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PHONOLOGY

Kannada, like most other Dravidian languages, has a phonological system that contains a number of significant contrasts not found in other languages. The most striking differences are the existence of retroflex (sometimes referred to as domal or cerebral) consonants, and the contrast between long and short vowels. In addition, Kannada also exhibits consonantal contrasts borrowed from Sanskrit or Indo-Aryan, especially the aspirated series, both voiced and voiceless; it also has borrowed from Indo-Aryan both retroflex and apico-palatal sibilants.

SK tends to eliminate the aspirated consonants and the sibilant contrasts to some extent; but in many dialects it exhibits consonants such as *f* and *z*, and vowels such as *a* [æ] and *ɔ* (primarily in Urdu or English loan words such as *fīzu* 'fees', *bānku* 'bank', and *byar* 'lawyer'). Uneducated speakers tend to substitute other native Kannada sounds for these borrowed sounds.¹ For example, *bānku* (bank) is often spelled and pronounced [byāṅk], even by educated people.

1.1. **Vowel sounds.** The basic Kannada vowel system consists of five long and five short vowel phonemes. Diphthongs *ai* and *au* also occur, but they may be considered to consist of *a+y* and *a+v* respectively. In addition, *a* and *ɔ* may occur in foreign loan words (see 1.0).

The vowels of SK, along with their equivalents in Kannada script, except for *ae* and *ɔ* (see 1.1.3), are as follows:

| | | Front | Central | Back |
|------|-------|---------------|-------------|---------------|
| High | Short | <i>i</i> ಇ | | <i>u</i> ಉ |
| | Long | <i>ii</i> ಈ | | <i>uu</i> ಊ |
| Mid | Short | <i>e</i> ಎ | | <i>o</i> ಒ |
| | Long | <i>ee</i> ಏ ಁ | | <i>oo</i> ಓ ಔ |
| Low | Short | | <i>a</i> ಅ | |
| | Long | | <i>aa</i> ಆ | |

The Kannada alphabetic ordering of vowels is: *a*, *aa*, *i*, *ii*, *u*, *uu*, *e*, *ee*, *o*, *oo*. Note that the Kannada letters used for the borrowed sounds *ae* and *ɔ* are those of *ee* and *aa* respectively, with the exception that borrowed words with *æ* are often written with *yaa*, as noted above.

1.1.1. High vowels. The high vowels of Kannada are short *i* and *u*, and long *ii* and *uu*. The front vowels *i* and *ii* are preceded by a trace of a *y* glide, and the back vowels *u* and *uu* by a *v* glide, in initial position following a pause.

i is a short high front unrounded vowel that occurs initially, medially, and finally. As with many of the other short vowels, it is lower and more lax in initial and medial than in final position, and even more lax before a geminate consonant. In final position *i* is higher and more tense, but not quite cardinal.

ide [ʏiðe] 'it is' *biDi* [biɖi] 'leave'
illa [ʏilla] 'no, not'

ii is a long high front unrounded vowel, and occurs in initial and medial position. In final position it is rare, resulting usually from morphophonemic leveling out of some other vocalic sequence.

ii [i:] 'this' *iiiga* [ʏi:ga] 'now'
niivu [ni:wu] 'you'
iddii [ʏiddi:] 'you (sing.) are' (< LK *iddiye*)

u is a short back rounded vowel that is low-high in initial and medial position, and high in final position.

uppu [wUppu] 'salt' *kuDi* [kUdĩ] 'drink'

Some grammarians describe final *u* as slightly unrounded (Rajapurohit 1975: 92), but many speakers stigmatize this pronunciation. The amount of unrounding may vary depending on whether it is preceded by a rounded or unrounded vowel.

uu is a long high back rounded vowel, and occurs in initial and medial positions. In final position it is rare, except as the conjunctive particle *-uu*, and then it usually is accompanied by a rising or emphatic intonation.

uTa [wu:tɑ] 'food' *muuru* [mu:ru] 'three'
avanuu [əβənu:] 'he, too'

1.1.2. Mid vowels. The mid vowels of Kannada are front vowels *e* and *ee*, and back vowels *o* and *oo*. In initial position following a pause, all words beginning with *e* and *ee* in Kannada have an automatic *y* glide before them; and initial *o* and *oo* are preceded by a *v* glide, phonetically [w] or [β].

