CHAPTER I

PHONOLOGY

1.0 Introduction

The phonemes to be discussed in this section are: /t k b d g f s š z ž x ǧ ḥ h ' m n l r i a u * : + - ↓ ↑/.[1] In addition to these phonemes, the element # (see 1.6) is included in this section because of its influence on certain phonological processes.

1.1 Consonants

  1.11 /t/ includes the following sound types:
    [tʰ] released and slightly aspirated occurs in the environments /+tV/, /+t-V/, and /t+/. An example of this is found in the word [tʰibḥærtʰ] 'garden'.
    [t], released but unaspirated, occurs in /VtV/, /CtV/, /tC/, /VtC/, and /CtC/, e.g., [ætbir] 'pigeon', [ætʊrdin] 'back', [its] 'sleep'. It should be noted that the consonant in the last three environments may not be a nasal.[2]
    [t'], unreleased, occurs before nasals: e.g., [nt'nti] 'they'. This allophone may also occur as an alternant of [t] before other consonants in long sequences of rapid speech.
    [t], domal or emphatic, occurs with /*/. When it occurs before /*+/, it is unreleased. In other environments, however, it is released. This is the only allophone of /t/ that may occur in the environments /t*/ or /tVC*/.
    [t̤ʰ], a fortis allophone, occurs with /:/ in /t:/, /tC:/, or /tV:/. When the sequence is /V~Ct:+/, the aspiration is increased.[3]

  1.12 /k/ includes the following sound types:
    [kʰ], released and slightly aspirated, occurs initially before /a/ and before /+/, e.g., [kʰænun] 'fireplace'.
    [k], released but unaspirated, occurs in /Vka/.
    [kʸ] is slightly aspirated and palatalized. It occurs before /i/, e.g., [kʸimi] 'you'.

---

[1] The methods used in phonemic analysis are those described in Z. S. Harris's Methods in Structural Linguistics, pages 25-125. Certain typographical conventions are followed. Phonemes and phonemic transcriptions are placed between diagonal lines / /; allophones and phonetic transcriptions are enclosed in square brackets [ ]; the symbol ~ means "or". V = any vowel; C = any consonant. Translations are enclosed in single quotation marks.

[2] For additional data on consonantal release, see Appendix to Chap. I.

[3] Additional data is found in section 1.24 and the Appendix to Chap. I.

[k^W] differs from the preceding allophones because of the labialized release. It occurs before /u/. It may vary freely, however, with [k^h] and [k].

[ḳ], emphatic, occurs with /*/. When it occurs before /u/, there may be a labialized release.[1]

1.13 /b/ has few allophones. In borrowed words it occurs as a substitute for an original [p], e.g., /babor/ from Spanish vapor 'ship'.

[b] voiced, bilabial, released stop occurs before vowels and voiced consonants. Before /+/ it may occur unreleased, e.g., [kədub] 'lies'.

[b$_{vl}$], partially voiceless, occurs before voiceless consonants, e.g., [idub$_{vl}$t^h] 'it melted'. It also occurs in /sbV/.

[ḅ] occurs in the same environments as those given for the other fortis consonants.

1.14 /d/, like /b/, has few allophones.

[d], released, occurs before vowels and voiced consonants. Before /+/ it occurs as a free variant of [d^1]. It should be noted that it does not occur before nasals.

[d^1], unreleased, occurs before nasals and before /+/. In the latter position it may vary with [d].

[ḍ], domal, emphatic, occurs with /*/ or in /dV*/ or /dVC*/.

[ḍ] occurs with /:/ in the same environments as those given for other fortis consonants.

1.15 /g/ does not occur frequently.

[g], released, occurs before vowels, consonants, or /+/.

[g^W] has a slightly labialized release. It occurs before /u/, but it seems to vary freely with [g] in this position.

[ġ] the occurrence of this allophone is limited by the same conditions as those that limit the occurrence of other fortis consonants.

1.16 /f/. There are few restrictions on the occurrence of this phoneme. It occurs before vowels as well as before voiceless consonants It does not occur before voiced consonants without the introduction of [ə] (1.72) or /-/ (1.42). In /flV/ or /frV/, it may occur as [fə], or there may be a transposition of the vowel so that /i-frah/ 'he enjoyed' often occurs as /i-farh/.

---

[1]The description of the vocalic allophones (1.2) makes it possible to simplify the description of consonants with palatalized or labialized release. Because these allophones occur only before /i/ or /u/ respectively, and because /i/ and /u/ are known to consist of two components: vocalic and semi-consonantal, sequences in which the palatalized or labialized release occurs can be treated as sequences of /Ci/ or /Cu/.

[k^W] differs from the preceding allophones because of the labialized release. It occurs before /u/. It may vary freely, however, with [k^h] and [k].

