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Gayo is an Austronesian language spoken by some 260,000 people in the central highlands of the Indonesian province of Aceh, at the northern tip of the island of Sumatra. Gayo belongs to the Malayo-Polynesian branch of the Austronesian family of languages (Ross 1995, Blust 1999). Nothofer (1994) places Gayo along with Nias, Mentawai, Enggano and the various Batak languages in a North-West Sumatra/Barrier Islands subgroup. Five distinct but mutually intelligible dialects are recognised within Gayo: Bukit, Dëret, Cik, Serbejadi and Lues.

There has been relatively little descriptive work on the Gayo language. The first detailed record of Gayo is Hazeu's (1907) comprehensive Gayo-Dutch dictionary, which established the phonemic and morphological inventory of the language and described the phenomenon of so-called 'funny nasals' (see below). Eades (2005) is the only comprehensive grammar of Gayo and includes lengthy discussion of the phonology and morpho-phonology of the language. Eades observes that the presence of 'funny nasals' is no longer typical of the speech of younger speakers. Apart from these studies, there have been a few sketches of Gayo phonology and morpho-syntax (e.g. Baihaqi 1977, Syamsuddin 1979, Soravia 1984).

The language of literacy and inter-ethnic communication for the Gayo has traditionally been Malay (M) and, nowadays, its modern incarnation, Bahasa Indonesia (BI). Bahasa Indonesia has had a significant influence on the speech of the younger Gayo, particularly in the larger towns, affecting phonology, syntax, and styles of speech. Unlike Acehnese, the language of the surrounding majority ethnic group, Gayo has never been used as a written medium. As a result, no standard orthography has been developed for the language. The orthography employed here is based on that of Bahasa Indonesia, with some additional diacritics. The data in this description is based on Eades (2005), which describes the Bukit and Dëret dialects of Gayo, and on the speech of Syamsul Bahri, a 25 year old speaker of the Bukit dialect. He also provided the recorded text. Our presentation of Gayo phonetics and phonology is based primarily on impressionistic evaluation of the language.

Consonants

The inventory of consonant phonemes in Gayo is typical of western Indonesian languages. The nineteen consonant phonemes of Gayo are listed in the table.

| | Bilabial | Alveolar | Alveo-palatal | Palatal | Velar | Glottal | Labial-velar |
|----------------|----------|----------|---------------|---------|-------|---------|--------------|
| Plosive | p b | t d | | | k g | ʔ | |
| Fricative | | s | | | | h | |
| Affricate | | | tʃ dʒ | | | | |
| Approximant | | | | j | | | w |
| Nasal | m | n | | ɲ | ŋ | | |
| Trilled rhotic | | r | | | | | |
| Lateral | | l | | | | | |

| | | | | | | | |
|------|---------|---------------|-----------------|------|---------|---------------|-----------------|
| /p/ | /paraŋ/ | <i>parang</i> | ‘machete’ | /dʒ/ | /dʒalu/ | <i>jalu</i> | ‘race’ |
| /b/ | /baraŋ/ | <i>barang</i> | ‘things’ | /j/ | /kaju/ | <i>kayu</i> | ‘wood’ |
| /t/ | /kutə/ | <i>kute</i> | ‘village’ | /w/ | /wu/ | <i>wu</i> | ‘fish trap’ |
| /d/ | /kudə/ | <i>kude</i> | ‘horse’ | /m/ | /aman/ | <i>aman</i> | ‘safe’ |
| /k/ | /kulə/ | <i>kule</i> | ‘tiger’ | /n/ | /anan/ | <i>anan</i> | ‘grandmother’ |
| /g/ | /gulə/ | <i>gule</i> | ‘sugar’ | /ɲ/ | /paɲut/ | <i>panyut</i> | ‘oil lamp’ |
| /ʔ/ | /saʔat/ | <i>saʔat</i> | ‘moment’ | /ŋ/ | /seŋ/ | <i>sèng</i> | ‘iron sheeting’ |
| /s/ | /səp/ | <i>sop</i> | ‘soup’ | /r/ | /rəa/ | <i>roa</i> | ‘two’ |
| /h/ | /hal/ | <i>hal</i> | ‘thing, matter’ | /l/ | /kal/ | <i>kal</i> | ‘half-coconut’ |
| /tʃ/ | /tʃəp/ | <i>cop</i> | ‘land, alight’ | | | | |

