THE PHONEMES OF THE ADZERA LANGUAGE

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0. INTRODUCTION

0.1. The Adzera[1] people live in the north-east part of New Guinea, in the vast Markham Valley. The Leron river, a tributary of the Markham, is approximately the border to the south-east, and the Gusap river, a tributary of the Ramu (or Guin in the Adzera language), the border of the north-west. The larger part of the people live in the flats of the valley, but some of the clans have also settled in the first grass-hills, bordering the valley, as well as the valleys of tributary rivers between the Leron and Gusap, e.g. the Jarus group, which lives in the Jafats, Maŋiaŋ and Mami river valleys.

0.2. According to the last census (1970) the population figure stands at 17,600. All of them speak <u>one</u> language[2], which differs only slightly in minor grammatical matters, but more in vocabulary in the various "district groups" (a term coined and used by K.E. Read: *Oceania,* Vol. 27 (1946), 2:98.   The language spoken by the Kaiapit and Saŋaŋ district group is taken as the norm and is used for the data given here.

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[1]The word "Adzera" is a distortion of the word /a dzraʔ / which means *inward, up country, up-stream.*

[2]H.A. Holzknecht, The Adzera Family of Languages, *KIVUNG,* Vol. 4 (1971), 3:171-174.

0.3. The late Reverend Fritz Oertel founded the Mission Station Kaiapit in 1918. He recorded the language and rendered it in a practical alphabet. The late Dr O. Dempwolff, professor at the University of Hamburg, Germany attempted an "Analysis of the Adzera language" in 1928-29 (handwritten manuscript in the Hamburg University Archives, Manuscript Book, No. 786) with the data then known. Unfortunately, through war action all the material of Reverend Fritz Oertel, who died in June 1938 - dictionary, grammar (?) and other collected linguistic material - was lost. In 1947 the writer found one copy of the printed Bible History (1925) and one copy of the Catechism (1925), together with the last copy of the First Primer (1925) in Adzera. With the help of many informants the language was learned and words collected. In 1949 I came upon a word list of about 400 words, typed by the late Reverend Fliehler. This list has the words grouped in subjects, like animals, plants, trees, food etc. The practical alphabet of Reverend Fritz Oertel was changed in some instances, e.g. the glottal stop taken up.

The present discription was undertaken first in German as part of the Language Course of the Bible Translators - Summer Institute of Linguistics[3] at Neukirchen, Kr.Moers, Germany, during the summer of 1962, and is now, after more study and investigation, redone in English[4].

1. CHART OF PHONEMES

1.1. CONSONANTS

Type of sound	Labial	Alveolar	Velar	Glottal
voiceless[5] stops	p	t ts ($\mathcal{t}$)	k	?
prenasalized voiceless stops	^{m}p	^{n}t nts ($^n\mathcal{t}$)	$^\eta$k	$^\eta$?
voiced stops	b	d dz ($\mathfrak{z}$)	g	
prenasalised voiced stops	^{m}b	^{n}d $^{ndz}_{dz}$ ($^n\mathfrak{z}$)	$^\eta$g	
voiced nasals	m	n	η	

[5] Aspiration is quite pronounced in the so-called Adzera-group (Kaiapit-Saŋaŋ); less so in the Amari and Oŋaʔ groups; the least in the Jarus group.

Type of sound	Labial	Alveolar	Velar	Glottal
voiceless fricatives	f	s		h
vibrants		r		
semivowels	w		j = y	

1.2. *VOWELS*

	Non-Back	Back
High	i	u
	i:	
Non-High	a	o
	a:	o:

2. CONTRASTIVE FEATURES

2.1. *CONSONANTS*

Adzera consonant phonemes are divided into five contrastive groups: stops, nasals, fricatives, vibrants and semivowels.

The stops contrast in non-nasalized and prenasalized ones, in voiced and voiceless ones.

Stops and nasals contrast as to labial, alveolar and velar point of articulation. Voiceless non-nasalized and prenasalized stops have an additional contrast at the glottal point of articulation.

Fricatives and vibrants as to labial and alveolar and glottal point of articulation.

The semivowels contrast to labial and alveolar point of articulation.

2.2. *VOWELS*

Vowel phonemes contrast as to high and non-high positions, and horizontally as to non-back and back position.