In some dialects, the quality of mid vowels is affected by the following vowel; they may be slightly lower if the following vowel is a low vowel, or slightly higher if the following vowel is a mid or high vowel (Rajapurohit 1975b:91-92).

e is a short unrounded vowel that occurs in initial, medial, and final position. In nonfinal position it is generally [ɛ], similar to the 'e' in English 'bed'; finally it is phonetically high-mid central.

elli [yɛllĩ] 'where' *bele* [bɛlɛ] 'price'
naaLe [na:lɛ] 'tomorrow'

ee is a long mid-high front unrounded vowel that occurs in initial and medial, but rarely in final position except with "expressive" lengthening of the emphatic particle *-ee*, with a difference in intonation as well.

eenu [yc:nu] 'what' *beeku* [bc:ku] 'is needed'
illee [Yulle:] 'right here'

o is a short back rounded vowel that is phonetically low-mid in initial and medial positions, and mid in final position.

ondu [wɔnɖu] 'one' *gottu* [gɔttu] 'is known'
togo [tɔgo] 'take'

oo is a long mid back rounded vowel that occurs in all positions, but in final position is usually a case of the dubitative clitic *-oo* (4.11.3).

ooDu [wo:ɖu] 'run' *nooDu* [no:ɖu] 'see'
yaaroo [ya:ro:] 'someone or other'

1.1.3. **Low vowels.** The low vowels of SK are *a* and *aa*, with *æ* and *ɔ* found in some loan words.

a is a short central unrounded vowel that in initial and medial position is phonetically [ə], like the 'u' in English 'but'. In final position, however, it is low.

adu [əɖu] 'that thing' *avanu* [əβənu] 'he'
mara [məra] 'tree'

aa is a long low central unrounded vowel that occurs in all positions, although in final position it would be found only in monosyllables or as the interrogative suffix *-aa* (see 4.3).

aagu [a:gu] 'become' *maadu* [ma:ɖu] 'make'
baa [ba:] 'come'

æ is a mid-low front unrounded long vowel that occurs primarily in loan words, but also in rare instances in native Kannada words. For some speakers *æ* would be replaced by *yaa* or *ee* and by ೞ or ೞ in orthography.

bængu [bæŋku] ~ [be:ŋku] 'bank'
hæge [hægE] ~ [he:gE] 'how'

ɔ is a mid-low back rounded long vowel that occurs only in loan words. Some speakers may replace it with *aa* both in SK and in orthography.

ɔyar [ɔyər] ~ [la:yər] 'lawyer'
kɔfi [kɔfi] ~ [ka:fi] 'coffee'

1.1.4. **Other vowels.** LK has some other vowels, used mainly for representing sounds in certain Sanskrit loan words (such as vocalic [ɪ]), but these are not found in SK. In the Dharwar dialect, schwa

(a mid-central vowel [ə] akin to the final sound of English 'sofa') sometimes contrasts minimally with *a*, especially before an originally high vowel. Since this dialect also has a rule that raises LK final *-e* to *i*, forms can then come to contrast:

| LK | EARLIER DHARWAR | PRESENT-DAY DHARWAR |
|--------------------|-----------------|---------------------|
| <i>kari</i> 'fry' | *[kəri] | <i>kəri</i> |
| <i>kare</i> 'call' | *[kare] | <i>kəri</i> |

In this dialect *e* may also be lowered to [æ] when a nonhigh vowel follows; when that *-e* is raised in final position by the afore-mentioned rule, [æ] may come to contrast with *-e*. (Bright 1966b: 317; Hiremath 1961:1-10). Since the Dharwar dialect is not considered standard except in northern Karnataka, we will not consider these vowels to be part of the inventory of SK as described here.

1.2. Consonants. As mentioned above (see 1.0), Kannada has a native Dravidian inventory of consonants, with a superimposed system of aspirated consonants and supplementary sibilants borrowed from Indo-Aryan, and with *f* and *z* borrowed from Urdu and reinforced by English loans. In SK these borrowed phonemes tend to be replaced by similar native phonemes (e.g., *f* may be replaced by *ph* or *p*, *z* by *j* or *s*, aspirates by nonaspirates, etc.).

The consonants of SK, with their equivalents in Kannada script, are as follows:

STOPS AND NASALS

| | Voiceless | | Voiced | | |
|-----------|-----------------|-------------------|-----------------|-------------------|-----------------|
| | Unaspirated | Aspirated | Unaspirated | Aspirated | Nasal |
| Velar | <i>k</i> ಕ್ | <i>kh</i> ಖ್ | <i>g</i> ಗ್ | <i>gh</i> ಘ್ | <i>ŋ</i> (ṅ) ಙ್ |
| Palatal | <i>c</i> ಚ್ | <i>ch</i> ಛ್ | <i>j</i> ಜ್ | <i>jh</i> ಝ್ | <i>ñ</i> ಞ್ |
| Retroflex | <i>T</i> (ʈ) ಠ್ | <i>Th</i> (ʈʰ) ಠ್ | <i>D</i> (ɖ) ಡ್ | <i>Dh</i> (ɖʱ) ಡ್ | <i>N</i> (ṇ) ಣ್ |
| Dental | <i>t</i> ತ್ | <i>th</i> ತ್ | <i>d</i> ದ್ | <i>dh</i> ಧ್ | <i>n</i> ನ್ |
| Labial | <i>p</i> ಪ್ | <i>ph</i> ಫ್ | <i>b</i> ಬ್ | <i>bh</i> ಭ್ | <i>m</i> ಮ್ |