Stops

Voiceless plosives are unaspirated. They are unreleased word-finally, e.g. *sengap* /səŋap/ [səŋap] ‘quiet’, *panyut* /paɲut/ [paɲut] ‘oil lamp’, *wuk* /wuk/ [wuk] ‘hair’. The alveolar plosive /t/ is slightly fronted, compared to /d/, and is articulated at the alveo-dental position. Unusually for the region, velar /k/ may be backed by some speakers to uvular [q] before /a/, e.g. /kal/ [kal] ~ [qal] ‘half-coconut’. The glottal stop phoneme is confined to loanwords, e.g. *saʔat* /saʔat/ [saʔat] ‘moment’ (< M/BI *saat*, but ultimately from Arabic) and *bapaʔ* /bapaʔ/ [baʔpaʔ] ‘man, mister’ (< M/BI *bapak*).

Fricatives

With respect to the voiceless glottal fricative /h/, [h] can alternate with a partly or fully breathy voiced [ɦ] between vowels and before glides, e.g. *sahan* /sahan/ [saʔhan] ~ [saʔɦan] ‘who’, /bahwa/ [bafiʔwa] ‘that’.

Liquids, approximants and nasals

The voiced alveolar lateral /l/ is optionally realised as dental [l̪] syllable-finally, e.g. *seldi* /səldi/ [səldi:] ‘hiccup’, *jelbang* /dʒəlbəŋ/ [dʒəld̪bəŋ] ‘hoe’, and *awal* /awal/ [aʔwal] ‘banana’. Elsewhere, /l/ is realised as alveolar [l], e.g. *lède* /ladə/ [lɛ:ɖɛ:] ‘chili’, *geléh* /gələh/ [gələh] ‘slaughter’.

The only rhotic, /r/, has a number of allophones. In intervocalic position, it is normally an alveolar tap [ɾ], or very short trill (involving only 2 taps), and more rarely an alveolar approximant, e.g. *parang* /paraŋ/ [paʔraŋ] ~ [paʔraŋ] ‘machete’. In word-final position it is a slightly longer trill, e.g. *bacar* /batʃar/ [batʃar] ‘fast’. In word-initial position it is typically strongly trilled, e.g. *rap* /rap/ [rap] ‘near’. When an intervocalic [r] ends up in post-obstruent onset position as a result of optional /ə/-reduction and deletion in non-final syllables, the rhotic is strongly trilled, e.g. *peram* /pəram/ [pəram] ~ [pram] ‘to store away (fruit)’. In the case of a syllable-final (but word-medial) rhotic, there is optional metathesis with the vowel,

or deletion of the vowel with concomitant rhotic fortition, e.g. *kerben* /kərbən/ [kərbən] ~ [krəbən] ~ [kr'bən] 'sacrificial animal'.

The labial-velar approximant /w/ can alternate with the bilabial approximant [β] word-medially, e.g. *awah* /awah/ [a'wah] ~ [aβah] 'mouth'.

Distributional restrictions and frequency considerations

All consonants in Gayo can occur word-initially and medially, e.g. *babi* /babi/ [ba'bi:] 'pig', *mude* /mudə/ [mu'dy:] 'young', *aman* /aman/ [a'mān] 'safe', *hal* /hal/ [hal] 'thing, matter', *kahè* /kahe/ [ka'hɛ:] 'later', *roa* /rɔa/ [rɔ'a:] 'two', *utara* /utara/ [uta'ra:] 'north', *wu* /wu/ [wu:] 'fish trap', *awah* /awah/ [a'wah] 'mouth'. However, there are a number of constraints with regard to which consonant phonemes can function as syllable codas. Only fricatives, non-palatal nasals, rhotics, laterals, and voiceless stops can occur word-finally, e.g. *oros* /ɔɔs/ [ɔ'ɔs] 'uncooked rice', *karang* /karaŋ/ [ka'raŋ] 'riverbank', *bacar* /batʃar/ [ba'tʃar] 'fast', *awal* /awal/ [a'waɻ] 'banana', *Jemat* /dʒəmat/ [dʒə'mat] 'Friday', *wuk* /wuk/ [wukʰ] 'hair'. Word-medially, clusters and hence consonants in coda position are not common. Within the same morpheme, clusters occur most frequently in word-medial position and are usually restricted to nasal + homorganic obstruent, e.g. *empus* /əmpus/ [əmpʊs] 'garden', *murantō* /murantō/ [murantō:] 'traveller', and liquid + obstruent, e.g. *seldi* /səldi/ [səldi:] 'hiccup'. Non-homorganic clusters not involving a liquid appear in loans, e.g. *nikmat* /nikmat/ [nik'mat] 'taste' and at morpheme boundaries, e.g. *mulilitni* /mu-lilit-ni/ [mulilitni] 'to wrap', *muluahni* /mu-luah-ni/ [mulu'ahni] 'to take off'. In word-initial position, clusters are restricted to two kinds: (1) homorganic nasal + obstruent sequences, and then only as a result of optional deletion of the vowel in the prefix /mu-, e.g. *mubedil* /mu-bədil/ [mubə'dil] ~ [mbə'dil] 'shoot', and (2) stop + /r/, as a result of optional /ə/-deletion, e.g. *keras* /kəras/ [kə'ras] ~ [k'ras] 'heavy' (see also above).

