

Microcosmos: The Circassian Verb

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1. Introductory Remarks

The Circassian¹ verb rivals the sentence in expressive power, apparently by making extensive use of a "syntactical" morphology that reflects both deep and surface syntactic structure. This verb is of great interest to the contemporary linguistic theorist because it tells them what sort of information morphology must handle. To render such a grammatical marvel comprehensible to the reader it will be necessary to have a brief theoretical preamble. I have adopted autolexical syntax (Sadock 1991) in spirit without necessarily adhering to generalised phrase structure grammar (Sadock's preference) in technique. Autolexical syntax ('autolexical grammar' would be better) is a simple and yet powerful theory in which various grammatical components work in parallel, subject to simple constraints, to parse a given string in a variety of ways simultaneously. Thus a string's components have at one and the same time distinct linguistic significance, much as a note of music may enter simultaneously into melodic and harmonic structures. Symbolically one might represent such parallel processing as a Cartesian product of grammars, $G_1 \times G_2 \times \dots \times G_n$. Because these are rule systems acting upon strings the net result of such a product is a restricted set of acceptable grammatical forms (see Sadock 1991: 43-47, where a different representation of this process is given), rather than an expanded field of data as would be the result from a Cartesian product of sets. Because the morphology of a language seems to be one component with at most sub-components in it, we shall see that despite several types of morphology acting in parallel to make up a verb no element belongs to more than one sub-component at a time. The Cartesian product of grammars does not hold, therefore, within a component (in other words the notion of component is still a coherent one) and instead one has a union of "sub-grammars" operating under complex informational and logical constraints in order to produce an intercalation of elements (Colarusso 1991).

Examples are from Bzhedukh West Circassian (unmarked) or Kabardian (K) East Circassian, I must thank Hisa Torkacho, Rashid Dahabsu, and Majida Hilmi for most of these forms.

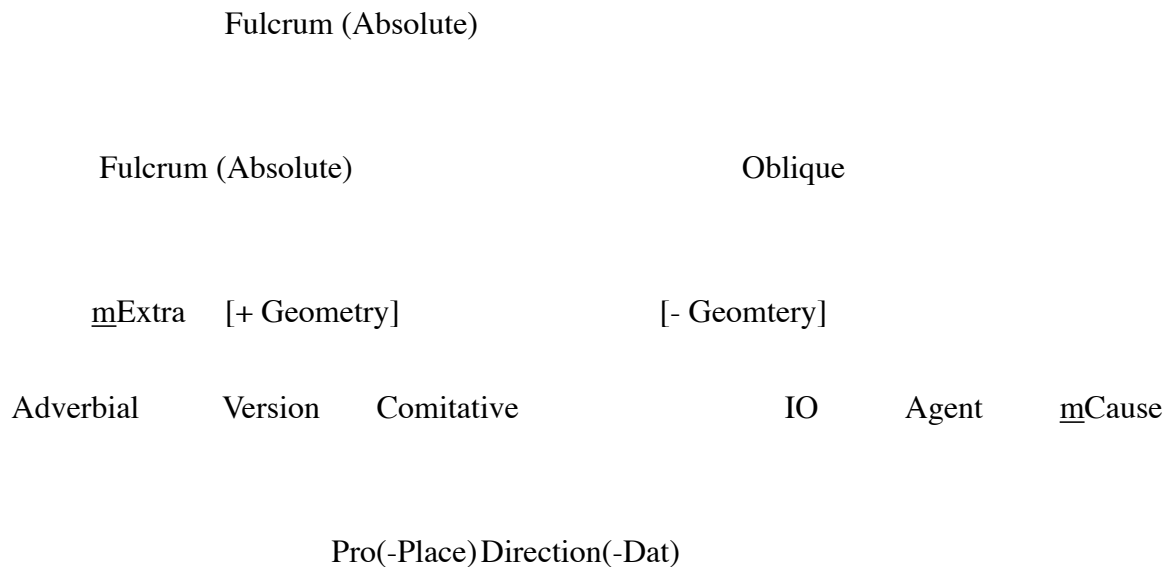
2. Argument Structure

The Circassian verb wears its theta roles or argument structure (Sells 1985: 37-38; Haegeman 1991: 35-47, 286-294) on its sleeve. In (1) I have denoted the topmost node as either 'fulcrum' or 'absolutive.' This is the head of the argument structure in that the sense of the verbal action is determined by the noun in the absolutive for both transitive and intransitive verbs. That noun is the fulcrum upon which the verbal action

is based and around which it pivots.

The fact that it is a head also implies that the other arguments will stand in an implicational hierarchy with regard to it. In other words the noun in the oblique, denoted by 'obl,' will imply that in the absolutive: obl > fulcrum (abs), and similarly for the other nodes. In this diagram and others to follow, unusual or special elements (perhaps derived from more complex structures), that is nodes that are marked, will be marked by 'm.' Thus, in (1) the causative node is marked to reflect the rarity, complexity, or difficult semantics of causative verbs. Such causatives may also be derived from a higher matrix verb, but arguments for this have yet to be found. I make the claim here that deep ergative languages, such as Circassian, are ergative precisely because the argument structures of their verbs has the headed structure of (1).

(1) Argument structure



2.1. Fulcrum and Oblique [-Geometry] Indices The ergative fulcrum is the initial index and refers to Ns in the absolutive. Other roles, considered traditionally to be grammatical (and hence [-geometry]), such as indirect object, agent (subject) or causative agent are non-initial indices and refer to Ns in the oblique case. To aid the reader I have underlined the relevant morphemes in this and the following sections.

It should be noted in all the following examples that once two or more arguments come between a prefix (of whatever type) and the stem that prefix shows a schwa-grade form. For example, in the strings, prefix-io-s-stem, prefix-ag-cause-stem, or prefix-io-ag-cause-stem, the prefix will be in a schwa-grade. Contrast /-qa-/ 'horizon of interest' in (2b, i) with /-qə-/ its schwa-grade in (2c, i, and ii). Also, phonological effects in

the verb (a very rich area) are shown in parentheses to the right.² For the abbreviations used in the examples, see the appendix.

(2) Fulcrum and oblique indices

a. Simple Intransitives

(i) λ'ə-ha-r ma-a-pλ+a-ha (mapλà x')

man-pl-abs 3-pres-look+intr-pl

'The men are looking.'

(ii) sa s-a-pλ+a (sà pλa)

I I-pres-look+intr

'I am looking.'

b. Two-place transitives

(i) λ'ə-m-a sa sə-qa-y-ə-λaγ'ə-γa-ha (səqəλaγ'ə γà x')

man-obl-pl me me-hor(izon of interest)-he-non pr-see-past-pl

'The men saw me.'

(ii) sa wa wə-s-λaγ'ə-γ (wəsλaγ'ə γ)

I you you-I-see-past

'I saw you.'

c. Three-place transitives

(i) a-š^y wa sa sə-qə-w-a-y-ə-t'ə-γa (səqwəyt'ə γ)

3-obl you me me-hor-you-to-he-non pr-give-past

'He gave me to you.'

