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A DESCRIPTIVE GRAMMAR
OF
UKRAINIAN LOW GERMAN

by

Eric Mierau

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Introduction
and
Acknowledgements

The author's idiolect which is the main basis of this dissertation belongs to a group of dialects which are labeled Ukrainian Low German (ULG). These dialects are today spoken, generally as a second language, by perhaps over 100,000 people living mostly in Russia, Paraguay, Western Canada and Mexico. Practically all of these speakers are Mennonites who trace their origin to the Dutch Anabaptist movement of the Reformation. Due to severe religious persecution these Mennonites left northern Holland shortly after the Reformation and gradually came to settle mainly in the Prussias where their native Dutch was presumably replaced by Low German. The lure of economic freedom from the severe restrictions that developed in the Prussias after Frederick the Great, brought most of the Prussian Mennonites to the steppes of South Russia (under the encouragement of Catharine the Great) where the Old Colony or Chortitza settlement was founded in 1789 and the Molotschna settlement in 1803. Although some of the settlers left for North America as early as 1874, the majority did not do so until 1917. The last large wave of emmigration took place during World War II, with new settlements taking place both in North and South

America.

The most popular designation for ULG is /plout+diitsh/ Flat-German or /mɨnish/ Mennonite. We have chosen the term Ukrainian Low German to emphasize what seems to be the period of time during which the speech of the Low German speaking Mennonites saw its most thorough innovation and definitiveness, namely the 19th century in South Russia. We say this because of the large number of phonological differences that become apparent when comparing ULG with the various Prussian forms of Low German.

Research toward this dissertation has been done by the author over a period of three years. Summer research in 1962 was financed by the Indiana University Graduate School. This research made possibl the interviewing of a number of informants in Manitoba (Winnipeg) and in Saskatchewan, particularly the latter. Several dozens of tapes are on file in the Archives of Languages of the World, Indiana University. The author carried on further research in the summer of 1963

The author wishes to acknowledge the tireless informant help of his wife Velma and his mother-in-law Mrs. Helen Penner.

Special thanks are due to Prof. F. W. Householder Jr. for valueable suggestions and to Prof. C. F. Voegelin under whose influence as committee chairman, teacher and inspirer, this dissertation has taken shape.

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CHAPTER ONE: PHONOLOGY

1.1.1 From the typological-articulatory point of view as developed by C. F. Voegelin[1] the twenty three consonantal phonemes[2] of Ukrainian Low German (ULG) may be divided into what is basically a two dimensional scheme. These two dimensions are manner of articulation and major articulator.

The manner of articulation dimension divides the ULG consonants into four series, namely stops (S), fricatives (F), nasals (N), and liquids (L).[3]

The second dimension which concerns major articulators gives rise to what in this model is called linear distinctions, of which there are six in ULG, dividing the consonants into the following groups: bilabial or labiodental (1), alveolar (2), alveopalatal (3a), palatal (3b), velar (4) and glottal (5).[4] The label (1) indicates that the main articulator involves the lips, (2) that the main articulator is the tip of the tongue, (3) that the main articulator is the blade or

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[1]By consonants are meant all phonemes except vowels, not phonemes having the consonantal feature as in distinctive feature terminology.

[2]A brief distinctive feature analysis is given in Appendix A.

[3]For much of the terminology used in this section see C.F. and F. M. Voegelin, Guide for Transcribing Unwritten Languages in Field Work, AL 1.6.1ff (1959).

[4]This numbering system designating linear distinctions is an adaptation of C.F. Voegelin's method of using the numeral 1 for labial, 2 for tongue tip, 3 for tongue blade, 4 for tongue root and 5 for glottal consonants. These are not points of articulation, but more precisely major articulators.

mid part of the tongue, (4) that the main articulator is the root or back part of the tongue, and (5) that the main articulator is post-oral.

What might be termed a third dimension of the ULG consonant system is the series generating component of voicing[1] which introduces a series of binary oppositions among certain stops and fricatives.[2]

Voiceless stops and nasals are produced by the four articulators (1), (2), (3b), and (4), yielding /p t kj k/ and (voiced) /m n nj ng/. All voiceless stops can be said to match all nasals. The series generating component of voicing introduces three additional stops /b d g/ produced by articulators (1), (2) and (4) respectively.

In the ULG consonant system, the voiceless fricatives account for the maximum number of linear distinctions, being produced by articulators (1), (2), (3a), (3b), (4) and (5), /f s sh xj x h/ respectively. The voiced fricatives /v z zh j[3]/ are introduced by the series generating component of voicing, being produced by articulators (1), (2), (3a) and (3b) respectively. The two fricatives /sh/ and /zh/, produced by articulator (3a), are not matched by any other consonants. /f s xj x/ however, are matched by both the (voiceless) stops as well as the nasals. The only postoral ULG consonants is /h/ produced by articulator (5).

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[1]Rather than voicing, it may be more accurate to speak of lenisness and fortisness, leaving voicing and voicelessness as redundant accompanying features respectively. Whispered speech tests show native speakers of ULG to differentiate without difficulty /p/ from /b/, /f/ from /v/ etc.

[2]One phoneme, namely /j/ which has both fricative and stop allophones, is counted in the fricative series since in most of its occurences it is phonetically a fricative.

[3]For this classification of /j/ see the allophonic description of this phoneme in section 1.4.1 below.

Two liquids, /l/ and /r/, are both produced by articulator (2).

The total number of stops in ULG is seven, fricatives ten (high), nasals four, and liquids two. The total number of consonants produced by articulator (1) is five, by (2) seven (high), by (3a) two, by (3b) four, by (4) four and by (5) one (low).

In summary, it may be typologically interesting to point out that the fricatives outnumber the stops both in total number (ten to seven) and in the number of voiceless-voiced oppositions (four to three). Perhaps another typologically interesting observation is that the largest number of consonants is produced by the tongue tip at the alveolar position, (2). Diagramatically the ULG consonant system appears thus:[1]

	1	2	3a	3b	4	5	
Stops	p	t		kj	k		voiceless
	b	d			g		voiced
Fricatives	f	s	sh	xj	x	h	voiceless
	v	z	zh	j			voiced
Nasals	m	n		nj	ng		
Liquids		l					
		r					

FIGURE 1.

---

[1]Our choice of the symbols /kj sh zh xj nj ng/ is notivated purely by the mechanical limitations of a conventional typewriter keyboard. None of the phonemes designated by these symbols are phonetically complex in the sense that they are sequences, such as k plus j. See 1.4.1 below for phonetic detail.

1.1.2 The ULG vowel system, in terms of the total number of contrasts, is clear: there are fourteen such contrasts, including four diphthongs and ten monophthongs. Which of these fourteen vowels constitute unit phonemes and which constitute clusters is a complicated problem since a comparatively large number of phonetic facts enter the picture. These phonetic facts include relative length contrasts, tense-lax contrasts, three relative tongue heights, three relative areas of front-to-back articulation, and involve a series of three sunsystems in terms of (partly phonologically and partly morphologically predictable) stress phenomena.

Relative length contrasts differentiate the following four pairs of vowels (long:short respectively for each pair): /ii/ : /i/, /ee/ : /e/, /oo/ : /o/, and /uu/ : /u/. The four diphthongs /ei ai au ou/ are phonetically long, as is /a/[1] also. /ɨ/ is short.

Tense-lax contrasts include the following (tense:lax respectively for each pair): /ii/ : /i/, /ee/ :/e/, /oo : /o/, and /uu/ : /u/. For the remaining vowels there are no tense-lax contrasts.

In terms of relative tongue height, and front-to-back articulation, the ULG vowels are distributed as shown in Fig. 2 below.

	Front	Central	Back
High	ii		uu
Mid	ee, ɨ	ɨ	u, oo
Low	ei, e	ai, a, au	o, ou

FIGURE 2.

---

[1]Except when /a/ occurs in roots used as affixes, e.g. /moon-dax/ [mó:ndăx] Monday where /a/ is both short and unstressed.

The following ULG vowels occur both stressed and unstressed,[1]

FIGURE 3.

ii uu
ee oo
ei ai au ou

The vowels that occur only stressed[2] are

FIGURE 4.

i u
e a o

The only vowel that is never stressed is /ɨ/[3] so that it can be regarded as a neutralization of the five vowels /i e a o u/.

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[1]Unstressed /a/ occurs only under very restricted conditions. See previous note. Examples of unstressed long vowels are comparatively rare.

[2]Apparent exceptions are mere free variants with /ɨ/ which occur mainly in loans, /jenɨrool/ general (military) varying with /jɨnɨrool/.

[3]There is an unstressed [a] in ULG, but this vowel is interpreted as an allophone of /r/. The motivation for this analysis is morphophonemic economy, so that a form like /hoomr/ hammer exists in only one morphophonemic shape which has a syllabic /r/ in some environments (as above) and a non-syllabic /r/ in others. Should the (unstressed) syllabic [a] of hammer be interpreted as an allophone of the phoneme /a/ (which is perfectly possible), this morpheme (as well as many others including those with syllabic /l m n/ which would then -- for the sake of consistency -- be /ɨl ɨm ɨn/) would have two morphophonemic alternants, namely /hooma/ and /hoomr/.

With this much of an overview of the ULG vowels[1] a number of alternate analyses can be given, among them at least the following:

1) Basic system /i e a o u/ and /ɨ/, the rest clusters;

2) Two basic subsystems of vowels, one consisting of /i e o u/ plus a series generating component of length or tenseness, the other consisting only of /a/ (without any series generating component), and /ɨ/ comprising a third subsystem (although a neutralized one);

3) All vowels except possibly /ai/ and /au/ interpreted as units, a total of twelve. The case for considering /ei/ and /ou/ as units is supported by their phonetic structure since the upward gliding element in each is very small -- so small in fact, that the entire vowel sequence transcribed as /ei/, for example, falls within the range of the vowel /e/. A similar situation exists for /ou/ although the upward limit of the latter is in some instances as high as the lowest occurence of /oo/.

Other interpretations of the ULG vowel system could no doubt be put forward, giving further consideration to stress phenomena, neutralization, etc. We prefer the first solution because it is the simplest of those mentioned in that

1) it contains the smallest number of units;

2) it is typologically simpler than the other solutions, both in respect to subsystems and the number of contrastive features required to distinguish all the vowels from one another;

3) it makes transparent the relationship between the phonetic features of tenseness and length on the one hand, and laxness and non-length on the other;

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[1] See Appendix B for a spectrographic vowel analysis.

4) it highlights the distributional differences between vowels transcribed with two symbols (long) and those transcribed with one symbol (short), the latter being restricted to occurence in closed syllables only[1] except /ɨ/ which is not restricted in this respect.

Although the solution which we have chosen is by no means an arbitrary one, we make no claims as to its uniqueness. Nor does it seem probable that a different model -- say the binary distinctive feature model -- would lead to a unique solution.[2]

At least one interesting feature which is somewhat obscured by the solution which we have adopted, concerns the matter of tongue height: in our solution the only high vowels are the clusters /ii/ and /uu/, whereas on bothe the mid and low levels there are clusters as will as unit phonemes. This fact appears to be the strongest phonetic argument in favor of the second solution mentioned above. But adopting this second solution would require either abandoning or extensively redefining the concept of contrastive tongue height in order to incorporate the fact that tense vowels tend towards a more peripheral formant structure than do lax vowels which tend to be more centralized. Thus one would have to allow for variations within the 'same' tongue height depending on the tenseness or laxness of the vowels involved, as shown below.

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[1]The vowel /a/ of course is phonetically long, although there is no short correlate in the system. /a/ does not occur in open syllables, and in this respect patterns like a short vowel.

[2]See Appendix A.

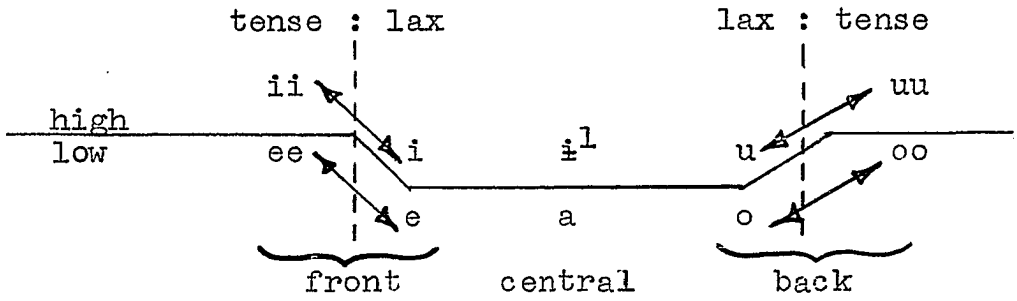

FIGURE 5.

This kind of analysis also has the advantage of showing the neutralization of tense-lax vowel pairs in open syllables, in which the total ULG vowel scheme is reduced to a system (excluding diphthongs) of four vowels beside /ɨ/ and /a/ as in Fig. 6 below.

high	ii	uu
low	ee	oo

FIGURE 6.

1.2.1 As supporting evidence for the twenty three ULG consonants, we now present a number of frames, each containing various words so arranged as to show the contrastive function of the consonants in three series or dimensions: first the point of articulation, second the manner of articulation, and third the contrasts created by the series generating component of voicing. Each frame is as minimal as possible, that is, its member words are preferably minimal sets, and where this is not possible, they are analogous sets.

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[1]Were it not for the fact that /ɨ/ is actually the sole member of a separate subsystem (interms of stress) one might consider it to be the lax counterpart of tense /a/.

1.2.1.1 Point of Articulation Contrasts.

Frame 1, stops in initial position:

/p/ as in /poor/ pair

/t/ as in /tool/ pay

/kj/ as in /kjookj/ church

/k/ as in /kool/ bald

Frame 2, stops in final position:

/p/ as in /oop/ open

/t/ as in /moot/ measure

/kj/ as in /mookj/ notice

/k/ as in /mook/ make

Frame 3, fricatives in initial position:

/f/ as in /foor/ drive

/sh/ as in /shood/ regretable

/h/ as in /hoor/ hair

Frame 4, fricatives in prefinal position:

/f/ as in /haf-t/ has

/s/ as in /las-t/ reads

/sh/ as in /lash-t/ erases

/xj/ as in /laxj-t/ lays

/x/ as in /lax-t/ laughs

Frame 5, nasals in initial position:

/m/ as in /moot/ measure

/n/ as in /noot/ seam

Frame 6, nasals in final position:

/m/ as in /shlem/ ill tempered

/n/ as in /shen/ dandruff

/nj/ as in /zenj/ singe

/ng/ as in /lung/ lung; compare also /hunj/ dogs

Frame 7, liquids in initial position:

/l/ as in /loot/ allow

/r/ as in /root/ council

Frame 8, liquids in final position:

/l/ as in /hool/ fetch

/r/ as in /hoor/ hair

The incompleteness of frames 3, 4 and 5 is due to the restricted distribution of certain phonemes. The contrast between /h/ and /x/ occurs only in a very few items, e.g., /jɨ-hou-t/ had compared to /rɨxul/ greedy person. Were morphological evidence to be taken into account, the contrast between /h/ and /x/ could be predicted since /h/ occurs only morpheme initially and /x/ occurs only morpheme non-initially.[1] Our reason for maintaining the contrast is primarily morphophonemic because /x/ alternates regularly with /g/ but never with /h/; for example, /huux/ high : /huug-ɨ/ high ones. /x/ and /xj/ are also neutralized in certain environments, for example /huux/ high : /hexj-r/ higher. /h/ does not take part in any such neutralizations, unless one were to relate it to /ng/, the latter occuring only after the stressed vowel of a syllable, the former only before the stressed vowel of a syllable.

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[1]But note the proper name /jɨhoun/ John where /h/ is not morpheme initial. Proper names in general exhibit a fair number of extrasystemic peculiarities which we have not dealt with.

1.2.1.2 Manner of Articulation Contrasts.

Frame 1, contrasts at position (1):

/p/ as in /poor/ pair

/f/ as in /foor/ drive

/m/ as in /mool/ (number of) times

Frame 2, contrasts at position (2):

/t/ as in /huut/ skin

/s/ as in /huus/ house

/n/ as in /kuun/ turkey

/l/ as in /kuul/ dimple

/r/ as in /zuur/ sour

Frame 3, contrasts at position (3) (both a and b):

/kj/ as in /vakj/ wake

/sh/ as in /vesh/ wipe

/xj/ as in /vaxj/ away

/nj/ as in /venj/ turn

Frame 4, contrasts at position (4):

/k/ as in /luk/ trap door

/x/ as in /lox/ hole

/ng/ as in /lung/ lung

1.2.1.3 Voiced-Voiceless Contrasts.

/p/ : /b/ as in /trup/ troup : /trub/ pipe

/t/ : /d/ as in /riit/ tear : /riid/ ride

/k/ : /g/ as in /mook/ make : /moog/ stomach

/f/ : /v/ as in /braif/ letter : /braiv/ letters

/s/ : /z/ as in /riis/ rice : /riiz/ giant

/sh/ : /zh/ as in /farsh/ verse : /farzh/ verses

/xj/ : /j/ as in /booxj/ mountain : /booj/ mountains

1.2.2 As evidence for the contrastive function of the ULG vowels we present the following examples, including all intrasyllabic vowel clusters:

/i/ as in /zi-t/ sees	/u/ as in /vut/ temper
/ii/ as in /zii-t/ be! (pl.)	/uu/ as in /ruut/ out
/e/ as in /zet/ sit	/o/ as in /rot/ eradicate
/ee/ as in /reet/ speaks	/oo/ as in /zoot/ seed
/ei/ as in /zei-t/ sows	/ou/ as in /zout/ sat
/ai/ as in /zait/ sweet	/au/ as in /shaut/ pod

/a/ as in /zat/ plant

The vowel /ɨ/ occurs only in (phonetically unstressed position, so that true minimal pairs exhibiting a contrast between /ɨ/ and any of the other vowels do not exist,[1] for example, /jɨnou/ exact : /jen-ɨ/ to grant; compare also /ran-ɨ/ to run with /ran-r/ one who runs (where /r/ is both vocalic and syllabic).

1.3.1 In order to make it possible to describe the distribution of the ULG phonemes within the limits of such recurrent patterns as have a relatively high frequency in the language, we here attempt to delimit a context which will make our distributional statement maximally efficient. Since the syllable is a likely candidate as a point of reference for

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[1]Although such contrasts do not exist -- at least in that none have been noted by us -- they are nevertheless theoretically possible since vowel clusters (but not the single vowels /i e a o u/ which are always stressed) do occasionally occur unstressed.

stating the distribution of phonemes, we first consider this possibility.

To define the syllable in purely phonetic terms would require not only a statement concerning syllable peaks, but also a statement delimiting all syllable boundaries by certain junctural features. A definition of the former -- the syllable peaks -- is not particularly problematic, at least in the case of certain phoneme sequences, for example, /bɨ-tool-ɨ/ to pay for, which clearly has three syllable peaks but offers no phonological clues that would unambiguously assign /t/ and /l/ to a particular syllable. Another example, this time containing a consonant cluster, permits three possible 'syllabifications': /hundrt/ hundred (/r/ here being both syllabic and vocalic). In this morpheme /n/ may belong to the first syllable and /d/ to the second; /nd/ may both belong to the first syllable (compare /vund/ wound), or /nd/ may both belong to the second. This last mentioned alternative is actually not possible because it would leave the first syllable open, and with a single vowel of the series /i e a o u/, which is an impossible sequence in as much as monosyllabic utterances of this sort do not occur in isolation in ULG.

There are some sequences of phonemes in ULG that clearly exhibit such junctural features as make it possible to determine syllable boundaries. For example, the sequence /kt/ in /ɨktaubr/ October has several phonetic features which can be generalized as follows: any syllable final stop is lengthened and weakly released provided it is followed in the same work by another consonant.[1] Other phoneme sequences at syllable

[1] This applies to one-root words only. Compounds exhibit this feature even when followed by a vowel.

boundaries, both of the type that do and those that do not permit the identification of clearly delimited syllable boundaries could be cited. (for a more complete discussion of these junctural features see 1.5.2 below.)

A suitable contextual framework for the description of the distribution of ULG phonemes is not to be found in terms of the phonetic syllable which we have unsuccessfully attempted to define. Some unit other than the syllable will therefore be necessary in order to make structurally pertinent statements about phoneme distribution. This unit is the monosyllabic morph, which can be defined phonologically as a single phonetic syllable (i.e. a single syllabic pulse produced by the motion of the intercostal muscles, which in ULG amounts to a single harmonic peak[1] optionally preceded and/or followed by a consonant or consonant cluster) the boundaries of which are morphologically determined. The phonetico-morphological hybrid resulting from the above definition we will call a syllable (rather than some such monstrosity as a 'syllamorph' even though that is precisely what is meant), and it is this kind of 'syllable' in reference to which we will make statements in the following section concerning the distribution of ULG phonemes.