GLIDES, SIBILANTS, FRICATIVES, LATERALS, AND CONTINUANTS

| | Glides (Voiced) | Sibilants (Voiceless) | (Voiced) | Fricatives (Voiceless) | Laterals (Voiced) | Continuants (Voiced) |
|-------------------|--------------------|--------------------------|-------------|---------------------------|----------------------|-------------------------|
| Pharyngeal | | | | <i>h</i> ಹ್ | | |
| Retroflex | | <i>S</i> (ʃ) ಸ್ | | | <i>L</i> (l) ಲ್ | |
| Apico- palatal | <i>y</i> ಯ್ | <i>sh</i> (ʃ) ಶ್ | | | | |
| Alveolar | | <i>s</i> ಸ್ | <i>z</i> ಜ್ | | <i>l</i> ಲ್ | <i>r</i> ರ್ |
| Labial | <i>v</i> ವ್ | | | <i>f</i> ಫ್ | | |

The above classification of glides, sibilants, and so forth, is untraditional in that it includes borrowed phonemes and classifies all sounds by position of articulation. This the Kannada alphabet does only with stops and nasals. The Kannada alphabetic ordering of the stops and nasals is given in the preceding chart, reading the horizontal rows consecutively; the order of the other consonants (following the final nasal, *m*) is: *y*, *r*, *l*, *v*, *sh*, *S*, *s*, *h*, and *L*.

Alternative transcriptions used by some other authors are given in parentheses; however, we will not use them except where they converge with standard phonetic transcription (in which case they will appear in brackets). Note that the Kannada letters used for *z* and *f* are the same as those for *j/s* and *ph* respectively, sometimes modified with underdots.

Phonetically, all medial geminate consonants are twice as long as a single consonant when following a short vowel; after a long vowel, they are longer than a single consonant but shorter than a geminate following a short vowel. Voiced geminate consonants do not usually occur after a long vowel, and voiceless geminates following a long vowel are often the product of some contraction or deletion process, or are in a borrowed word.

saaku [sa:ku] (short *k*) 'enough'

cikka [tʃlka] (long *k*) 'small'

hookke ʃ (+ *hoogokke*) [ho:k•E] (half-long *k*) 'to go'

keeLLi (+ *keeLali*) 'let someone ask'

1.2.1. Velar consonants. The velar consonants, produced in the back of the mouth with the root of the tongue raised to touch the velum (soft palate) are *k*, *kh*, *g*, *gh*, and *ŋ* (ṅ).

k is a voiceless unaspirated velar stop, similar to the 'k' that follows 's' in English words such as 'skin'. The puff of air that follows initial 'k' in English, such as in 'kin', is not present in Kannada *k*.

kelavu 'some' *tiL-koo* 'understand'
maaDokke 'to do'

kh is a voiceless aspirated velar stop, with a stronger puff of air following the *k* than in words beginning with 'k' in English. *kh* is probably closer phonetically to the 'k+h' sequence in a word like 'pack-horse'. *kh* occurs primarily in loan words from Indo-Aryan, and many speakers replace it with nonaspirated *k*.

k(h)aNDita 'certainly' *shank(h)a* 'conch'

g is a voiced unaspirated velar stop, very similar to English 'g'.

gottu 'is known' *vagi* 'wash (clothes)'
beLagge 'morning'

gh is a voiced aspirated velar stop. It has no equivalent in English, except perhaps in a word like 'pigheaded'. *gh* occurs mainly in Indo-Aryan loan words and may be replaced by *g*.

g(h)aNTe 'hour' *sang(h)a* 'association'

ŋ is a velar nasal, similar to the 'ng' sequence in English words like 'sing'. In LK it occurs almost exclusively before other velar consonants, and is therefore not considered to be phonemic. In SK, however, it may occur before other consonants as the result of deletion of velar consonants (and vowels) that conditioned its occurrence before their deletion.

LK *hengasu* → SK *hengsu* [heŋsu] 'woman'

LK *angaDi* → SK *angDi* [aŋDi] 'shop'

Also, a nonvelar nasal may become [ŋ] if it comes to precede a velar consonant as the result of the deletion of some other sounds (Bright 1958:5).

LK *nanage* → SK *nange* [naŋge] 'to me'

Rather than adopting a so-called autonomous phonemic analysis (see note 4), this grammar will select basic forms that will make the occurrence of [ŋ] always predictable.