(ii) wa sa a-r q-qə-s-a-w-r'a-a-γa (qəsapr'à aγ)

you me 3-abs 3-hor-me-to-you-say-th v-past

'You said it to me.'

d. Causatives

(i) sa wa wə-s-γa-a-pλ-a-a-γa (wəzγapλà aγ)

I you you-I-cause-con-look-intr-th v-past

'I made you look.'

(ii) sa a-š^y wa wə-qa-y-ə-s-γa-a-λaγ'ə-γa (wəqəyzγaλaγ'ə γ) or

sa a-š^y wa wə-qa-y-a-s-γa-a-λaγ'ə-γa (wəqayzγaλaγ'ə γ)

I 3-obl you you-hor-3-non pr- (or -dat-)I-cause-con-see-past

'I showed you to him.'

(iii) sa a-ha-m-a wa a-r q-qə-w-a-y-ha-s-γa-a-t'ə-γa (qwahzγat'ə γ)

I 3-pl-obl-pl you 3-abs 3-hor-you-to-3-pl-I-cause-con-give-past
'I made them give it to you.'

In many of the forms of (2) both pronouns and their corresponding verbal indices (affixes) can occur, though a rule of pro-drop often applies in discourse. Nevertheless, it seems that these indices cannot be viewed as mere clitics that have been incorporated into the verb. Nor can they be seen as echo pronouns ("You, (you) come here!"), since only one echo pronoun can occur in a sentence and by contrast there is no limit to the number of pronouns that can persist in the forms depicted in (2).

2.2. [+Geometric] Oblique Indices These provide information about the physical or metaphorical stage upon which the action takes place. In (3c) a discontinuous stem is set off in brackets.

(3) Geometric

- a. sa psə-ʔə-ś°a-m sə-ø-ʔə-a-λ (səʔ°à λ)
I river-edge-skin-obl I-3-edge-pres-lie
'I lay on the river bank.'
- b. tʰə-λ-a-r ʔaana-m ø-ø-t'-y-a-λ (t'ayλ)
write-lie-th v-abs table-obl 3-3-surface-dir-dat-lie
'The book lies on the table.'
- c. ś°ə-za-bġə-rə-[x̣a-]t-ya-a-[č'ʷə]-ya (ś°əzabġərəx̣adyač'ʷə y)
y'all-recip-mid-dist-mass-we-cause-con-exit-past
'We made y'all scatter.'

2.3 Extras These are a benefactive (or a detrimental), a comitative, and an adverb (often with instrumental force). They are not an obligatory part of the argument structure of any verb, but rather are merely extra referents which can be reflected in the verb.

The occurrence of a pronoun with a postposition or a separate word precludes use of a coreferential verbal index. Therefore, these are true clitics. With the benefactive, for example, there exists a separate postposition /p'aap'č'ʷa/, which can be used with a pronoun. Similarly with the detrimental, adversative, comitative, and adverbial arguments separate postpositions or words exist and the verbal indices cannot then be used. Thus while obligatory arguments seem to trigger their indices in the verb, non-obligatory ones seem to rely upon the distinct mechanism of cliticization or incorporation to appear in the verb, note (4e).

(4) Version

- a. pśaaśa-r ø-qə-ś°-ś'°ə-y-a-s-š'ʷə-ya (qəś°ś'°aysš'ʷə y)

girl-abs 3-hor-y'all-despite-dir-dat-I-lead off-past

'I led the girl off despite y'all.' (said of marriage by abduction)

b. pśaaśa-r ø-qə-ø-ha-ś'°ə-w-də-y-a-s-š'°ə-γa (qahś'°əbdaysš'°ə γ)

girl-abs 3-hor-y'all-despite-dir-dat-I-lead off-past

'I led the girl off with your help despite them.'

c. pśaaśa-r wə-p'aap'č'°ya ø-qə-y-a-s-š'°ə-γa (qaysš'°ə γ)

girl-abs your-sake 3-hor-dir-dat-I-lead off-past

'I led off the girl for you.'

d. pśaaśa-r ø-qə-w-fə-y-a-s-š'°ə-γa (qəpfaysš'°ə γ)

girl-abs 3-hor-you-for-dir-dat-I-lead-past

'I led the girl off for you.'

e. *pśaaśa-r wə-p'aap'č'°ya ø-qə-w-fə-y-a-s-š'°ə-γa (qəpfaysš'°ə γ)

girl-abs your-sake 3-hor-you-for-dir-dat-I-lead-past

'I led the girl off for you.'

The adverbial (instrumental) node contains affixes that relegate the entire sentence to one of a sentential adverb. These may be translated into English as sentences with 'how,' 'when,' or 'why.' The verbal indices are copied, not incorporated, because they co-exist with an independent adverb (44a). The discontinuous nature of 'when' /-zə- ... -a-/ (5c) is remarkable and must be due to a morphological transformation (see §7.4).

(5) Adverbial index (embedding, control of S¹)

a. yə-λas ø-x'°ə-γa-ê tə-z-a-r-a-za-r-a-mə-λay'°ə-γa-ra ø

(x'°əγà ê təzarazaraməλay'°ə γara)

gen-year 3-pass-past-already we-how-dat-instr-dat- recip-loc-dat-not-see-past-part copula

'A year has already passed without our seeing one another.'

b. ø-qə-z-fə-z-a-t'-y-a-wəć'°a-a-γa-g'°ara-ra-ra (qəzfəzat'°aywəć'°à a γag'°ararar)

3-incept-what-for-self-dat-surf-dir-dat-stop-th v-past-referential-gerund-def

'the particular reason why he stopped'

c. sə-qə-zə-yə-yə-a-q'°ə-γa-ž'°ya sə-y-a-ž'°ə-γa (səqəzərayq'°ə γaž'°ya sayž'°ə γ)

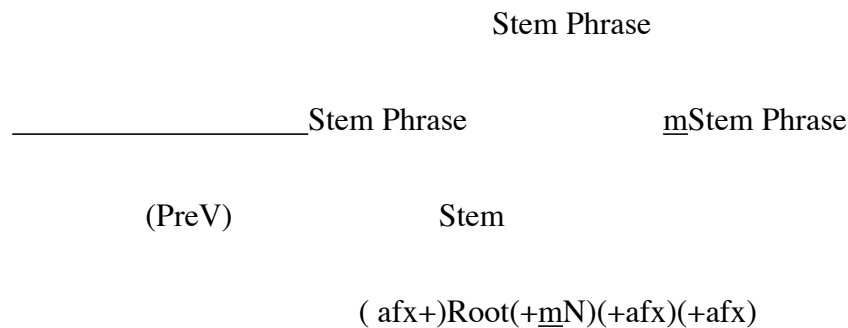
I-hor-when-container-dir-when-be full-past-inst I-dir-dat-go-past

'When I was satisfied I left.'