High non-back and non-high vowels contrast further in long and short vowels.

2.3. *CONTRASTS IN IDENTICAL AND ANALOGOUS ENVIRONMENTS*

2.3.1. Consonants

/p/ + /b/	/papo/ (papo)	*sugar-can maggot*
	/babo/ (babo)	*quick, hasty*
	/pa'an/ (pa'an)	*to forbid s.th.*
	/ba'an/ (ba'an)	*to rise up* (in stomach)

/t/ + /d/	/taŋindan/ (taŋindan)	to forgive, let have
	/daŋindan/ (daŋindan)	to knot into string
/t/ + /s/	/iti?/ (iti?)	bamboo knife
	/isi?/ (isi?)	small, little
/t/ + /ts/	/tafan/ (tafan)	his great grandfather
	/tsafan/ (ȼafan)	praise, to honour
/ts/ + /dz/	/tsari?an/ (ȼari?an)	to stir up, stir round
	/dzaridan/ (ʒaridan)	to sit crosslegged
/k/ + /g/	/kaŋan/ (kaŋan)	be ripe, very hard
	/gaŋan/ (gaŋan)	bark, skin
/s/ + /ts/	/sa?/ (sa?)	men's house
	/tsa?/ (ȼa?)	prop. hole where pigs lie
/s/ + /dz/	/jas/ (jas)	left
	/jadz/ (jaʒ)	oinment
/n/ + /ŋ/	/ganaŋ/ (ganaŋ)	banana, yam
	/gaŋan/ (gaŋan)	skin, bark
/k/ + /?/	/imiŋk/ (imiŋk)	dark
	/imiŋ?/ (imiŋ?)	it is, it lies (there)
/mp/ + /p/	/impri?/ (impri?)	he pulls, takes out
	/ipri?/ (ipri?)	is in labour
	/mpapa ruan/ (mpapa ruan)	to lean on
	/papa/ (papa)	light, not heavy
/r/ + /d/	/rarodan/ (rarodan)	to straighten
	/darodan/ (darodan)	to chase, drive off
final final		
/?/ + vowel	/itsara/ of tsaradan	to offer, sacrifice
	/itsaara?/ of tsaara?an	to be dry

2.3.2. Vowels

/u/ + /o/	/nu?an/ (nu?an)	cooked through, done
	/no?an/ (no?an)	to call
	/nugu(n)/ (nugu(n))	heart, breast
	/nogo/ (nogo)	that, in a distance
/i/, /a/, /o/, /u/	/nigi/ (nigi)	that, that one with you
	/naga/ (naga)	that, that one in far distance
	/nogo/ (nogo)	that, that one with him
	/nugu(n)/ (nugu(n))	heart, breast
/i/ + /i:/	/tsipo/ (ȼipo)	armlet, bracelet
	/tsiipo?/ (ȼi:po?)	taro beetle

/a/ + /a:/	/ampi/ (ampi)	*many*
	/aampi/ (a:mpi)	*guest, visitor*
	/mama/ (mama)	*mountain*
	/maama?/ (ma:ma?)	*child*
/o/ + /o:/	/fofidan/ (fofidan)	*to be old*
	/foofi/ (fo:fi)	*bamboo flute*
	/osoda nan/ (osoda nan)	*to accuse, put suspicion on s.b.*
	/oosodan/ (o:sodan)	*to command, order*

Length of vowel occurs quite frequently otherwise in verbs beginning
with an /a-/ and the added prefixes /na-/, /ma-/, /a-/, /da-/ and their
combinations /mada-/, /romə-/, /rona-/, /roda-/, /romada-/ e.g. /aridan/
to shine, spear gives /naari/ (na:ri) *shall shine, spear.*