1.2.2. **Palatal consonants.** The palatal consonants, pronounced with the blade of the tongue (or sometimes the tip) raised to touch the hard palate (or even the alveolar ridge), are *c*, *ch*, *j*, *jh*, and *ñ*.²

c is a voiceless unaspirated blade-alveolar affricated stop, similar to the 'ch' in English words like 'church', but without aspiration. When geminate, the stopped portion of the consonant is lengthened, then released with affrication.

cikka 'small' *yoocisu* 'think'
huccu [hUt·ʃu] 'madness'

ch is a voiceless aspirated blade-alveolar affricated stop, not found normally in English except across morpheme boundaries in words like 'witch-hunt', and found in Kannada only in items borrowed from Indo-Aryan. Many speakers substitute *c* for *ch*.

c(h)atri 'umbrella'

j is a voiced unaspirated blade-alveolar affricated stop, similar to the 'j' in English 'judge'. As with *c*, in geminates the stopped portion is lengthened and released with affrication.

jaati 'caste' *raaja* 'king'
ajji [əɖ·ʒi] 'grandmother'

jh is a voiced aspirated blade-alveolar affricated stop, comparable in English only to the cluster of consonant sounds in 'bridge house'. It is found only in Indo-Aryan loan words in Kannada, where it is usually replaced by *j*.

j(h)aaDamaali 'scavenger'

ñ is a voiced nasal, usually only homorganic (articulated in the same position) with a following blade-alveolar stop, although some educated speakers have forms with *ñ* following a *j*, as in *jñāana* 'knowledge' and *jñāpaka* 'memory'. These will be treated as borrowings from LK. Otherwise, in SK it will be considered here as a positional variant of *n*.

pance [pəñtʃE] 'dhoti' *manju* [məñdʒu] 'fog'

1.2.3. **Retroflex consonants.** The retroflex (dorsal, cerebral) consonants, produced with the tip of the tongue turned back to touch the

hard palate behind the alveolar ridge, are *T(t)*, *Th(th)*, *D(d)*, *Dh(dh)*, and *N(n)*. These sounds do not have any English equivalents. As usual, in SK the aspirated sounds are generally replaced with their unaspirated counterparts.

Retroflex consonants do not ordinarily occur in initial position in native Kannada words, but do in some borrowed words.

Toopi 'hat' *Dabba* 'box'

In addition, English loan words containing alveolar 't' and 'd' are perceived as retroflex by most Kannada speakers, and occur almost always with retroflex articulation.

eNDu 'end' *hooTalu* 'hotel' *Tavnu* 'town'

T is a voiceless unaspirated retroflex stop.

uuTa 'food, meal' *buTTi* 'basket'

g(h)aNTe 'hour'

Th is a voiceless aspirated retroflex stop, occurring only in loan words.

shuNT(h)i 'ginger' *kaT(h)iNa* 'hard'

D is a voiced unaspirated retroflex stop in initial position or when geminated; intervocalically it is flapped.

biDu 'leave' *doDDA* 'big' *gaNDa* 'husband'

Dh is a voiced aspirated retroflex stop, occurring only in loan words or in onomatopoeic expressions.

gaaD(h)a (*nidre*) 'sound (sleep)' *Dham* 'bang'

N is a voiced retroflex nasal, phonemically distinct from *n* as both occur intervocalically, finally, and as geminates.

kaaNu 'seem' *haNNu* 'fruit'

heNTi (← *heNDati*) 'wife'

1.2.4. Dental Consonants. The dental consonants of SK, pronounced with the tip of the tongue pressed against the back of the upper front teeth, are *t*, *th*, *d*, *dh*, and *n*. The aspirated consonants are, as usual, often replaced by their unaspirated counterparts.

In English loan words, the English interdental affricates such as those found in 'think' or 'this' are often perceived as aspirated dentals, and are sometimes replaced by *th* and *dh* respectively.

thiy ~ *tij* 'thing' *thaenksu* ~ *teenksu* 'thanks'

t is a voiceless unaspirated dental stop. Unlike English 't', which is generally alveolar, Kannada *t* is pronounced with a perceptible interdental affricate offset [θ] after the dental stopped portion. This is similar to words in English where 'th' follows an alveolar stop, as in 'eighth'.

tappu [t^θɔppu] 'mistake' *hattu* [hət^θu] 'ten'

th is a voiceless aspirated dental stop, occurring mainly in loans from Indo-Aryan, and replaced by *t* by many speakers in SK.

deevast(h)aana 'temple' *kat(h)e* 'story'

d is a voiced unaspirated dental stop. Like *t*, it has an interdental offset [ð] in initial position and when geminate; however, intervocalically and after a nasal it is almost a pure fricative.