Before going into distributional statements, however, a word must be said about polysyllabic morphs, which have so far been excluded from our definition. In any polysyllabic morph a syllable boundary will be assumed to occur wherever a phonemic sequence other than any that occurs in a monosyllabic morph exists. This definition will separate syllables where junctural features are present, but leave syllable boundaries ambiguous where no such junctural features are present. To illustrate

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[1]Including the vocalic-syllabic allophone of /r/.

this point, we again use the word /ɨktaubr/ October which is a single polysyllabic morpheme containing three syllabic peaks (the last being a syllabic allophone of /r/). Junctural features enable us to make the division ɨk--taubr, but the boundary between the last two syllables remains ambiguous. Since there are no systematic rules governing the juxtaposing of phonemes across syllable boundaries (which by our definition of syllable imply morpheme boundaries), we will describe phoneme distribution with reference to the word and syllable only.

But first we turn to the definition of the ULG word, to which distributional references will also be made. In ULG two degrees of length of pause in deliberate but connected discourse can be detected. The longer of these two occurs before and after units which we will call words (simple phonological words), the shorter one between certain syllables (as defined above). All words[1] are also characterized by one prominent stress which occurs normally as part of the sentence pattern, or as a component of empnasis (independent of a particular sentence pattern). Stress, juncture and intonation are treated in more detail in 1.5 below.

The distribution of ULG phonemes will now be described in some detail with reference to the syllable, and in (necessarily) lesser detail with reference to the word. With reference to the syllable, we present a minimum-maximum formula in which C stands for consonant, and V for vowel or vowel cluster:

---

[1]Certain particles can not receive primary stress, and are consequently treated as affixes with special phrase functions, i.e. phrase rather than word affixes (often called clitics, in this case proclitics). For example, /fɨ/ for in /ekj dau dout fɨ dee-n jung./ I do that for the boy.

(C) (C) (C) V (C) (C) (C) (C)[1]

Examples of all observed syllable types follow:

V	/ei/	egg
VC	/ekj/	I
VCC	/ailj/	oil
VCCC	/angst/	fear
VCCCC	/ailj-zd/	(you) oiled
CV	/nee/	no
CVC	/mot/	must
CVCC	/hamd/	shirt
CVCCC	/kjarps/	pumpkin
CVCCCC	/kjamf-st/	(you) fight
CCV	/fruu/	woman
CCVC	/trub/	pipe
CCVCC	/flint/	gun
CCVCCC	/kjlam-st/	(you) pinch
CCVCCCC	/shlurp-st/	(you) slurp
CCCV	/shtrau/	straw
CCCVC	/shkloov/	slave
CCCVCC	/shtrangk/	rope
CCCVCCC	/shtrenj-st/	(you) exert

1.3.2 With reference to the syllable as defined in 3.1 above, all single consonants except /h/ occur finally, and all except /s zh xj x nj ng/ occur initially. The following two consonant clusters occur:

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[1]The only unattested sequence is the maximum, i.e. CCCVCCCC.

(S- stop, F- fricative, N- nasal, L- liquid)

	Initial	Final
S-F	t, d, kj, k plus v; t plus s	p, t, kj, k plus s or sh
S-N	kj, k, g plus n	
S-L	p, b, kj, k, g plus l or r; d plus r	
F-S	sh plus p or t	
F-F	sh plus v	
F-N	sh plus m or n; j plus n	
F-L	f, sh, j plus l or r; v plus r	
N-S		m plus p, b or d; n plus t or d; nj plus kj; ng plus k
N-F		m plus f, s or z; n plus s, z, sh or xj; nj plus sh
L-S		l or r plus p, t, d or kj
L-F		l or r plus m; r plus n

Barring certain morphophonemic contractions (see 2.0.3 below) any final V, C, or CC may be followed by /sh/, /s z sh/, /t d/, or /st sht zd zhd/,[1] thus producing additional two-consonant clusters as well as three- and four-consonant clusters.

There are also four initial three-consonant clusters in ULG, namely, /shpr shpl shtr shkl/.

All intrasyllabic ULG vowel clusters have already been mentioned. All of these clusters occur in all positions in the syllable, that is, they occur initially, medially, and finally. No single vowels occur syllable finally except /i/ (but note the onomatopea /na/, an exclamatory or hesitation particle).

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[1]The reason for these groupings is that in most instances they represent morpheme alternants, e.g. /bang-st/ (you) are lonesome, /bang-zd/ (you) were lonesome, but compare /angst/ fear, a single morpheme.

With reference to the chart showing the position and types of consonant clusters that occur in ULG, note the absence of two phonemes, /x/ and /h/. /x/ does of course appear in clusters when it occurs stem finally and is followed by consonantal suffixes, as in /duu luux-st/ you lied. /h/ never clusters within the syllable in ULG.

There is a unique case of overlap between initial and final clusters, /ts/, as in /tseixj/ fabric and /rets/ crack.

The phoneme /r/ participates in the largest number of consonant clusters, /zh/ and /ng/ in the least. The exact numbers, based on the chart (above) are as follows: /r/ in 22, /l/ in 19, /sh/ in 14, /n/ in 12, /kj/ in 9, /p t v m/ in 8 each, /k s/ in 7 each, /d f j/ in 5 each, /b g xj/ in 3 each, /z nj/ in 2 each and /zh ng/ in one each.

Restrictions in the types of phonemic sequences that may occur across syllable boundaries depend almost entirely on the difference between affixation and compounding. In the latter there are no restrictions whatsoever, but in the former there are many, which will be discussed in chapter 2 below. Examples illustrating various consonantal sequences occuring in compounds are /t+t/[1] as in /ruut+toz-i/[2] to drag out, /rps+sh/ as in /kjarps+shal/ pumpkin peel, /p+m/ as in /oop+mook-i/ to open. Vowel clusters are equally unrestricted, for example, /oo+oo/ as in /noo+oop-i/ to mimic. A few polysyllabic morphemes also contain consonantal or vocalic sequences of the type that generally

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[1]Any geminate sequence except /rr/ is phonetically long.

[2]For the function of /+/see 1.5.1 below.

are restricted to compounds, for example, /kt/ in /ɨktaubr/ October, and /ɨou/ in /tɨoutr/[1] theatre.

1.4.1 Significant Allophones of ULG Consonants.

/p/ is a voiceless, tense, bilabial stop, unaspirated after /s sh/, also unaspirated before /ɨ/; aspirated elsewhere.

/t/ is a voiceless, tense, alveolar stop, unaspirated before and after /s sh/ and /ɨ/; aspirated elsewhere.

/kj/ is a voiceless, tense, palatal stop (phonetically a unit rather than a sequence), unaspirated before /s sh/ and /ɨ/; aspirated elsewhere.

/k/ is a voiceless, tense, velar stop, unaspirated before and after /sh/, and before (but not after) /s/ and /ɨ/; aspirated elsewhere.

/b/ is an unaspirated, voiced, lax, bilabial stop.

/d/ is an unaspirated, voiced, lax, alveolar stop.

/g/ is an unaspirated, voiced, lax, velar stop.

In work final position all ULG stops are optionally unreleased, and therefore (in the case of /p t kj k/) also unaspirated.

/f/ is a voiceless, tense, labiodental fricative.

/s/ is a voiceless, tense, alveolar fricative.

/sh/ is a voiceless, tense, alveopalatal fricative.

/xj/ is a voiceless, tense, palatal fricative (phonetically a unit rather than a sequence).

/x/ is a voiceless, tense, velar fricative.

/h/ is a voiceless, glottal fricative.

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[1] /ɨ/ is a separate syllable, delimited on both phonetic and distributional grounds.

/v/ is a voiced, lax, labiodental fricative.

/z/ is a voiced, lax, alveolar fricative.

/zh/ is a voiced, lax, alveopalatal fricative.

/j/ is a voiced, lax, palatal stop after /i/ and /e/, and a voiced, lax, palatal fricative elsewhere, with medium friction intervocalically, and heavier friction elsewhere. Phonemically /j/ acts as the counterpart of /g/, the two being neutralized in certain environments; morphophonemically, /j/ is the voiced counterpart of voiceless /xj/. Distributionally, /j/ patterns much like the less restricted fricatives such as /f/, /z/ or /sh/.

/m n nj ng/ are voiced, nasal continuants, bilabial, alveolar, palatal and velar respectively.

/l/ is an alveolar lateral continuant. /l/, /m/ and /n/ have syllabic allophones in the environments C_C_x and $C\_\#$ ($C_x \neq /r/$).

/r/ has four major allophones as follows:

[r], an alveolar flap, occurs in the environment V_V (where V equals either a single or a double vowel);

[r, r̃], alveolar flap or trill, occurs in the environments C_V, V_C, #_ and $V_x\_\#$ ($V_x \neq VV$);

[a̠], a non-syllabic raised-low central vowel, occurs in the environments $V_1V_1\_C$ and $V_1V_1\_\#$.[1]

[a], a syllabic low central vowel (but always unstressed, unlike the

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[1]In these environments [a̠] occurs intramorphemically and [a] intermorphemically, so that, on purely phonological grounds, these two allophones can be said to contrast, e. g. /buur/ farmer [bú:a̠] versus B/buu-r/ builder (build plus agentive suffix) [bú:a] ; compare also the bisyllabic form /buu-ɨ/ to build.

phoneme /a/ with which it is in all other respects identical), occurs in the environments C_C, C_# and V^1V^2_# (see previous footnote). Examples illustrating the various allophones of /r/ are, /voor-ɨ/ to become with [r]; /kral/ bead, /kort/ short, /ran/ run and /bur/ felt (noun), all with [r, r̃]; /foor-t/ drive (pl.)! (contrasting with /foot/ touch) and /fiir/ fire, both with [ą]; and /foodr-sh/ fathers, /amr/ pail, and /ei-r/ eggs, all with [ă].

1.4.2 The main allophones of the ULG vowels are shown in Fig. 7 and Fig. 8 below.

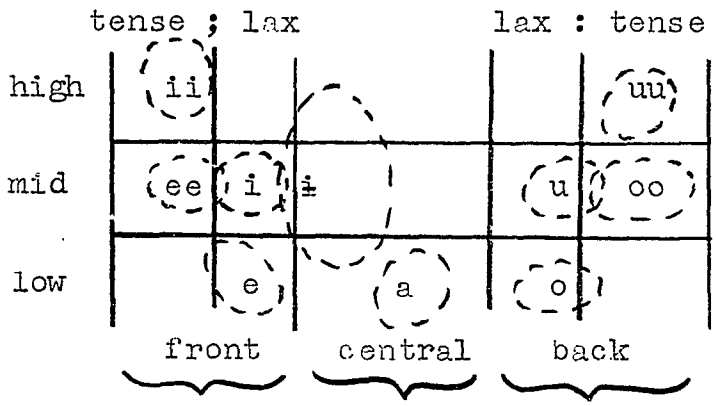

FIGURE 7.

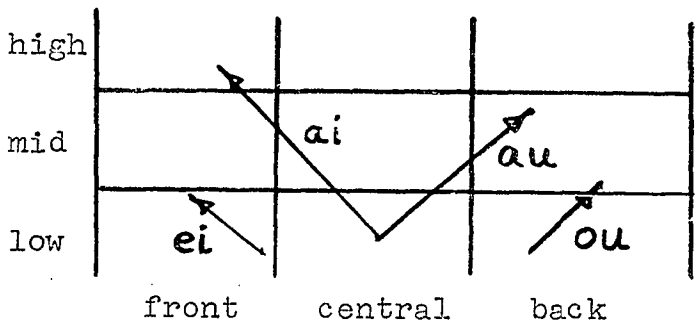

FIGURE 8.

The two phonetically high vowels are /ii/ and /uu/, front and back respectively, both tense and long. Their respective lax, short counterparts, phonetically mid, are /i/ and /u/, front and back respectively. The other phonetically mid vowels are /ee/ and /oo/, front and back resp., both tense and long; /ɨ/ is the only other phonetically mid vowel, although

its vertical range is very large, partly as a result of free variation, and partly determined by surrounding consonants, e.g. labials tend to lower this vowel, whereas palatals tend to raise it and velars tend to round it somewhat. The other features of /ɨ/ are its extreme shortness, laxness, and fronted central articulation. The lax counterparts of /ee/ and /oo/ are /e/ and /o/ resp. These vowels occur phonetically at low tongue height (along with /a/ and the starting points of all diphthongs), front and back resp., both short. /a/ is a low, central, relatively long and tense vowel; sometimes /a/ is slightly lower than /e/ or /o/, but not generally.

The starting points of the diphthongs /ai/ and /au/ fall within the range of /a/, from where /ai/ rises to a high front position, and /au/ to a high back position; /ai/ actually rises phonetically higher than does /au/. The gliding element in the diphthongs /ei/ and /ou/ is very much smaller than in the diphthongs described above. It is so small in fact, that both the beginning and ending point of /ei/ remains within the allophonic range of the monophthong /e/ (see Figs. 7 and 8 above); the gliding element in /ou/, although slightly less than in /ei/ has its ending point outside of the allophonic range of /o/, since the vertical range of this vowel (i.e. /o/) is very small. /ei/ rises from a low centralized front position to a low-mid front position; /ou/ from low centralized back to low-mid back. All diphthongs are phonetically long. All vowels transcribed by the symbols u and o are rounded.

All V_1V_1 clusters have a mid central non-syllabic offglide before velar and palatal stops and fricatives as well as before the consonantal allophones of /r/, e.g., /muuk/ [mú:ᵊk] made, /biij/ [bí:ᵊj] bend, and

/feerɨ/ [fé:ˀrɨ] in front.

1.5.1 The phonological word has already been identified in 3.1 above. We here specify further, that the phonological word is a minimal utterance occuring potentially between long (as against short) silences with one predominant stress. This stress is predictable according to the following set of rules, some of which have phonemic, others morphemic implications:

1) The first VV sequence in any word receives predominant stress (hereafter marked ´ over the vowel of the stressed syllable).

2) If a word does not contain any vowel cluster, then the first V other than /ɨ/ receives ´.

3) /ɨ/ is never stressed.

4) The abstractivizing suffix /-ríi/ is always stressed (so that this rule takes precedence over 1) and 2) above.[1] No other affixes ever receive primary stress, even when conditions 1) and 2) are fullfilled by them.

Words appearing to violate any of the above rules -- and there are a few such words including the name of six of the months of the year plus some others -- also have an alternate form which does conform to these stress rules. For example, /jounɨvóor/ or /jóunɨvoor/ January, /noovámbr/ or /nɨvámbr/ November, /ougúst/ or /ɨgúst/ August.

Compound phonological words can be defined in terms of both juncture and stress as strings of two or three simple phonological words. Juncturally, such compounds are bounded (potentially) by long silences, and may or may not have internal short silences (or junctures), depend-

[1]When this suffix combines with a root, this root receives secondary stress, marked ` , as in /foorm-r-rii/ farming business [fò:ɡ̃márí:].

ing on which phonemes are present. As for stress, compound words contain as many stressed units as they do simple words, the first of which has one primary stress, and the others each one secondary stress. The position of this secondary stress is the same as it would be, should the simple word with which it occurs (as a member of a compound word) stand alone. E. g. /daut+mook-ɨ/[1] [dáutmò:ʔkɨ] to kill, contains two simple words, /daut/ dead and /mook-ɨ/ to make. As the first member of a compound, /daut/ receives primary stress and /mook-ɨ/ as the second member receives secondary stress which occurs in the same position as primary stress would occur, should /mook-ɨ/ stand as an isolated simple phonological word.

Our analysis of stress rules and compounds leaves a small residue of 'minimal pairs' where one member of the pair contains a prefix (which is unstressed) and a stem (which has primary stress), and the other member contains two stems, the first with primary and the second with secondary stress. An example is /ùnjr-hául-ɨ/ to converse vs. /únjr+hàul-ɨ/ to hold under.[2] The first of the items illustrated above is a simple phonological word with affixes only, and the second is a compound phonological word. A typological implication of the occurence of the same form with and without stress,[3] in terms of the major-minor morpheme cleavage as developed by C. F. Voegelin, is that such forms

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[1] /+/ denotes compound-internal stress-group boundaries, irrespective of any (other) junctural features; /-/ denotes affix boundaries.

[2] The first element in such pairs is either /unjr/ under or /eevr/ over.

[3] Better, with different degrees of stress, e.g. weak (unstressed), secondary and primary.

can be considered major morphemes with one function, and minor morphemes with another. An example is, /vòut-émr/ whatever vs. /vóut/ what, cp. also /írjnt+vòut/ anything.[1]

1.5.2 We recognize a number of non-contrastive, entirely predictable intersyllabic junctural features. The first of these is internal to the compound word and concerns geminate consonant clusters which are phonetically long. /+/ always occurs simultaneously with this feature, e.g. /om+mook-i/ to alter, /fol+lakj-i/ to drip full, /ruut+tekj-i/ to jerk out.

The second of these intersyllabic junctural features is internal to either the simple or compound word and concerns dissimilar consonant clusters whose first member is a stop, and whose second member is any consonant except /h/. The junctural feature here is a delayed, weak release of the first memner, and therefore also the absence of any aspiration on the part of /p t kj k/. This feature may or may not occur simultaneously with /+/, e.g. /shlaxt+masr/ [shláxtmàsă] butcherknife, /iktaubr/ [iktáubă] October. The cluster /j+g/ [dʸg] also shows the last described feature, e.g. /trij+goon-i/ [tridʸgò:ni] to go back. Voiceless stops followed by /h/ or /V/ (vowel) also have this feature, e.g. /uut+haul-i/ [ú:thàuli] to endure.

Another junctural feature occuring in conjunction with vowels consists of a weak glottal interruption which occurs in the following environments:

1) /...i_V.../ e.g. /fi-enjst-i/ [fi?énjsti] to frighten

2) /_V.../ e.g. /akj/ [?ákj] corner

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[1]Even here, the morphemic identity of the various usages of /vout/ remains problematic. Further discussion is given in chapter 3 below.

3) /..._V.../ e.g. /noo+oop-ɨ/ [nó:ʔò:pɨ̀] to mimic, /drangk+amr/ [drángkʔàmă] slop-pail, /derxj+aiv-ɨ/ [dérxjʔàivɨ̀] to practise through. Of the above mentioned three environments, 1) and 3) involve syllable boundaries, and 2) involves word boundaries.

External juncture is marked by space and represents long silence, which occurs between words only when the speaker is being very deliberate or emphatic; it also occurs generally between clauses and sentences. When inter-word silence is lacking, we still write interword space to prevent any ambiguous representations of, say, simple as against compound words. It may be noted here that our definition of the word depends on its occurence with potential primary stress[1] together with its relevant junctural features.

Three contrastive intonation contours, symbolized by period (.), exclamation mark (!), and question mark (?) are definitive of the phonological sentence. The main characteristics of each may be represented as follows: (w word; a raised numeral indicates relative pitch, ^{1} the lowest, ^{4} the highest) e.g. $w^{2}w^{2}w^{2}w^{3-1}$ /w w w w./, as in /morjɨ goo ekj vaxj./ (tomorrow go I away) Tomorrow I am going away.; w^{2-4-2} /w!/, as in /jɨhoun!/ John!; $w^{2}w^{2}w^{2-3}$ /w w w?/, as in /jei-st duu vaxj?/ (go you away) Are you going away?.

The essential feature of the declarative sentence (.) is the lowering of the pitch of the stressed syllable of the last word in the sen-

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[1]More research is needed to determine when forms do and when they do not receive primary stress. The problem appears to be one of rhythm in sentences, complicated by emphatic stress phenomena.

tence unless some earlier word -- even the first one -- is emphasized, in which case this lowering of pitch sets in with the emphasized word and continues to the end of the sentence: $w^{4-1}w^{1}w^{1}w^{1}$ /ẅ w w w./ (where " marks the emphasized word) as in /mörjɨ goo ekj vaxj./ (tomorrow go I away) Tomorrow I am going away.

The essential feature of the imperative sentence (!) is the occurence of pitch 4 in conjunction (where applicable) with, for example, the absence of the actor person pronoun which must alwats occur in a declarative sentence: $w^{2}w^{4-2}$ /w w!/ as in /goo-t vaxj!/(go-you pl. away) Go away! (cp. the declarative /jii goon-ɨ vaxj./ You are going away.).

The interrogative sentence (?) is characterized by the rising pitch of the stressed syllable of the last word, unless some other word in the sentence is emphasized, in which case this rising pitch begins with the emphasized word and continues through to the end of the sentence: $w^{2-3}w^{3}w^{3}$ /ẅ w w ?/ as in /jëi-st duu vaxj?/ (go you away) You are going away?. Special interrogative word order (verb plus actor person, as in the interrogative sentences cited above) does not necessarily occur with the interrogative contour, nor does the interrogative contour necessarily occur with interrogative word order, that is to say, either interrogative word order or interrogative contour or both together, signify interrogation. An example of each of these three possibilities is given below. The exemplary sentence in each case means Are you going away?.