Lengthening

A plosive or nasal may be lengthened (by a half-length) when it is followed by the third person singular possessive enclitic =é, e.g. *pesammé=a* /pəsam-e-a/ [pəsam·ea] 'warm (3POSS)', *anakké* /anak-e/ [anak'e] 'his/her offspring', *rommé* /rɔm-e/ [rɔm'e] 'his/her rice plants', *ananné* /anan-e/ [anan'e] 'his/her grandmother'. This lengthening is most obvious in isolation, where an increased force of articulation is more audible.

A note on so-called 'funny nasals'

A feature of the Gayo phonemic inventory present in the speech of older speakers but now largely lost in the speech of younger speakers (approximately under 60 years), including our main speaker, is a special set of nasals sometimes referred to as 'funny nasals'. Their place of articulation parallels the plain nasals (into which they have merged amongst younger speakers), and they stem diachronically from an original nasal + voiced plosive combination, where the plosive has been lost, e.g. *kunul* /kuñul/< /kundul/ 'sit' (adapted from Hazeu 1907). They are a well-known areal feature of the wider Indonesian area (see e.g. Blust 1997). In this section they are represented with the circumflex /˘/ placed above the nasal in the transcription. As they do not usually occur in the speech of younger speakers, the funny nasals are not otherwise represented in the orthography or transcription outside of this section.

The term 'funny nasal' was first used by Lawler (1977) to describe a parallel phenomenon in Acehnese and was later adopted by Durie (1985, 1987). The funny nasals are distinguished from plain nasals in two ways. First, there is a marked reduction in the nasality of funny nasals in comparison with nasals. Lawler (1977: 221) describes the funny nasals in Acehnese as having 'significantly reduced nasal air flow'. Secondly, in funny nasals the velum is raised immediately before the onset of the following vowel. As a result, they do not nasalise following vowels, in contrast with plain nasals. An aerodynamic study of Acehnese by Ladefoged & Maddieson (1996: 104f.) confirms earlier observations by Lawler, Durie and others, and leads these investigators to label funny nasals as orally released nasals. Durie (1985) analyses the

funny nasals in Acehnese as allophonic variants of plain nasals, the variation being based on the interaction of nasal consonants with nasal vowel phonemes. In Gayo, however, the funny nasals are phonemic in the language of older speakers, as there is no distinct set of nasal vowel phonemes which could affect the quality of a preceding nasal consonant. The funny nasals can only occur as the onset of a final syllable, and the vowel following is always oral, e.g. *time* /tiṃə/ [tiṃɨ:] ‘bucket’ (M/BI *timba*), *lemu* /ləṃu/ [ləṃu:] ‘cow’ (M/BI *lembu*). In contrast, plain nasals can occur as the onset or coda in any syllable, e.g. *lime* /limə/ ‘five’, *karang* /karaŋ/ ‘riverbank’, *murantô* /muranto/ ‘traveller’, *Jemat* /dʒəmat/ ‘Friday’. For older speakers, vowels following plain nasals, especially in word-final position, are very strongly nasalised, e.g. *lime* /limə/ [liṃɨ:] ‘five’, *Jemat* /dʒəmat/ [dʒəməṃt] ‘Friday’.