daari [d^ða:ri] 'way' *idde* [Yɪd^ðE] 'I was'
idu [YIðu] 'this thing'

dh is a voiced aspirated dental stop, occurring mainly in loans from Indo-Aryan, and usually replaced by *d* in SK.

nid(h)aana 'slow'

n is a voiced nasal that is phonetically homorganic with following consonants, but apico-alveolar in other positions (Bright 1958:4).

ondu [wɔṇḍu] 'one' *pance* [pɔṇtʂE] 'dhoti'
nanna [nɔṇna] 'my' *naanu* [na:nu] 'I'

1.2.5. Labial consonants. The labial consonants of SK, pronounced with both lips firmly closed, are *p*, *ph*, *b*, *bh*, and *m*. (The bilabial or labio-dental *v* and labio-dental *f* will be dealt with below; see 1.2.6.1-2.)

p is a voiceless unaspirated bilabial stop. Initially it occurs mostly in loan words, since historically initial **p* changed to *h* in Kannada sometime in the tenth century (Gai 1946:13).

paapa 'alas' *ippattu* 'twenty' *kempu* 'red'

ph is a voiceless aspirated bilabial stop, appearing mainly in loan words from Indo-Aryan, and sometimes in place of *f* in loans from Urdu and English. As with other aspirated consonants, it is often replaced by unaspirated *p*.

siita-p(h)ala 'custard apple'

b is a voiced unaspirated bilabial stop.

baa 'come' *habba* 'festival' *tumba* 'very much'

bh is a voiced aspirated bilabial stop. It occurs mainly in Indo-Aryan loan words, and is usually replaced by *b* in SK. However, in some instances it occurs in Dravidian items, where original **p* has changed to *h* and then is combined with a prefix.

b(h)aaSe 'language' *omb(h)attu* 'nine'

m is a voiced bilabial nasal consonant.

mane 'house' *tumba* 'very much' *amma* 'mother'

1.2.6. Other consonants. Up to now the Kannada alphabetic ordering has been followed in the presentation of the consonants. Due to the borrowing of sounds from other languages and to the lack of a phonetically logical order to the Kannada alphabet from here on (that is, Kannada follows the Sanskrit alphabetic order, with the Kannada sounds that are not found in Sanskrit being added at the end), this text departs from this order to present the sounds in a more linguistically sophisticated manner.

1.2.6.1. Glides. The Kannada glides are *y* and *v*. Glides are vowel-like consonants that occur either between two vowels or preceding or following a vowel. In Kannada, unlike some languages, two vowels do not coalesce when they occur together in adjacent morphemes; rather, a glide is inserted between them (see 1.3.5).

y is phonetically similar to *i*.

yaaru 'who' *ayya* 'sir' *payru* 'crop'

When front vowels occur in initial position, *y* is automatically inserted in front of them (see 1.1.1-2).

v is voiced, and is either labio-dental or bilabial. When followed by front vowels (*i*, *ii*, *e*, *ee*) it tends to be labio-dental [v]; before *a*

cases are identical to verb stems, with the addition of an enunciative *u* if the stem ends in a consonant. (Exceptions to this are *baa* 'come', *taa* 'give', and *koo* 'reflexive', which have the irregular stems *bar-*, *tar-*, and *koLL-* respectively.) The verb stem is a nonfinite form to which present tense markers, infinitive markers, and several other grammatical forms are added.

3.1.1. Past verb stems. In addition to simple verb stems, Kannada also has past verb stems that are used in forming the past tense, past participles, conditionals, and some other constructions. Past stems also form the base to which contingent PNG markers are added.

Past verb stems are not regular overall, but the majority are formed by adding the past marker *-id-* (see 3.4.3) to the verb stem. (The *d* of these past stems is deleted in several constructions; see rules for individual constructions.) Those past stems not formed with *-id-* are formed in various semiregular or irregular ways (see 3.4.3.1-8). These forms may be found in a Kannada-English dictionary (e.g., Ziegler 1929).

3.2. The infinitive. The infinitive is a nonfinite form of the verb that occurs together with other verbs, auxiliary verbs (modals), negative morphemes, and some other forms. In Kannada there are really two kinds of infinitives, both added to the verb stem. One is basically stem + *-al*, and the other is stem + *-okke*.¹

The infinitive using *-al* is a historically older form, and is called the second infinitive in LK (Kittel 1903:122). Before consonants, the *l* of *-al* is usually deleted even in LK, and the *a* may also be removed in SK by the rule of short vowel deletion (see 1.3.6).

bar- 'come' + *-al* + *beeku* 'must' → *bar-beeku* 'must come'
(see 3.6.1)

bar- 'come' + *-al* + *-i* 'optative' → *barli* 'let (someone) come'
(see 3.3.2)

bar- 'come' + *-al* + *illa* 'negative' → *barlilla* 'didn't come'

niv̄v̄ ñ pustak oodl-ee beeku 'you must definitely read this book'

1 2 3 4 5 6 1 6 5 4 2 3

(Upadhyaya and Krishnamurthy 1972:142)

and *aa* and consonants it is bilabial with slight rounding [β]; and preceding back vowels (*u, uu, o, oo*) it is bilabial with stronger rounding [w] (Bright 1958:5).

viSa [vɪʂa] 'poison' *vaara* [βa:ra] 'week'
haavu [ha:wu] 'snake'

When back vowels occur in initial position, they are automatically preceded by a *v* glide, phonetically [w] (see 1.1.1-2).