$w^{2}w^{2}w^{3-1}$ /w w w./ as in /jei-st duu vaxj./ (order only)

w 2w2w2-3 /w w w?/ as in /duu jei-st vaxj?/ (intonation only)

w2w2w2-3 /w w w?/ as in /jei-st duu vaxj?/ (both)

To the second of the above examples compare $w^2\ w^2\ w^{3-1}$ /w w w./ as in /duu jei-st vaxj./ which is declarative and not interrogative.

Since pitch 4 is associated with the emphasis of individual words, any of the three above cited examples could be (among other things) $w^2\ w^2\ w^{2-4}$ /w w ẅ?/, for example, /duu jei-st vä̈xj?/ <u>You are going away?</u>.

The above described contours define only phonologically simple sentences, i.e. one-contour sentences. Multicontour sentences (frequently consisting of one syntactic clause per phonological contour) have the internal juncture (,) which indicates a rise in pitch at the end of each clause with which it occurs, e.g.

/vn duu door han+kjem-st, n am zit-st, dan zaj mii./

<u>when you there there-get and him see then tell me</u>

<u>When you get there, and see him, tell me.</u>

$w^2\ w^2\ w^2\ w^2w^{2-3}\ w^2\ w^2\ w^{2-3}\ w^2\ w^{3-1}\ w^1.$

/w w w w+w, w w w, w w w./

The rather brief outline of ULG intonation contours given above is -- since it is nothing but a sketch -- admittedly an over-simplification. Many stylistic variations have not been dealt with. But we leave this as a subject for future research.

<u>1.6</u> There is a considerable amount of phonemic neutralization in ULG. All this neutralization occurs on purely phonological grounds and within morphemes, having no relationship with morphophonemic phenomena (see chapter 2).

The opposition kj : k is operative only when either of these consonants is contiguous to the vowels /a/ or /oo/. In all other environ-

ments (with respect to vowels) the contrast kj:k is inoperative since /kj/ occurs contiguous to front vowels /ii i ei ee e ai/ and /k/ occurs contiguous to back vowels /uu u ou o au/; for example, /lakj/ drop vs. /lak/ varnish, and /kjookj/ church vs. /kook/ cook.

The opposition xj:x occurs under precisely the same conditions as kj:k. The nasals /nj/ and /ng/, both of very limited distribution (with respect to contiguous vowels), contrast only when they are contiguous to /u/, but are neutralized when contiguous to other vowels. Other than occuring contiguous to /u/, /nj/ occurs also with /i/ and /e/, and /ng/ also with /a/ and /o/. Examples are, /klunj/ step : /lung/ lung, showing contrast, and /binj/ tie, /zenj/ singe, /lang/ long, and /ongkl/ uncle showing no contrast.

Except for a few words like /hamd/ shirt, all nasals are neutralized before (homorganic) stopS and fricatives /f s z/ (but not the other fricatives), /m/ occuring before /p b f/, /n/ before /t d s z/, /nj/ before /kj/ and /ng/ before /k g/.

/j/ and /g/ are neutralized when juxtaposed to /ii i ee e ei ai a/ and /ɨ/[1] but contrast in juxtaposition to all back vowels, /uu u oo o ou au/. The neutralized form of these two phonemes is /j/([dʲ] after /i/ and /e/, and [j] elsewhere).

The single vowels /i e o u/ and their geminate counterparts /ii ee oo uu/ are neutralized in open syllables. Their phonetic manifestation in such syllables is equivalent to the geminate clusters.[2] /ɨ/, by vir-

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1With contrast preserved in loans like /gɨlosh/ rubber overshoe (from Ukrainian.
2Except for those instances where /a/ occurs in a word used as a suffix.

tue of the fact that it is never stressed, could be considered as representing the neutralization of the vowels /i e a o u/ which are always stressed.[1]

Other types of neutralization could be cited in order to account for what would otherwise have to be considered gaps in the distribution of consonants with respect to their privilege of occurence both in clusters and in various positions in the word or syllable. For example, /r/ after /t/ or /d/ might be considered to be the neutralization of /r/ and /l/, or again, /z/ at the beginning of a word might be considered to be the neutralization or /z/ and /s/ and so on.

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[1]Here one could of course argue -- as in all other instances of neutralization -- that single vowels (except /a/ and /ɨ/) simply do not occur in open syllables, their distribution being limited to closed syllables.

CHAPTER TWO: MORPHOPHONEMICS

2.0.1 The most widespread morphophonemic process affecting ULG consonants involves the alternation of the voiceless:voiced phoneme pairs p:b, f:v, t:d, s:z, sh:zh, xj:j, and x:g. In our morphophonemic transcription this type of alternation will be indicated by capitals, the voiceless symbol being used where the base form of the morpheme in question has a voiceless consonant subject to voicing under specified conditions, and the corresponding voiced symbol being used where the reverse situation obtains. For example, the morpheme /klooG/ complain has the base form /kloog/ which, when followed by a suffix that begins in a voiceless consonant becomes /kloox/; for example, /ekj kloog-Ø/ I complain, /duu kloox-st/ you complain, /hai kloox-t/ he complains, /vii kloog-ɨ/ we complain, /ekj kloog-d-Ø/ I complained, and /vii kloog-d-ɨ/ we complained. The morpheme meaning complain can be unambiguously represented by the form /klooG/ in all environments.[1]

2.0.2 Concerning vowels, the most widespread morphophonemic process is that of vowel replacement or ablaut.[2] The number of morphophonemic

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[1]Although this is admittedly one of the goals of morphophonemic representation of morphemes, we have adopted this principle only to a very minor extent, following it in fact only in the case of voiced:voiceless (or voiceless:voiced) consonant alternation. In view of the great number and variety of morphophonemic alternations in ULG any rigid adherence to a principle such as this one would require a perfectly preposterous battery of morphophonemic symbols. This we have chosen to avoid.

[2]This is of course also a very widespread morphemic process (e.g. the past tense is so markde for a large number of verbs).

vowel alternations occuring in ULG verbs is twenty one, as shown below:

Vowel of base form →	Vowel of secondary form
ii	i ee oo
i	ee
ee	e a oo
e	ee
ai	i a oo
a	ee
au	e ei oo
ou	e
oo	e ei a
uu	i oo

Morphophonemic vowel alternations in nouns[1] produce the following seventeen patterns:

Vowel of base (sg.) form →	Vowel of pl. form
e	ee
a	ee e ai oo
au	ii ai uu
ou	ee e a
o	e a
oo	ee
u	i a
uu	ii

[1]In many cases these alternations are accompanied by other morphophonemic processes, marking plurality together with these, e.g. /shep/ ship : /sheep-Ø/ ships, and /moun/ man : /man-r/ men.

Purely morphophonemic vowel alternations also occur in adjectives when these combine with morphemes marking the comparative and superlative degree. The following six alternations have been observed:[1]

Vowel of the base (positive) form →	Vowel of secondary form
ii	a
au	e a
oo	a
u	i
uu	ee

Combining all the vowel alternation patterns mentioned separately above, gives a total of 40, as shown below:

Vowel of base form →	Vowel of secondary form
ii	i ee a oo
i	ee
ee	e ai a oo
e	ee
ai	ii i a oo
a	ee e ai oo
au	ee e ei ai a oo uu
ou	ee e a
o	e a
oo	ee e ei a
u	i a
uu	ii i ee oo

[1]Not included in these alternations are those that are part of the mechanism of suppletion, as in the adjective /gaut/ good, /beet-r/ better, /ba-st/ best.

The above vowel alternations do not correlate significantly with other morphophnemic mechanisms. Hence their value in morphophonemic classification is negligible. It may, however, be of interest phonologically that (1) back vowels tend to be re placed by front vowels, (2) the vowel /a/ functions as a replacement for front and back vowels alike, and (3) long vowels are replaced by either long or short vowels, but short vowels -- with a few exceptions -- are replaced only by short vowels; /a/ which is phonetically a long vowel is replaced by either short or long vowels and v.v.

In addition to the 40 different vowel alternations mentioned so far, there are 24 purely morphemic (not morphophonemic) vowel alternations which mark the past tense of close to one hundred verbs. Of the 24 alternations of this type only three overlap with the 40 already discussed.

Vowel of present tense (base form) ⟶	Vowel of past tense
ii	o
i	a o u
ee	ou
e	o u
ai	i a o
a	ee ou o u
au	i
ou	o u
o	u
oo	i ai o u uu

In view of this great multiplicity of vowel alternations -- a multiplicity which would necessitate the use of no less than 40 morphophonemic cover symbols -- we will not attempt a morphophonemic transcription, but will list alternate forms in the following manner, e.g. /riit/ (-i-) -ai- (-ee-) tear, where parentheses enclose purely morphophonemic vowel alternations, and vowels given separately but without parentheses represent morphemic alternations, -ai- in this instance being the past tense morpheme.

2.0.3 A number of morphophonemic changes occur at all root-suffix boundaries. These include the following:

1) Suffixed -S after root final consonant plus /r/ or root final vowel cluster plus /r/ becomes -SH, e.g. /hoomr/ hammer plus -s (pl.) becomes /hoomr-sh/ hammers; cp. also /duu viir-sht/ you were to /duu por-st/ you hurry (trans.).

2) A root final stop after a prefinal consonant other than /r/ is lost before an affixial -ST or -T, e.g. /ekj kroump-Ø/ I fasten with a latch, /duu kroum-st/ you fasten..., and /hai kroum-t/ he fastens...[1]

3) Two successive identical consonants except /r/ coalesce, e.g.

/ekj puust-Ø/ I blow

/duu puust/ you blow, from */duu puust-st/, rules 2 & 3

/hai puust/ he blows, from*/hai puust-t/, rule 2

/ekj puust-Ø/ I blew, from */ekj puust-t-Ø/, rule 3

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[1]But note that root final /lkj/ plus suffixial -ST or -T becomes [l^{y}] which is not strictly speaking an allophone of /l/, but a morphophonemic contraction of /l/ plus /kj/, e.g. /ekj malkj-Ø/ I milk but /hai malkj-t/ he milks [hái mál^{y}t].

Compare to the above /kloor/ clear and /kloor-r/ clearer.

4) Suffixial -S after root final SH is lost, e.g. /duu voush-t/ you wash, from */duu voush-st/.

5) Root final /d/ is assimilated to an immediately following suffixial /t/, e.g. /rood/ guess : /ji-root/ guessed (participle), from */ji-rood-t/.

2.0.4 Inorder to facilitate a comprehensive morphophonemic classification of ULG roots and their appropriate affixes, we propose to discuss phenomena applicable to roots separately -- when feasible -- from those applicalbe to affixes. Our discussion of both roots and affixes will highlight three morphophonemic aspects: (1) the number of alternants, (2) the shape of alternants, and (3) the selection of alternants, i.e. the cleavage between root morphs and affix morphs. We will furthermore treat vocalic alternations separately from consonantal ones where this is morphophonemically desirable, especially since the classificatory functions of these two categories differ considerably from one another. Based on the above mentioned general principles, our morphophonemic classification to some extent follows one analysis of the English verb by Juilland and Macris,[1] although we differ with them in some very important respects, e.g. their use of 'regular' (statistically larger) versus 'irregular' (statistically smaller) classes, and their definition of 'morpheme' as including only phonologically conditioned allomorphs; we include in our use of the term 'morpheme' both phonologically as well as lexically conditioned allomorphs, and dispense with the terminology 'regular' and 'irregular' altogether.

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[1]Alphonse Juilland and James Macris, The English Verb System, Janua Linguarum 24, Mouton and Co., 'S-Gravenshage, 1962.

A cruicial factor in our treatment of morphophonemics has been the dicision to allow for allomorphic redundancy in a given form,[1] i.e. the simultaneous cooccurence of two 'allomorphs' of the same morpheme, as for example in the past tense formation of the verb /ziikj/ search, which is marked redundantly by both vowel replacement as well as the suffix /-t/, yielding the past form /zox-t/ searched. This analysis is preferred to considering -o- as the past tense marker with -t as a mere morphophonemic adjustment (or conversely, -t as the past tense marker with -o- as a secondary morphophonemic adjustment) because it achieves a certain amount of economy of classification. Compare verbs like /mook/ make, which belong to a class marking past tense by vowel replacement alone, e.g. /muuk/ made; compare also verbs like /ran/ run, which belong to a class marking past tense by suffix alone, e.g. /ran-d/ ran. Therefore verbs like /ziikj/ search, past /zox-t/, can be analyzed as belonging to both of the abovementioned classes simultaneously, thus introducing no further morphophonemic complexities.

2.1.1 A complete list of verbal affixes[2] is given here prior to any discussion of their morphophonemic functions. Note the following abbreviations: first person singular (1s), second person sing. (2s),

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[1] Another factor which obviously serves to predetermine a large area of morphophonemic phenomena, is the basis on which morphemic cuts are made in the first place, i.e. the underlying definition of the term 'morpheme' itself. We will adopt a loose operational definition that specifies a morpheme as being a semantically minimal linguistic form (or group of forms in complementary distribution) with a relatively constant meaning (or range of meanings).

[2] Complete except for affixes whose sole function is either to modify roots semantically, or transfer their class membership.

third person singular (3s), plural, any person (pl), past tense (pa), infinitive (inf), participle (part), gerund (ger), imperative (imp), and present tense (pr) which is morphemically an unmarked category.

-Ø	1s
-ST	2s
-t ~ -Ø	3s
-ɨ ~ -t	pl
-ɨ	inf
jɨ-...-t ~ jɨ-...-ɨ ~ ...-t	part
$V_1 > V_2$ ~ -t ~ -Ø ~ -d ~ $-X^J$ ~ suppletion	pa
jɨ- ~ -ɨ	ger
-Ø!	2s imp
-t!	2pl imp

Most of the above listed affixed have no -- or only marginal -- classificatory morphophonemic value. Those with no classificatory value are the mono-allomorphic morphemes 1s, inf, 2s imp and 2pl imp; so also the bi-allomorphic ger whose two members are in free variation, e.g. /(dout) jɨ-ran/ or /(dout) ran-ɨ/ (the) running. Of the two allomorphs of the pl morpheme, -t occurs only with the verb /zen-t/ are, -ɨ occuring with all other verbs (still other allomorphs occur with nouns). The voiced allomorph -zd of 2s occurs only after mono-allomorphic stems ending in a voiced phoneme (including vowels which are phonetically voiced); -st occurs elsewhere, even after a final voiced consonant of a poly-allomorphic root which is in such cases regressively assimilated to voicelessness, e.g. /ekj droog/ I carry vs. /duu draxj-st/ you carry.

The three remaining affixes, that is, 3s, part and pa have a much

greater degree of morphophonemic classifying value. The allomorph -Ø of 3s occurs with the modal auxiliaries, whereas both -t and -Ø occur with all the other verbs, the former in pr forms and the latter in pa forms. The allomorph -t of the part again occurs only with the modal auxiliaries, but the allomorphs ji-....-t and ji-...i occur variously with the remaining verbs. The past morpheme occurs as -t~-Ø with some verbs, -d~-Ø with others, -t~-d~-Ø with others, -xj~-j with still others, and as a suppletive form with the verb to be. A large number of verbs occur with the past tense marked by vowel replacement. Finally a considerable number of verbs mark past tense redundantly, i.e. by both suffix (as outlined above) and vowel replacement.

The following table presents a summary of the morphophonemic classification of ULG verbs on the basis of the third person singular morpheme, the participial morpheme and the past morpheme. The verb /zii/ be is excluded for the moment on the grounds of its many unique morphophonemic features.

3s allomorphic distribution:

-t~-Ø	(A) (see p.48 for notation)
-Ø	(B)

part allomorphic distribution:

ji-...-t	(A)
ji-...-i	(B)
...-t	(C)

pa allomorphic distribution:

-t~-Ø	(1)
-d~-Ø	(2)

$V_1 \succ V_2$ (3)

-t ~ -Ø plus $V_1 \succ V_1$ (4), or (1) plus (3)

-t ~ -d ~ -Ø plus $V_1 \succ V_1$ (5), or a modification of (1) plus (3)

-xj ~ -j (6)

2.1.2.1 The most general morphophonemic feature of ULG verbal roots is the number of vowel alternations that occur. The forms that are relevant here, include only the simple present and the simple past (1s, 2s, 3s, and pl/inf for each) as well as the participle. All other forms of the verb, such as the future, the past perfect, the abilitive or even the imperative introduce no morphophonemic complexities beyond those introduced by the pr, pa, and part forms together with person and number.

The total number of vowel alternations within a given verb paradigm ranges from none (class I) to one (class II) to two (class III) to three (class IV).

The precise (phonemic) qualities of the vowel alternations that occur are not significant -- in the sense that they correlate with other morphophonemic phenomena -- beyond the fact that they are extremely abundant; out of a theoretically possible total of 356 vowel alternations, 55 actually occur (not all of these apply to verbs however; see 2.0.2 above).

The selection of these alternants, i.e. the cleavage between root vowel alternations (refering to the stressed vowel when a multi-syllabic root is in question) and affixes, is morphophonemically more diagnostic that the phonemic shapes which they (i.e. the root alternants) have. The following series of figures, each containing and exemplifying a verb paradigm (without independent actor person particles which are obligatory in normal sentence constructions) are intended to ill-

lustrate the cleavage between root alternants (with reference to vowel alternations only) and affixes:[1]

Class I

e.g. spank

klop-Ø	klop-t-Ø
klop-st	klop-Ø-st
klop-t	klop-t-i
klop-i	ji-klop-t

Class IIa

e.g. make

mook-Ø	muuk-Ø
mook-st	muuk-st
mook-t	muuk-i
mook-i	ji-mook-t

Class IIb

e.g. die

shtoorv-Ø	shtorf-Ø
shtoorf-st	shtorf-st
shtoorf-t	shtorv-i
shtoorv-i	ji-shtorv-i

[1] The arrangement of the various forms is as follows:

Present	Past
1s	1s/3s
2s	2s
3s	pl
pl/inf	part

Solid lines within boxes separate morphophonemic root alternants; double solid lines past tense forms that result from vowel alternations.

Class IIIa

e.g. sleep

shloop-Ø	shlaip-Ø
shlap-st	shlaip-st
shlap-t	shlaip-i
shloop-i	ji-shloop-i

Class IIIb

e.g. fall

foul-Ø	fol-Ø
fel-st	fol-st
fel-t	fol-i
foul-i	ji-fol-i

Class IIIc

e.g. have to

zoul-Ø	zul-Ø
zoul-st	zul-st
zoul-Ø	zul-i
zel-i	zul-t

Class IIId

e.g. lie (position)

lij-Ø	lax-Ø
lixj-st	lax-st
lixj-t	lag-i
lij-i	ji-leej-i

Class IV

e.g. catch

jriip-Ø	jraip-Ø
jrip-st	jraip-st
jrip-t	jraip-i
jriip-i	ji-jreep-i

At this point we introduce two highly irregular verbs which have so far

been excluded from discussion:

Class V be	zii	viir
(six suppletions)	be-st	viir-sht
	es	viir-ɨ
	zen-t/-ɨ	jɨ-veez-ɨ

Class VI would vud

(defective paradigm) vusht

vud (3s)

vud-ɨ (pl)

2.1.2.2 Several consonantal alternations which apply to verb roots only -- and not to, say, noun or adjective roots -- are of a kind that we have labeled 'pseudo-neutralizations', by which we mean certain consonantal alternations that are purely phonologically conditioned (i.e. alternations that are in no way dependent on morpheme concatanation) but apply only to one class of major morphemes, in this case verbs.[1] Two such pseudo-neutralizations have been noted:

1) /j/ plus /au/ ➛ /gau/, e.g. /jait/ pour : /gaut/ poured ; but compare the noun /jaud/ iodine.

2) /u/ plus /nj(kj)/ ➛ /ung(k)/, e.g. /vii finj-ɨ/ we find : /vii fung-ɨ/ we found; but compare the particle /unjɨ/ below.

The voiced : voiceless alternations occuring among ULG consonants include the following phoneme pairs: p:b, f:v, t:d, s:z, sh:zh, xj:j and x:g.[2] These alternations apply to verbs under the following con-

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[1]These alternations do not apply to, say, nouns, hence we use the term 'pseudo' since generalizations of the type made in 1.6 above cannot be made.

[2]The stops /kj/ and /k/ have no voiced morphophonemic counterparts.

ditions: (1) Root final voiced consonant becomes voiceless before 2s pr, 3s pr, and any participial allomorph ending in -t. (2) Root final voiced consonant becomes voiceless before 1s pa, 2s pa, and 3s pa. This type of alternation does not apply to verbs of Group 2 (see 2.1.4 below).[1]

Root final voiceless consonants become voiced before the present pl/inf forms of the verb /max/, e.g. /vii meej-ɨ/ we like/might;[2] the same alternation applies to all pl/inf forms of the verb /doorf/, e.g. /vii derv-ɨ/ we are allowed to, or /vii durv-ɨ/ we were allowed to.

