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ILLUSTRATIONS OF THE IPA

Assamese

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The variety described here is representative of colloquial Assameseⁱ spoken in the eastern districts of Assam. Assam is a north-eastern state of India, therefore Assamese and creoles of Assamese like Nagamese are spoken in the different north-eastern states of Nagaland, Arunachal Pradesh, Meghalaya, and also the neighbouring country of Bhutan. Approximately 15 million people speak Assamese in India (see *Ethnologue*, Gordon 2005, which lists 15,374,000 speakers including those in Bhutan and Bangladesh). In the pre-British era (until 1826), the kingdom of Assam was ruled by Ahom kings and the then capital was based in the eastern district of Sibsagar and later in Jorhat. American missionaries established the first printing press in Sibsagar and in the year 1846 published a monthly periodical ‘*Arunodoi*’ using the variety spoken in and around Sibsagar as the point of departure. This is the immediate reason which led to the acceptance of the formal variety spoken in eastern Assam, (which roughly comprises of all the districts of Upper Assam). Having said that, the language spoken in these regions of Assam also show a certain degree of variation from the written form of the ‘standard’ language. As against the relative homogeneity of the variety spoken in eastern Assam, variation is considerable in certain other districts which would constitute the western part of Assam, comprising of the district of Kamrup up to Goalpara and Dhubri (see also Kakati 1962 and Grierson 1968). In contemporary Assam, for the purposes of mass media and communication, a certain neutral blend of

eastern Assamese, without too many distinctive eastern features, like /ɹ/ deletion, which is a robust phenomenon in the eastern varieties, is still considered to be the norm. The lexis of Assamese is mainly Indo-Aryan, but it also has a sizeable amount of lexical items related to Bodo among other Tibeto-Burman languages (Kakati 1962), and there are a substantial number of items borrowed from Hindi, English and Bengali in recent times.

The speaker of this passage is a 27-year-old female teacher in a prestigious middle school. Apart from her teaching activities she also speaks in public gatherings and other social events. She grew up in Jorhat and has lived there all her life.

Consonants

The following twenty consonants belong to the consonant inventory of the Assamese speakers represented by the speaker of the Assamese passage:

	Bilabial	Alveolar	Palatal	Velar	Glottal
Plosive	p b p ^h b ^h	t d t ^h d ^h		k g k ^h g ^h	
Nasal	m	n		ŋ	
Fricative		s z		x	h
Approximant		ɹ	j	w	
Lateral approximant		l			

Consonant	Transcription	Orthography	Gloss
p	paɭ	পাল	‘to rear’
p ^h	p ^h aɭ	ফাল	‘to split’
b	baɭ	বাল	‘male child’
b ^h	b ^h aɭ	ভাল	‘good’
t	taɭ	তাল	‘Palmyra tree’
t ^h	t ^h aɭ	থাল	‘plate’
d	daɭ	দাল	‘branch’
d ^h	d ^h aɭ	ধাল	‘shield’

k	kaɭ	কাল	‘time’
k ^h	k ^h al	খাল	‘ditch’
g	gaɭ	গাল	‘cheek’
g ^h	g ^h at	ঘাত	‘stroke’
ɽ	ɽam	ৰাম	‘Hindu God <i>Rama</i> ’
l	laɭ	লাল	‘red’
s	saɭ	ছাল	‘roof of a house’
z	zaɭ	জাল	‘net’
x	xaɭ	শাল	‘loom’
h	haɭ	হাত	‘hand’
m	maɭ	মাল	‘goods’
n	naɭ	নাল	‘handle’
ŋ	aŋuɽ	আঙুৰ	‘grape’
w	suwali	ছোৱালী	‘girl’
j	ijat	ইয়াত	‘here’

Syllable-final plosives /p/ /t/ /k/ are unreleased. Syllable-initial and syllable-final /t/ /t^h/ /n/, /d/, and /d^h/ are denti-alveolar or apico-alveolar depending on the preceding or following vowel. For instance, in /tɔɭɔt/ ‘down’ LOCATIVE, both the initial /t/ as well as the final /t/ are alveolar. While these segments are distinctly denti-alveolar in the presence of vowels which are high and front, for instance in a word like /titi/ ‘wet’ CONJUNCTIVE PARTICIPIAL they are definitely apico-alveolar when either the preceding or the following vowel is a back vowel.