1.2.6.2. Sibilants and fricatives. The Kannada sibilants are *S(s)*, *sh(ś)*, *s*, and *z*; and the fricatives are *h* and *f*.

S is a voiceless retroflex sibilant, found mainly in words borrowed from Indo-Aryan.

Sooki 'fashionable' *b(h)aaSe* 'language'
varSa 'year'

sh is a voiceless apico-palatal sibilant, found in borrowed words.

shabda 'sound' *deesha* 'country'
prashne 'question'

Bright notes that in some dialects *sh* is replaced by *S* (Bright 1958:4).

deesha → *deeSa* 'country'

In other dialects *sh* and *S* may be merged simply to *sh*, except in very careful speech or before retroflex consonants (Bright, personal communication). (In uneducated speech, *S*, *sh*, and *s* may all be merged to *s*.)

b(h)aaSe → *baase* § 'language'
deesha → *deesa* § 'country'

s is a voiceless alveolar sibilant.

sose 'daughter-in-law' *saaku* 'enough'
sneehita 'friend'

z is a voiced alveolar sibilant, occurring mainly in loan words from Urdu and English. It is often replaced by *j* and sometimes by *s* in rapid or casual speech.

k(h)azaane ~ *k(h)ajaane* 'treasury'
Dazan ~ *Dajan* 'dozen'
iizi ~ *iisi* ~ *üji* § 'easy'

h is usually a voiceless, though sometimes voiced (Bright 1958:5), glottal spirant, not unlike the 'h' in words like English 'harp'. It is before voiced consonants in clusters that it is sometimes voiced. In some dialects *h* may be completely absent (see preface).

hattu 'ten' *uuhe* 'conjecture'
bahLa 'very much'

f is a voiceless labio-dental fricative, found mainly in loan words from Urdu and English. Many speakers replace *f* with *ph* or *p*.

maafi ~ *maap(h)i* 'excuse'
k)fi ~ *kaafi* ~ *kaap(h)i* 'coffee'

1.2.6.3. Laterals and continuants. Modern SK has three consonants in this group: *L* (*l*), *l*, and *r*.³

L is a voiced retroflex lateral. It does not occur in initial position.

baaLe 'banana' *haLLi* 'village' *büLu* 'fall'

l is a voiced alveolar lateral.

laDDU 'a sweet' *bele* 'price'
nillu 'stand' *haalu* 'milk'

r is a voiced flapped or trilled (Bright 1958:5) continuant, made with the tip of the tongue against the alveolum.

reppe 'eyelash' *nore* 'foam'
uuru 'town' *karrage* 'blackish'

1.3. Morphophonemics. Morphophonemics (or sandhi) deals with changes that occur in sounds when two words or portions of separate morphemes (meaningful units) come together to form a new word, or when they are adjacent in a sentence. The kinds of changes that are possible are:

- a. Insertion of some other sound between the two adjacent sounds.
- b. Deletion of one or more sounds.

- c. Replacement of one or more sounds by another sound.
- d. Permutation (reordering) of adjacent sounds.

Most of the processes that operate on underlying forms⁴ (before morphophonemic rules apply) to produce SK surface forms have to do with coalescence of adjacent vowels, deletion of short vowels, and reduction of consonant clusters formed by these deletions. There are also more complicated changes that take place, and some of these will be considered in this section if they are fairly regular. More idiosyncratic processes will be treated as properties of individual morphemes or morpheme classes, and these will be handled in other sections (see sections 2 and 3, on the noun and verb, respectively).

1.3.1. Morphophonemics of Sanskrit loan words. Many loan words from Sanskrit into Kannada do not follow the Kannada morphophonemic rules; rather, they use Sanskrit rules. For example:

deeva 'god' + *aalaya* 'place' → *deevaalaya* 'temple'

whereas two Kannada morphemes with the same adjacent vowels would follow a different rule, and appear differently on the surface.

A complete statement of Sanskrit sandhi rules is out of place here. For these the reader may consult a Sanskrit grammar or a traditional grammar of LK (e.g., Kittel 1903).