There are a great many other morphophonemic features which could be used to make finer subdivisions of verbs; bur such subdivisions would not show any significant amount of correlation with other morphophonemic features since they occur rather sporadically and hence are of little classificatory value. Rules pertaining to such features are listed below.

1) Unstressed root initial syllables or the prefixes /fɨ/ and /bɨ/ are incompatible with /jɨ/, the prefixed part of the participial morpheme, e.g. /duu drɨjiir-sht/ you conduct, but /duu ha-st drɨjiir-t/ you have conducted, not */ duu ha-st jɨ-drɨjiir-t/.

2) Root incremental /k/ is added to the past singular forms of /fang, binj, henj, shprinj, zinj, vrinj, finj, drinj/; similarly /kj/ is added to /goo/. For example, /ekj fang/ I catch : /ekj fongk/ I caught; but

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[1] All verbs of group 2 end in voiced phonemes (even vowels which are phonetically always voiced).

[2] The alternation x:j involves an intermediate neutralization by which /ee/ plus /x/ becomes /eexj/, after which voiceless /xj/ alternates to voiced /j/.

compare /vii fong-ɨ/ we caught.

3) Root final /t/ is replaced by /s/ in the past tense forms of the verbs /mot/ must and /vait/ know, e.g. /ekj vait-Ø/ I know and /ekj vis-t/ I knew.

4) The root final consonant or consonant cluster of the past tense forms of the verbs /brinj, denjkj, ziikj/ is replaced by /x/, e.g. /ekj brinj-Ø/ I bring : /ekj brox-t/ I brought ; /ekj denjkj-Ø/ I think : /ekj dox-t/ I thought.

5) Root incremental /X/ (i.e. x:g) is added to the past tense forms of the verbs /shloo/ hit and /zai/, e.g. /ekj zai-Ø/ I see : /ekj zax/ I saw : /vii zag-ɨ/ we saw.

5a) Root incremental /xj/ is added to 2s pr and 3s pr forms of the verbs of Group 20.

6) Root incremental /n/ is added to the present plural and participial forms of the verbs /zai, shloo, shtoo, goo, dau/. For example , /ekj zai-Ø/ I see : /vii zain-ɨ/ we see : /vii hab-ɨ jɨ-zain-ɨ/ we have seen.

7) The singular imperative forms of the eight verbs /neem, jeeV, eet, freet, fɨjeet, leeZ, breekj, shteekj/ are /nem, jef, at, frat, fɨjat, las, brakj, shtakj/ respectively. These imperative forms are unlike those of all other verbs in that they are based on a derived form of the root rather than on the base. But note that the plural imperative forms of these verbs conform to the regular pattern: /neem-t, jeef-t .../.

8) The past tense forms of /zaj, laj, hab, dau/ add /D/(i.e. d:t) which replaces root final consonants where these are present. E. g. /ekj zaj-Ø/ I say : /ekj zeed/ I said : /duu zeet-st/ you said : /vii zeed-ɨ/ we said; compare also /ekj dau-Ø/ I do : /ekj daid/ I

did.

9) When the vowel /oo/ of the verb /droog/ carry is morphophonemically replaced by -a-, final /g/ is simultaneously replaced by /xj/ as in /duu draxj-st/ you carry. This alternation of g:xj is not automatic and applies also to the verb /froog/ ask.

The following rules each apply to single verbs.

10) /hab/ (present) plus /-st/ becomes /ha-st/ (you) have.

11) /hab/ (present) plus /-t/ becomes /haf-t/ (he) has.

12) Root final /p/ of /kjaip/ buy is replaced by /f/ in the second and third person singular present forms as well as all past forms, e.g. /duu kjaf-st/ you buy, /hai kjaf-t/ he buys, /vii kof-t-ɨ/ we bought.

13) The second and third person singular present forms of /zai/ see add an incremental /t/ to the root, e.g. /duu zit-st/ you see, /hai zit/ he sees (from */ hai zit-t/).

14) All past forms of /shtoo/ stand add an incremental /n/ e.g. /ekj shtun-t/ I stood.

15) All past forms of /goo/ add an incremental /nj/, e.g. /ekj jinjkj/ I went/walked (the final /kj/ of this form results from rule 2) above, which must be applied before rule 15).

16) The root allomorph of the verb /eet/ eat which cooccurs with the participial morpheme is /-jeet-/, as in /jɨ-jeet-ɨ/ eaten.

17) The second and third person singular present forms of the verb /fɨliir/ lose both have the optional form /fɨlist/ (you/he) loses beside the regular forms /duu fɨliir-sht/ you lose and /hai fɨliir-t/ he loses.

18) /vud/ plus /-st/ becomes /vusht/ (you) would.

19) /lij/ plus the past morpheme /-a-/ becomes /lax/ as in /ekj lax/ I lay (position). Here the alternation of final /j/ to /x/ (or its

voiced counterpart /g/) is not automatic, since /j/ regularly alternates with /xj/.

2.1.3 The following morphophonemic classification of ULG verbs is based on sections 2.1.1 and 2.1.2.1 above. Consonantal morphophonemics (see 2.1.2.2 above) and the various vocalic patterns of replacement (see 2.0.2 above) are excluded from this classification for reasons already mentioned, so that only five morphophonemic features appear:

column one indicates the number of root alternants;

column two indicates the cleavage between these root alternants and various affixes (see 2.1.1 above);

column three indicates which allomorph(s) of 3s cooccur with a given root;

column four indicates which allomorph of part cooccurs with a given root;

column five indicates which allomorph of past cooccurs with a given root;

column six gives a reference number for each morphophonemically classified group of verbs;

column seven merely indicates the number of verbs in each morphophonemic group.

A MORPHOPHONEMIC CLASSIFICATION OF ULG VERBS

Class	Subclass	3s allomorph	part allomorph	past allomorph	Group no.	Number of members
I	-	(A)	(A)	(1)	1	many
				(2)	2	many
II	a	(A)	A	(3)	3	4
			B	(3)	4	1
	b	A	A	4	5	4
				3	6	1
			B	3	7	14
				5	8	1
		B	(C)	3	9	1
				4	10	1
III	a	(A)	A	(3)	11	4
			B	3	12	8
				5	13	2
	b	(A)	A	(4)	14	1
			B	(3)	15	1
	c	(B)	(C)	3	16	3
	d	(A)	(B)	(3)	18	5
IV	-	(A)	(B)	3	19	25
				6	20	4
V	-	(supplet.)	(supplet.)	(supplet.)	21	1
VI	-	(B)	-	-	22	1

Note: parentheses enclose redundant morphophonemic features.

Verb classes I to IV each have from one to four root alternants resp. The sole member of class V, the verb to be, has six suppletive root alternants, and the single member of class VI, the subjunctive auxiliary would which has a defective or restricted paradigm consisting only of those forms that correspond to the present forms of other verbs (any person or number), has but one root form.

Subclass IIa differs from subclass IIb in only one respect: the participial morpheme occurs with the present or base (see below) form in IIa, but with the past form in IIb. Subclasses a, b, c and d of class III differ from one another in two respects: one concerns the cleavage between root allomorph and participle, the other concerns the incidence of an additional (secondary or derived) root allomorph. In subclass IIIa the participial morpheme cooccurs with the present (base) form of the root; in subclasses IIIb and c the participial morpheme co-occurs with the past form of the root; and in subclass IIId the participial morpheme cooccurs with a unique root allomorph. In subclasses IIIa and b a secondary root allomorph cooccurs with 2s and 3s in the present tense only; in subclass IIIc a secondary root allomorph co-occurs with the present plural and infinitive forms only; and in subclass IIId a secondary root allomorph cooccurs only with the participial morpheme.

Groups 9, 10, 16, 17 and 22 -- all of whose member verbs are syntactic auxiliaries -- mark all occurences of 3s with -Ø, in contrast to all other verbs, which mark 3s with -t in the present tense and with -Ø in the past (but the verb be marks 3s with a suppletive form in the present tense).

The distribution of participial allomorphs parallels that of 3s al-

lomorphs in that it separates most auxiliaries (Groups 9, 10, 16 and 17) from all other verbs. The auxiliaries just mentioned cooccur with the part allomorph ...-t whereas the part allomorphs of all other verbs are either ji-...-i or ji-...-t.

The past tense morpheme divides all verbs into one of seven categories, according to the various allomorphs of this morpheme that cooccur with different roots. Note the following examples of this last mentioned feature:

Type (1), past allomorphs -t and -Ø as in /klop/ spank

/ekj klop-t-Ø/ I spanked

/duu klop-Ø-st/ you spanked

/vii klop-t-i/ we spanked

Type (2), past allomorphs -d and -Ø as in /jlaiV/ believe

/ekj jlaiv-d-Ø/ I believed

/duu jlaiv-Ø-zd/ you believed[1]

/vii jlaiv-d-i/ we believed

Type (3), past allomorph of vowel replacement as in /mook/ make

/ekj muuk-Ø/ I made

/duu muuk-st/ you made

/vii muuk-i/ we made

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[1]We have found it necessary to set up a past tense allomorph of the form -Ø even though in most instances of a 2s past form a hypothetical past marker -t or -d would be lost automatically by the rule that a root final stop preceded by another consonant and followed by a suffixed -st or -t is lost. But such an analysis would not explain past forms like */duu nei-zd/ you sewed (cp. /duu nei-st/ you sew, and /nei/ sew); here we conceive of the past as -Ø in /duu nei-Ø-zd/ you sewed, and as -d in /hai nei-d-Ø/ he sewed. Note also the past tense form of the verb /hab/ have which is /houd/ had. Here /d/ is a root increment rather than a past tense marker because it appears in the 2s form as /t/ rather that -Ø, e.g. /duu hout-st/ you had.

Type (4), past allomorphs -t and -Ø and vowel replacement as in

/ziikj/ search /ekj zox-t-Ø/ I searched

/duu zox-Ø-st/ you searched

/vii zox-t-i/ we searched

Type (5), past allomorphs -t, -d and -Ø as well as vowel replacement as in /haul/ hold

/ekj hil-t-Ø/ I held

/duu hil-Ø-st/ you held

/vii hil-d-i/ we held

Type (6), past allomorph -xj and -j as in /shrii/ shout

/ekj shrii-xj-Ø/ I shouted

/duu shrii-xj-st/ you shouted

/vii shrii-j-i/ we shouted

The single verb be constitutes a seventh type of past tense formation, the past allomorph here being a suppletive form, e.g. /ekj zii/ I am : /ekj viir-Ø/ I was.

Our choice of a base form for each verb is governed by the relative ease with which we can derive secondary forms from it. This criterion is best fulfilled in our choice of that form of the verb that occurs in the first person singular present form.[1]

2.1.4 In the following morphophonemically classified sample lexicon of verbs, the base form is given first, followed by vowel alternations of which those that are purely morphemic (i.e. past tense markers) are

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[1] This same base form also occurs in the imperative; the only exceptions have been noted in rule 7 of section 2.1.2.2.

given without parentheses, and those that are purely morphophonemic are given in parentheses.[1]

Group 1: klop hit, zat seed, shmakj taste, kook cook, klof plod, kus kiss, fesh fish, horxj listen, pux boast, krouts scratch, pūust blow, rutsh slide, plount plant, plinjkj blink, rangk rank, belkj shout, shoult switch, vaxt wait ...

Group 2: tauB move about violently (as of wind, sea, children at play), beeD pray, klooG complain, jlaiV believe, shtuuZ run quickly, ruuZH murmur (as of wind, water), driiJ dry, kjam comb, bren burn, zenj singe, lang reach for, pral move suddenly or with excessive speed, por hurry (trans.), roor weep, borJ borrow, nei sew, praxr beg, preediJ preach, kjreejl tease, reekjn figure (arithmetic) ...

Group 3: foot -au- touch, mook -uu- make, zaJ -ee- say (apply consonantal rule 8), laJ -ee- lay (rule 8).

Group 4: foor -uu- drive.

Group 5: ziikj -o- search (rule 4); similarly brinj bring, and denjkj think; also in this group vait -i- know (rule 3).

Group 6: hab -ou- have (rules 10, 11 and 8).

Group 7: binj -u- tie (rule 2); similarly shprinj jump, zinj sing, vrinj wring, finj find and drinj force; also drinjkj -u- drink,

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[1] Vowel replacement is both the most productive and the most diagnostic tense marking mechanism of classes II, III and IV, occuring with all the verbs of these classes except for the four members of group 20. In fact, vowel replacement is the only mark of the past tense for over 60 of these verbs -- the total being about 80, so th t some 20 verbs mark past tense redundantly.

henj -e- hang (rule 2), fang -o- catch (rule 2), and halp -o- help; similarly traf meet/hit, malkj milk, vous grow and shtoorV die.

Group 8: voor -o- become/happen (also used as future, present progressive and imperfect auxiliary).

Group 9: vel -u- want/desire.

Group 10: mot -u- must (rule 3).

Group 11: jeeV (-e-) -ou- give (rule 7), leeZ (-a-) -ou- read (rule 7), drooG (-a-) -uu- carry, and frooG (-a-) -uu- ask.

Group 12: freet (-a-) -ou- eat (colloq.) (rule 7), eet (-a-) -ou- eat (polite) (rules 7 and 16), fɨjeet (-a-) -ou- forget (rule 7), shloop (-a-) -ai- sleep, loot (-a-) -ai- let/permit, shloo (-ei-) -uu- hit (rules 5 and 6), goo (-ei-) -i- go/walk (rules 2, 6 and 15), zai (-i-) -a- see (rules 5, 6 and 13).

Group 13: shtoo (-ei-) -u- stand (rules 6 and 14), haul (-e-) -i- hold.

Group 14: kjaip (-a-) -o- buy (rule 12).

Group 15: foul (-e-) -o- fall.

Group 16: koun (-e-) -u- can/be able; similarly ʒoul shall/must and doorF may.

Group 17: maX (-ee-) -u- like/may.

Group 18: viiZ -ai- (-ee-) show, zet -ou- (-ee-) sit, fɨliir -uu- (-oo-) lose (rule 17), friir -uu- (-oo-) freeze, lij -a- (-ee-) lie (positional) (rule 19).

Group 19: biit (-i-) -ai- (-ee-) bite; similarly kjniip pinch, shmiit throw, jriip catch, riit tear and shiit defecate (vulgar); breekj (-a-) -uu- (-oo-) break (rule 7), shteekj (-a-) -uu- (-oo-) pierce (rule 7), shait (-i-) -au- (-ee-) shoot; similarly kruup

creep/crawl, zuup drink excessively, shluut lock; shtriiD (-i-) -ai- (-ee-) quarrel; similarly shniiD cut, riiD ride, shriiV write, and riiV rub; shuuV (-i-) -au- (-oo-) push; similarly shruuV screw; biiJ (-i-) -uu- (-oo-) bend; similarly liiJ lie (tell a lie) and viiJ weigh; neem (-e-) -ou- (-oo-) take (rule 7), dau (-ei-) -ai- (-oo-) do (rules 6 and 8).

Group 20: shpii (-i-) (-ee-) spit (rule 5a); similarly shrii scream, shtii step and kjrii get/receive.

Group 21: zii ~ be ~ es ~ zen ~ viir ~ veez be.

Group 22: vud would (rule 18).

2.2.1 The most frequently occuring allomorph of the plural morpheme is -ɨ. This allomorph combines with all verbs (except be) as well as with the majority of nouns and all adjectives. All allomorphs of the plural morpheme occuring with nouns are now listed.

Suffixial allomorphs: (morphophonemic class I)

-ɨ (Ia) -s (Ib) -sh (Ic) -ɨs (Id) -r (Ie) -j (If) -ɨnjɨ (Ig)

Vowel replacement allomorphs: (morphophonemic class II)

(for phonemic shapes of alternations see 2.0.2 above)

Allomorph of reduction: (morphophonemic class III)

root final /nt/ or /njkj/ becomes /nj/.

Some nouns belong to more than one of the above named classes simultaneously. Such nouns are treated as redundantly marked for plurality. However, the voiceless : voiced alternation of final consonants is considered to be purely morphophonemic rather than part of the plural marking mechanism even when this type of alternation is the only overt sign of plurality. The reason for making this 'exception' to

the principle of allowing allomorphic redundancy is the same as the reason for excluding voiceless:voiced as well as voiced:voiceless alternations of verb root final consonants from membership in any particular morpheme other than the root, because such membership would serve only to introduce morphophonemic complexity without achieving any structurally pertinent goal. Therefore any voiceless:voiced alternation of noun root final consonants will be treated as a non-automatic[1] morphophonemic manifestation, even where it is the only overt mark manifesting the plural allomorph -Ø, as for example in /piirT/ horse (singular or base form) whose plural form is /piird-Ø/ horses.

Roots like /piirT/ horse and /fesh/ fish constitute a fourth class of nouns that cooccur with the plural allomorph -Ø.[2]

Nouns that are redundantly marked for plurality are of two types: 1) those belonging simultaneously to classes I and II, and 2) those belonging simultaneously to classes I and III.

A special case of allomorphic redundancy occurs when a noun combines with the diminutive suffix -kji as well as the plural morpheme. In such sequences (1) the diminutive suffix is always followed by the plural -s, and (2) the usual manifestations of the plural morpheme (i.e. the pluralizing mechanisms occuring regardless of the diminutive -kji) unless one of these mechanisms is one of the three suffix allo-

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[1] Non-automatic because many roots have final voiceless consonants which do not become voiced under any conditions.

[2] To be distinguished from certain (but not all) mass nouns like /zount/ sand which make no sg/pl distinction at all, occuring syntactically only in singular constructions.

morphs -s, -sh, or -ɨs, or unless -kjɨ is preceded by a voiceless consonant which is voiced in the base form of the root in question. Furthermore, an incremental -s- is sometimes heard in diminutive plurals like /henj-s-kjɨ-s/ (hand-pl-dim-pl) small hands; compare /henj-kjɨ-s/ with the same meaning but without incremental -s-; compare also the simple plural /henj/ hands derived from the singular /hount/ by both vowel replacement and final consonant cluster reduction.

2.2.2 There are very few morphophonemic mechanisms affecting noun roots in conjunction with the plural morpheme.

One of these is the alternation of root final consonants from voiceless to voiced (see 2.0.1 above). The other of these morphophonemic mechanisms affecting nounroots is of the kind we have called 'pseudo-neutralizations' (see 2.1.2.2 above). This phenomenon may be stated as follows: /k g x/ justaposed to any /a/ which is the result of replacement (morphophonemic or morphemic) automatically become /kj j xj/ resp. Examples are /buk/ belly : /bakj/ bellies, /goust/ guest : /jast/ guests and /lox/ hole : /laxj-r/ holes.[1]

2.2.3 A morphophonemic classification of ULG nouns can be based entirely on the various allomorphs of the plural morpheme as follows:

Class I: subclass a) -ɨ (Group 1)
b) -s (Group 2)
c) -sh (Group 3)
d) -ɨs (Group 4)

[1] /g/ in /lag-ɨ/ lay (pl) is actually merely the result of voicing of /x/ morphophonemically.

(cont.) e) -r (Group 5)

f) -j (Group 12)

g) -ɨnjɨ (Group 13)

Class II: V_1 V_2 (subclasses only in terms of vowel pairs or in terms of the particular vowel that marks past tense) (Group 6)

Class III: reduction of final consonant cluster (no subclasses, Group 7)

Class IV: zero allomorph (Group 8)

Class V: no plural (certain mass nouns) (Group 9)

Class VI: no singular (certain nouns denoting pairs) (Group 10)

Note also the following multiple classes:

Class I-II: subclasses e) (see e) under Class I above) (Group 11)

f) (Group 12, also see above)

g) (Group 13, also see above)

Class I-III: (all type e) for which see above) (Group 14)

Class II-III: (no subclasses) (Group 15)

Class I-II-III: (all type e) (Group 16)

2.2.4 The morphophonemic conventions employed in the sample lexicon of this section are the same as those used for verbs (see 2.1.4 above).

Group 1: kout cat, desh table, koor car, bɨklɨzhan tomato, orjl organ, zestr sister, aur (-uu-)[1] ear, tiiT time, jreiS old man ...[2]

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[1]The alternation /aur~ uur-/ is in fact often found in free variation. This is true of several nouns as well as particles where /au/ alternates with /uu/, and similarly /ai/ with /ii/. An example of the latter is /shair/ scissors (sg) : /shiir-ɨ~shair-ɨ/ scissors (pl).

[2]This group is larger than all the others comvined.

Group 2: hoomr hammer, amr pail, finjr finger, kootr tomcat ...[1]

Group 3: meekjɨ girl, droshkjɨ buggy, leepl spoon, falm colt, hoon rooster, kɨmɨtai committee ...[2]

Group 4: fruu woman/wife, mɨjal girl (colloq.), bol bull.

