur*, *▽-(y)Akai*, and *▽-(y)Ayaz* (8.2.3.2): *kalkabildi* ‘s/he managed to stand up’; the non-deletable vowel of the imperfective suffix *-(I)yör* (8.2.3.3): *görüyorum* ‘I see’; the converbial marker *-(y)ken* (8.5.2.2): *bakmışken* ‘having looked’
- (b) The vowels in the following derivational suffixes (7.2.2.2):

-gen: *altıgen* ‘hexagon’
 -gil: *halamgil* ‘my aunt and her family’
 -(I)mtrak: *pembemtrak* ‘pinkish’
 -leyin: *sabahleyin* ‘in the morning’

(c) The suffix *-ki* (8.1.4) optionally undergoes vowel harmony after *gün* ‘day’ and *dün* ‘yesterday’: *dünki/dünkü* ‘yesterday’s’.

(vii) The following clitics are invariable (11.1): *bile*, *ki*, *ya*, *ile* and *ise*: *baktım ki* ‘upon seeing’, *söyledim ya* ‘but I have said [it]’, *Korhan ile* ‘Korhan and...’, *bunlar ise* ‘as for these’.

See also 2.6.