1.3.2. Retroflex assimilation. When a retroflex nasal (*N*) and a nonretroflex consonant come together, the tendency is for the nonretroflex consonant (especially if it is a dental) to assimilate to retroflexion.

A good example of this process is when the past tense marker *-d-* is added to verbs with stems ending in *N*.

kaaN- 'see' + *-d-* 'past' → *kaND-* 'saw'

In some other cases, a stem-final *L* may change to *N* (by another rule), in which case *-d-* will also retroflex.

koL- 'obtain' + *-d-* 'past' → *koN-* + *-d-* → *koND-* 'obtained'

However, most verbs ending in *L* do not follow the example of *koL-* (see 3.4.3.3; also see Biligiri 1959 and Schiffman 1968 for various attempts to deal with these so-called irregular past forms).

1.3.3. **Enunciative vowels.**⁵ Many Kannada noun and verb stems end in consonants; but Kannada rules require that all words (except loan words ending in *n* or *r*) must end in a vowel before a pause. For this reason, an enunciative vowel, usually *u*, is added to consonant-final stems before a pause.

naanu+u 'I' *kaNN+u* 'eye' *koLL+u* 'obtain'
naan 'bread' (borrowed from Hindi-Urdu, so no enunciative *u*
 is added)

In borrowed words that do not end in *n* or *r*, this addition of enunciative *u* is more regular, since such words often lack a final vowel in the donor language.

bass+u 'bus' *bukkk+u* 'book' *Taap+u* 'top'

If the final consonant that occurs before a pause is *y*, enunciative *u* is replaced by *i*.

naay+i 'dog'

When words ending in consonants do not precede a pause, or precede another vowel, enunciative *u* is not present.

avara hesar(u) een(u) → avar hesr eenu? 'What is his name?'

(In the above example, short *a* is deleted by another rule; see 1.3.6.)

1.3.4. **Consonant gemination.** As mentioned earlier (see 1.2), in Kannada there seems to be a complementary distribution (nonoverlapping of the environments of occurrence) between morphemes with the structures (C) \bar{V} C and (C)VC₁C₁; that is, geminate consonants do not usually follow long vowels, short vowels are often followed by geminate consonants (except in Sanskrit loan words), and geminate consonants following long vowels are phonetically short.

Because of these distributional facts in Kannada, loan words with short vowels and a single final consonant will usually have the final consonant geminated, and an enunciative vowel (see 1.3.3) added.

kapp → kappu 'cup' *braS → braSSu* 'brush'

All consonants can geminate in this fashion except *r* (although geminate *r*'s can occur in some other contexts [Upadhyaya 1972:32]).

Therefore, final syllables of words with short vowels can usually be given with the underlying form (C)VC, and the gemination of the final consonant, plus the addition of enunciative *u*, are taken care of by these rules.

1.3.5. Glide insertion. It has already been mentioned that the glide *y* is automatically inserted before front vowels, and *v* before back vowels in initial position (see 1.1.1-2). These glides are also inserted between two vowels in certain environments in LK, and in slow or careful SK speech.

When words ending in front vowels (*i*, *ii*, *e*, *ee*) are followed by other words or morphemes beginning with another vowel, *y* is generally inserted. (Sometimes *n* may be inserted instead but the conditions governing its occurrence are not clear.)

mane 'house' + *-aa* 'question' → *maneyaa?* 'a house?'

mane 'house' + *-alli* 'in' → *maneyalli* 'in the house'

sari 'all right' + *-aa* 'question' → *sariyaa?* ~ *sarinaa?* 'all right?'

The conditioning environment for the insertion of *v* is following back or low vowels (*u*, *uu*, *o*, *oo*, *a*, *aa*) and preceding another vowel.

nija 'truth' + *-aa* 'question' → *nijavaa?* 'Is it true?'

1.3.5.1. Glide reduction. In casual speech, the sequences of vowels plus glide produced by glide insertion (see 1.3.5) contract to single long vowels in various ways. The sequences generally are reduced as follows: *iyV* → *ii*, *eyV* → *ee*,⁶ *uvV* → *uu*, and *avV* → *aa*.

daari 'way' + *-alli* 'locative' → *daariyalli* → *daariili* 'on the way'

mane 'house' + *-alli* 'locative' → *maneyalli* → *maneeli*

'in the house'

guru 'teacher' + *-a* 'genitive' → *guruva* → *guruu* 'teacher's'

mara 'tree' + *-an(na)* 'accusative' → *maravan(na)* → *maraan(na)*

'tree (acc.)'