In the production of /b/, very often a released [β] in the initial syllable onset position is noticed, as in [βɔtah] instead of [bɔtah] ‘wind’. Although aspiration is distinctive in all positions, there is considerable amount of de-aspiration in certain positions. Voiced aspirates in non-initial positions tend to lose their quality of breathiness. For instance, [bag^h] > [bag] ‘tiger’, [lab^h] > [lab] ‘profit’, and [xad^h] >

[xad] ‘desire/wish’. Among the voiceless aspirates, a distinguishing characteristic in the phonetics of Assamese is that of spirantisation, which is not observed for /p^h/ and /t^h/, but /k^h/ undergoes spirantisation to the extent that [x] and [χ] are frequently realised as allophones of /k^h/. Depending on the individual speaker and on the degree of carefulness of speech (fast speech/slow speech or formal speech/informal speech), /k^h/ can be pronounced anywhere from [k^h] to [χ] or [x]. [gak^hiɪ] > [gaχiɪ] > [gaxiɪ] ‘milk’, [ak^hɔɪ] > [aχɔɪ] > [axɔɪ] ‘a letter of the alphabet’.

Although the writing system of Assameseⁱⁱ maintains a token retroflex vs. dental distinction, neither of the two place features form a part of the consonantal system. Therefore, it appears that obstruents have neutralized their dental vs. retroflex distinctions to become very distinctly alveolar (since the distinction is present in all the related languages and also preserved in the orthography, I assume that the distinction was historically present in Assamese, a contention which is, nonetheless, debatable).

All the consonant phonemes, except the velar nasal /ŋ/ and the semi-vowels /j/ and /w/, contrast initially, medially and finally. /ŋ/ in Assamese occurs independently of homorganic consonants but does not appear in word-initial positions.

Affricates are also not present as distinctive sound units. However [dz] occurs as an allophone of /z/ in some speakers, mostly in syllable-initial and therefore prominent positions. Voice Onset Time is delayed in the phonetic realisation of /z/. In non-prominent positions the delay in the onset of voicing is considerable and it can sound like an [s]. This tendency can also occasionally result in word-final devoicing.

However, speakers can easily differentiate between a devoiced [z] and a [s]. [z] and [s] are both laminal.

An allophonic palatalisation when /z/ is followed by /j/ as in [xuizzʲɔ] ‘sun’ [dʰoizzʲɔ] ‘patience’ [baaizzʲk] ‘superficial’ is also observed in Assamese. In the careful speech of speakers with a higher degree of formal education, lexical items may be pronounced in a way which reflect the corresponding orthographic convention, as in সূৰ্য [xui.ɪdzjɔ] ‘sun’.

Standard Assamese has been reported to attest consonant gemination (Moral 1996). The following examples have been taken from Moral 1996:

/sappɔn/	‘fifty six’
/sabbis/	‘twenty six’
/uttɔɪ/	‘answer’
/dʰikkɔɪ/	‘disgust’
/unnois/	‘nineteen’

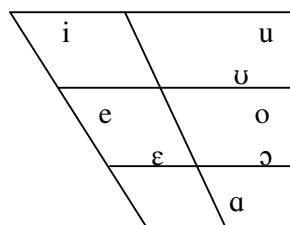
Moral also reports degemination in the Central Assamese dialects spoken in the contiguous districts of Morigaon, Nagaon and Sonitpur. Degemination may be a lexically determined process in the variety discussed here.

The only rhotic [ɻ] is limited in the number of its allophones. Like English, when [ɻ] precedes a consonant, it is normally an alveolar approximant, but it can also undergo deletion in all positions except the initial position. In non-initial positions, /ɻ/ is subject to optional deletion, giving way to phonetic lengthening in the place of the deleted segment, e.g. [amɔɪ] ~ [amɑ:] ‘our’.