3. DESCRIPTION OF PHONEMES WITH ILLUSTRATIONS

3.1. CONSONANTS

/p/	a voiceless labial stop	/pai/	*meat*
/mp/	a labial voiced nasal plus voiceless labial stop	/mpu(i)/	*water, river*
/b/	a voiced labial stop	/bi?/	*blood*
/mb/	a labial voiced nasal plus voiced stop	/kasombi/	*smelling herb*
/t/	a voiceless alveolar stop	/totin/	*tree pulp*
/nt/	an alveolar voiced nasal plus voiceless alveolar stop	/ntuŋ?/	*stalk, stump*
/d/	a voiced alveolar stop	/doŋ/	*bamboo drum*
/nd/	an alveolar voiced nasal plus voiced alveolar stop	/mimindan/	*to get dark*
/k/	a voiceless velar stop	/kits/	*string, threat*
/ŋk/	a velar voiced nasal plus voiceless velar stop	/gaŋkaŋ/	*shell*
/g/	a voiced velar stop	/gai/	*tree, wood*
/ŋg/	a velar voiced nasal plus voiced velar stop	/ruŋgan/	*himself*
/?/	a voiceless glottal stop	/ima?/	*no*
/ŋ?/	a voiced velar nasal plus glottal stop	/sisiŋ?/	*news, message*
/ts/	a voiceless alveolar affricate stop	/tsa?/	*prop*
/nts/	a voiced alveolar nasal plus voiceless affricate stop	/ntsuf/	*pit, hole*
/dzaf/	a voiced alveolar affricate stop	/dzaf/	*fire*

/ndz/	a voiced alveolar nasal plus voiced alveolar affricate stop	/ndzaman/	*to bless, chart*
/m/	a voiced labial nasal	/mamo/	*cassowary*
/n/	a voiced alveolar nasal	/nidan/	*to speak*
/ŋ/	a voiced velar nasal	/ŋadan/	*to open wide* (mouth)
/f/	a voiceless labiodental frigative	/fain/	*a part, some*
/s/	a voiceless alveolar frigative	/sai/	*prairie grass*
/h/	a voiceless glottal frigative	/haha/	*jubilant cry*
/r/	a voiced alveolar rolled vibrant	/ratan/	*to fear*
/w/	a voiced high close back unrounded non-syllabic vocoid	/wap/	*forest*
/j=γ/	a voiced high close front unrounded non-syllabic vocoid	/jaban/	*to go up*

3.2. VOWELS

/i/	a voiced high close front unrounded vowel	/gian/	*his cheek*
/u/	a voiced high close back unrounded vowel	/gum/	*work, garden*
/o/	a voiced close back rounded vowel	/nowai/	*mangotree and fruit*
/a/	a voiced low open central unrounded vowel	/garam/	*man, people*
/ii/	a voiced high close front unrounded vowel	/tsiipo?/	*Taro beetle*
/oo/	a voiced middle close back rounded long vowel	/foofi/	*bamboo flute*
/aa/	a voiced low open, central unrounded long vowel	/maama?/	*child*

4. CONSTRUCTION OF SYLLABLES

Syllables in Adzera consist of an optional onset of one or two consonants, an obligatory nucleus (peak) of one or two vowels[6] and an optional coda of one consonant. (Word medial sequences of two consonants are mostly of the same type as the syllable onset.)

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[6] There are a number of words, which contain a syllable nucleus of three vowels /poait/ *beautiful* /ofoail/, *quarrel,* etc.

$$\pm C_1 \pm C_2 \pm V_3 \pm V_4 \pm C_5$$

If C_2 is absent C_1 = any of the prenasalized or non-prenasalized voiced and voiceless stops, the nasals, frigatives, vibrants and semi vowels; except /ʔ/, /ŋʔ/ and /ŋg/.

If C_2 is /r/ C_1 = any consonant except /ʔ/, /ŋʔ/, /ndz/, /ŋg/, /n/, /w/, and /j=y/.

If C_2 is /w/ C_1 = any velar.

V_3 and V_4 may be any vowel, but the sequences /uu/, /ou/ and /uo/ do not occur. (Sequences /ii/, /oo/ and /aa/ are phonetically long vowels).

All of the 12 possible syllable types covered by this formula have been observed in both monosyllabic and polysyllabic words.

$$C_5 = \begin{matrix} p & t & ts & k & ʔ \\ {}^mp & {}^nt & {}^nts & {}^ŋk & {}^ŋʔ \\ b & & dz & & \\ m & n & & ŋ & \\ f & s & & & \\ r & & & & \end{matrix}$$

The following types of syllable structure, therefore occur (v = vowel, C = consonant):

Type of Nucleus	Open Syllables	Closed Syllables
Simple Nucleus		
No Onset	V	VC
Simple Onset	CV	CVC
Complet Onset	CCV	CCVC
Complex Nucleus		
No Onset	VV	VVC
	VVV	VVVC
Simple Onset	CCV	CVVC
	CVVV	CVVVC
Complex Onset	CVV	CCVVC

5. DISTRIBUTION OF PHONEMES

5.1. *SINGLE CONSONANTS AS DESCRIBED ABOVE*

(Word initial, intervocalic and final).