3. Stem Formation (Derivational Morphology)

The verb stems that determine the argument structure show a wide range of derivational morphology. There is suffixation and prefixation, but there is also context-sensitive circumfixation, transparent pre-verb - root combinations, and even rare instances of verbal compounding (marked and somewhat poetic in tone). This derivational sub-component is diagrammed in (6). Nodes within parentheses are optional. In (6) N = noun, Pre-V = pre-verb, m = marked, and afx = affix

(6) Derivational morphology



3.1. Suffixation This is an important process. Four of the six suffixes are highly productive. Rarely two suffixes occur (7d). In some instances an incorporated noun (whence mN of (6)) comes between the root and two suffixes.

(7) Suffixation

- a. ø-w-a-s-ʔ°a+t°a-a-ɣa (wasʔat°à a ɣ)

3-you-dat-I-say+prolonged-th v-past

‘I told it to you.’
- b. sa šxə-n-ə̄m sə-y-a-šx+a-a-ɣa (sayšxà a ɣ)

I eat-inf-obl I-3-dat-eat+intr-th v-past

‘I am trying to eat the food.’
- c. sahbəy-a-r ø-qə-w-ʔa-č°a-s-λ+hə-a-ɣa (qəpʔač°asλhà a ɣ)

infant-th v-abs 3-hor-your-arm-instr-I-lie+active-th v-past

‘I set the baby in your arms.’
- d. K yənə-zə-r ø-zə-xa-t-ɣa-wək°ə+rə+yə-a-ɣ-ś(zəxədəɣawək°ə̄rəyà fıs)

giant-evil-abs 3-all-mass-we-cause-fall+smooth+down-past-aff

‘We made the evil giant topple over.’

3.2. Prefixation Prefixes can be familiar morphemes that appear elsewhere in other functions, as in (8a), or they can be forms that while transparent are nevertheless restricted in use, as in (8b).

(8) Prefixes

- a. tə-za-za+a+w-a-a-γa (təzazawà a γ)
we- recip- recip+ con+ hit- dat- th v- past
'We fought with each other.'
- b. sə-w-a-qə+p^ʃəsa-a-γa (səwag^oəp^ʃəsà a γ)
I- you- dat- heart+(tell a) tale- th v- past
'I was thinking about you.'
- c. zə-y-a-wə+fa (zaywè fa)
self- he- pres- valence+ bend
'He is bending over.'

3.3. Circumfixation The occurrence of both a prefix and suffix is called a circumfix. Since one requires the other this is an instance of context-sensitive morphology (9). The suffix which converts a stative root into an active stem, /-hə-/ in (9a) is the same verb root as /-hə-/ 'to enter'. Form (9c) achieves its circumfixation by a context sensitive use of incorporation of a stem final noun, /dəyə/ 'joint.'

(9) Circumfixation

- a. sə-qa-t'ə+s+ha-a-γa (səqat'əshà a γ)
I- incept- down+ sit+ active- th v- past
'I sat down'
- b. tə-t^ʃ-y-a-γə+λ+ə-γa (tət^ʃayγ^oəλə γ)
we- surf- dir- dat- purpose+ lie+ dynamic- past
'We lay down (on a surface).'
- c. sə-qa-wə+q^oə+dəyə-γa (səqawəq^oədəyə γ)
I- incept- multiple/valence+ stretch+ joint- past
'I stretched/flexed myself.'

3.4. Pre-verbs As in most languages basic verbal action in Kabardian can be modified by preposition-like particles affixed to the verb. Unlike many languages, however, the geometric sense of such "pre-verbs" is almost invariably maintained. I have placed these discontinuous elements in brackets. As (10c) illustrates, these can occur with the more ordinary geometric forms of the arguemnt morphology. These

derivational pre-verbs differ from the fulcrum or argument structure ones in that the former have no personal index referent whereas the geometric morphemes of the argument structure can (§2.2, (3)).

(10) Pre-verbs

- a. ps-a-r ø-qə-[x̣a-čə]-ya (qəx̣ačə y)
water-th v-abs 3-hor-mass-flow out-past
'The water flowed out(as from a mass in a bucket or pot).'
- b. ps-a-r ø-qə-[ḍə-čə]-ya (qədəčə y)
water-th v-abs 3-hor-opening-flow out-past
'The water flowed out (as from a hole or breach).'
- c. ṣ°ə-za-bġə-rə-[x̣a-]t-ya-a-[č̣°ə]-ya (ṣ°əzabġərəx̣aḍyač̣°ə y)
y'all-recipr-mid-dist-mass-we-cause-con-exit-past
'We made y'all scatter.' (same as 3c)

3.5. Verb Compounding Verb compounding is rare. I have only found instances where the verb /-č̣°ə-/ 'to exit, leave', with or without a preverb, has been compounded with another stem.

(11) Verb compounding

- a. sa a-ha-m-a sə-ø-ha-[₁bλa]-[₂pλə]+[₁č̣°ə]-ya (sahbλapλəč̣°ə y)
I 3-pl-obl-pl I-3-pl-past (geometric sense)-look+exit-past
'I looked past them.'
- b. ø-za-bġə-rə-[ỵ°a+λ+ə]+[č̣°ə]-ya-ha (zabġərəỵ°aλəč̣°ə yà x̣°)
they-recip-mid-dist-purpose+lie+dynamic+exit-past-pl
'They scattered and took up positions lying down.'
- c. K šə-r psə-m ø-ø-ṣ°-a-[ṭ°ə+s+ə]+[ḳ°ə]-n-w-ś/ (ṣ́°aṭ°əsəḳ°ənə wś)
horse-abs water-obl 3-3-under-dat-[down+reach+dyn]+[exit]-fut-def-aff
'The horse will drown in the water (river).'

4. Post-Stem Clitics

The suffixes following the stem are clitics³ that attach to various parts of the syntactic tree (12). A vertical bar divides those terminal nodes that belong to different higher nodes. V⁰ is the simple verb. It is the same as the stem phrase. V¹ is a verb-like node between the simple verb and the verb phrase. V² is the old verb phrase node (compare McCawley 1988: 55ff.). INFL is short for 'inflection' and represent the various moods and tenses that can modify the verb phrase. S is the sentence node which is itself subject to

adverbial and conjunctive modification. I shall present example of the various elements going from left to right in (12). In (12) pot = potential, neg = negative, and conj = conjunction. Items within parentheses occur only in one sub-branch of Circassian.

(12) Clitic train of inflectional morphology (herein C = complementiser)

S

INFL

V²

V¹

V⁰

StemP- V⁰ adv-ref-pot-V¹ adv-aspect-past-perf-V² adv- pres -num-neg-(mood-)C-adv-conj(-postp)
 (fut)

4.1. Stem Phrase Adverbs Stem phrase adverbs or V⁰ adverbs are a highly productive set of suffixes with a geometric sense (see Smeets 1983). These can occur with stem affixes to yield two adverb affixes in a row (13a) and can come with dative affixes of their own (13c). They often require particular pre-verbs and can hence exhibit context sensitive morphology.