Group 5: jeist ghost/spirit, shtekj piece, lixjt light, bilT picture, liiF body ...

Group 6: huuT -ii- skin; similarly muuS mouse, luuS louse, pluuX plough, tsuuX train; vulF -i- wolf, vaXJ -ee- way; similarly leT (eye) lid, drooT wire, shep ship, noogl nail, foogl bird, tsoogl tail; braudr -ai- brother; similarly baum tree, draum dream, knaup button, faut foot, hauT hat; post -a- post/pole; similarly rok skirt/jacket, buk belly, bok buck, kop head, koum comb, vorm worm, oupl apple, gounS goose, korF basket; daX day.

Group 7: rinjkj ring.

Group 8: piirT horse, brauT bread, frinT friend, braiF letter, kjniiF knife (colloq.), farSH stanza/verse, booXJ mountain, fesh fish, shau shoe, bain leg, shviin pig, shoop sheep, hounshkjɨ mitten, enjl angel, fookjl piglet, blii lead, aimskjɨ ant, leljɨ lily ...[3]

Group 9: botr butter, iis ice, hoor hair, shtrau straw ...

Group 10: bekjsɨ trousers ...

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[1]All nouns of this group terminate in /r/ eventhough there are /r/ final nouns in other groups as well.

[2]All nouns ending in /ɨ/ belong to this group, as do many that end in /l/ and nasals; also a few others.

[3]Some nouns like /himl/ sky/heaven and /rɨdiiskjɨ/ radish can be pluralized by either -Ø or -s.

Group 11: koulF -a- calf; similarly lox hole, loum lamb, houlS throat, boul ball, shtok stick, moun man/husband; duuk -ii- kerchief; similarly buuk book, muul mouth (colloq.), huuS house; shtaul -ai- chair, han -ai- hen, bosh -e- bush; similarly got god and lounT country; dak -ee- roof; similarly hauspɨtal hospital,[1] braT board, blouT leaf, glouS glass, rouT wheel.

Group 12: kau -ii- cow.

Group 13: tuun -ii- fence.

Group 14: kjint child, dinjkj thing, joorlinjkj yearling, shpoorlinjkj sparrow.

Group 15: vount -e- wall; similarly hount hand and shtrangk rope.

Group 16: bount -e- string.

2.3.1 The affixes treated in this section are the comparative morpheme -r and the superlative -stn~-st. The absolute form of the superlative, -stn, alternates with the oblique form -st which serves as a base for obligatorily following gender suffixes. The only morphophonemic mechanism affecting the comparative suffix is its coalescence with a root final /r/ when followed by another suffix, as in /ain diistr-ɨt/ a darker one (neut.) from */ain diistr-r-ɨt/ a dark comparative-neut. Root final /r/ followed by the comparative -r followed by the masculine gender -r coalesce to /rr/ as in /diistr-r/ darker (masc.) from*/diistr-r-r/ dark-comp.-masc.

2.3.2 Adjective stem[2] final voiceless consonants in some cases become

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[1]This English loanword (the native ULG form is /krangkɨ+huus/ lit. sick-house) is treated phonologically as a compound word having the typical stress pattern[háuspɨtàl].

[2]By stem we mean root plus class changing affix.

voiced before a suffix which consists solely of or begins with a voiced phoneme. Such alternations are indicated in our transcription by the appropriate upper case letter (see 2.0.1 above). Other morphophonemic changes in stems include 1) the alternation of the adjective deriving (class changing) suffix -ɨxj to -j[1] before the comparative suffix, and to -jɨ before a sequence of the comparative suffix plus a gender suffix, e.g. /shpoos/ fun (noun/verb) : /shpoos-ɨxj/ funny (adj.) : /shpoos-jɨ-r-ɨt/ funnier one (neut.) : /shpoos-ɨxj-st-ɨt/ funniest one (neut.); 2) morphophonemic vowel replacement in conjunction with both the comparative and superlative morphemes; 3) root incremental /-d/; 4) replacement of root final /r/ by /n/; 5) loss of root final /t/; and 6) suppletion. Of the above named processes numbers 3) to 6) each apply to only one root, 2) to all of those roots which also undergo changes 3) to 6), and 1) to a large number of (other) roots.

2.3.3 On the basis of the alternations sketched in the preceding section, we offer the following morphophonemic classification of ULG adjectives, together with a sample lexicon.

Class I: (no vowel alternations)

subclass a) no morphophonemic changes other than the voiceless ~ voiced alternation of final consonants (Group 1)

subclass b) alternation 1) (see 2.3.2 above) (Group2)

Class II: (with vowel alternation)

subclass a) (no additional changes) (Group 3)

subclass b) alternation 3) (Group 4)

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[1]After a root final /r/ this alternation is optional.

subclass c) alternations 3) and 4) (Group 5)

subclass d) alternation 5) (Group 6)

Class III: (one suppletive adjective) (Group 7)

Sample lexicon:

Group 1: shmok pretty, diistr dark, kolT cold, jriiS dirty ...

Group 2: shpoos-ɨXJ funny, makl-ɨXJ comfortable, mukr-ɨXJ thin (as of an undernourished person) ...

Group 3: graut -a- big/large,[1] huuX -e- high, jungk -i- young.[2]

Group 4: kjliin -a- small.

Group 5: shvoor -a- heavy.

Group 6: ault -e- old.

Group 7: gaut~beet~ba good.

2.4.1 A number of affixes cooccur only with numerals. These include the following:

-tɨXJ times ten

-Tn (absolute)~-T (oblique) ordinalizer

-s enumerative[3] (cooccurs with and follows the ordinal absolute morph)

-Tl fractional

The last phoneme of the suffix -tɨXJ alternates to /j/ before a voiced phoneme of a following suffix, and /ɨ/ (of the morpheme -tɨXJ) is si-

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[1]As previously indicated, the replacement of a (back) vowel by /a/ always brings with it a change of contiguous /g/ to /j/ (see 2.1.2.2 above), so that bigger is /jrat-r/ (cp. /graut/ big).

[2]Final /k/ of /jungk/ young is lost before suffixes.

[3]This morpheme also cooccurs with a few non-numerals, i.e. /iir-sht/ first and /lat-st/ last.

multaneously lost, for example /tvin-tj-r-sh/ twenties (as of bills of money) from */tvin-tɨXJ-r-sh/ two times ten agent plural. The /T/ of the ordinalizing suffix represents /t/ or /d/ depending on the same conditions as those specified for the /XJ/ of -tɨXJ (see above); the same is true for the /T/ of the fractional morpheme. The oblique form of the ordinal suffix is obligatorily followed by a gender suffix or the plural -ɨ.

2.4.2 The ULG numeral roots are listed below, together with a discussion of their allomorphic alternations which depend largely -- but not entirely -- on the affixes treated in the preceding section.

/tvai ~ tvin/ two[1]

The second allomorph of this morpheme occurs only before the suffix meaning times ten; the first allomorph occurs either with other affixes or isolated.

/drai ~ dar ~ dre ~ dret/ three

The first allomorph of this root does not cooccur with any affixes; the second only with the affix meaning times ten; the third with the ordinal, enumerative and fractional morphemes; and the fourth only in the compound form /dret+tiirn/ thirteen.

/fair ~ fiir/ four

The allomorph /fair/ occurs without affixes, and varies freely with

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[1] The morpheme /ain/ (oblique) ~ /aint/ (absolute) one is classified as an A particle. This morpheme is unlike true numerals in that it has an oblique form which serves as a base for the addition of gender suffixes. No other numeral can be directly followed by gender suffixes without the intervening occurence of the ordinal suffix. Actually this peculiarity of the morpheme one is due to the fact that it is inherently a singular morpheme, whereas the numerals (from two on) are inherently plural -- and gender distinctions are made only in the singular, hence in one but not in two etc.

/fiir/; the latter allomorph occurs either with affixes or in the compound construction /fiir+tiirn/ fourteen, or in numeral phrases expressing values lower than one hundred, e.g. /fiir n dar-tixj/ 34 (four-and-three-times ten).

/fiiF~fef/ five

Here again the first allomorph occurs only without affixes; the second occurs either with affixes or in the compound /fef+tiirn/ fifteen. In numeral phrases -- contrary to the usage of four -- the allomorph /fiiF/ occurs, as in /fiiv i fiir-tixj/ forty five, or /fiif hundrt/ 500.

/zas~tsas/ six

/zeevn~tseevn/ seven

The second allomorph of each of the numerals six and seven occurs only before the suffix meaning times ten; the first allomorph of each of these numerals occurs elsewhere.

/axt~ax~taxn/ eight

The first allomorph occurs without affixes, the third only with the affix meaning times ten, and the second with the remaining affixes and in the compound /ax+tiirn/ eighteen. The first allomorph occurs also in numeral phrases, e.g. /axt n taxn-tixj/ eighty eight.

The remaining numerals are all mono-allomorphic (barring voiceless : voiced alternation of final consonants):

/neejn/ nine

/tiirn/ ten

/alF/ eleven

/tvalF/ twelve

/hundrT/ hundred

/duuznT/ thousand

/miljaun/ million

An incremental -s- occurs with the morphemes /hundrT/, /duuznT/ and /-tixJ/ when these are followed by either the ordinal or fractional morphemes, e.g. /tvai hundrt-s-tl/ 2/100, or /ain dar-tixj-s-tl/ 1/30.

2.5.1 Some particles that combine with affixes undergo various morphophonemic changes of the types already mentioned in preceding sections of this chapter in conjunction with verbs or nouns etc. Certain of these particles also have an absolute versus an oblique form. Phonologically conditioned voiceless:voiced alternations are indicated in our lex lexicon with upper case symbols. For the morphophonemics of articles and demonstratives as well as possessive pronouns see sections 2.6 and 2.7 below. Other A particles will now be discussed:

/oop ~ oopn/ open (absolute ~ oblique)

/tau ~ taun/ closed (absolute ~ oblique)

/air ~ iir/ before (absolute ~ oblique)

For all three of the above listed particles, the absolute allomorph occurs without affixes and the oblique form occurs only with affixes. The oblique form /iir/ is usually followed by the superlative suffix which in turn is followed by a gender or number suffix. Such a construction always has the meaning first, e.g. /iir-sht-r/ first one (masc.), or /iir-shtn-s/ firstly (before-sup.-enumerative).[1]

Five additional particles, each having an absolute as well as an

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[1]Morphologically unrelated to the ordinal suffix -Tn ~ -T.

oblique form, are /beni~benr/ inside (of), /boovi~boovr/ above, /buuti~buutr/ outside (of), /hinji~hinjr/ behind and /unji~unjr/ under. For each of these particles, the absolute form occurs both morphologically and syntactically 'absolute' in the sense that it occurs neither with affixes nor as part of a syntactic phrase (itself being the sole member of a phrase). We illustrate: /hai shtei-t buuti/ he stands outside, or /buuti shtei-t r/ outside he stands. The oblique form of each of these five particles occurs either with suffixes, as in /hai es di buutr-sht-r./ He is the 'outside-most-one'., or as a phrase introducing particle, as in /hai shtei-t buutr dout huus./ He stands outside the house.

Another particle is unlike the above mentioned five in the distribution of its two basic forms. The form /feer(i)/ in front occurs either syntactically absolute, as in /hai shtei-t feeri/ he stands in front, or morphologically oblique, as in /hai es di feer-sht-r./ He is 'front-most-one'. The other form /fer/ in front of occurs only syntactically oblique, as in /hai shtei-t fer dout huus./ He stands in front of the house.[1]

2.5.2 Other than stylistic variations (see 2.7 below), there are few morphophonemic alternations affecting particles that do not cooccur with affixes. One such particle with three allomorphs is /oul ouli oulr/ all; the first and second allomorphs occur as parts of noun phrases (hence what we have called syntactically oblique), and the third occurs as the sole member of a syntactic phrase (hence syntactically absolute). The difference in distribution between the first two allomorphs

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[1]We would hesitate to say that /fer/ is a different morpheme than /feer(i)/ since the only semantic difference, if indeed it is a difference, between in front and in front of is syntactically conditioned.

is that the first occurs in conjunction with articles, and the second does not. Note the following three illustrations of the three allomorphs of the morpheme meaning all.

/oul dɨ mensh-ɨ zet-ɨ./ All the people sit.

/oulɨ mensh-ɨ zet-ɨ./ All people sit.

/dɨ mensh-ɨ zet-ɨ oulr./ The people all sit.

Several particles that do not occur with status quo affixes do nonetheless occur with transformative suffixes. One such particle, /zelfst/ self (absolute form), has an oblique form when it cooccurs with the adjectival suffix -ɨXJ; this oblique form is /zelfs/, e.g. /dɨ zelfs-j-ɨ dakj/ the same blanket (the self-adj.-fem. blanket); compare the absolute form in /dɨ dakj zelfst/ the blanket itself. For a complete list of B particles see Appendix C.

2.6 ULG articles, possessives, demonstratives and adjectives (except when the latter function predicatively) are marked for one of three genders: masculine (masc.), feminine (fem.) or neuter (neut.), depending on the particular noun which they modify, whether this noun is overtly expressed or covertly implied. These gender distinctions occur only in singular, never in plural constructions.[1]

There are three morphophonemic patterns of gender marking: one involving only the definite article /dai~dout/ the, another involving only the demonstrative article /diZ~dit/ this, and a third involving

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[1]The phonemic shapes of all pluralized articles, possessives and adjectives are identical with their feminine counterparts, so that there is no overt phonemic distinction between a pluralized noun phrase and a feminine noun phrase.

the demonstrative article /jan/ that (distal), the indefinite article /ain/ a, all possessive pronouns and all adjectives. These three patterns are shown in tabular form below:

pattern no.	article	adjective	noun	gender
	dai	(graut-r)	(leepl)	masc.
1	dai	(graut-ɨ)	(goufl)	fem.
	dout	(graut-ɨ)	(masr)	neut.
	dis	graut-r (/)	leepl	masc.
2	diz-ɨ	(graut-ɨ)	(goufl)	fem.
	dit	(graut-ɨ)	(masr)	neut.
2a	diz-r	--	--	masc.
	jan	graut-r (/)	leepl	masc.
3	jan-ɨ	graut-ɨ (/)	goufl	fem.
	jan	graut-ɨt(/)	masr	neut.
	jan-r	--	--	masc.
3a	jan-ɨ	--	--	fem.
	jan-t	--	--	neut.

Columns one to three in the above table represent noun phrases, with optional elements enclosed in parentheses. A parenthesized slash indicates that either the noun or the adjective on either side is optional, but that one of the two is obligatory.

In patterns 1, 2 and 3 (but not 2a or 3a) there is some amount of formal overlap of gender marking, so that in pattern one, /dai/ the/ that (proximal) serves either as masc. or fem; in pattern 1 and 2 the adjectival suffix -ɨ serves either as fem. or neut; and in pattern 3

/jan/ that (distal) serves either as masc. or neut. We regard these 'double functions' as neutralizations, presented in tabular form below:

pattern no.	article	adjective	noun
1	masc./fem. neut.	masc. fem./neut.	masc. fem. neut.
2	masc. fem. neut.	masc. fem./neut.	masc. fem. neut.
3	masc./neut. fem.	masc. neut. fem.	masc. neut. fem.

The above table is intended to show that in spite of neutralization there is no structural ambiguity in any of the three patterns (even when the noun of any given phrase is removed) because the mark of the particular gender that refers to a given noun occurs with **both** article and adjective even though one or both of these marks is a neutralization of two genders. This means, for example, that when the article of a given phrase is marked for either masc. or fem., the adjective of the same phrase must be marked for either masc./neut. or fem./neut. If the former is the case, the phrase in question belongs to the masc. gender, but if the latter, it belongs to the fem. gender. In summary, every member of a noun phrase (consisting of at least as article and an adjective) bears the gender mark of the noun to which it refers, and even if each of these gender marks is a neutralization of two genders (but never the same two for both the article and the adjective, see table above) the actual gender of the phrase in question is the one that occurs with both the article and the adjective. However, in a

phrase consisting of an article plus or minus a noun (but no adjective), there is structural ambiguity between masc. and fem. in pattern 1, and between masc. and neut. in pattern 3.

The sole instance of a differentiation of cases in ULG occurs in conjunction with singular masculine nouns, whose modifying articles, possessives and adjectives are obligatorily distinguished as either actor-related (and marked masculine as discussed above) or non-actor-related (and marked -n or -m[1]). By 'actor-related' we mean occuring in a noun phrase whose syntactic function is that of subject; and by 'non-actor-related' we mean occuring in a noun phrase whose syntactic function is anything except subject. Examples are: /jef mii dee-n graut-n leepl!/ Give me the big spoon!, /zai at met eer-n leepl./ She eats with her spoon., but compare /jef mii dout graut-i masr!/ Give me the big knife! (neuter, hence no non-actor marker). Note the additional allomorph /dee-/ (sometimes contracted to /d-/) of the definite article /dai/ the (masc.) which occurs only when followed by the non-actor suffix.

2.7 A good number of ULG morphemes have two or more stylistic variants. By stylistic we mean not necessarily or solely free variation, but also enunciatory deliberateness, emphasis, and -- to a certain extent, depending on the linguistic background of the speaker -- variations in style due to High German or even English interference.

Both deliberateness of enunciation as well as emphasis involve the use of stress with morphemes that are otherwise not stressed. The most

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[1] /-m/ occurs sporadically in place of /-n/; this variation stems undoubtedly from High German interference but rarely corresponds to any distinction of indirect:direct object as it does in High German.

general feature of such unstressed forms -- usually particles -- is the vowel /ɨ/ which replaces the (stressed) vowel of the stressed forms. Examples are /dɨ/ for /dai/ the (masc./fem.), /dɨt/ for /dout/ the (neut.), /vɨ/[1] for /vii/ we, and /ɨt/ for /dout/ the (neut.) in certain environments.[2] In some instances vowels are entirely lost, as in /n/ for /ain/ a (masc./neut.), /n-ɨ/ for /ain-ɨ/ a (fem.), /m/ for /am/ him, and /s/[2] for /es/ is. A somewhat unique reduced form is /r/[3] which occurs in place of /hai/ he. In at least one instance reduction goes to the point of eliminating an entire morpheme, as in /dit dau vɨ nixj./ We don't (better won't) do this. (this (neut.) do we not), where /dau/ is a reduction of /daun-ɨ/ do-plural.[4]

High German interference is frequently encountered in conjunction with making distinctions of case. The reason for this interference is probably the existence in High German of a fairly extensive case system, compared to an extremely simple one in ULG, where the only consistently observable case distinction is that of actor : non-actor, and this only in masculine singular forms. ULG speakers

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[1]These forms -- as well as other reduced forms of pronouns -- occur only when they immediately follow a verb or the subjunctive particle /van~vn/ if.

[2]This contraction does not occur sentence initially.

[3]No doubt cognate with High German 'er' he.

[4]This particular type of verbal reduction occurs only when a plural actor person morpheme (and in some instances one of the singular forms also) immediately follow a verb, e.g. /vout ha jɨ door./ What have you (pl) (got) there?, compared to /vout jii door hab-ɨ/ what you (pl) have there...

with a considerable knowledge of High German feel that more distinctions must be made in ULG. These extra distinctions are usually made in order to differentiate direct from indirect objects, and are sometimes applied in all three genders, approximating High German patterns.