Sometimes, consonants apparently not native to Assamese but used in loan words from English and Hindi also surface, like [f] and [ʃ] among others, in words such as *fan* and *shwal*. This is also optional and borrowed words may assimilate to the native system in such a way that *fan* and *shwal* may be realized as [p^hɛn] and [sal] respectively. [dz] and also [tʃ] are used exclusively in loan words from English and Hindi and do not belong to the ‘native’ sound system of Assamese. [r^h] is a Sanskrit remnant and occurs only in a select few words in the careful speech of educated people. For instance /pɔɾ^h/ ‘read’ can also be realized as [pɔh].

Vowels

Assamese has eight oral vowels



Vowel	Transcription	Orthography	Gloss
i	bil	বিল	‘a lake’
e	beli	বেলি	‘sun’ ⁱⁱⁱ
u	bul	বুল	proper name
ʊ	bʊl	বোল	‘colour’
o	bol	বল	‘let’s go’
ɛ	bɛl	বেল	‘stupid person’
ɔ	bɔɾ	বৰ	‘big’
ɑ	bal	বাল	‘male child’

The plot of the vowels in the diagram above shows that front vowels are more spread out, allowing for significant height differences between /i/, /e/ and /ɛ/. /e/ has a mid

central allophone used in many contexts, especially after the occurrence of /i/, and is somewhat lower than a prototypical [e].

Among the back vowels, while /ɔ/ is the lowest, /o/ is higher than /ɔ/. /u/ is only slightly lower than /u/. The quality of the [ɑ] may vary depending on the context, but is mostly pronounced in the mid position, and it assimilates to the back quality of neighbouring consonants in the environment, and it may be realized further back after the velar consonants.

The occurrences of [e] and [o] are constrained by the process of vowel harmony. They mostly appear only when /i/ and /u/ occur in the following syllable. However [e] and [o] appear in borrowed items from English, Hindi, and those which have been directly incorporated from Sanskrit. All the other vowels except [e] and [o] may occur word-initially, medially, or finally.

Though there are no phonemic length distinctions, the vowels are long in open syllables and shorter in closed syllables.

The list of Assamese vowel phonemes also includes a vowel has been the subject of attention in phonetic studies in the recent past (Ladefoged 1986, 2001, 2003). In my analysis, this vowel is shown to be /ʊ/, but in Ladefoged's work(s) this vowel has been shown to represent /ɔ/, a low back vowel which has the tongue position of [ɑ] and the rounding of [ɔ]. Contrary to the investigation by Ladefoged, the vowel in the repertoire of the speaker of this experiment shows the qualities of height and roundedness (also noted by Ladefoged), and therefore represented as [ʊ], a vowel which alternates to /u/ under vowel harmony. Note that the occurrences of /e/ and /o/ in the examples used for Ladefoged's experiment is only due to the presence of the following high vowels /i/ and

/u/, but this property is not discussed or observed in his work. Furthermore, in Ladefoged's examples the 'rounded low vowel' in the verbal root [pɔt] 'to bury' leads to the derivation of a high round vowel in /puti/ 'having buried'. Nonetheless, it is eminently possible that different regional variations have different sounds for the Assamese vowel /u/. It is shown in the field report of Ladefoged's study that his consultants belonged to various parts of Assam, and it is not taken into account how this heterogeneous representation may have had an implication on the experiment. We know from previous work on Assamese (Goswami 1970) that the vowels of Western Assam vary from those of Eastern Assam.

Therefore, it will probably not be far-fetched to believe that Ladefoged's speaker of the vowel in the word [pɔt] does not belong to the speaking population described in this illustration. Even so, it is plausible that the reference vowel exemplified in Ladefoged's set of examples is /u/, as it displays tense harmony when altering from /u/ → /u/.

However, there may be a possibility of unifying the vowel posited by Ladefoged with the one postulated here. An investigation of the pharyngeal vocal tract may show that the pharyngeal component is what gives the vowel its 'backed' quality (John Esling, p.c.). Therefore it may be reasonable to describe the oral vowel as either reduced /u/ or as open /ɔ/. Articulatory evidence in pharyngeal phonetics shows that retracted vowels are associated with complex laryngeal mechanisms which may affect the fronting and raising of those vowels (Esling, 2005). Hence, the retracted (–ATR) quality of the vowel discussed here may benefit from such an investigation. The retracted feature of the vowel and the participation of this vowel in the process of vowel harmony (both of

which has been pointed out in this description) may be the result of the pharyngeal property.