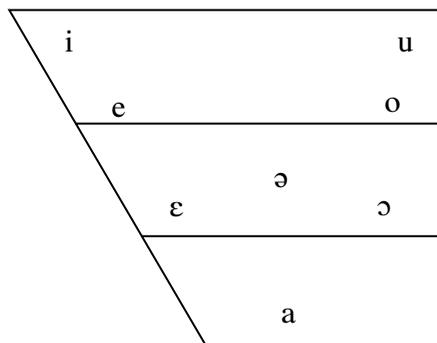
Hazeu (1907), who was the first to report funny nasals in Gayo, treats them as nasal + voiced plosive clusters, and he represents them orthographically as such. For example, *lemis* /ləṃis/ ‘mosquito’ is given as *lembis*, and *lemem* /ləṃəm/ ‘be a long time’ as *lemböm*. However, he points out that the plosive element in these combinations is often pronounced so softly that it is often undetectable (p. viii). Hazeu’s treatment of funny nasals as nasal + voiced plosive clusters is synchronically unsatisfactory. Such clusters do in fact appear in Gayo, albeit only across morpheme boundaries in native words, e.g. *pem-belah* /pəm-bələh/ [pəmbəlah] ‘axe’, but also in recent borrowings from Bahasa Indonesia, e.g. the place name *Banda (Aceh)* /banda/ [banˈda:]. Baihaqi (1977), a native speaker of Gayo, also identifies two distinct sets of nasals: so-called *nasal sengau* ‘nasal nasals’ in contrast with *nasal tak sengau* ‘non-nasal nasals’. Other recent studies of Gayo (e.g. Syamsuddin 1979, Soravia 1984) do not identify two distinct sets of nasals. This is most likely because the distinction has largely been lost in the speech of younger speakers.

Vowels

There are three front vowels, three back vowels and two central vowels in Gayo. Orthographic conventions for the vowels are as follows: *é* /e/, *e* /ə/, *ô* /o/, *è* /ɛ/, *o* /ɔ/ and *a* or *ë* /a/.

| | | | | | | | |
|-----|---------|---------------|-----------|-----|---------|--------------|------------|
| /i/ | /dəŋki/ | <i>dengki</i> | ‘jealous’ | /u/ | /tuk/ | <i>tuk</i> | ‘call out’ |
| /e/ | /dəŋke/ | <i>dengké</i> | ‘meat’ | /o/ | /oloh/ | <i>ôlôh</i> | ‘bamboo’ |
| /ɛ/ | /sɛ/ | <i>sè</i> | ‘now’ | /ɔ/ | /sɔbɔh/ | <i>soboh</i> | ‘morning’ |
| /ə/ | /inə/ | <i>ine</i> | ‘mother’ | /a/ | /padih/ | <i>padih</i> | ‘only’ |

The approximate location of the vowel phonemes is given in the Vowel Chart.



The very marked nasalisation of word-final vowels after plain nasals, characteristic of older speakers who maintain the distinction between funny and plain nasals, is not evident among younger speakers. Nasalisation is today normally lighter in degree, occurring most often after

a syllable-initial nasal consonant. It is most noticeable in final syllables, especially between two nasal consonants, e.g. *anan* /anan/ [a'nān] 'grandmother', but will not be indicated further here.

Stressed vowels in open word-final syllables are phonetically long, e.g. *pitu* /pitu/ [pi'tu:] 'seven'. In utterance-final position, these same vowels may be partly devoiced, e.g. *utara* /utara/ [uta'rḁ###], alongside more usual *utara* /utara/ [uta'ra:] 'north'.

In utterance-initial position vowels may be preceded by a non-phonemic glottal catch or stop, e.g. *ône* /one/ [##³o'ne:] ~ [o'ne:] 'sand'.

The high vowels /i, u/ in Gayo have a similar allophonic range: [i, i̇, ɪ, j] and [u, ʊ, ʊ, w], respectively. They are usually tense when they occur in open final syllables or in non-final syllables before a non-high vowel in the following syllable, e.g. *dengki* /dɛŋki/ [dɛŋ'ki:] 'jealous', *biak* /biak/ [bi'ak] 'sibling', *ipon* /ipɔn/ [i'pɔn] 'tooth', *kucak* /kutjak/ [kut'jak] 'small'. Otherwise, some laxing of high vowels (especially of /u/) is possible, particularly in closed syllables, e.g. *tingkep* /tiŋkɛp/ [tiŋ'kɛp] 'window', *wuk* /wuk/ [wʊk] 'hair'.