[ḳ], emphatic, occurs with /*/. When it occurs before /u/, there may be a labialized release.[1]

1.13 /b/ has few allophones. In borrowed words it occurs as a substitute for an original [p], e.g., /babor/ from Spanish <u>vapor</u> 'ship'.

[b] voiced, bilabial, released stop occurs before vowels and voiced consonants. Before /+/ it may occur unreleased, e.g., [kədub] 'lies'.

[b$_{vl}$], partially voiceless, occurs before voiceless consonants, e.g., [idub$_{vl}$t^h] 'it melted'. It also occurs in /sbV/.

[ḅ] occurs in the same environments as those given for the other fortis consonants.

1.14 /d/, like /b/, has few allophones.

[d], released, occurs before vowels and voiced consonants. Before /+/ it occurs as a free variant of [d^ꝯ]. It should be noted that it does not occur before nasals.

[d^ꝯ], unreleased, occurs before nasals and before /+/. In the latter position it may vary with [d].

[d], domal, emphatic, occurs with /*/ or in /dV*/ or /dVC*/.

[ḍ] occurs with /:/ in the same environments as those given for other fortis consonants.

1.15 /g/ does not occur frequently.

[g], released, occurs before vowels, consonants, or /+/.

[g^W] has a slightly labialized release. It occurs before /u/, but it seems to vary freely with [g] in this position.

[g̣] the occurrence of this allophone is limited by the same conditions as those that limit the occurrence of other fortis consonants.

1.16 /f/. There are few restrictions on the occurrence of this phoneme. It occurs before vowels as well as before voiceless consonants. It does not occur before voiced consonants without the introduction of [ə] (1.72) or /-/ (1.42). In /flV/ or /frV/, it may occur as [fə], or there may be a transposition of the vowel so that /i-frah/ 'he enjoyed' often occurs as /i-farh/.

---

[1]The description of the vocalic allophones (1.2) makes it possible to simplify the description of consonants with palatalized or labialized release. Because these allophones occur only before /i/ or /u/ respectively, and because /i/ and /u/ are known to consist of two components: vocalic and semi-consonantal, sequences in which the palatalized or labialized release occurs can be treated as sequences of /Ci/ or /Cu/.

1.17 /s/ includes the following sound types:

[s̤] occurs with /:/ as do the fortis consonants already described.

[ṣ], like the sounds [ṭ ḍ ḳ] occurs with /*/ in the environments described for other emphatic consonants.

[s] is heard in environments other than those described above. It should be noted that when it occurs before a voiced consonant there is usually the introduction of [ə] or /-/.

1.18 /š/ seems to occur freely and with few restrictions that can be described here. It should be noted that like /s/ it occurs before voiced consonants with the introduction of [ə]. A fortis variant occurs in the environments given for other consonants of this type.

1.19 /z/ occurs freely.

[z̧], domal, emphatic occurs with /*/ and in the environments described for the other emphatic consonants.

[z] occurs with /:/.

1.110 /ž/. There are few restrictions on the occurrence of this phoneme. A variant, [ǯ], occurs initially, and frequently in /nž+/.

1.111 /x/, a voiceless, palato-velar spirant, has the following positional variants:

[xʸ] with slightly palatalized release occurs before /i/.

[xʷ] occurs before /u/. The labial release is not so clear as in [kʷ] or [gʷ]. Often the release is not detectable, so that this sound appears to vary freely with [x].

[x] occurs before consonants (except voiced stops), before vowels, and before /+/.

[x̤] occurs with /:/.

1.112 /g̱/ is a voiced palato-velar spirant.

[g̱ʸ], slightly palatalized, occurs before /i/.

[g̱ʷ] occurs before /u/. As in the case of [xʷ], the labialized release may be dropped, so that the sound is heard simply as [g̱].

[g̱] occurs in all environments except those just described.

1.113 /h/ does not occur frequently. It is found before vowels. When it occurs after /+/, it is preceded by [ə].

1.114 /ḥ/, a voiceless palato-velar spirant, occurs with few restrictions. When it occurs before consonants, there is a vocalic release similar to [ə] but differing slightly because it is whispered.

1.115 /ʻ/, a voiced pharyngeal spirant, apparently occurs only when preceded or followed by a vowel, i.e., in /+ʻV/, /VʻV/, /CʻV/, /VʻC/, and /Vʻ+/.

1.116 /r_n/ includes the following sound types:

[m] as a bilabial nasal occurs before vowels or before /+/ after a vowel or in / vmC/ (provided the consonant that follows is not a stop).

[m̩], syllabic, occurs in /+mC/ or /Cm+/.

[m˺], unreleased occurs before stops.

[mᵊ] occurs as a variant of [m̩] in /+mC/ or as a variant of /m/.