CHAPTER THREE : MORPHOLOGY

3.1 All ULG roots can be divided into two categories, depending on whether or not they cooccur with status quo affixes and/or operators. By affixes we mean root additive morphemes, and by operators non-additive morphemes (e.g. replacives, reductions, intonations). Those roots that combine with minor morphemes (i.e. affixes and/or operators, see 3.3 below) can again be divided into two classes, verbs and non-verbs. Verbs are so defined by their compatibility with person marking suffixes, and non-verbs by their incompatibility with person marking suffixes. Verbs can be subclassified into those that are compatible with the imperative operator and suffix, and those that are not. The latter subgroup includes a small group of roots all of which are auxiliaries, which can again be split into two groups, one including those auxiliaries that are compatible with the past morpheme, and the other including only the subjunctive auxiliary /vud/ would which is not compatible with the past morpheme. Non-verbs can be subclassified into nouns and non-nouns, the latter being compatible with gender morphemes, and the former not. Non-nouns can furthermore be divided into three groups: (which are compatible with the comparative morpheme), numerals (which are compatible with the ordinal morpheme but not the comparative morpheme), and A particles[1] (which are compatible with neither the comparative nor the ordinal morpheme). A particles can be divided into three groups as follows: group one, those occuring with gender or plural or non-actor

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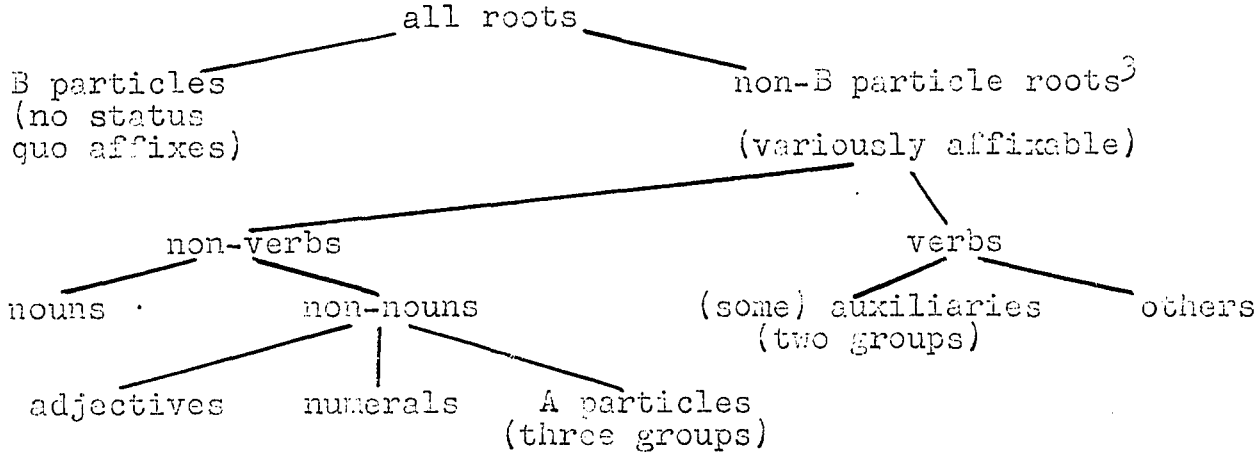
[1] B particles are those that do not cooccur with any status quo affixes and/or operators.

markers (including /kjain/ none, /m̥axj/ some,[1] /diS~dit/ this, /dai~dout/ the/that proximal, /jan/ that distal, /miin/ my, /diin/ you, /ziin/ his, /eer/ her/their, /onS/ our, /juun/ your (pl), /houlF/ half, /gouns/ completely/repaired, and /iijn/ own); group two, those occuring with superlative or gender or plural or non-actor markers (including /air~iir/ before, /feer(i)~fer/ before/in front (of), /beni~benr/ inside (of), /unji~unjr/ under, /boovi~boovr/ above, /buuti~buutr/ outside (of), and /hinji~hinjr/ behind); and group three, those occuring with gender or non-actor markers (including /ain/ a/one, /jiid/ each/every, and /veer~vee-n/ who/whom[2]).

The morphological classes of ULG roots can now be tabulated in a chart showing their hierarchical interrelationships:



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[1]The particle /manxj/ some may not belong to this group at all since its cooccurences with what appear to be gender suffixes may in fact be contractions of /manxj/ plus /ain/ a/one plus gender suffix, e.g. /manxj-it/ many a (neut.), perhaps from /manxj ain-t/ (same meaning). According to the latter analysis /manxj/ is a B particle.

[2]/veer~vee-n/, an interrogative/relative particle, cooccurs with the non-actor morpheme but no others. In this sense it actually constitutes a separate group of A particles.

[3]Excluding a number of nouns that do not cooccur with status quo affixes of any kind, e.g. /zount/ sand; but even such nouns cooccur with transformative affixes, e.g. /zound-ixj/ sandy, which then functions as an adjective, e.g. /dit es n zound-ji-r-it./ This is a sandier one (neut.). (where /-ji/ is an allomorph of /-ixJ/, an adjective forming suffix).

The affixes and/or operators that distinguish ULG form classes from one another we will refer to as divisive, all others as non-divisive. All divisive affixes and/or operators are necessarily of the status quo type (i.e. they are non-class changing or non-transformative), and all the rest are either of the status quo type or of the transformative (or class changing) type. This latter kind of affix and/or operator may cooccur with any root, even a member of the B particle category, e.g. /eevr/ over: /eevr-ɨxj/ left over (adjectival A particle) as in /dai eevr-ɨj-r/ the remaining one (masc.). For a complete list of B particles see appendix C.

A large number of ULG roots are members of more than one root class. Among such roots, noun-verbs are the most frequent, e.g. /puudr/ powder (cosmetic) which is a verb in /zai puudr-t zixj./ She powders herself., but a noun in /dit puudr es diir./ This powder is expensive., Less frequent are verb-adjectives, e.g. /shlem/ complain, which is a verb in /hai shlem-t./ He complains. but an adjective in /hai es shlem-r ous ekj./ He is more complaining than I. Occasional instances of roots with other two and even three class functions have been noted.

We shall now proceed to discuss the morphological constructions in which nouns, adjectives, numerals, A particles and verbs occur.

3.1.1 Nouns are morphologically the most difficult of all root classes to define. Negatively, they are characterized by their incompatibility with gender morphemes, thus contrasting with adjectives, A particles and numerals; on a higher level (of the hierarchy given above) nouns contrast with verbs, but also negatively, namely by their incompatibility with person marking morphemes.

The one affix that is most characteristic of nouns as a whole is the diminuitive marker /-kjɨ/ which cooccurs with all but mass nouns. The situation with respect to the plural morpheme is almost the same, since this morpheme cooccurs with all except certain mass nouns.[1] When the diminutive and plural morphemes cooccur with the same noun, the plural allomorph -s always occurs after the diminutive, e.g. /blaum-kjɨ-s/ small flowers. Often plurality is redundantly marked in such constructions, as in /benj-r-kjɨ-s/ small strings (compare /bount/ string and /benj-r/ strings). For the conditions under which this redundancy of pluralization occurs see 2.2.1 above.

Another way of seeing nouns as a morphological class is on the basis of their inherent gender, either masc., fem. or neut., a fact that is overtly expressed by appropriate affixes and/or operators that cooccur with noun modifiers, i.e. A particles, adjectives and numerals. We illustrate:

/dai	tvai-d-r	kjliin-r	baum/
the (masc/fem)	two-ordinal-masc	small-masc	tree

The second small tree.[2]

A noun of any of the three gender classes becomes neuter when cooccuring with the diminutive suffix, e.g. /dit baum-kjɨ/ this(neut) little tree, compared to /dis baum/ this(masc) tree.

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[1] Notice that some mass nouns cooccur with the plural marker but that no mass nouns cooccur with the diminutive marker.

[2] Even mass nouns are definable as nouns in this manner, e.g. /dis zount/ this(masc.) sand.

3.1.2 Adjectives are those roots or stems (stem equals root plus transformative suffix) that optionally cooccur with the comparative morpheme /r/. All adjectives also occur with the superlative morpheme /-st∼-stn/, but it is the comparative morpheme that is divisive for defining adjectives as a morphological class since it cooccurs with no other roots or stems, which the superlative morpheme does.

When adjectives cooccur with sequences of suffixes, the comparative or superlative always precedes a gender or plural morpheme, as illustrated in the following noun phrase:

/miin-ɨ	jrɛt-st-ɨ	shair/
my-fem.	large—superlative-fem.	scissors

my largest scissors[1]

3.1.3 Numerals can be defined as a morphological class by their cooccurrence with the ordinal suffix /-T∼-Tn/, as in /dɨ tvai-d-r/ the second (the (masc/fem) two ordinal-masc.), /tvai-dn-s/ secondly (two-ordinal-enumerative). This ordinal suffix, which we consider to be divisive for numerals, is optionally followed by another suffix (as just illustrated). Cardinal numerals are generally unsuffixed, e.g./hiir koom-ɨ tvai men-r./ Here come two men. But notice the suffixed cardinal numeral in /hiir zen-t fiif tvai-r-sh./ Here are five twos. (i.e. five two dollar bills, literally two-argentive-plural, to which compare the form /tvai-ɨ/ twos).

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[1] Scissors here being singular; compare the analogous plural sentence /miin-ɨ jrɛt-st-ɨ shair-ɨ zen-t shoorp./ my (pl) largest (pl) scissors (pl) are (pl) sharp.

The maximum number of suffixes that can follow a numeral root is three: /tvin-tixjs-t-r/ twentysecond (masc.) (two-times ten-ordinal-masc.) The suffix meaning times ten precedes the ordinal suffix which in turn precedes a gender or plural or enumerative suffix. The fractional suffix /-Tl/ occurs either alone or preceded by the suffix meaning times ten and/or followed by the plural allomorph zero. An example containing the fractional suffix is /drai zas-tiirn-dl-Ø/ 3/16 (three six-ten-fractional-plural).

3.1.4 A particles are morphologically distinct from adjectives on the one hand and from numerals on the other, lacking the divisive characteristics of these two classes (by definition) but sharing with them their optional cooccurence with gender affixes and/or operators. Although we can define A particles as a morphological class and furthermore divide them into three subclasses, their individual syntactic functions are in most instances very diverse, including articles, possessives, adjectivals (morphologically distinct from adjectives), prepositions (or noun phrase introducers similar to articles) and others (see 3.1 above).

The first group of A particles includes all articles except the indefinite /ain/ a/one as well as several adjectivals. Articles have already been treated in connection with gender and case in 2.6 above, where one particular point concerning the use of /dout/ the/it/that (neut.) was not made, namely, its reference to nouns of any gender provided that this neuter form (i.e. /dout/) is itself not a part of the same phrase in which the noun referred to occurs. Note for example the neuter form #/dout/# or its contracted (and necessarily unstressed)

equivalent /it/ both referring to the masculine noun /baum/ tree in the following two sentences.

/dout es ein shmok-r baum./
it (neut.) is a (masc./neut.) pretty (masc.) tree
/dee-n baum let it shmok./
that-non-actor (masc.) tree appears it (neut., actor) pretty

The first of the above two examples means It is a pretty tree., the second That tree is pretty. (literally, That (or It), with reference to a certain tree, namely that tree, looks or appears pretty.)[1] Compare to the above the question and answer sequence

/vout es dout. dout es ein baum./
what is it (neut.)? it (neut.) is a (masc./neut.) tree.
What is it? It is a tree.

The adjectivals of the first group of 4 particles function syntactically as adjectives but do not cooccur with either the comparative or superlative affixes. The possessive person markers which also belong to this group function much like articles syntactically.

The second group of 4 particles consists of seven morphemes which have either adjectival and/or adverbial functions. These particles may all cooccur with the superlative but not the comparative morpheme. For examples of their use see 2.5.1 above.

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[1] To invert the ULG sentence /dout es ein shmok-r baum./ to its simple syntactic counterpart /dai baum es shmok./ involves a semantic personification of /baum/, since the former sentence means It is a pretty tree., but the latter That tree is good-- i.e. it behaves properly. Compare the simple--both syntactically and semantically--sentence pair /dout es ein graut-it masr./ It is a large knife. and /dout masr es graut./ The knife is large.

The third and final group of A particles includes only the three morphemes /ain/ a /one, /jiid/ each/every, and /veer~vee-/ who. The first functions as indefinite article and the second as a quantitative adjective, e.g.

/jef-Ø	ain-n	jiid-n	vout!/
give-2s imp	one-non-actor	each-non-actor	something

Give something to each one!

The morpheme /ain/ also functions as the numeral one when followed by the neuter suffix /-t/. The morpheme /jiid/ is the only one of this group of particles that does not occur without a suffix in any of its syntactic environments. /veer~vee-/ optionally cooccurs with the non-actor suffix /-n/ (second allomorph), but not with any other affixes.

3.1.5 Verbs contrast with non-verbs in that they cooccur with person markers. Most but not all verbs also cooccur with a number of other affixes, among them the imperative, past and participle. The modal auxiliaries (including /mot koun soul vol mol doorF/) and the subjunctive auxiliary /vud/ furthermore cooccur neither with the past morpheme nor the participle.

Although verb tense constructions other than the simple present and past strictly speaking belong to syntactic analysis, we will here present a brief outline of these tenses, all of which make use of auxiliaries.

Future tense:

auxiliary /veer/ will with person marker plus main verb with infinitive marker, e.g. /ekj voor-Ø ran-i./ I will run.

Present Progressive tense:

auxiliary /dau/ do with person marker plus main verb with infinitive marker, e,g. /ekj dau-Ø ran-i./ I am running.

Past Progressive tense: auxiliary /daid/ did (past) with person marker plus main verb with infinitive marker, e.g. /ekj daid-Ø ran-i./ I was running.

Present Perfect tense:

auxiliary /hab/ have with person marker plus main verb with participle, e.g. /ekj hab-Ø ji-ran-t./ I have run. or I have been running.[1]

Past Perfect tense:

auxiliary /voor/ will with person marker plus main verb with participle plus auxiliary /hab/ have with infinitive marker, e.g. /ekj voor-Ø ji-ran-t hab-i./ I will have run.[1]

Modal auxiliaries can occur in any tense construction except a progressive with /dau/ do or /daid/ did. Examples follow.

Present tense with modal:

modal aux. with person marker plus main verb with infinitive marker, e.g. /ekj vel-Ø ran-i./ I want to run.

Past tense with modal:

modal aux. with person marker plus main verb with infinitive marker, e.g. /ekj vul-Ø ran-i./ I wanted to run.

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[1]The verbs /bliiV/ (-i-) -ai- (-ee-) remain, /goo/ (-ei-) -i- go/walk, /koom/ (-o-) -ou- come, /zii~ .../ be, /voor/ -o- become/happen, /foor/ -uu- drive, /shtoorV/ -o- die, and verbs of motion (including /ran/ run and others) in conjunction with particles of motion use be rather than have as auxiliary in this type of construction.

Future tense with modal:

future construction (see above) plus modal aux. with infinitive marker, e.g. /ekj voor-Ø ran-ɨ vel-ɨ./ I will want to run.

Present Perfect tense with modal:

aux. /hab/ have with person marker plus main verb with infinitive marker plus modal aux. with participle marker, e.g. /ekj hab-Ø ran-ɨ vul-t./ I have wanted to run.

Future Perfect tense with modal:

future perfect construction (see above) plus modal aux. with participle marker, e.g. /ekj voor-Ø jɨ-ran-t hab-ɨ vul-t./ I will have wanted to run.

The six modal auxiliaries are /vel/ -u- want (to)/intend to/claim to/be about to, /doorF/ -u- be permitted to, /koun/ -u- be able to, /maX/ -u- like (to)/may, /mot/ -u- be obliged to and /zoul/ -u- be expected to/ought to/be said to. Several modal auxiliaries may co-occur in the same verbal complex, as in the following past perfect compulsive abilitive,

/ekj houd-Ø mɨ dout zul-t denjkj-ɨ kjen-ɨ./

I had-1s me that should-participle think-infinitive can-inf.

I should have been able to think of that.

All of the tenses exemplified above are in the declarative mood. Other moods will now be illustrated.

Simple Subjunctive:

aux. /vud/ would with person marker plus main verb with infinitive, e.g. /ekj vud-Ø ran-ɨ./ I would run.

Perfect Subjunctive:

aux. /vud/ with person marker plus main verb with participle marker plus aux. /hab/ with infinitive marker, e.g. /ekj vud-Ø j±-ran-t hab-±./ I would have run.

Two-clause conditionals can be expressed in many differing ways, such as the following list of alternant constructions of the present conditional, all meaning If I would run (then) I would fall.

1) /vn ±kj ran-± vud-Ø, (dan) vud-Ø ±kj foul-±./
   if I run would then would I fall
2) /ran-d-Ø ±kj, (dan) fol-Ø ±kj./
   ran I then fell I
3) /ran-d-Ø ±kj,(dan) vud-Ø ±kj foul-±./
   ran I then would I fall
4) /vn ±kj ran-± vud-Ø, (dan) fol-Ø ±kj./
   if I run would then fell I
5) /vn ±kj ran-d-Ø, (dan) vud-Ø ±kj foul-±./
   if I ran then would I fall

Should we reverse the clauses of any of the above examples, we would obtain new variants, as for example the sentences given below, all based on 1) above.

6) /foul-± vud-Ø ±kj, vn ±kj ran-± vud-Ø./
   fall would I if I run would
7) /ekj vud-Ø foul-±, .../
   I would fall ...
8) /ekj fol-Ø, .../
   I fell ...

Passive verbal constructions are of two types, morphological passives and syntactic passives. Morphological passives require verb forms that do not differentiate person, being in fact all built on a 3s base, with the verb preceded by a non-actor person particle:

/mii hungr-t/ I'm hungry (literally, me hungers (it))

/dii hungr-t/ you're hungry

/ons hungr-t/ we're hungry

Note the corresponding past forms:

/mii hungr-d-Ø/ I was hungry

/dii hungr-d-Ø/ you were hungry[1]

/ons hungr-d-Ø/ we were hungry

Syntactic passives require no affixial restrictions as do morphological passives. They simply involve the use of the particle /fon/ by, the reversal of actor and goal, and the addition of the aux. /voor/ become, e.g. active: /ekj zai-Ø am./ I see him., passive: /hai voor-t fon mii ji-zain-i./ He is seen by me.

Medio-passive verb constructions (i.e. verbal constructions in which actor and goal have the same referent) are like active constructions in all respects:

/duu kjam-Ø-zd dii/ you combed yourself

/di fruu kjam-d-Ø zixj/ the woman combed herself

/ di mensh-i kjam-d-i zixj/ the people combed themselves

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[1]Past tense is here not zero as in corresponding active 2s forms; this is true of all 2s past passive forms of this type, since the actual form of the verb is 3s.

The morpheme /zixj/ is used for all third person forms whether singular or plural.

3.2 The affix and operator inventory of this section is divided into groups in terms of the root classes of 3.1 above. Furthermore, status quo affixes are distinguished from transformative affixes, as are divisive affixes from non-divisive ones.

3.2.1.1 Status quo noun suffixes include the following:

-kjɨ	diminutive
-shɨft	collective
-rii	abstractive
-shɨ	femininizing
-mɨs	-ism

All of these suffixes are mutually exclusive. The distribution of the diminutive suffix has already been discussed in 2.2.1 above. The collective suffix /-shɨft/ optionally cooccurs with and precedes the plural allomorph /-ɨ/, as in /braidr-shɨft-ɨ/ brotherhoods or /har-shɨft-ɨ/ highnesses (literally lord-ships). The abstractive suffix /-rii/ obligatorily follows the agentive suffix /-r/ and optionally precedes the plural allomorph /-ɨ/, as in /drekj-r-rii-ɨ/ printing presses. This suffix always combines with primary word stress and the root to which it is suffixed with secondary stress so that in terms of stress alone, any simple ULG word containing the morpheme /-rii/ behaves like a compound. The femininizing suffix /-shɨ/ optionally follows the agentive /-r/ and optionally precedes the plural allomorph /-s/ e.g. /foorm-r-shɨ-s/ farmer women and /dɨ bruun-shɨ/ the Brown woman (i.e. Mrs. Brown). The suffix /-mɨs/ is incompatible with other suffixes, e.g. /kɨmɨnis-mɨs/ communism.

3.2.1.2 Transformative noun suffixes include the following:

-ɨngk	verb > noun
-heit ~ -kjeit	adjective > abstract noun
-nɨs	verb/concrete noun > abstract noun
-r	verb/noun > agentive noun
-s	adjective > concrete (uncoutable) noun
-tɨxj	verb > abstract (non-pluralizable) noun

Of the above suffixes /-s/ and /-tɨxj/ are the only two that cooccur neither with the diminutive nor the plural morphemes; all the others are optionally followed by these two suffixes (i.e. diminutive and pl) in that order, e.g. /rɨjiir-ɨng-(s)-kjɨ-s/[1] little governments (compare /rɨjiir-ɨngk/ government and /rɨjiir/ govern). The second allomorph of the abstract noun forming suffix /-heit ~ -kjeit/ occurs only after the adjective forming suffix /-ɨXJ.../ (see below), and the first allomorph occurs elsewhere, e.g. /ren-lɨxj-kjeit/ cleanliness (compare /ren-lɨxj/ cleanly and /rein/ clean), /frii-heit/ freedom, /krangk-heit/ sickness and /fraxj-heit/ insolence. The suffix /-s/ sometimes cooccurs with the same root as /-heit/, but not always, e.g. /dom-s/ beside /dom-heit/ both meaning silliness;[2] compare /shlem-s/ sore/hurt/wound (but not */shlem-heit/) and /krangk-heit/ sickness (but not */krangk-s/). The suffix /-nɨs/ usually requires morphophonemic vowel replacement in the root with which it combines, as in /fɨshtent-nɨs/ understanding (noun), compared to /fɨshtount/ brain or the verb form /fɨshtoo/ (pr) ~ /fɨshtunt/ (past) understand. The agentive suffix /-r/

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[1] /ngk/ (nasal+stop) before a consonant cluster (other than /rr/) automatically becomes /ng/ (the stop being lost). /(-s-)/ in this sequence is an optional increment.