(13) Stem phrase (V⁰) adverbs

- a. sə-da-k''+a+t'a-yə-ž'ə-γa (sədak''at'ayəž'ə γ)
 I-verticle-move+intr+prolonged-up-reference-past
 'I improved again.'
- b. tə-w-t'-y-a-psaλə-aḥ-ś'ə-γa (təpt'aypsalaḥś'ə γ)
 we-you-surf-dir-dat-talk-around-able-th v-past
 'We were able to talk all about you.'
- c. yənə-ž-a-r q'əsḥa-λaaḡa-m ø-y-a-ʔə-λ'-a-a-γa (yaʔəλ'ə a γ)
 giant-evil-th v-abs mountain-high-obl 3-3-dat-stick-near-dat-th v-past
 'The evil giant was stuck (nailed) to the high mountain.'

4.2. Reference, Self, and Potential Next come two morphemes with distinct roles. The first, reference

(14a), is glossed as ‘again.’ It can express the fact that the verb implicitly assumes some earlier instance of the action or state. A form for ‘self,’ (14b) is used in intransitives that have a reflexive sense or, analogously, in three place transitives (or causatives of two-place transitives (14c)) to disambiguate the reflexive verbal index /zə-/. In such cases the preferred hierarchy of reference is first person before second and second before third. Reflexives without /-žʲə-/ reverse the hierarchy (14d). Form (14b) is after Dumézil and Namitok (1939: 26) and is in an old form of Chemgwi

(14) Reference

- a. ø-qə-ø-tʰ-y-a-y-ha-xə-žʲə-γa (qəʰərahxəžʲə̀ə̀ γ)
- 3-hor-3-surf-dir-dat-3-pl-take-reference-past
‘They took it back from him.’
- b. ø-qa-wəšʲə-žʲə-γa (qawəšʲə̀ə̀žʲə̀ə̀ γ)
- 3-incept-sleep-self-past
‘He fell asleep.’
- c. γʰəžʲə̀ə̀-m-žʲə̀ə̀ a-šʲ sa zə-sə-y-ə-γa-λa γʰə-žʲə̀ə̀-γa (zəsəyγαλa γʰə̀ə̀žʲə̀ə̀ γ)
- mirror-obl-inst 3-obl I self-I-3-non pr-cause-see-self-past
‘He let me see myself with a mirror.’ or
* ‘He let me see himself with a mirror.’
- d. γʰəžʲə̀ə̀-m-žʲə̀ə̀ a-šʲ sa zə-sə-y-ə-γa-λa γʰə-γa (zəsəyγαλa γʰə̀ə̀ γ)
- mirror-obl-inst 3-obl I self-I-3-non pr-cause-see-past
‘He let me see himself with a mirror.’ or
* ‘He let me see myself with a mirror.’

As far as I can determine only Bzhedukh preserves a distinct form (15) with a final or ‘at last’ sense. The action or state referred can be an intended or anticipated one. In all other forms of Circassian this has fallen together with that used for reference.

(15) Finality (Hadaghat’la 1968, vol. 1, p. 126

- pśaaśa-r ø-q-ø-ha-sʰə-yə-y-ə-ħə-žʲə̀ə̀-a-γa (qahśʰə̀ə̀rəyħə̀ə̀žʲə̀ə̀à a γ)
- girl-abs 3-hor-3-pl-despite-dir-3-non pres-carry off-final-th v-past
‘He carried off the girl despite them.’

Potential (16), is best rendered as ‘can.’

(16) Potential

ø-qə-ø-t'-y-a-y-ha-xə-ž'ə-š'ə-γa (qət'ərahxəž'əs'ə γ)

3-hor-3-surf-dir-dat-3-pl-take-reference-potential-past

'They were able to it back from him.'

4.3. V¹ Adverb After reference and potential comes an adverb that seems to modify a verb node intermediate between the simple verb stem and what was traditionally called a verb phrase node.

(17) V¹ adverbs

a. ø-y-a-šxə+a-ž'ə-š'ə-p'a-γa-ha(yašxəž'əs'əp'ə γà x')

3-3-dat-eat+intr-again-able-utmost-past-pl

'They were able to feast again on it.'

b. ø-s-šxə-š'ə-q'a-γa-p (sšxəš'əq'ə γà p)

3-I-eat-able-excess-past-not

'I was not able to eat too much.'

c. ø-w-ʔ'a-q'ə -n (pʔ'ag'ə n)

3-you-say-still-subjunctive

'You would still say that?!'

Some of these adverbs (17a, b) have emphatic variants that are quite rare and have pragmatic senses. They might best be treated semantically as rare pragmatic suffixes (see §6), but as yet I have simply kept them with the V⁰ adverbs. These convey the judgement or attitude of the speaker toward a situation. They exhibit a free floating lengthened emphatic stressed vowel either on the suffix itself, if the primary stress comes after it (18a, b) or otherwise at primary stress (18c). They are not context sensitive with any preverbs. Example (17a) is from Hadaghat'la (1968, vol. 1, p. 121), (18c) from the same (p. 88), while (18b) is from Mr. Dahabsu.

(18) Emphatic (Pragmatic) V¹ Adverbs

a. a-š'ə-š'ə-ha-r ø-y-ə-γa-k'ə+a+də-p'a-a-γa-š'ə't'ə-n (əγak'əadəp'ə aγaš'ə't'ə n)

3-obl horse-pl-abs 3-3-non pres-cs-go+intr+out-surely-emph-past-perf-subjunctive

'Surely he has let the horses run off first thing!'

b. wə-z-γa-a-p'a-ra-r ø (wəzγà ap'arar)

you-what-cry-emph-surely-pres-gerund be

'What are you crying about so?'

- c. ž^yawaap^ʼa sə-z-a-r-a-x̣^ʰə-n ø-š^yə-ʔa-a-q̣^ʰa-ma (š^yəʔà aq̣^ʰama)
answer I-how-dat-instr-dat-happen-inf 3-deix-exist-emph-suffice-if
'Is it at all possible for me to help?'

In (18a) /-p^ʼa-/ seems to be derived from the same root as 'nose' or 'front', with the semantic extension to 'first' as seen in /yah-p^ʼa-na-ra/ ordinal-first-ordinal-pronoun suffix = 'first,' while in (13c) /-q̣^ʰa-/ is obviously an adverbial use of the verb /(-y-a-)-q̣^ʰə-/ (direction-dative)-suffice = 'to suffice, fill up.' One should note the aberrant position of what appears to be the subjunctive /-n/ in (18a) as opposed to the more usual position in (19d). I have not found these emphatic variants in Kabardian.