1.117 /n/ as a dental nasal occurs in /+nV/, / VnV/, / VnC/ (except where C = /k/ or /g/), / Vn+/ and /rn+/.

[n̩], syllabic, occurs in /+nC/, /Cn+/ and /CnC/: e.g., [n̩ta] 'he', [n̩t˺n̩ti] 'they'.

[nᵊ] with a short vocalic release occurs as a variant of [n̩] in /+nC/: e.g., [n̩t˺n̩ti] may occur as [nᵊt˺n̩ti]

[ŋ] occurs before /k/ or /g/: e.g., [iŋkr̩] 'he arose'.

1.118 /l/ occurs when preceded or followed by a vowel.

[l̩] syllabic occurs in /+lC/ or /Cl+/.

[lᵊ] with a short vocalic release alternates with [l̩].

[ɫ], slightly backed, occurs with /*/. If preceded by a consonant, it occurs as [ɫ̩].

1.119 /r/ includes a variety of trills.

[r₂] occurs in /+rV/. After /#/ it is preceded by a short glottal stop.

[r₁] occurs in / VrV/ or / VrC/ (provided the consonant is a stop) and before /+/ when there is no drop in tone.

[ɹ] occurs before fricatives and nasals. It also occurs before /+/ when there is a drop in tone.

[r̩] syllabic occurs in /+rC/. The syllabic quality of this allophon is due to [ᵊ] which always occurs with it. This [ᵊ] sometimes seems to be whispered and may be overshadowed by the trill.

[rˡ] a domal trill occurs with /*/.

1.2 Vowels

1.21 /i/ includes a variety of sound types.

[īy] occurs in /+iV/ or /+i-V/. It also occurs in / ViV/ or /CiV/. In some cases the initial component is shortened, so that it appears to vary freely with [y].

[i] occurs in /+iCV/, /Ci:/, /CiC:/, /Ci+/, /+i-C/. It should be noted that the following consonant may not be /g/, /x/, or /h/.

[iȳ] occurs as a variant of [i] in /+i-C/.

[ɪ] occurs in /CiC/ unless the second consonant is /g/, /x/ or /h/, or is followed by /*/. It also occurs before two consonants.

[ɨ] occurs with /g/, /x/, /h/, and in /iC */. It should be noted that [ɪ] and [ɨ] may be lowered slightly so that they approach the upper mid vowels.

1.22 /a/

[a] occurs before /+/. After /+/ it varies freely with [æ] before consonants.

[æ] occurs in /CaC/ (but not /CaC*/ or /CaC:/). It also occurs in /+aC/ as a free variant of [a].

[ǽ] approaches [a] and occurs before /i/ and /u/.

[ɛ] occurs in /aC:/ or /aCC/.

[ɑ] occurs with /*/.

1.23 /u/

[ůw] occurs in /+uV/ or /+u-V/. It also occurs in /VuV/ or /CuV/. The initial component is shortened, so that this sound often occurs as [w].

[uw̃] differs from the preceding allophone in that the initial component is not shortened, while the final component is, so that the sound may be heard as [u] in rapid speech. In slow speech, however, this is not the case, and the two components may be heard. Further evidence for the presence of [w] is given by the fact that the addition of an affix beginning with a vowel results in a lengthening of the [w]: e.g., [l̩mitru], [l̩mitruwæt].

[u] occurs in /+uC/ and /uC:/. It also occurs in /Cu:/ or /uC+/.

[ʊ] occurs in /CuC/ but not in /CuC*/.

[ʊˡ] differs from the preceding sound in that it is slightly lower and approaches [o]. It occurs with /*/.

1.3 Suprasegmental Components

1.31 /*/. This phoneme indicates a back position for certain consonants and all vowels (except [ə]).[1] It differs from the phonemes described above in that its domain extends over the entire syllable in which it occurs. In the phonemes previously described, the selection of allophones is determined by the phonemes immediately before or after. When /*/ occurs, however, not only the preceding consonant, but also the vowel and the consonant before that vowel, if any, are affected: e.g., [ad̩ɑd̩] 'finger'. In this word, both [d]'s are domal, and the vowel between them is a back vowel. Because this is the general structure of sequences containing an emphatic consonant, it may be said that there is an element which extends over the three phonemes in such manner that the point of articulation is further back. The domain of the phoneme /*/ may then be described more exactly as /CVC*/, and the example just given can be written /adad*/. It should be noted that not all consonants have special allophones occuring with this phoneme. Those that do are /t d k s z r l/. It should also be noted that in may cases /*/ may be dropped, so that many words have two forms: e.g., /g̩idad ~ g̩idad*/.

---

[1][ə] is, of course, non-phonemic. See Appendix to Chapter I, p.9.

AN OUTLINE OF

THE STRUCTURE OF SHILḤA

by

Joseph R. Applegate