/p/ /pai/, *meat* /dapiŋ⁷/, *saliva* /wap/, *forest*

/mp/ /mpu/, *water* /impa/, *he sits* /gamp/, *village*

/b/ /bi⁷/, *blood* /iba/, *he came* /ifab/, *pig*

/mb/, - /kasombi/, *smelling herb* -

/t/ /tauf/, *stone* /tata⁷/, *morning* /pit/, *G-string*

/nt/ /ntuf/, *noise* /dintut/, *Elefantiasis* /fadafint/, *termite*

/d/ /doŋ/, *bamboo drum* /dadaŋi/, *fern* -

/nd/, - /gando-gando/, *a specie of yam* -

/k/, /kits/, *string* /akaran/, *to write* /kawak/, *Leatherhead bird*

/ŋk/ /ŋkiaŋ⁷an/, *be bitter* /gaŋkaŋ/, *skin, shell* /imiŋk/, *dark*

/g/ /gai/, *tree-wood* /gagiran/, *mend* -

/ŋg/, - /ruŋgan/, *himself* -

/⁷/, - /gro⁷an/, *to slip, fall* /muŋa⁷/, *retribution*

/ŋ⁷/, - /gafiŋ⁷an/ *to press* /sisiŋ⁷/, *news, message*

/ts/ /tsa⁷/, *prop* /pitsia/, *a winged ant* /maŋits/, *famine* -

/nts/ /ntsuf/, *pit, hole* /ŋantsiaŋ/, *stunted* /ŋants/, *shield* -

/dz/ /dzaf/, *fire* /moadzip/, *path* /jidzudz/, *filled up*

/ndz/ /ndzadan/, *cover with* /indzam/, *blest* -

/m/ /mai⁷/, *day* /jami/, *sterile, barren* /dziram/, *black cockatoo*

/n/ /nidan/, *to speak* /mana⁷/, *outside* /maŋan/, *who? one*

/ŋ/ /ŋir/, *rafter* /gaŋaf/, *level, flat* /ganaŋ/, *banana, yam*

/f/ /fain/, *a part, some* /afa⁷/, *sister-in-law* /wauf/, *wild kapok*

/s/ /sai/, *prairie grass* /sasa⁷/, *empty* /opis/, *bean*

/h/ /hai/, *yes* /haha/, *jubilant cry* -

/r/ /raban/, *to hack, hoe* /rarub/, *Caurie shell* /ratar/, *old*

/w/ /wap/, *forest* /watsawits/, *hawk* -

/j=y/ /jaban/, *to go up* /jaja⁷/, *slippery* -

5.2. SYLLABLE INITIAL CONSONANT CLUSTERS

5.2.1. C + r (Word initial and medial)

/pr/ /propan/, *to fall*   /opras/, *deep, penetrating*

/mpr/ /mpris/, *grater*   /impra'/, *he goes round*

/br/ /brofan/, *to snore*   /nabrof/, *knife-spear*

/mbr/ /mbro'/, *material, vine* /imbras/, *to spread wide, free its branches*

/tr/ /trisan/, *be tough*   /itrap/, *he clips off*

/ntr/ /ntrakan/, *to click o's tongue*   /mintroa/, *figtree* and *fruit*

/tsr/ /tsrukan/, *to suck*   /itsri/, *a tree*

/ntsr/ /ntsrukan/, *become loose*   /intsru'/, *bears no fruit*

/dr/ /druŋan/, *full of leaves*   /idra /, *he goes in a crowd*

/dzr/ /dzra'/, *up-stream*   /idzrob/, *releases bow*

/kr/ /kras/, *dancing tune*   /krikakrik/, *noise of gulping*

/ŋkr/ /ŋkraŋan/, *be hard, ripe*   /aŋkrosan/, *to limp*

/gr/ /graŋ/, *stone blade of adze*   /bigro'agin/, *turn around*

/mr/ /mri'/, *dry, arid*   /mrumri'/, *very soft* (fruit)