4.4.Past Tense, Aspect, and Perfective Numerous examples of the past tense /-ɣa/ have already been given. A double past is a remote past (19a), that is a past of a past.⁴ The past tense suffix can be preceded by a durative/habitual (19b) or progressive aspect, either with an assertive sense (19c) or a subjunctive one (19d), and followed by a perfective (19e). The perfective is clearly derived (at least historically) from the auxiliary verb /š^yə-t^ʼ/ deixis-stand, which can be used periphrastically to express perfectives or statives (19f). In all other forms of West Circassian Bzhedukh /-tə-/ is replaced by /-š^yt^ʼə-/ (in Bzhedukh, Shapsegh, Natukhay, and Hakuchi) (/š^ytə/ in Chemgwi, Hatukhay, Yegerukhay, and Abadzakh). The durative or habitual past (19b) has a past tense suffix that shows an /-a/ where phonologically it should not. It is either an exception to the rule that deletes this vowel under most circumstances, or it is itself a small morpheme. I have glossed the form using the latter assumption.

Since the following adverb clearly modifies V² it seems that the past tense suffix does too. This sets it in contrast, however, with the present (and in Kabardian the future) affix, which modifies the inflection node.

(19) Past tense, aspect, and perfective

- a. wa-š^yχə ø-qə-y-a-š^yχə-ɣa-a-ɣa (qayš^yχəχà aɣ)
sky-rain 3-chg of st-dir-dat-rain-past-th v-past
'It rained long ago.'
- b. wa-š^yχə ø-qə-y-a-š^yχə-tə-ɣ-a(qayš^yχətə ɣa)
sky-rain 3-chg of st-dir-dat-rain-durative/habitual-past-attributive affix
'It rained for a while.' or
'It used to rain.'
- c. wa-š^yχə ø-qə-y-a-š^yχə-š^yt^ʼə-ɣa(qayš^yχəš^yt^ʼə ɣ)
sky-rain 3-chg of st-dir-dat-rain-prog-past
'It was raining.'

- d. wa-š^yχə ø-qə-y-a-š^yχə-nə-γa(qayš^yχənə γ)
sky-rain 3-chg of st-dir-dat-rain-subjunctive-past
'It might have been raining.'
- e. wa-š^yχə ø-qə-y-a-š^yχə-γa-š^yt^ʿ (qayš^yχəγà š^yt^ʿ)
sky-rain 3-chg of st-dir-dat-rain-past-perf
'It had rained.'
- f. wa-š^yχə ø-qə-y-a-š^yχə-γa-n ø-š^yə-t^ʿ(qayš^yχə γan š^yə t^ʿ)
sky-rain 3-chg of st-dir-dat-rain-past-inf 3-deix-stand
'It had rained.'

The Kabardian system is simpler (20)(Colarusso 1991).

(20) Kabardian past statives and duratives

- a. Stative past
K λ'ə-z-m psaλa-n ø-ø-f'af'-ta (f'af't)
man-old-obl talk-inf 3-3-love-stand
'The old man loved to talk.'
- b. Durative past (colloquial)
K sə-λaaža-r-ta (səλažà rt)
I-work-dist-stand
'I was working.'
- c. Durative (aorist) past (formal or poetic language)
K sə-λaaža-aγ-t (səλažà fit)
I-work-past-stand
'I was working.' or
'during the time that I was working'

Without past tense the aspect suffixes of Bzhedukh yield two futures, a general (21a) and an immediate (21b), which often has subjunctive or volitional force.

(21) Bzhedukh Futures

- a. ø-š^yχə-tə (š^yχət)
3-laugh-durative
'He/she will laugh.'

- b. \emptyset -š'xə-nə (š'xən)
3-laugh-subjunctive
'He might laugh.' or
'He will laugh soon.' or
'He shall (willingly) laugh.'

4.5. V² Adverbs After the past tense and its aspects comes another set of adverbs, apparently applying to V². These have a wide semantic range, but generally seem to set limits in time or quantity.

(22) V² adverbs

- a. \emptyset -k'ə+a-γa-a-γa-xa-ha (k'əγαγαxà x')
- 3-move+intr-past-th v-past-already-pl-aff
'They already left long ago.'
- b. \emptyset -s-ś'ə-ś'ə-γa-č'y-a-ha (sś'əs'əγαč'yà x')
- 3-I-do-able-past-exhaustive-pl
'I was able to do them (the tasks) completely.'
- c. \emptyset -s-šxə-γa-a-š'y-a (sšxəγà aš'y)
- 3-I-eat-past-emph-excess
'I ate too much.'
- d. \emptyset -s-šxə-γa-ɽ'a (sšxəγaɽ')
- 3-I-eat-past-little
'I ate just a bit.'

4.6. The Inflection Node This node resembles the old aux(iliary) one. As one might expect because of its semantics (it is an inflectional node not a Vⁿ), it is not bounded by an adverb, thus distinguishing it from the other nodes in (12). Future and (a rare) present tense, number, negation, and mood are daughters of this node. In Kabardian plural number comes before future tense (23a).

(23) Plural number

- a. K \emptyset -qə- \emptyset -t-y-a-y-ə-xə-žə-fə-ha-n-w-q'əm (qətəɾəy xəžəfəhənəwq'ə m)
- 3-hor-3-surf-dir-dat-3-non pr-take-reference-potential-pl-fut-def-not
'He will not be able to take them back from him.'
- b. \emptyset -qə- \emptyset -t'-y-a-y-ə-xə-ž'ə-ś'ə-tə-ha-p (qət'əɾəy xəž'yəs'ətə x'à p)
- 3-hor-3-surf-dir-dat-3-non pr-take-reference-potential-fut-pl-not

‘He will not be able to take them back from him.’

The relic present tense /-ra/ occurs optionally in third plurals in Kabardian and obligatorily in present tense forms which are suffixed in some way, such as with a gerund (18b) or with a negative in both Kabardian and Bzhedukh.

(24) Relic Present

- a. K ma-a-k'°ə+a-ha-r(-q'ə́m) (mà ak'°afiar(-q'ə́ m))
3-pres-move+intr-pl-pres(-not)
‘They are (not) going.’
- b. ma-a-k'°ə+a-ha-ra-p (mak'°ax' à rà p)
3-pres-move+intr-pl-pres-not
‘They are not going.’

Kabardian has a very rich system of future tenses and various moods. There seems to be no Western Circassian equivalent to this.

(25) Future and Moods

- a. K ø-k'°ə+a-ha-n-w-ś (k'°afianə wś])
3-move+intr-pl-fut-def-aff
‘They will be going.’
- b. K sə-k'°ə+a-a γ-śara (sək'°afisà ra)
I-move+intr-past-optative
‘I would like to have gone.’
- c. K wə-q'ə-s-da-mə-ʔa+pəq'°ə-a γ-ta-ma sa ø-q'ə-s-a-ħaħa-k'°ə-n-ta
(wəq'əzdaməʔapəq'°à fitama sa q'əzahak'°ə nta)
you-hor-me-with-not-hand+help-past-irrealis-if I 3-hor-me-dat-hard-exhaustive-fut-irrealis
‘If you had not helped me, it would have been very hard for me.’
- d. K wa a-bə wə-ø-śə-s-ħaa γ°-a γ-śara-t (wəsəsħaa γ°afisàrà t)
you 3-obl you-3-deixis-I-see-past-optative-irrealis
‘If only I had seen you there!’