In word-initial position, both /i/ and /u/ have optional glide allophones, e.g. *iok* /iɔk/ [i'ɔk] ~ [jɔk] 'caterpillar', and *uak* /uak/ [u'ak] ~ [wak] 'medicine'. True approximants /j/ and /w/ never show this kind of alternation, e.g. *wu* /wu/ [wu:] 'fish trap'.

The peripheral high mid vowels /e/ and /o/ also share a similar allophonic range in terms of height: [e, ɛ, ɪ] and [o, ɔ, ʊ], respectively. Allophones appear to be in free variation, e.g. *bôr* /bor/ [bɔr] ~ [bɔ̇r] ~ [bɔ̇r] 'mountain', *pelôlô* /pələlə/ [pələ'lo:] ~ [pələ'lu:] 'argue'. This process of vowel raising can lead to partial overlap with high vowels /i/ and /u/ with their converse tendency to laxing. However, in most cases, the distinction between high and high-mid vowel phonemes can be made clear in slow speech. Mid-high back /o/ may also show slight off-gliding in utterance-final position: *lô* /lo/ [lo:ʔ] 'day'.

The low mid front vowel /ɛ/ has an additional allophone, with a faint centralised offglide, [ɛ^ə], that appears only before syllable-final [ɿ], e.g. *kemèl* /kəməl/ [kə'me^əɿ] 'shy'.

The most frequently occurring vowel phoneme is /ə/, written *e*. It has a number of allophones. It often tends to long [ɣ:] in final (stressed) open syllables, e.g. *kule* /kulə/ [ku'lɣ:] 'tiger', and to short [ɣ] in open penultimate syllables of words whose final open syllable contains /ə/, e.g. *pendere* /pən-dərə/ [pəndɣ'rɣ:] 'hitting implement'. However, the quality of these unrounded back(ed) allophones can vary somewhat and, impressionistically at least, differences are often difficult to perceive: [ɣ(:) ~ ɣ(:) ~ ə(:) ~ ə(:)]. Elsewhere, /ə/ is central [ə], e.g. *penan* /pənan/ [pə'nan] 'cake', *pembelah* /pəm-bələh/ [pəmbə'lah] 'axe'. In non-final syllables before /r/, /ə/ is frequently reduced and deleted, e.g. *peram* /pəram/ [pə'ram] ~ [pram] 'to store away (fruit)'.

/a/ has three principal allophones: [a, ə:, ɣ:]. They show a complex distribution that reflects the interaction between internal processes of sound change and the nativisation of loans, especially from Malay/Indonesian. /a/ is realised as [ə:] in penultimate syllables of roots whose final (i.e. stressed) syllable is closed and contains /ə/, e.g. *səbet* /sabət/ [sə:bət] 'companion', *bəden* /badən/ [bə:dən] 'body'. It surfaces as [ɣ:] in penultimate syllables of vowel-final roots that end with /ə/ ([ɣ:]), e.g. *lède* /ladə/ [lɣ:dɣ:] 'chili', *bède* /badə/ [bɣ:dɣ:] 'fried banana'. Elsewhere its vowel quality is low central, e.g. *arap* /arap/ [a'rap] 'front', *ama* /ama/ [a'ma:] 'father'. Minimal pairs show that [ə:] (and [ɣ:]) in penultimate syllables of roots are allophones of /a/, and not of /ə/, whose manifestation in the same context is always predictably short [ə], cf. *sədəp* /sadəp/ [sə:dəp] 'scythe' vs. *sedep* /sədəp/ [sədəp] 'delicious'; and *dère* /dərə/ [dɣ:rɣ:] 'young girl, virgin' vs. *dere* /dərə/ [dɣ'rɣ:] 'hit'. There is a tendency amongst speakers to reduce the length of pre-final [ɣ:] to [ɣ] in some words with intervocalic /r/, such that *dère* /dərə/ and *dere* /dərə/ may both appear as [dɣ'rɣ:]. However, this pair in particular can be distinguished since optional pre-final /ə/-reduction with rhotic fortition only occurs in *dere* /dərə/ [dɣ'rɣ:] ~ [dɣ'rɣ:] ~ [drɣ:] 'hit'.