Vowel harmony is a distinguishing feature of the Assamese vowel system. The tense value of the following high vowel is shared by the mid vowels in the preceding syllable. Vowel harmony in Assamese is regressive, and in the presence of the two vowels /i/ and /u/, the preceding /ɛ/ and /ɔ/ and /u/ change their tense quality to result in /e/ /o/ and /u/. Harmony affects all the vowels of a word (mostly restricted to a trisyllabic or quadrisyllabic domain). However, harmony is not attested in longer syntactic domains and compounds. Assamese vowel harmony is typically word-based, excluding compounded words and larger morpho-syntactic domains. Vowel harmony in Assamese is therefore a regressive (right-to-left) process and there are no morphologically significant positions, which either trigger or target it. The Assamese examples are given below:

Vowel harmony triggered by the /i/ and /u/ in suffixes

Root	Gloss	Suffix	Derivation	Gloss
b ^h ekula	‘frog’	i	b ^h ekuli	‘frog’(dim)
upɔɪ	‘above’	i	upɔɪi	‘in addition’
k ^h ɔɪɔs	‘spend’	i	k ^h ɔɪɔsi	‘spend-thrift’
pɔlɔx	‘silt’	uwa	poloxuwa	‘fertile land’
mer	‘curl’	uwa	meɪuwa	‘curled’
gubɔɪ	‘dung’	uwa	gubɔɪuwa	‘fly living in dung’

Vowels that do not agree with tense values may be adjacent, in the presence of two intervening consonants, and also a nasal segment. A nasal, which is in the immediately adjacent position of a triggering vowel, can block vowel harmony. Some examples of blocking by nasal segments and consonant clusters are shown below:

Blocking by nasals

sekɔni	‘strainer’	(*sekoni)
putɔni	‘dumping ground’	(*putoni)
kʰɔmiɿ	‘leavening agent’	(*kʰomiɿ)

Blocking by coda consonants

xɔkti	‘strength’	(*bonti)
gustʰi	‘clan’	(*gustʰi)
pʰɔɪmutʰi	‘throwing stick’	(*pʰoɪmutʰi)

Surface diphthongs often result from the sequences /ei/, /oi/, /ai/, /ou/, /au/ (regardless of which member of the pair is assigned stress). In careful speech some speakers pronounce each vowel separately.

All the vowels discussed till now are phonemically oral. Apart from these oral vowels, there is a nasal vowel /ã/. The phonemic existence of this nasal vowel is demonstrated by the existence of /ã/ and /a/ minimal pairs, as the following words show:

/sa/ ‘look’	/sã/ ‘shadow’
/xu/ ‘sleep’	/xũ/ ‘right’
/gat/ ‘body’ LOCATIVE	/gãt/ ‘hole’

Oral vowels following a nasal consonant have a certain degree of nasalization, exhibiting clear nasal airflow in the whole segment. However, other oral vowels except /a/ do not have nasal counterparts.

Prominence

In marked difference to European languages, the perceptual difference between stressed and unstressed syllables is reportedly not so easy to establish in the languages of South Asia, and Assamese is no exception. Owing to this difficulty, there are also differing views on stress placement rules in Assamese. The notable views on this aspect are those of Kakati (1962), who accepts Grierson's (1895) description where Assamese is said to follow the pan-Indian system of accenting the heavy penultimate syllable. Goswami (1966) differs from this view and opines that primary stress in Assamese is on the first or second syllable and never moves beyond the second syllable. Some acoustic correlates supporting this view, like low-rise in pitch and longer syllable duration were shown in Mahanta (2001). Mahanta (2001) argues that Assamese follows a trochaic rhythm and therefore prominence is word initial in non-compounded words. Primary prominence is on the second syllable if it is a heavy syllable (a closed syllable) and the first is light (an open syllable), if not, primary prominence is on the first syllable. Primary prominence is never assigned to any syllable beyond the second syllable. The following examples of stress in Assamese are from Mahanta (2001)^{iv}.

sòku	'eye'	bòndɔɪ	'port'	zibòn	'life'
ɹàti	'night'	àndʰaɪ	'dark'	bagàn	'garden'
gðhɔna	'jewellery'	gðɹɔ	'pride'	anòndɔ	'happiness'
bòɹoxi	'fishing rod'	zòntɹɔ	'machine'	guɹùttɔ	'importance'

In Assamese, phonetic stress is non-contrastive, and speakers are not aware of any lexical pairs that differ in meaning because of stress placement. The phonetic correlate of prominence is an initial low pitch, which progressively becomes higher towards the

end of the prominent syllable. Other correlates like duration and intensity are not present.