Perhaps the only trace of the irrealis /-ta/ in West Circassian is the concessive, /-γ°at°/ (dialect /-yat°/) (Kerasheva 1960: 1088-1089). This suffix always has an emphatic vowel before it and it always conveys a past sense with or without an overt past tense affix.

(26) West Circassian Concessive

- a. sə-k°ə+a-a-γ°at° (sək°à aγ°à t°)
I-come+intr-emph-even if
'Even if I came ...'
- b. ø-k°ə+a-γa-a-γ°at° (k°aγà aγ°à t°)
3-come+intr-past-th v-even if
'Even if he came ...'

4.7. Complementisers, Sentential Adverbs and Conjunctions The S-node itself can be modified by complementizers, adverbs, and conjunctions. The latter two, with conjunctions being very adverb-like in their syntactic function, bound the node on the right, just as other adverbs have done for the other nodes. The parallel between the S-node and the other V-nodes is, therefore, very close and tempts one to suggest that the S-node is mislabelled. Instead it might better be termed a "maximal V."

(27) Kabardian Complementiser, Sentential Adverb, and Conjunction

- a. K ø-q°a-k°ə+a-a-γ-ta-ma (q°ak°à fitama)
3-move+intr-past-irrealis-if
'If he had come ...'
- b. K ø-q°a-k°ə+a-a-γ-ta-ma-əy (q°ak°əfitamə y)
3-move+intr-past-irrealis-if-even
'Even if he had come ...'
- c. K ø-q°a-k°ə+a-a-γ-ta-ma-əy-əy (q°ak°əfitamərə y)
3-move+intr-past-irrealis-if-even-and
'And even if he had come ...'

The Bzhedukh equivalents to the forms in (27) lack the irrealis /-t°a-/ cognate, but are otherwise of the same pattern. Also in (27) I have used only one complementizer, /-ma/, merely to indicate position. In (28) I give Bzhedukh examples of the others, using [...] to denote embeddings. The purpose complementizer

(28g) is exceptional in that the verbs it governs seem not to be inflected for person even when overt nouns remain under their control.

(28) Complementizers

a. Zero complementizer (doubly embedded)

[[sa zə-g°ara ø-qa-s-a-ž°y-a] ø-ø-fa-da] ø-qə-s-s°a-s°ə-γa

(qasà ž°ya fà da qəss°a-s°ə γ)

_____ me one-certain 3-hor-me-dat-call-dat 3-3-for-be like 3-hor-me-despite-know-past

‘It seemed to me as though some one called to me.’

b. Infinitive complementizer

[λ°ə-m s°əz-a-r ø-qa-y-ə-bġəna-n] ø-χ°ə-γa (qəybġə nan χ°ə γa)

_____ man-obl woman-th v-abs 3-incept-3-non pr-desert-inf 3-happen-past

‘It happened that the man deserted the woman.’ or

‘It was possible that the man deserted the woman.’

c. Predicative (declarative) complementizer

[szə-qa-y-ə-mə-ʔat°-əw] ø-š°ə-t° (zəqəyməʔà t°əw š°ə-t°)

_____ self-incept-3-non pres-not-stand up-pred 3-deixis-stand

‘He should not get up.’

(lit., ‘That he not raise himself up stands there.’)

d. Infinitive-predicative (declarative) compound complementizer

[szλ°ə-m s°əz-a-r ø-qa-y-ə-bġəna-n-əw] ø-mə-χ° (qəybġə nanəw məχ°)

_____ man-obl woman-abs 3-incept-3-non pr-desert-inf-pred 3-not-happen

‘It is impossible for the man to desert the woman.’

e. Indirect discourse, special /-ma/ form

sa wa [szə-a-r ø-s-š°ə-γa-ma] ø-w-a-s-ʔ°a-a-γa (sš°ə γama wasʔ°à a γ)

_____ I you [meat-th v-abs 3-I-eat-past-that] 3-you-back-say-th v-past

‘I said to you that I ate the meat.’

f. Indirect question complement as a definite (absolute) nominal

[N zə-z-fa-w-γa-wəć°a-a-γa-ra-r] ø-s-a-s°ə (zəzfabγawəć°à a γarar sà s°ə)

[self-what-for-you-cause-stop-th v-past-gerund-abs] 3-I-pres-know

‘I know why you stopped.’

g. S-adverb or specialised complementiser ‘in order to’

[A ɣaaś°a-m (ø-ø)-ž°a-nə-k°a] ø-da-č°ə-γa (ž°anə k°a dač°ə γ)

[field-obl (3-3-)plough-inf-in order to] 3-out-exit-past

‘He went out to plough the field.’

h. Question complementizer

a-r wə-š'ə ø-ø-ra-ah (pš'ərà h)

3-abs your-brother 3-be-pres-Q

‘Is he your brother?’

i. Intensive/rude complementizer (compare /ba/ ‘much’)

a-r wə-š'ə ø-ø-ra-ba (pš'è raba, pš'è ba)

3-abs your-brother 3-be-pres-indeed

‘He is indeed your brother!’

j. Intensive/rude question complementizer

a-r wə-š'ə ø-ø-ra-ba-ah (pš'ərabà h, pš'əbà h)

3-abs your-brother 3-be-pres-Q

‘Is he indeed your brother?!’

4.8. Postpositional Sentential Adverb The West Circassian dialects have an elaborate sentential adverbial postposition that is lacking from Kabardian and its cogener, Besleney (Paris 1974: 232-233, §§228, 229). The form in (29) is in Shapsegh (after Paris 1974: 44).

(29) Shapsegh Adverbial Postposition

ø-qa-a-k'ə+a-ra-psawə-m ø-y-ha-y-ə-γa-λaγ'ə-ra-əy-g'a-za-γ'a-m

(yahrəyyaλaγ'ərə yg'azaγ'am)

who-hor-pres-come+intr-pres-all-obl it-3-pl-3-non pres-cause-see-emph-and-still-all-time-adv

‘He/she always showed it to all who came.’

4.9. Conjunction and Verb-Raising In West Circassian there is a consecutive conjunction /-ś(a)/ ‘and then’, which seems to take the place of both a complementizer and a conjunction. This form (30a) permits the unusual phenomenon of verb adjunction (30b). The resulting mammoth form must have equal subjects, but the subject indices show no signs of equal-subject-deletion. Such verb adjunction is distinct from the verb-raising that is seen when the object of an embedded verb is generic (30c and d). The Bzhedukh form (30b) is from Hadaghat'la (1968, vol. 1, p. 161).