Words whose penultimate syllable contains the allophones [ə:] or [ɣ:] (< /a/) are mostly borrowings whose ultimate and penultimate syllables both contain /a/ in the source language. Examples include *rèje* /radʒə/ [rɣ:dʒɣ:] 'king' (< M/BI *raja* /radʒa/), *pəger* /pəgər/ [pə:gər]

'fence' (<M/BI *pagar* /paɣar/ 'fence'); *bëde* /badə/ [bɣ:ɔ:ɣ:] (< Acehnese *bada* /bada/ 'fried banana'). The low unrounded vowel /a/ has two orthographic representations. It is represented as *ë* when it is realised as [ə:] and [ɣ:], otherwise it is represented as *a*.

Vowel harmony

Vowel harmony in Gayo is already apparent in our discussion above of the allophonic distribution of /ə/ and /a/: the central or backed quality of a non-final allophone must agree with the allophonic central/backed quality of any central vowel to its right, as is seen in the following set:

| SHARED CENTRALITY | | | | SHARED BACKNESS | | | | |
|-------------------|---------|-----------------------|--------------|-----------------|--------|-----------|-------------|----------------------|
| /a/ | /sadəp/ | [sə:'dəp []] | <i>sədəp</i> | 'scythe' | /darə/ | [dɣ:'rɣ:] | <i>dëre</i> | 'young girl, virgin' |
| | /arap/ | [a'rap []] | <i>arap</i> | 'front' | | | | |
| /ə/ | /sədəp/ | [sədəp []] | <i>sedep</i> | 'delicious' | /dərə/ | [dɣ:'rɣ:] | <i>dere</i> | 'hit' |
| | /pənan/ | [pə'nan] | <i>penan</i> | 'cake' | | | | |

Vowel harmony also occurs elsewhere in the Gayo system, although the extent to which it occurs differs across vowels. It is less apparent or pervasive amongst high vowels than amongst mid vowels.

The phonetic tense/lax value of the final high vowel is optionally shared by the same vowel in the preceding syllable, e.g. *ulu* /ulu/ [u'lu:] 'head', *ini* /ini/ [i'ni:] 'this', *inih* /inih/ [i'ni:] 'seedling'. However, the process is not obligatory and variation does occur.

In the case of two peripheral high-mid or low-mid vowels in a word which share frontness or backness, they must also share the same degree of height, e.g. *jérét* /dʒeret/ [dʒe'ret[]] 'graveyard', *rèbèk* /rɛbek/ [rɛ'bek[]] 'rip, tear'; *soboh* /sɔbɔh/ [sɔ'bɔh[]] 'morning', *ôlôh* /oloh/ [o'loh[]] 'bamboo'. Vowel harmony also occurs, even when peripheral mid-vowels differ in frontness, e.g. *onè* /ɔnɛ/ [ɔ'nɛ:] 'there (close)' and *ôné* /one/ [o'ne:] ~ [ɔ'nɛ:] 'sand'.

A note on vowel sequences

Vowel sequences in Gayo normally occur only across syllable boundaries. Examples of words containing vowel sequences are *sien* /siən/ [si'ən[]] 'here', *ru* /ru/ [ru:i[]] 'thorn' and *poa* /pɔa/ [pɔ'a[]] 'salt'. A non-distinctive [j] is often inserted between two vowels where the first vowel in the sequences is /i/, e.g. *kiup* /kiup/ [ki'ʊp[]] ~ [ki'jʊp[]] 'lid'. Similarly, where the first in a vocalic sequence is a back vowel, a non-distinctive [w] is optionally inserted, e.g. *ru* /ru/ [ru:i[]] ~ [ru'wi:] 'thorn'. In connected speech, some sequences are almost diphthong-like through stress shift and syllable reduction, e.g. *muloi* /mulɔi/ 'begin' has the citation form [mulɔ'i:], but also [mu'lɔi] with tense high vowel off-glide. In the Bukit dialect the phoneme /e/ can alternate with the sequence /ai/, and /o/ and /u/ can alternate with the sequence /au/ in some words. In most dialects of Gayo, these sequences are heard only in poetic language, except for the south-eastern dialect, where only the sequences occur, and never the single vowel variants. These sequences are not diphthongal in nature, since they consist of two syllables, with stress on the final vowel, e.g. *pét* /pet/ ~ /pait/ [pɛt[]] ~ [pa'it[]] 'bitter', *lô* /lo/ ~ /lau/ [lo:] ~ [lo:ʔ] ~ [la'u:] 'day', and *wu* /wu/ ~ /wau/ [wu:] ~ [wa'u:] 'fish trap'.