[2] But these two forms do not have identical syntactic distributions, e.g. /dout es n-ɨ dom-heit./ as compared to /dout es dom-s./ both meaning That is silliness.

has a masculine connotation except when followed by the femininizing suffix /-shɨ/, e.g. /shriiv-r/ male secretary : /shriiv-r-shɨ/ female secretary (compare /shriiv/ write). The suffix /-tɨxj/ occurs for example in /shpeel-tɨxj/ toy(s) (lit. play-thing(s)) and /reekjn-tɨxj/ arithmetic (lit. figure-out-thing).

3.2.2 Adjective suffixes include the following:

-r	comparative (status quo and divisive)
-zɨm	verb > adjective (transformative)
-sh	noun > adjective (trans.)
-boor	noun/verb > adjective (trans.)
-ɨXJ ~ -lɨXJ ~ -rɨXJ	noun/verb > adjective (trans.)

The comparative suffix /-r/ optionally cooccurs with all adjectives whether these be simple or derived by one of the above listed transformatives. Comparative /-r/ optionally follows a transformative suffix and optionally precedes plural, non-actor or gender suffixes. E.g. /dit es shmok-r./ This (neut.) is nicer., /hai es shpoor-zɨm-r./ He is more frugal., /dit es n shmok-r-ɨt./ This (neut.) is a (masc./neut.) nicer one (neut.). and /vii zen-t shpoor-zɨm-r-ɨ liid./ We are-(pl) more frugal-(pl) people. (cp. the verb /shpoor/ save). Examples of the remaining suffixes are /bok-sh/ stubborn : /n bok-sh-r-ɨt/ a more stubborn one (neut.) : /bok/ buck;[1] /dangk-boor/ thankful : /dangk-boor-r/ more thankful : /dangk/ thank; /iiz-ɨxj/ icy : /n iiz-jɨ-r-ɨt/ an icier one (neut.) : /iis/ ice; /jlekj-lɨxj/ happy : /jlekj-lɨj-ɨ mensh-ɨ/ happy (pl) people (pl) : /jlekj/ happiness/luck.[2]

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[1]The suffix /-sh/ also occurs with proper names denoting nationality, e.g. /juut-sh/ Jewish, compared to /n juud/ a Jew.

[2]The allomorphs /-ɨXJ ~ -lɨXJ ~ -rɨXJ/ are not in complementary distribution phonologically, but cooccur variously with different roots.

3.2.3 Status quo numeral suffixes include the following three:

-t±XJ	times ten
-Tn~-T	ordinal (divisive)
-Tl	fractional

The ordinal suffix optionally cooccurs with all numerals, optionally following the morpheme meaning times ten and optionally preceding either a plural, enumerative, non-actor or gender suffix or operator. For example, /neejn-t±xjs-t-r/ ninetieth one (masc.) (nine-times ten-ordinal-masc.).[1] The fractional suffix optionally follows the morpheme meaning times ten but may not be followed by any affixes at all, e.g. /ain dre-dl/ one third.

3.2.4 Status quo non-noun suffixes include the following:

-r	masc. gender	(divisive)[3]
-±	fem. gender	
-±t~-t	neut. gender	
-n~-m[2]	non-actor	
-s	enumerative	
-st~-stn	superlative	

For special forms of articles with reference to gender, as well as for gender neutralization see 2.6 above. The allomorph -±t of the neuter

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[1]For incremental /s/ as in this example see preceding remarks.

[2]For this alternation see 2.6 above.

[3]We consider any one or all of these suffixes as divisive even though the particle /veer~vee-/ who does not cooccur with gender suffixes but only with the non-actor suffix, i.e. /vee-n/ whom (masc.).

suffix cooccurs with adjectives and numerals; /-t/ of the same morpheme cooccurs with A particles. Gender suffixes -- among others including plural and non-actor -- are closing, following othe suffixes or being directly attached to roots.

The non-actor suffix contrasts morphologically with the masc. suffix -r, having exactly the same distribution (with the exception of the single morpheme /veer~vee-/ which cooccurs with the former but not the latter); but syntactically these two morphemes are in complementary distribution, the masc. suffix occuring only as actor-related and the non-actor suffix occuring only as non-actor related[1] (masc. constructions only). E.g. /dai graut-r leepl/ the big spoon, a masc. noun phrase, occurs only as a subject syntactically; the non-subject form of the same phrase would be /dee-n graut-n leepl/, as in the sentence /jef mii dee-n graut-n leepl!/ Give me the big spoon!, or as in /hai at met dee-n graut-n leepl./ He eats with the big spoon.

The enumerative morpheme -s cooccurs with all ordinal numerals (obligatorily after the ordinal suffix) as well as with the adjectival particles /iir-shtn-s/ firstly (lit. before-superlative-enumerative), /lat-stn-s/ lastly and several others.

References to A particle affixes and their cooccurences have already been made in 3.1.4 above, as well as throughout the present section, and will not be repeated here. The distribution of the superlative suffix -st~-stn roughly parallels that of the comarative suffix -r (see above).

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[1]For this terminology see 2.6 above. On the basis of the meaning test for identifying morphemes as either same or different, we here conclude different, since one morpheme means masc. actor and the other masc. non-actor.

3.2.5 Status Que Verb Affixes are listed below:

(For the phonemic shapes of the following see 2.1.1 above)

1s

2s

3s

infinitive

past

gerund

2s imperative

2pl imperative

Additional affixes -- all of them prefixes -- are listed below.

/fi-/ subjective distributive

/bi-/ objective distributive

/ti-/ purposive to

/ecvr-/ over

/unjr-/ under

The only affixial sequence other than prefix (plus root) plus suffix cooccuring with verbs is that of the past tense (suffix allomorph) followed by a singular or plural person suffix. In singular constructions either the past tense or the person marker is zero, but in plural constructions both suffixes have phonemically overt (non-zero) allomorphs. One exemplary paradigm will suffice,

/ekj ran-d-Ø/ I ran (root plus past plus person)

/duu ran-Ø-zd/ you ran

/hai ran-d-Ø/ he ran

/vii ran-d-i/ we ran.

The above listed prefixes will now be discussed briefly. All of them occur to the exclusion of other prefixial morphemes or parts of morphemes (such as the pasticiple /jɨ-...-t/). Our semantic labels for the first two are merely indicative of their most frequent usage. It might have been just as well to say that the function of these two prefixes is that of transforming one verb (namely a root) into another verb (namely the same root plus a prefix) with a shift in meaning. A few examples are /jait/ pour, /fɨ-jait/ spill and /bɨ-jait/ pour over/on as in the sentences /ekj jait-Ø dout vootr uut./ I pour the water out., /ekj fɨ-jait-Ø dout vootr./ I spill the water. and /ekj bɨ-jait-Ø dɨ blaum-ɨ met vootr./ I water the flowers. (literally, I over-pour the flowers with water.) respectively.

The purposive morpheme tɨ- obligatorily cooccurs with the inf. suffix -ɨ but only in complementary verb constructions, e.g. /hai fɨ-shtei-t nixj tɨ-zinj-ɨ./ He doesn't know how to sing. (literally, he understands not to sing.).

The semantic functions of the prefixes eevr- and unjr- are again very much like those of fɨ- and bɨ- when it comes to giving them a meaning label. E.g. /eevr-shvam/ flood (lit. over-swim) and /unjr-shtoo/ investigate (lit. under-stand).

The participial morpheme has already been extensively treated in 2.1.1 above. A further note is here added. Verbs can be transformed to adjectival A particles by the addition of gender suffixes to the participial form. The allomorphs of the participial forms in such constructions are identical with those in other (i.e. verbal) constructions except that the participial suffixial element -ɨ is always replaced by -n, and suffixial element -t of Group 2 verbs is always replaced by -d.

Examples are /fɨ-goot-n-ɨt/ (something) spilled (neut.) (to which cp. /fɨ-goot-ɨ/ spilled, participle), /om+jɨ-mook-t-ɨt/ (something) altered (neut.) (to which cp. /om/ around and /jɨ-mook-t/ made, participle) and /fɨ-driij-d-ɨt/ (something) whithered (neut.) (to which cp. /fɨ-driixj-t/ whithered, participle).

A few nouns can be transformed into adjectival particles in a very similar way to that just described for verbs, namely by the addition of a suffixed -n,[1] which is obligatorily followed by a gender or plural suffix, as for example, /n-ɨ iizr-n-ɨ shtang/ an-fem. iron-fem.(adjectival particle) bar. Nouns that can be transformed in this manner include /iizr/ iron, /tseixj/ cloth, /ladr/ leather/hide, /holt/ wood (transformed to /heltr.../ woodden) and perhaps a few others.

3.2.6 The most widely occuring affix-operator morpheme in ULG is the plural which cooccurs with most nouns, adjectives, numerals, A particles and verbs. This morpheme is morphophonemically complex in conjunction with nouns only; elsewhere the allomorph -ɨ occurs almost exclusively, e.g. /vit/ white : /vit-ɨ/ white ones (adjective), /tvai/ two : /tvai-ɨ/ twos (numeral), /jan/ that : /jan-ɨ/ those (A particle), to which compare nouns like /bount/ string : /benj-r/ strings or /braif/ letter : /braiv-Ø/ letters.

3.3 In the morpheme typology of this section we shall speak of major morphemes as a typological class including all roots, and minor morph-

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[1]This suffixed -n could be morphemically treated in one of four ways: 1) as a morphophonemic increment of the root, 2) as a part of whichever suffix follows, 3) as an allomorph of the participle (compare transformed verbs with the participial suffix allomorph -n), or 4) as a separate morpheme with the simple function of transforming nouns into adjectival particles.

emes as a second typological class including all non-roots, i.e. affixes and operators (together abbreviated m). Furthermore, we shall find it useful to divide major morphemes into particles (A particles and B particles, together abbreviated P), and non-particles (abbreviated M). This division of P:M correlates with the loose statistical measure of small : large,[1] but our reasons for making this distinction are structural, since particles generally serve as modifiers of members of the M category, sometimes as phrase introducing morphemes (for example,/dai moun/ the man, P plus M), sometimes as sentence modifiers (for example /uk/ also, as in /miin braudr kjem-t uk./ My brother comes also., P plus M plus M-m plus P), and sometimes as substitutes for overtly unexpressed or contextually non-contiguous members of the M category (or evenas substitutes for whole phrases whose head is an M) (for example, /r /r/ he (contracted unstressed form of /hai/) in /door jei-t r./ There walks he., P plus M-m plus P, where /r/ refers to or substitutes for an unexpressed masculine noun such as /moun/ man, e.g. /door jei-t n moun./ There walks a man., P plus M-m plus P plus M; another example is /uk dit es n moun./ Also this (one) is a man., P plus P plus Mm plus M, where /uk/ is a sentence modifier, /dit/ is a noun phrase referent (to the non-contiguous phrase /n moun/), and /n/ introduces a noun phrase phrase).

In terms of text frequency our analysis of seven short texts[2] shows the following percentages of the occurence of P, M and m morphemes:

---

[1]The total number of P morphemes is around 100, M in the thousands, and m about 50. Although the total inventory of numerals is quite small (about 15) we classify numerals as M rather than as P morphemes since they function syntactically very much like adjectives.

[2]Each of the seven texts here refered to was recorded by us from a different informant and each contains different subject material. Sen-

Text number:		1	2	3	4	5	6	7	average
Morpheme type:	P	38	38	41	42	39	36	41	40
	M	33	37	33	33	32	33	33	33
	m	29	24	26	25	29	31	26	27

This simple statistical computation points to the fact that P morphemes have the highest text frequency, m the lowest, and M between the two. This is typologically significant in so far as the total inventory of P morphemes is only around 100, whereas that of M morphemes is in the thousands. The total inventory of m morphemes is about 50, but only some ten of these recur frequently in texts (i.e., the three gender morphemes, the three person morphemes, the plural morpheme and the non-actor morpheme).

We have observed the range of morphemes per word to be from one to four, the average being around 1.7. The range of P per word is 0 to 2 and of M 0 to 3.

A few ULG morphemes function as either P or M in some environments, but as m in others. These include /eevr/ over (P), /unjr/ under (P), /jeejn/ against (P/M), /fer/ in front of (P). /shloo/ hit (M) and a few others. Examples of these morphemes used as prefixes (either with secondary or weak stress), hence m, are /eevr-shvam-ɨ/ to flood (contrasting with /eevr+shvam-ɨ/ to swim over, a compound with primary stress on the first root, secondary on the second); /unjr-haul-ɨ/ to converse (contrasting with the compound /unjr+haul-ɨ/ to hold under); /jeejn-oun/ contrary (contrasting with the phrase /jeejn am/ against him, and with

tences generated at random by ourselves indicate very similar results: P 41%, M 33% and m 26%.

the verb /bi̇-jeejn-i̇/. to meet; /fi̇r-op-goon-i̇/ to go in front (/fi̇r/ being the unstressed allomorph of /fer/) (contrasting with the phrase /fer am/ in front of him); and /shloo-zeevn-daut/ good-for-nothing (literally, hit-seven-dead)[1] (contrasting with /shloo/ as a verb in /ekj shloo-Ø am/ I hit him/.

3.4 Compound words have already been defined both phonologically and morphologically in 1.5.1 above. We will now present an outline of the various kinds of compounds in ULG, both in typological and in root or stem class terms.

M-M

noun plus noun, e.g. /jelt+biidl/ money purse;

noun plus adjective, e.g. /fi̇-henjkj-ni̇s+fel/ complex (prefix-verb-nominalizing suffix-adjective);

noun plus noun-verb, e.g. /dak+ran/ eavestrough (roof plus groove /run);

noun-verb plus noun-verb, e.g. /shlaxt+masr/ butcher knife;

verb plus noun, e.g. /drash-mi̇shiin/ threshing machine;

adjective plus adjective, e.g. /fol-shtend-i̇xj/ complete (adjective-verb-adjective suffix/;

adjective plus noun, e.g. /huux+vaxj/[2] highway;

adjective plus verb, e.g. /gaut+mook-i̇/ rectify (literally good plus make);

numeral plus numeral, e.g. /ax+tiirn/ eighteen.

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[1] From the fairy tale about the clever tailor who swatted seven flies with one blow of his belt and became reputed as a 'slayer'of seven' (flies not spedified!) with one blow.

[2] /vaxj/ functions both as M and P, e.g. /ain vaxj, tvai veej/ one road, two roads (both nouns) and /hai jei-t vaxj./ He goes away. (Particle).

P-M

particle plus noun, e.g. /benr+reif/ inner tube;

particle plus adjective, e.g. /eevr+riip/ over ripe;

particle plus verb, e.g. /uut+haul-i/ to endure (literally, out plus hold).

P-P (infrequent), e.g. /door+met/ therewith (but also /door-met/, m-P).

P-M-M (infrequent), e.g. /eevr+oks+kjnaip/ overcoat buttons (i.e. buttons of an overcoat).

The morphological class function of each compound as a whole is in all cases the same as the function of the last member of a given compound. If the final member of an M-M compound is a noun-verb, the whole compound functions as a noun; but if the final member of a P-M compound is a noun-verb the whole compoud functions as a verb.

Compounds of the type P-M where M equals a verb, are very abundunt in ULG. Many different particles may combine with the same root, as for example /ruut+ran-i/ to run out, /nen+ran-i/ to run in, /vaxj+ran-i/ to run away, /trij+ran-i/ to run back, /met+ran-i/ to run along (with), /nop+ran-i/ to run up, /rouf+ran-i/ to run down, /heer+ran-i/ to run toward speaker, /han+ran-i/ to run toward goal, //rom+ran-i/ to run around, /derxj+ran-i/ to run through, to run over and /unjr+ran-i/ to run under. The constituent roots of compounds of this kind occur as separate (or simple) words in the simple present and the simple past tense constructions of the verb, but as a single compound elsewhere, e.g. /ekj ran-Ø nuu ruut./ I'm running out now: /ekj voor-Ø nuu ruut+ran-i./ I will now run away.

There is one morpheme in ULG that occurs only in compounds, namely /on~o/ negative, as for example in /on+zexjr/ uncertain or in /o+mak-li+xj/ uncomfortable (both examples particle plus adjective).

APPENDIX A

DISTINCTIVE FEATURES OF PHONEMES

The distinctive feature analysis given below is based largely on the author's articulatory impressions as well as on presumably analogous examples given for distinctive feature oppositions in various languages by Jakobson, Fant and Halle.[1] Our analysis of vowels only has been supplemented by some spectrographic research (see Appendix B).

None of the three prosodic features are distinctive in our analysis of ULG. Of the twelve inherent features, seven are distinctive: consonantal/non-consonantal, vocalic/non-vocalic, grave/acute, diffuse/compact, oral/nasal, interrupted/continuous and tense/lax. The application of the consonantal/non-consonantal and vocal/non-vocalic features to the ULG phonemes separates consonants, liquids, glides and vowels from one another. The grave/acute feature divides all consonants into two groups, the labials and velars (grave) versus the alveolars, prepalatals and palatals (acute).

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[1] See especially their Preliminaries to Speech Analysis, MIT Press, 1961.

The same feature separates back vowels (grave) from front vowels (acute), leaving the central vowels in an intermediate (plus-minus) category.

The diffuse/compact feature contrasts labial consonants, alveolar consonants and high vowels with velar consonants, palatal consonants and low vowels. Again, an intermediate (plus-minus) category both of consonants, i.e. the prepalatals /sh/ and /zh/, and vowels, i.e. the mid tongue height vowels, /i/, /ee/, /u/ and /oo/, results.

The two features oral/nasal and interrupted/continuous apply to non-vowels only. The former feature applies to labial consonants (contrasting/p b f v/ with /m/), velar consonants (contrasting/k g x/ with /ng/), alveolar consonants (contrasting /t d s z/ with /n/) and palatal consonants (contrasting /kj xj j/ with /nj/). The latter feature applies to the four above listed groups of oral consonants, separating the stops /p b k g t d kj/ from the fricatives /f v x s z xj j/. Some but not all contextual variants of /r/ contrast with /l/ by means of this same interrupted/continuous feature.

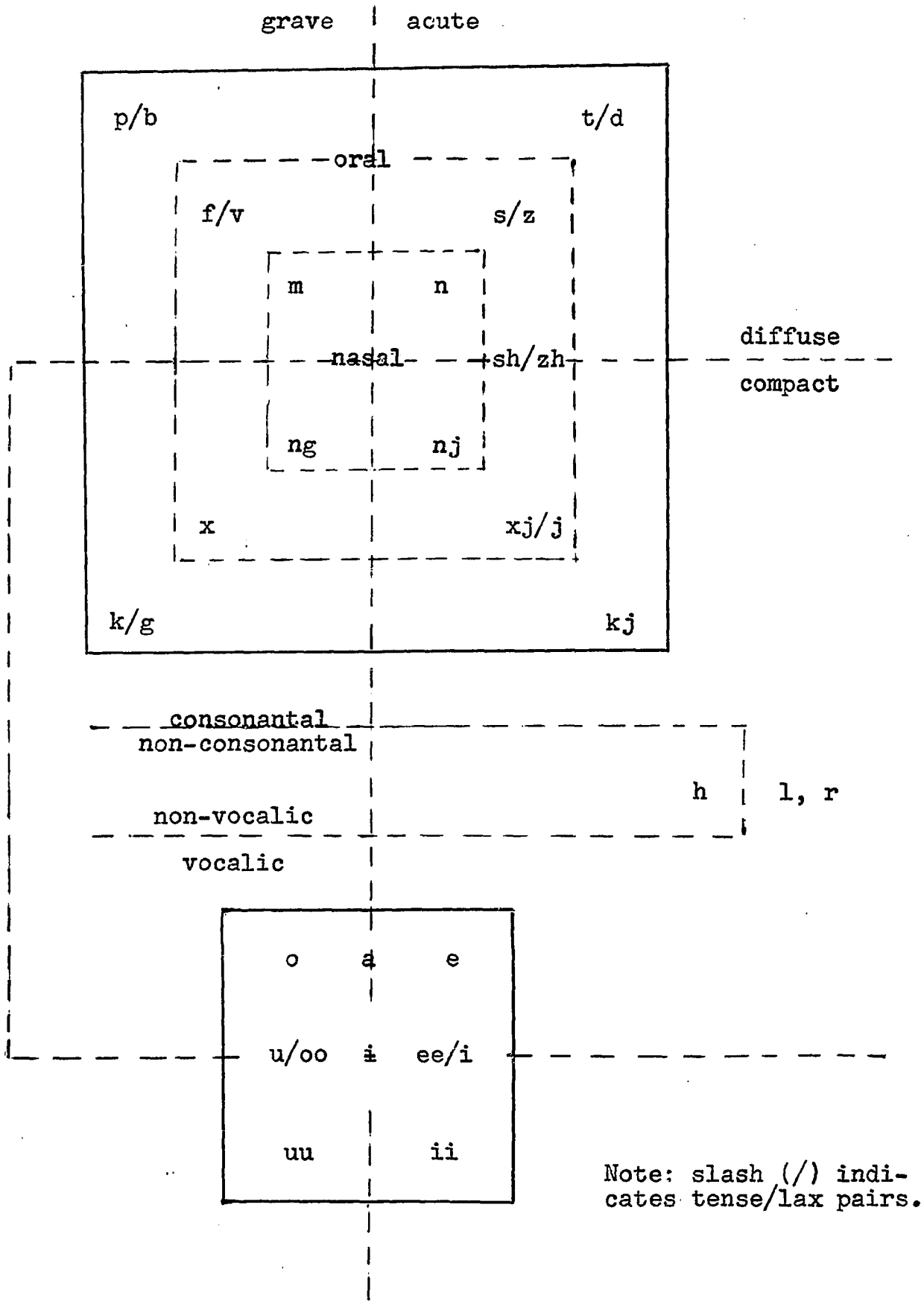
Finally, the tense/lax feature applies to all remaining phoneme pairs, namely p/b, f/v, k/g, t/d, s/z, sh/zh, xj/j, ee/i and oo/u.