Phonetic transcription

uttɑwɑ bɑtɑh ɑw xuizzɑ mazɑt tɑkɑtɑki lɑgi ɑsil zɛ| tɛʊlʊkɑ mazɑt kʊn bɛsi
 xɑktixali|| tenete gɑwɑm sʊlɑ pindʰɑ zɑtɑi ɛzɑn xɛikʰinit ɑhi ʊpɒstʰit hɒlhi|| tɛʊlʊkɛ
 tʰik kɔiɪlɛ zɛ zɛjei zɑtɑi zɑwɑ gɑ pɑɑ sʊlɑ tʊ ɑtɑɑbɒlɔi xɑikkʰɑm hɒbɔ| tɛʊkɛi bɛsi
 xɑktixali buli gɔinjɔ kɔɑ hɒbɔ|| zɛtɪjɑ uttɑwɑ bɑtɑhɛ nizɑ xɑmpuɑw zʊɛɛ bɒlibɒlɔi
 dʰɔiɪlɛ| tɛtɪjɑ zɑtɑi zɔnɛ ximɑn zʊɛɛ sʊlɑ tʊ mɛɪjɑi dʰɔi tʰɑkɪlɛ|| ɔbɔxɛxɑt uttɑwɑ
 bɑtɑhɛ nizɑ hɑ mɑni lɔɪ|| tɑpɑsɑt xuizzɑ ɹɒsmi zɛtɪjɑ pɹɑkʰɑ hɒbɒlɔi dʰɔiɪlɛ|
 tɛtɪjɑ zɑtɑizɔnɛ tɒtɑlikɛ gɑwɑm sʊlɑtʊ kʰʊli pɛlɑɪ|| xɛibɑbɛ uttɑwɑ bɑtɑhɛ mɑni lɒbɒlɔi
 bɑidʰjɔ hɒl zɛ| tɛʊlʊkɑ bʰitɑwɑt xuizzɑi bɛsi xɑktixali||

Orthographic Version

উত্তৰৰ বতাহ আৰু সূৰ্য্যৰ মাজত তৰ্কাতৰ্কি লাগি আছিল যে তেওঁলোকৰ মাজত কোন বেছি শক্তিশালী। তেনেতে গৰম চোলা

পিন্ধা যাত্ৰী এজন সেইখিনিত আহি উপস্থিত হ'লহি। তেওঁলোকে ঠিক কৰিলে যে যেয়েই যাত্ৰীজনৰ গাৰ পৰা চোলাটো

আঁতৰাবলৈ সক্ষম হ'ব তেওঁকেই বেছি শক্তিশালী বুলি গণ্য কৰা হ'ব। যেতিয়া উত্তৰৰ বতাহে নিজৰ সম্পূৰ্ণ জোৰেৰে

বলিবলৈ ধৰিলে, তেতিয়া যাত্ৰীজনে সিমান জোৰেৰে চোলাটো মেৰিয়াই ধৰি থাকিলে। অৱশেষত উত্তৰৰ বতাহে নিজৰ হাৰ

মানি ল'লে। তাৰপাছত সূৰ্য্যৰ ৰশ্মি যেতিয়া প্ৰথৰ হ'বলৈ ধৰিলে তেতিয়া যাত্ৰীজনে ততালিকে গৰম চোলাটো খুলি পেলালে।

সেইবাবে উত্তৰৰ বতাহে মানি ল'বলৈ বাধ্য হ'ল যে তেওঁলোকৰ ভিতৰত সূৰ্য্যই বেছি শক্তিশালী।