(30) Bzhedukh conjunction affix, verb adjunction, and verb-raising

a. wə-ø-âa-wə+s'k'ə+ta-nə-śa w-ə-wə+s'k'ə+ta-ž'ə-n

(wəâawəs'k'ətanə ś wəwəs'k'ətaž'ə n)

you-3-mass(in)-valence+slip+down-fut-and then you-non pr-valence+slip+down-self-fut
_____ 'You will slip down in the mud and then loose face.'

b. wə-ø-x̂a-wə+s'k'°ə+ta-nə-ś-w-ə-wə+s'k'°ə+ta-ž'ə-n

(wəx̂awəs'k'°ətanəśwəwəs'k'°ətaž'ə n)

you-3-mass(in)-valence+slip+down-fut-and then-you-non pr-valence+slip+down-self-fut
_____ 'You will slip down in the mud and then loose face.'

c. sa λə ø-s-šx̂ə-γa ø-s-ś'°a+yəγ°a-a-γa (sšx̂ə γa sś'°ayəγ°à a γ)

I meat 3-I-eat-past 3-I-subjectivizer+want-th v-past

'I wanted to eat meat.'

(lit., 'I wanted it that I ate meat.')

d. sa λə-s-šx̂ə-s-ś'°a+yəγ°a-a-γa (λəsšx̂əsś'°ayəγ°à a γ)

I meat-I-eat-I-subjectivizer+want-th v-past

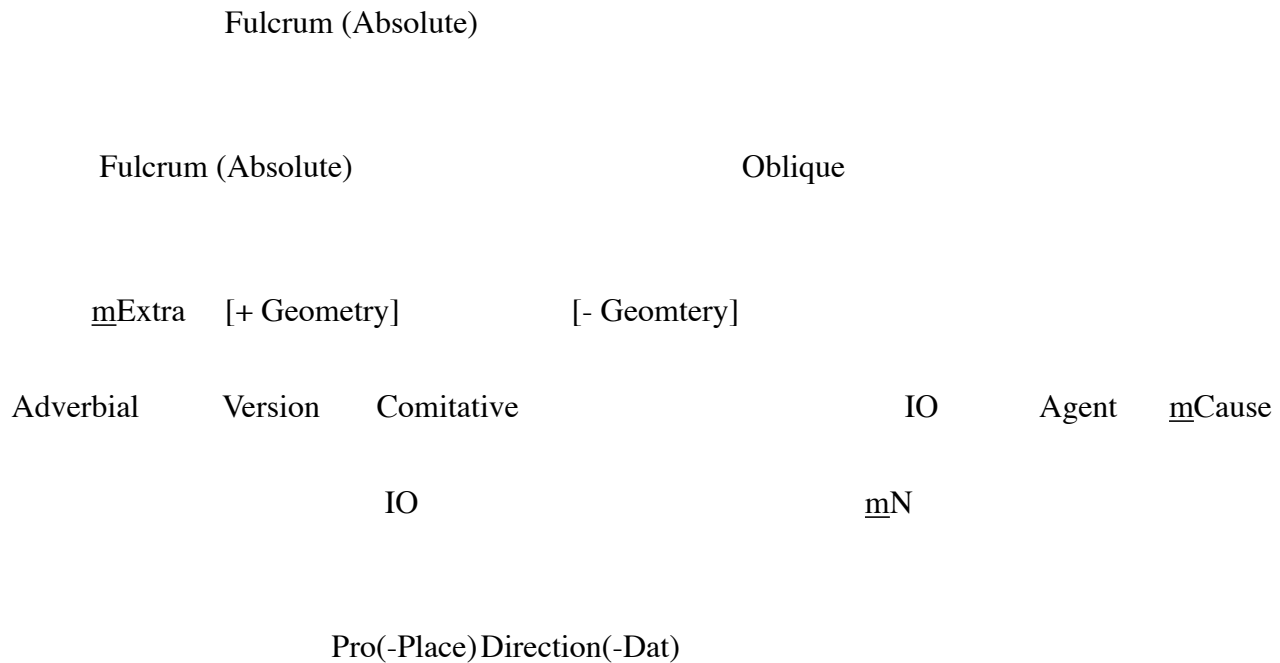
'I wanted to eat meat.'

5. Incorporation

Three sites permit incorporation (Sadock 1991: 78-110; Baker 1988a) of a noun.

5.1. Sites Nouns may be incorporated as stem suffixes (mN of (6)), as pre-verbs with an instrumental sense, or as elements that can modify indirect-objects. For the last two functions (1) must be enlarged to that in (31). These incorporated nouns can take overt third person indices, the indirect objects whose direction or locus they can serve to elaborate, whereas pre-verbs take zero third person indices.

(31) Argument structure



5.2. Pre-Root Incorporation Pre-root incorporated nouns can show an overt indirect object-like verbal index (32a), or can be either possessed (32b), or generic, (32c, d). Note in (32b, c, d) that such incorporated Ns come after any preverbs in the verbal complex. The Kabardian form (32b) is from Hadaghat'la (1968, vol. 1, p. 263).

(32) Pre-root incorporated N

- a. sə-y-a-λa-ɾ°a-a-γa (sayλaɾ°à aγ)
 I-3-dat-footpath (leg)-say-th v-past
 'I asked/beseeched him.'
- b. K də-yə-yə-tħa+ɾ°ə-χə+d-ś (dərəyɬaɾ°əχ°ə dś)
 we-dir-poss-god+front-bend+down-aff
 'We are the servants of a god. (a pagan worshipper)'
 (Hadaghat'la 1968, 1, §76: 263-5)
- c. K sə-χə-a-psaλə-ħə-n-ś (səχəpsaλəħənə wś)
 I-mass-dat-word-enter-fut-def-aff
 'I shall enter the conversation.'

- d. K də-ø-yə-rə-yə-da+zə-a-w-k'ə+a (dərəydazà wk'ə)
we-3-groove (= path)-dist-dir-out+turn(= circuit)-pres-prog-move+intr
'We are going for a long walk.'

5.3. Stem Noun Incorporation in Adverb Position The stem adverb position (6) is already marked with mN to reflect the incorporation in (33). (Note circumfixion by incorporation in (9c).)

(33) Stem phrase noun incorporation into adverb position

- sə-qa-wə+q'ə+dəyə-ya/ (səqawəq'ədəyə y)
I-change of state-multiple+stretch-joint-past
'I stretched (flexed) myself.'

5.4. Instrumental The instrumental nouns that are incorporated (into the adverbial node under the Extras node) appear to occupy a position reserved for subordinating indices (5). Incorporated nouns in this position can not only be referential (as opposed to the claim that incorporated nouns must always be generic), but can even show possession.

(34) Instrumental

- wə-s+ʔa+č'ya-k'ə+a+də-n (wəsʔač'yak'ədə n)
you-my+arm/hand+inst-move+intr+out-fut
'You will die by my hands.' or
'You are about to die by my hands.'