Below we present both a simple and a multidimensional charting of ULG phonemes and their distinctive features.

Phonemes:	p	b	f	v	m	k	g	x	ng	t	d	s	z	n	sh	zh	kj	xj	j	nj	l	r	h
Features:																							
consonantal/non-cons.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-
vocalic/non-vocalic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-
grave/acute	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-			
diffuse/compact	+	+	+	+	+	-	-	-	-	+	+	+	+	+	±	±	-	-	-	-			
oral/nasal	+	+	+	+	-	+	+	+	-	+	+	+	+	-			+	+	+	-			
interrupted/contin.	+	+	-	-		+	+	-		+	+	-	-				+	-	-		-	+	
tense/lax	+	-	+	-		+	-			+	-	+	-		+	-		+	-				

Phonemes:	ii	i	ee	e	a	ɨ	o	oo	u	uu
Features:										
consonantal/non-cons.	-	-	-	-	-	-	-	-	-	-
vocalic/non-vocalic	+	+	+	+	+	+	+	+	+	+
grave/acute	-	-	-	-	±	±	+	+	+	+
diffuse/compact	+	±	±	-	-	+	-	±	±	+
tense/lax		-	+					+	-	

MULTIDIMENSIONAL REPRESENTATION OF D.F. AND PHONEMES



Note: slash (/) indicates tense/lax pairs.

The above schematizations do not fully indicate the nature of the contrast between /l/ and /r/, nor between /g/ and /j/. Whereas /l/ is in all its occurrences a continuous lateral type liquid, /r/ is (by our prefered analysis) a vowel in some contexts, and an interrupted flap or trill type liquid in others. It is true that the vocalis allophones of /r/ could be assigned to the phoneme /a/ without violating the principle of complementary distribution, but such a solution would be morphophonemically undesirable since it would require very frequent alternation between /a/ and /r/, e.g. /hai foor-t/ he drives [fó:at] (which could be analyzed as /fooa-t/) compared to/vii foor-i/ we drive [fó:ʔri] . In our prefered analysis /foor/ is the invariant phonemic shape of the morpheme meaning drive, where in the alternate analysis suggested above, this same morpheme would have the shapes /fooa/ and /foor/, the latter before a suffixed element beginning with a vowel. Compare also /ekj hoomr/ I hammer [hó:ma] (alternately analyzable as /hooma/) and /vii hoomr-i/ we hammer. A further unnecessary complexity resulting from an analysis assigning unstressed [a] to /a/ rather than to /r/, is that the morphophonemic alternation of /z/ to /zh/ and /s/ to /sh/ after unstressed [a], predictable by our preferred analysis, would become unpredictable, e.g., by the suggested analysis, /hooma-sht/ (you) hammer (preferred form, /hoomr-sht/), to which compare (either solution) /ha-st/ (you) have.

Turning to the phonemic contrast between /g/ and /j/, we are dealing with three contextual phonetic variants, [g], [j] and [dj]. The last of these variants is in complementary distribution with both of the first

two occuring only after /i/ or /e/ in which positions neither [g] or [j] occur. Choosing the analysis /g/ [g, dj] would mean that this phoneme contrasts with /j/ by the feature interrupted/continuous and leave the acute/grave contrast between /g/ and /j/ as irrelevant; choosing the alternate analysis /j/ [j, dj] would leave the interrupted/continuous feature as irrelevant, and contrast /j/ with /g/ by the grave/acute feature. We have chosen the latter analysis since the grave/acute feature has a higher contrastive load among ULG phonemes than does the interrupted/continuous feature.

Our analysis of ULG vowels as given above maximizes the diffuse/compact feature at the expense of the tense/lax feature. If we admit that the articulatory features of tense vowels like /ii, ee, oo, uu/ are a higher tongue position as well as a more peripheral position (relative to frontness or backness) compared to lax vowels like /i e o u/ respectively, then the following analysis is perfectly possible:[1]

	acute		grave
diffuse	ii/i	ɨ	u/uu
compact	ee/e	a	o/oo

---

[1] Still another vowel analysis possible within the distinctive feature framework would make clusters of /ii, ee, oo, uu/ and perhaps even of /a/ (>*/aa/, versus /ɨ/>*/a/). This analysis may be schematically shown as follows:

	acute		grave
diffuse	i	ɨ	u
compact	e	a	o

The disadvantages of this analysis are that it obscures both tense/lax as well as diffuse/compact relationships, even though it does indicate the (redundant) feature of a relative difference in length between clusters (longer) and single vowels (shorter).

APPENDIX B

SPECTROGRAPHIC ANALYSIS OF VOWELS[1]

My interest in doing some spectrographic analysis of the vowels of this dialect arose primarily out of a desire to discover whether it is or is not acoustically justifiable to typologize vowel systems in terms of such features as relative frontness vs. backness, tongue height, and so on.

Essentially, the method which I used consisted of making spectrograms of pairs or triplets or quadruplets of words in which either the vowels or the consonantal sequences were held constant, at least as constant as the many neutralization patterns of this dialect permit. Formants one and two of the recorded vowels were measured and plotted on formant charts. These vowels were also measured for length.

All vocalic syllable peaks were analyzed, including such vowels as may phonemically be analyzed as clusters.

Although the size of the corpus here analyzed is exceedingly small, and all analysis is based solely on the speech of the analyst himself, the results appear to be interesting enough, in as much as previous analyses of the vowels of this dialect made without the aid of a sonagraph, are, in general, substantiated, although with some significant modifications.

The results of this study are given below in summarized and tabular form, followed by some discussion.

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[1]This is essentially a reproduction of a paper submitted to Prof. F. W. Householder in conjunction with the course in Acoustic Phonetics, Spring, 1964.

VOWEL		FORMANT ONE	FORMANT TWO	LENGTH (in centisecs.)
/ii/		280-350	2300-2700	15-25
/i/		400-450	1850-2150	7-13
/ee/		450-525	2000-2300	10-19
/e/		550-750	1650-2000	10-15
/a/		600-800	1350-1600	14-19
/ei/	start	700	1650-1750	
	finish	550-600	1950-2000	11-26
/ai/	start	600-700	1400-1600	
	finish	300-400	2200-2400	14-26
/au/	start	625-700	1350-1600	
	finish	350-500	925-1250	15-24
/ou/	start	650-700	1000-1200	
	finish	550-600	900-1050	11-29
/o/		650-700	1000-1250	9-17
/oo/		500-600	900-1050	10-22
/u/		500-550	1050-1250	10-17
/uu/		350-450	950-1200	15-23
/ɨ/		350-600	1600-1900	4-12

Concerning the range in the formant positions for the various vowels, no clearly discernable consonantal environments appear to be decisive, so that we interpret this range as normal fluctuation in pronunciation. Further research might well reveal consonantal conditioning of various vowel allophones, although such conditioning is at any rate expected to be rather slight.

Only the vowels /ei ai au ou/ show any diphthongization or gliding element. This gliding element is most noticeable in /ai/ in which formant one moves from about 640 cps to about 350 cps and formant two from about 1500 cps to about 2300cps; the movement of formant one in /au/ is from about 650 to over 400 cps, and formant two from about 1450 to about 1100 cps. The gliding element in /ei/ and /ou/ is much less noticeable, especially in the former which remains entirely within the variability range of the vowel /e/. The average amount of gliding found in /ei/ is as follows: formant one moves from 700 to about 575 cps, a difference of only 125 cps (cp. /ai/ with a difference of about 300 cps); formant two of /ei/ moves from about 1700 to 1975 cps, a difference of only 175 cps (cp. /ai/ with a difference of about 800 cps). The gliding element of /ou/ is somewhat less than that of /ei/. But, the entire formant area of this diphthong does not remain within the variability range of /o/ (as /ei/ does within the range of /e/); rather, it begins in the /o/ range and moves back and up into the /oo/ or mid tongue height range. The formant movement of /ou/ is: 675 to 575 cps for formant one, a difference of 125 cps, and 1100 to 975 cps for formant two, a difference of 100 cps (cp. the vowel /au/ which moves an average of 250 cps in formant one, and 350 in formant two). Thus there

are two clear diphthongs /ai/ and /au/, and two very faint diphthongs /ei/ and /ou/; the latter member of each of these pairs shows less gliding than the former member.

The amazingly large variability of formant one of the vowel /ɨ/ appears to be due at least in part to the fact that this vowel represents a neutralization of /i e a o u/ in unstressed position. The fluctuations appear to be induced both by consonantal environment (a point that needs investigation) as well as by the fact that this vowel is in a state of development historically speaking, so that what was formerly an unstressed /o/, for example, is now /ɨ/ which is still -- at times -- somewhat rounded, thereby possibly attaining a highly variable formant structure. Relative differences in vowel length reveal a pattern that coincides closely with tense:lax oppositions, since a given pair of vowels such as ii:i, ee:e, oo:o and uu:u in a fairly comparable environment[1] generally correlate as longer: shorter (with an average diff. of about 5 centiseconds) although in a few cases a difference in lingth is practically unmeasurable. However, never is an /i/ longer than an /ii/, for example. The very longest vowels occur in open syllables.[2] The most general statement that can be made regarding vowel length, is that /i e ɨ o u/ are shorter, and all the rest (including diphthongs) relatively longer.

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[1]Only vowels on the same spectrogram were compared for lingth so as to eliminate non-linguistic differences resulting from, say fluctuations in speed of utterance.

[2]In open syllables it is impossible to compare vowels like /ii/ with /i/ since those of the latter type (i.e. /i e a o u/) do not occur in this environment.

It appears that a typology of (phonemic) vowel systems can, it appears, indeed be constructed on the basis of spectrographic evidence. In the case of the dialect under consideration, we can divide the vowels up into three basic subsystems : a stressed subsystem including /i e a o u/, an unstressed subsystem including only /ɨ/ and a subsystem that is indifferent to stress and includes /ii ee ei au ou oo uu/. Taking the first subsystem separately, we notice the following structure:

higher	i		u
lower	e	a	o
	front	central	back

The third subsystem has the following structure:

higher	ii		uu
lower	ee, ei	ai, au	ou, oo
	front	central	back

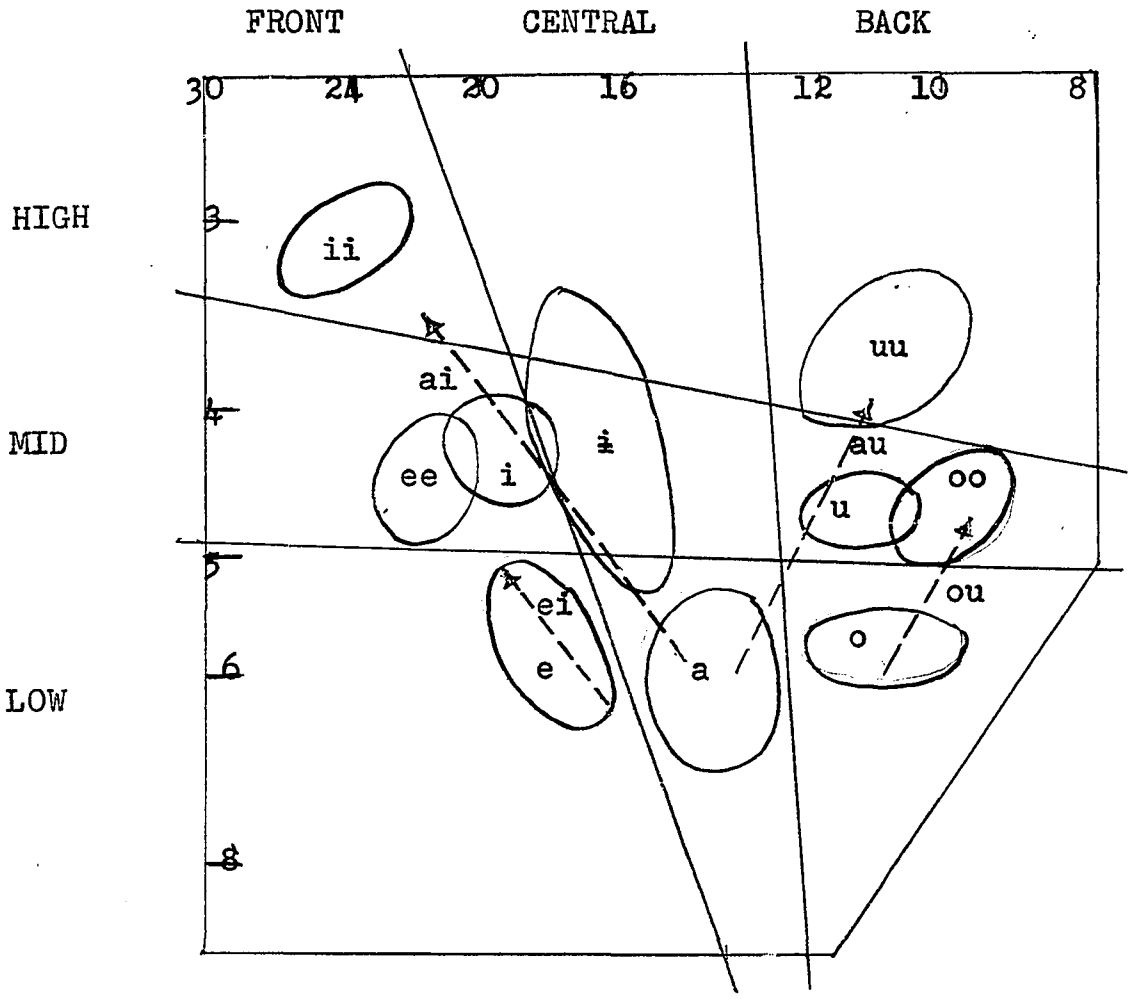
The typological conceptions of contrastive tongue height and contrastive front to back articulation need to be adjusted, for this dialect at least, as follows:

1) "High" tongue position is relatively lower for back /uu/ than it is for front /ii/; similarly for "mid" tongue position.

2) As regards frontness and backness, high vowels are much more spread apart than low vowels which tend to bunch up toward the center.

The problem of formant overlap between /ee/ and /i/ as well as between /oo/ and /u/ is to be viewed in terms of tense:lax correlations; /i/ being the lax counter of /ii/, and /u/ of /uu/.

All three vowel subsystems appear on a single chart below:



TYPOLOGICAL CLASSIFICATION

OF VOWELS

APPENDIX C

Actor Person

/ekj ~ ɨkj/ I, /duu ~ dɨ/ you, /hai ~ r/ he, /zai ~ zɨ/ she/they,[1] /vii ~ vɨ/ we, /jii ~ jɨ/ you pl.

Goal Person

/mii ~ mɨ/ me, /dii ~ dɨ/ you, /am ~ m/ him, /ar ~ deer/ her, /ons ~ ns/ us, /juunt ~ jnt/ you pl., /an ~ n/ them.

Instrumentals

/met/ with, /door+met ~ door-met/ therewith, /oonɨs ~ met-oonɨs/ without.

Benefactive

/fɨ ~ fɨr/ for.

Locatives, phrase initial only

/bat/ until/up to, /fon/ from/concerning.

Locatives, phrases initial or as verbal particles[2]

/bii/ by, /oun/ at, /tveshn/ between, /mangk/ among, /nen ~ en/ in/into, /ruut ~ uut/ out/out of, /nop ~ op/ up/on top of, /rom ~ om/ around/about, /noo/ after/behind/according to, /eevr/ over/about/concerning.

Locatives, occuring as verbal particles only

/trij/ back, /dool/ down, /heer/ motion towards actor, /han/ motion towards goal, /vaxj/ motion away from actor (also a noun meaning way/road), /rouf ~ ouf/ down/off, /oop/ open, /tau/ closed, /tvei/ broken.

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[1] The article /dai ~ dɨ/ also occurs with the function she/they.

[2] Verbal particles in compounds of the type P+M (M = verb), for which see 3.4. above.

Demonstratives

/hiir/	here
/door/	there (proximal)
/dort∿ dortnt/	there (distal)
/tuus/	at home

Interrogatives

/vout/	what
/vaur∿ vuur/	where
/vuur-om∿ v̈rom/	why
/vau/	how
/van∿ v̈nair/	when

Negatives

/nee/	no
/nixj/	not
/nii∿ nii-n̈xj∿ nii-mools/	never

Temporals

/fuurts/	immediately
/bault/	soon
/f̈ndoog/	today
/morj̈/	tomorrow
/jistr̈/	yesterday
/groots∿ afns/	just
/nox/	still/yet
/nuu/	now
/dan/	then
/emr/	always
/oul/	already

/ous/	when/as (also comparative than)
/vadr/	again
/zeit/	since
Quantitatives	
/blaus~ moo/	only
/meist/	almost
/mool/	sometimes/time/no. of times/once (temporal)
/atlɨxjɨ/	several
/on-jɨfeer/	approximately
/oul~ oulr~ ouli/	all
/oulɨs/	everything
/oul-ain~ɨl-ain/	alone
Other B particles	
/n/	and
/uk/	also
/oodr/	or
/oobr/	but
/zest/	otherwise
/dox/	yet/nevertheless
/viil~ viils/	because
/fɨleixjt/	perhaps
/fɨjeefs/	in vain
/vains/	at least
/dox-vol~vol/	probably
/van~ vn/	if
/zixj/	reflexive third person (singular or plural)
/zelfst/	intensive person, self (any person or number)

/beid~ beidɨs/	both
/zaxɨlkjɨs/	gently
/zair/	very
/zau/	so, thus
/joo/	yes
/uzhnt/	especially (for)
/na/	well
/iijns/	anyhow, actually
/eevns/	as a matter of fact
/ain-daunt/	no matter

APPENDIX D

Dialect Variations

Dialect variations within Ukrainian Low German can best be described in terms of two extremities corresponding to two major Mennonite settlement areas in the Ukraine. The main part of this dissertation describes the author's idiolect which belongs to the Molotschna settlement area variety of ULG and can therefore be taken as a representative idiolect of one dialect pole, contrasting sharply with the so-called Old Colony settlement area which represents the other pole, and whose divergent phonological and morphophonemic features are the main subject of this appendix.

There are four major phonological phenomena that characterize the Old Colony variety of ULG: (1) extreme fronting and considerable (but not complete) unrounding of /oo/ and /uu/ before the velar consonants /k/, /g/ and /x/,[1] (2) the occurence of [ɣ] as the post-tonic variant of /g/, (3) the phonetic value of /kj/ and /nj/ as fronted velars rather than palatals, and (4) the word initial incidence of /s/ where the Molotschna dialect has /ts/.

[1]There are some speakers of ULG who pronounce /oo/ and /uu/ as fully rounded back vowels (without any central off-glide before velars) in positions. We have not investigated how this feature might correlate with the others mentioned in this appendix.

The three major morphophonemic characteristics of Old Colony ULG are the following: (1) /n/ as the phonemic shape of all suffixial morph-final elements (except the gender morph designating fem.-neut.) which in Molotschna ULG have the shape /ɨ/, (2) root final /...eiV/ corresponding to Molotschna /...ou/, and (3) the participial form /jɨ-vas-t/ of the verb <u>to be</u> which in Molotschna ULG is /jɨ-veez-ɨ/. The most striking of these three features is the first, because it affects all plural verb forms, many plural noun forms, many participial verb forms and so on, e.g. Old Colony /vii mook-n/[mé:ˀkn], compared to Molotschna /vii mook-ɨ/[mó:ˀkɨ], <u>we make</u>. An example of Old Colony root final /...eiV/ is /bleiv/, compared to Molotschna /blou/ <u>blue</u>.

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[1]There are some speakers of ULG who pronounce /oo/ and /uu/ as fully rounded vowels without any central off-glide before velars. We have not investigated how this feature might correlate with the others mentioned in this appendix.

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Note: The only published literature on Ukrainian Low German that has come to our attention -- but unfortunately not into our hands -- is a Ph. D. dissertation by a certain Mr. Goertzen entitled 'ploutdits ...' done c.1960 in the Modern Languages Dept. of the University of Toronto.

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