References

- Esling, John H. (2005). There are no back vowels: The laryngeal articulator model. *Canadian Journal of Linguistics* 50, 13–44.
- Goswami, Golok Chandra. 1966. An Introduction to Assamese Phonology. Poona: Deccan College.
- Goswami, Golok Chandra. 1982. *Structures of Assamese*. Gauhati University: Department of Publication.
- Goswami, Golok Chandra and Jyotiprakash Tamuli. 2003. Asamiya. In *Indo-Aryan Languages*, Cardona George and Dhanesh Jain eds. 429–484. Routledge: New York.
- Goswami, Upendranath. 1970. *A study on Kamrupi, a dialect of Assamese*. Gauhati: Dept. of Historical and Antiquarian Studies.
- Gordon, Raymond G., Jr. (ed.). 2005. *Ethnologue: Languages of the World*, Fifteenth edition. Dallas, Tex.: SIL International. Online version: <http://www.ethnologue.com/>
- Grierson, George Abraham. 1895. On the Stress-Accent in Modern Indo-Aryan Vernaculars. *Journal of the Royal Asiatic Society of Great Britain and Ireland* 3, 139–147.
- Grierson, George, 1968: *Linguistic Survey of India: Vol-V, Part-I and II*, New Delhi, Motilal Banarasidass.
- Kakati, Bani Kanta. 1962. *Assamese, its formation and development*, 3rd edition Gauhati: LBS Publications.
- Ladefoged, Peter and Ian Maddieson. 1990. Vowels of the world's languages. *Journal of Phonetics* 18, 93–122.
- Ladefoged, Peter & Ian Maddieson. 1996. *The sounds of the world's languages*. Oxford: Blackwell.
- Ladefoged, Peter. 2001. *Vowels and consonants: An introduction to the sounds of the languages*. Oxford: Blackwell.
- Ladefoged, Peter. 2003. *Phonetic data analysis: An introduction to instrumental phonetic fieldwork*. Oxford: Blackwell.
- Ladefoged, Peter. 2007. Articulatory features for describing lexical distinctions. *Language* 83(1), 161–180.
- Mahanta, Shakuntala. 2001. Prominence in Assamese and Assamese English. M.Phil Dissertation. CIEFL, Hyderabad. (ROA 715 <http://roa.rutgers.edu/view.php?id=990>)

- Mahanta, Shakuntala. 2008. *Directionality and Locality in Vowel Harmony*. LOT Dissertation Series 173. Utrecht: Netherlands.
- Moral, D. 1992. Phonology of Asamiya Dialects: Contemporary Standard and Mayong. Ph.D. dissertation. Poona: Deccan College Post Graduate and Research Institute.
- Moral, D. 1996. Consonant gemination and compensatory lengthening in Asamiya dialects: contemporary standard and central Assam, in *Pan Asiatic Linguistics*, Vol. I, Salaya, Thailand. Institute of Language and Culture for Rural Development, Mahidol University: 151–63
- Roach, P. 2004. British English: Received Pronunciation. *Journal of the International Phonetic Association* 34(2), 239-245.
- The North East Writers' Forum. 2003. *Asomiya: Handpicked Fictions*. New Delhi: Katha.
- Singh, Prem. 1998. A note on Assamese phonology. *Indian Linguistics* 59(4), 95–100

ⁱAssamese is an anglicized term used for the language, but scholars have also used Asamiya or Asomiya as a close approximation of /ɔxɔmija/, the word used by the speakers for their language. Recently, there also have been some initiatives from the ruling government of the state to promote 'Asom' instead of 'Assam' as the name of the state. Beyond that, in terms of usage, neither Asamiya nor Asomiya have any symbolic significance for the speakers of the language, as Asamiya or Asomiya are not phonetically equivalent to /ɔxɔmija/. The reason for using Assamese in this IPA illustration is its wider currency, as a result of which 'Assamese' is more easily recognizable. The entry in ethnography is also under 'Assamese'.

ⁱⁱIt is also called the Assamese-Bengali script, which differ from each other only in two characters and they are ঞ which stands for the equivalent of [r] and ঞ which is pronounced in a way which is close to [w].

ⁱⁱⁱ There are harmonic restrictions on the occurrences of /e/ and /o/ and therefore the word occurs with a following /i/. This is discussed further in the immediately following passage.

^{iv} The recordings provided with this illustration are not from Mahanta (2001).