/ŋr/ /ŋro'/, *depression*   /sisiŋri'/, *a tree*

/fr/ /frodzan/, *to bubble*   /ifrip/, *he jerks*

/sr/ /sroakan/, *to crawl*   /jasru'/, *a tree*

5.2.2. C + w (Word initial and medial)

/kw/ /kwarak/, *verandah*   /kakwak/, *beardless*

/ŋkw/ /ŋkwafan/, *to breathe heavily*   /gaŋkwai/, *a specie of yam*

/gw/ /gwasan/, *to overlook*   /maragwaŋ/, *big, green lizard*

/ŋgw/ /ŋgwaŋan/, *to bark*   /daŋgwaŋ/, *he would have barked*

/ŋw/ /ŋwaŋ'an/, *be crooked*   /iŋwab/, *he howls* (dog for his master)

5.3.

Word medial consonant clusters, which can not readily be described as
syllable initial (C_1, C_2), but rather as syllable final plus syllable
initial C_5, C_1.

/ŋb/ /bajoŋbajoŋ/, *peel of bell*   /baŋbaŋˀan/, *be wide*

/mw/ /gumwat/, *smoke signal*

/ŋw/ /ŋaraŋwaran/, *search thoroughly*

Distribution of consonants within the clusters can be summarized in the following chart.

Cluster Type	Distribution in Word		
	Initial	Medial	Final
NC_2	+	+	+
C_1r; NC_2r	+	+	
ŋw; ŋgw; ŋkw; kw; gw	+	+	
ŋˀ		+	+
mw; ŋb; ŋw		+	
mbr	+	+	

N = all nasals; C_1 = all stops, frigatives and nasals except n. C_2 = voiceless and voiced stops.

5.4. *SINGLE VOWELS AS DESCRIBED ABOVE*

(Word initial, medial and final).

/i/ /ifut/, *potladdle* /antim/, *Adzeraladder* /bini/, *nice*

/o/ /okaf/, *fruit-hook* /odoroˀ/, *wood-beetle* /ogo/, *there in distance*

/u/ /utaˀ/, *empty* /utup/, *heap, great number* /idumpu/, *he splits*

/a/ /amoa/, *a banana* /antaf/, *men's string bag* /dampa/, *bow*

/i:/   -   /tsiipoˀ/, *taro beetle*   -

/o:/ /oosodan/ *order, command* /foofi/, *bamboo flute*

/a:/ /aampi/, *guest, visitor* /maamaˀ/, *child*   -

5.4.2. Vowel Clusters as Syllable Nucleus

/ia/   -   /gian/, *his cheek* /dam|pia/, *strecher*

/io/   -   /tsioˀ/, *thicket*

/oi/   -   /poif|an/, *to wrap in leaves* /o|moi/, *bottle-gourd*

/oa/   -   /foar/, *pole for carrying*   /foa|ri|dan/, *to lay out with leaves*

/ui/   -   /duiŋ/, *a smelling herb*   /mpui/, *water, river*

/ua/   -   /ruan/, *self, himself*   -

/ai/, /aits-aits/, *news*   /a|faif/, *cochroach*   /gai/, *tree, wood*

/ao/, /ao/, *interj.: he!*

/au/, /aub/, *a tree*   /tauf/, *stone*   /pau/, *tobacco*

    The following is a chart of consonants clusters. The vertical column represents the first consonant (C_1) and the horizontal represents the second consonant (C_2).

	p	t	k	b	d	g	f	s	ts,	dz,	h	r	m	n	ŋ	w	j=y	?
p												+						
^{m}p												+						
t												+						
^{n}t												+						
k												+				+		
^{ŋ}k												+				+		
b												+						
^{m}b												+						
d												+						
^{n}d												+						
g												+				+		
^{ŋ}g												+				+		
f												+						
s												+						
ts												+						
^{n}ts												+						
dz												+						
^{n}dz												+						
h																		
r																		
m	+			+								+				+		
n		+			+			+	+									
ŋ		+	+			+						+				+		+
w																		
j=y																		
?																		