Stress placement

The establishment of clear stress placement rules is known to be highly problematic in the languages of Indonesia. The perceptual differences between unstressed and stressed syllables in Indonesian languages are often only weakly marked, and can be difficult to determine – in contrast with what happens in most European languages. As a result, sources frequently disagree about where stress occurs (see in particular van Zanten, Goedemans & Pacilly 2003 for discussion and references, although no reference is made to Gayo). In Gayo stress is apparently non-contrastive, and speakers are not aware of any lexical pairs that differ in

meaning because of stress placement. In isolation stress normally occurs on the final syllable of the word, e.g. *asu* /asu/ [a'su:] 'dog', *serap* /sərap/ [sə'rap] 'side', *ru* /ru/ [ru'wi:] 'thorn'. The correlates of stress are increased vowel duration, loudness and pitch. Vowel lengthening is most evident in open final syllables. However, in practice the appearance of the three correlates is not restricted to the stressed final syllable, and it is perhaps better to describe them as occurring variably over a two syllable window (except where the pre-final syllable is open and contains /ə/). Any one or more of the stress correlates can appear on the first or second syllable of the stress window, and Gayo stress often gives the impression that it is in fact located primarily on the penultimate, especially in connected speech. As a result, there can be free variation, with no difference in meaning, for the same speaker, e.g. *sara* /sara/ [sara] ~ [sa'ra:] ~ [s'a:ra:] 'one', *ama* [a:ma] ~ [a'ma:] 'father'. If the penultimate syllable is open, the vowel may in fact be partly lengthened and the difference in loudness may be very small. Similar problems occur if the penultimate syllable is fully heavy, e.g. *murantō* /mu-ranto/ [muran'to:] ~ [mu'ranto:] 'traveller', where the final (stressed) vowel can appear lengthened but where other correlates often seem more evident on the penultimate syllable.

Where the pre-final syllable is open and contains [ə] from /ə/, all stress correlates appear on the final, e.g. *peram* /pəram/ [pə'ram] 'to store (fruit)'. This pattern is consistent with the previously observed optional deletion of non-final /ə/, e.g. [pram].

The partial indeterminacy and variability that we find for stress placement in Gayo is reinforced by three other factors. In the first instance, there is a large number of recent loans from Bahasa Indonesia, a language for which stress is often described as being on the penultimate syllable, e.g. *sepakat* /səpakat/ [sə'pakat] ~ [spakat] 'agree'. Secondly, the tendency for word-final lengthening is less marked in connected speech, with the effect of favouring a perceptual stress shift away from the final. The third factor involves suffixation. While stress usually shifts to the last syllable, e.g. *betih* /bətih/ [bətih] 'to know' and *pembetihan* /pəm-bətih-an/ [pəmbətih'an] 'knowledge', this is not always the case. This is especially so in forms involving the suffix *-ni*, e.g. /mu-luah-ni/ [mulu'ahni] 'to take off', where stress tends to remain on the final syllable of the root. It is also worth reporting the intuition of the Gayo themselves: older speakers in particular, when asked about alternative stress placements, such as in [anak] or [a'nak] for *anak* 'offspring', strongly prefer final stress as native, claiming the former is from Bahasa Indonesia.

Accordingly, Eades (2005) describes primary stress as final, with secondary stress on the penult, e.g. *anak* /anak/ [a'nak] 'offspring', since this indicates relative evenness of stress. In longer words, however, secondary stress can appear two syllables before the primary stressed syllables, e.g. *muluahni* /mu-luah-ni/ [mulu'ahni] 'to take off'.

Further investigation of stress, its placement and its correlates in Gayo, especially in connected speech, is clearly needed (see e.g. Hajek, Stevens & Eades forthcoming).