Very few stems (except those borrowed) end in *o*, so the sequence *ovV* does not normally occur. However, a similar reduction does occur in some cases of the sequence of *ahu*, which is reduced to *oo*.

bahudu → *boodu* 'may'

The above statements need to be qualified somewhat, since there are other sequences that are similar in underlying form, but have different outcomes. For instance, the suffix *-uva* added to verb stems to make adjectival participles, and the sequence *-uvu-* found in LK verbal nouns, reduce to *oo* in our SK dialect, rather than the expected *uu*.

bar+uva 'coming' → *baroo* 'next' *ir+uva* → *iroo* 'being'
maad+uvudu → *maadoodu* '(the act of) doing'

This reduction is particularly common in the formation of the habitual and immediate future negatives, where *illa* 'negative' is added to the verbal noun.

baruvudu '(the act of) coming' + *illa* 'negative' → *baruvudilla* →
baroodilla 'will not come' (which, with further rules, be-
comes *baroolla* and even *barolla*)

It is evident that the rules governing these sequences have not been fully worked out here,⁷ but they will cover most cases of V+glide+V sequences encountered by the student. Since most final long vowels are shortened anyway (see 1.3.6.1) except for the cases noted, many of the above examples will be reduced further by subsequent rules.

1.3.6. Vowel deletion/reduction. Various writers (e.g., Ramanujan 1967; Bright 1970) have pointed out that the most noticeable difference between SK and LK is the deletion or extreme reduction of short vowels in SK when they follow the first syllable of a word. For example, vowel deletion (and consonant cluster reduction; see 1.3.7) operates on an LK sentence as follows:

LK *ondu uurinalli obba raaja idda* → SK *ond uurnall ob raaja idda*
'in a town there was a king'

In general, most short vowels following the first syllable of a word are deleted; or, if the deletion would lead to the formation of unacceptable consonant clusters (generally three or more consonants together, with a few exceptions), the vowels are reduced to an extremely short sound. In the case of reduction rather than deletion, it is extremely difficult to state a general rule specifying which vowels in a sequence are deleted entirely and which are reduced.⁸ In case of

doubt, the student is advised to use full or reduced vowels rather than deleting them completely.

1.3.6.1. Long vowel shortening. After glide reduction (see 1.3.5.1), long vowels (particularly when final) are shortened so that they are shorter than full long vowels, but generally a bit longer than short vowels.

irtüya → *irtii* [Yirtʰi•] 'you (sing.) are'
bartiini → *bartini* 'I come'

But when special interrogative, dubitative, or presuppositive intonation is superimposed on final long vowels, shortening does not take place.

1.3.7. Consonant cluster reduction and assimilation. SK has a rule that operates on the output of the short vowel deletion/reduction rule (see 1.3.6) to reduce clusters consisting of geminate consonants plus another consonant, and clusters of nasal plus homorganic consonant plus another consonant.

iddaru → *iddru* → *idru* 'he was'
toorisuttaane → *toorsttaane* → *toorstaane* 'he shows'
hengasu → *hengsu* → *heɣsu* 'woman'

Also, clusters of laterals plus preceding retroflex or dental consonants assimilate to the preceding articulation.

keeLali → *keeLli* → *keeLLi* 'let (one) ask'
maaDalilla → *maaDlilla* → *maaDLilla* 'didn't do'
iddaLu → *iddLu* → *idlu* 'she was'

(Bright 1970:143; Nayak 1967:71-2; Upadhyaya and Krishnamurthy 1972:133)

Once again, if in doubt the student is advised to leave in a consonant (and reduced vowel) rather than make an unacceptable deletion.

1.3.7.1. Stop insertion. After reduction of clusters of geminate laterals (*ll*, *LL*) plus *r*, a *D* is sometimes inserted between them.

ellaru → *ellru* → *elDru* 'all (people)'
kaLLaru → *kaLLru* → *kaLru* → *kaLDru* 'thieves'

1.3.8. Final vowel raising. In SK, and in some other dialects such as Shimoga, stem-final *e* is raised to *i*. This occurs mainly in verbs, although in Dharwar dialect it happens in nouns also (Bright 1970:143).⁹

kare → *kari* 'call' (homophonous with *kari* 'fry')
ole → *oli* 'like' (homophonous with *oli*, from *one* 'shake, winnow')

1.3.9. Vowel replacement. There is a tendency in SK for some short *i*'s and *a*'s in noninitial syllables to be replaced by *a* or [ī], respectively (Bright 1958:17).

bekkin mari → *bekkan mari* 'kitten'
 (day) *maaDisa* (*beeku*) → (day) *maaDis* (*beeku*) → (day) *maaDas*
 (*beeku*) '(you must please) come (in)'
neetag hooga → *nett[ī]g hoogu* 'go straight'

1.3.10. Summary. The above morphophonemic rules apply generally in the language, except where particular application is specified. Special rules that apply only in noun or verb morphology are discussed elsewhere (see sections 2 and 3). Unless otherwise noted, the preceding section relies heavily on Bright (1958 and 1970) for analysis, examples, and rule ordering.