Transcription

The passage given here is 'The North Wind and the Sun'. A phonetic transcription is followed by a phonemic one. An orthographic version is also provided. The speaker uses two forms for 'then', /rəpə/ and /rəpəl/, reflecting optional l-deletion in this word. In the orthographic representation of the story, clitic boundaries are represented by (=) and morpheme boundaries by (–). Given the particular characteristics of stress placement and problems associated with its determination in Gayo, annotation of stress placement in the text has proven to be very difficult. Our transcription of stress here is based on the perceptions of three listeners (including the two authors) and is noted on the syllable thought to be most prominent by at least two listeners. One listener tended to regular final stress, another tended more strongly to penultimate stress, while the response of the third was more mixed but still favoured final stress. Preliminary acoustic analysis shows that listeners responded differently to acoustico-auditory cues such as relative vowel duration and F0 on the initial and penultimate syllables

(Hajek, Stevens & Eades forthcoming). Exceptionally, stress is marked on the antepenultimate syllable in [ˈpakea] *paké*=a ‘they’ and appears to reflect a phrasing effect.

Phonetic transcription

ma'ta ni 'lo: | ʊ'rʊm ku'ju: uta'raʒ ku'ju: uta'ra: ʊ'rʊm 'ma:ta n'lo: pə'lolo: sa'ra: 'lo: ||
 sa'han si pa'liŋ 'bəp̚ | kətik̚s sa'ra: dʒə'ma: muran'to: | 'gɛh ʊ'rʊm ba'dʒu: pəsam ||
 'pakea sə'pakat̚ | bah'wa: sa'han si 'ŋok̚ mulu'ahni ba'dʒu: pəsam'ea: | ijaŋ'gap̚
 pa'liŋ 'bəp̚ a'ri: si rɔ'awa: ||rə'ŋəl̚ ku'ju: uta'ra: bərə'mʊs sək̚'raskras'ɛ: || 'tap̚
 ma'kin 'kras 'wɛ: bərə'mʊs ma'kin 'kras dʒə'ma mu'ranto muli'lɪtni: badʒuje'ja:
 || 'dɔn ah'e'rɛ: | ku'ju: uta'ra: ka'lah || 'mata n'lo: mu'loi pə'rak̚ | rə'ŋə: dʒə'ma
 muran'toa mulu'ahni: ba'dʒu: pəsam'e || rə'ŋəl̚ ku'ju: uta'ra: muŋa'kui | bah'wa:
 ma'ta: n'lo: lə'bɪh 'bəp̚ a'dɪh ku'ju: utara'wa:

Phonemic transcription

mata ni lo urum kuju utara kuju utara urum mata nlo pəlolo sara lo || sahan si
 paliŋ bəp̚ | kətikə sara dʒəma mur anto | gɛh urum badʒu pəsam || pakea səpakat
 | bahwa sahan si ŋok muluahnibadʒu pəsamea | iaŋgap paliŋ bəp̚ ari si rɔawa ||
 rəŋəl̚ kuju utara bərəmus səkəraskərɛ || tape maken kərəs wɛ bərəmus maken
 kərəs dʒəma muranto mulilitni badʒuea || dɔn ahɛrɛ | kuju utara kalah || mata
 nlo mulɔi pərak̚ | rəŋə dʒəma murantoa muluahni badʒu pəsame || rəŋəl̚ kuju
 utara muŋakui | bahwa mata nlo ləbih bəp̚ adih kuju utarawa

Orthographic version

Mata ni lô urum kuyu utara

Kuyu utara urum mata n=lô pelôlô sara lô. Sahan si paling bep, ketike sara jema mu-rantô
 gèh urum baju pesam. Paké=a sepatat bahwa sahan si ngòk mu-luah-ni baju pesam=é=a,
 i-anggap paling bep ari si roa=wa. Renyel, kuyu utara be-remus se=keras-keras=é. Tapé,
 makén keras wè be-remus, makén keras jema mu-rantô mu-lilit-ni baju=é=a. Den ahèrè
 kuyu utara kalah. Mata n=lô muloi porak, renyejema mu-rantô=a mu-luah-ni baju pesam=é.
 Renyel, kuyu utara mungakui bahwa mata n=lô lebih bep adih kuyu utara=wa.

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