5.5. Absolutive Fulcrum In an old form of Chemgwi used by the poet Tsey Ibrahim one finds an inalienably possessed noun incorporated instead of an index into the initial position of the verbal complex. It is also marked with a detrimtive despite its absolute fulcrum position (Tsey Ibrahim, story II, line 16 in Dumézil and Namitok 1939: 30).

(35) Old Chemgwi

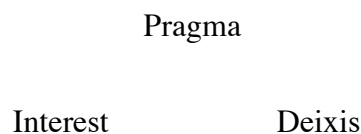
- w-śha-ś'ə-s-č'yə-n (pśhaś'əsč'yə n)
your-head-detriment-I-tear-volitional fut
'I shall tear off your head.'

This phenomenon is regularly applied in Abkhaz and Abaza to neuter singular direct objects and plural direct objects (Ns reflected by /y-/ index) when they precede the verb.

6. Pragmatical Morphology

Pragmatical morphological affixes do not have an independent correlate anywhere in the sentence (see also Scancarrelli 1986). Rather, they reflect the speaker's pragmatic stance with regard toward the affairs expressed by the utterance. These affixes occupy a position after the initial index (if overt) or the adverb index. The pragmatic affixes appear to be an important "signpost" in the trek across the verb. They are highly productive and of diverse significance. Their structure is that in (36). I have labelled the maximal node "pragma."

(36) Pragmatical Structure



6.1. Horizon of Interest Verbs reflect the speaker's (by polite extension, sometimes the hearer's) physical, social or emotional stake in the noun in the absolutive. Hence, it is an ergative morpheme. Verbs carrying this affix are termed /ʔa-k'°ac'ə/ arm (hand)-inside = 'in the hand,' as opposed to those without, which are termed /ʔa-č'yəb/ arm (hand)-back = 'outside the hand.' Their range of meanings is fascinating, progressing from a least marked personal sense of territory upon which an action takes place, to a marked expression of kinship involvement. This affix (37) is homophonous with a change of state or inceptive one (38) (see Colarusso 1984 for a full discussion). In its kinship sense (37d) /-qa-/ is context sensitive and requires an illative stem affix /-a-/.

(37) Horizon of interest

- a. sa wa t̂xəλ-a-r ø-w-a-s-t'ə-γa (wast'ə γ)
I you book-th v-abs 3-you-dat-I-give-past
'I gave you the book.'
 - b. sa wa t̂xəλ-a-r ø-qə-w-a-s-t'ə-γa (qwast'ə γ)
I you book-th v-abs 3-hor-you-dat-I-give-past
'I loaned the book to you.'
- that is to say,

‘I gave the book to you, but have retained an interest in it.’

c. š'ə+wə-m λ'ə-a-r ø-y-ə-wəč'yə-γa (əwəč'yə γ)

horse+man-obl man-th v-abs 3-3-pres-kill

‘The horseman is killing the man (a stranger).’

d. š'ə+wə-m λ'ə-a-r ø-qa-y-ə-wəč'yə+a-a-γa (qəwəč'yə à a γ)

horse+man-obl man-th v-abs 3-hor-3-pres-kill+in-th v-past

‘The horseman is killing the man (speaker's kinsmen).’

(38) Change of state (inceptive)

a. λ'ə-a-r š'ə-m ø-ø-ya-psə-xə-γa/ (yapsəxə γ)

man-th v-abs horse-obl 3(man)-3(horse)-vertical-descend-down-past

‘The man dismounted (but may soon remount).’

b. λ'ə-a-r š'ə-m ø-qa-ø-ya-psə-xə-γa (qaypsəxə γ)

man-th v-abs horse-obl 3(man)-incept-3(horse)-vertical-descend-down-past

‘The man dismounted (and is finished riding).’

6.2. Verbal Deixis The verb can also denote a particular place where the action took place, quite apart from any details regarding geometric information. This can govern a pronominal index (/ø-(ha-)/) which is reflected by a deictic pronoun in the syntax.

(39) Deixis of verbal action

a-š'y sa č'yaaλa-m-a sə-ø-š'yə-ø-ha-fa-zə-γa (səš'yəhfazə γ)

3-obl I child-obl-pl I-3-deixis-3-pl-for-turn-past

‘I met the children there.’

6.3. Order The order of the three nodes is demonstrated in (40), which though an awkward form can still be elicited.

(40) Order of pragmatic affixes

sə-qə-z-fə-š'yə-ø-ha-fa-zə-γa-ra (səqəzfəš'yəhfazə γar)

I-hor-what-for-3-deixis-3-pl-for-turn-past-gerund

‘the reason why I met them there (on my territory)’

7. The Nature of the Verb

There are features exhibited by the Circassian verb which suggest that it is more than a word by the standards of English and yet less than a sentence. I shall briefly examine five such features: variable ordering and scope, differing roles, homophony, transformations, and the cross-over constraint. All of these, apply to whole words or sentences as well. Their occurrence at or below the word level is rare, but it strongly suggests that the morphological component is not formally different from the syntactical one, merely that it is under utilised.

7.1. Variable Ordering and Scope Some clitic adverbs can occur in differing orders. This is to be expected from their sense and neutral semantic scope, as well as from their simultaneous role in syntax. Morphology here reflects syntactical freedom.

(41) Variability (differing orders, differing scopes)

- a. \emptyset -wə- λ a+č^yə- γ a-ma-əy (p λ ač^yə γ amə y])
3-you-[unanalyzable preverb]+can-past-if-even
'Even if you could do it.'
- b. Tsey Ibrahim, p. 27, story I, line 20, in Dumézil and Namitok 1939
Old Chemgwi
wə-qa-p λ +a-n \emptyset -w- λ ak^yə- γ a-ya-ma (p λ ak^yə γ ayama)
you-hor-look+at-inf 3-you-can-past-only/even-if
'If only you could look at (it).'
- c. K də- \emptyset -yə-rə-yə-da+zə-a-w-k^oə+a (dərəydazà wk^oa)
we-3-groove-dist-dir-out+turn(= circuit)-pres-prog-move+intr
'We are going for a long walk.'
- d. tə-da+zə-y-a-k^oə+a-a- γ a (tədazayk^oà a γ)
we-out+turn-dir-dat-move+intr-th v-past
'We acted in that matter.'
- e. Hadaghat'la 1968, vol. 1, #17, pp. 137-40,
Shapsegh West Circassian
 \emptyset -y-ə-ś^yʔa-š^yt^ə-ya-p-t^əa-əy (əś^yʔaš^yt^əə γ apt^əy)
3-3-non pr-know-durative-past-not-stand-and
'He was in a state where he hadn't known it for a long time and ...'
- f. Shapsegh
 \emptyset -y-ə-ś^yʔa-ya-t^əa-p-əy (əś^yʔa γ at^əapəy)
3-3-non pr-know-past-stative-not-and
'He had not known it for a long time'

- g. K sa wa a-r ø-q'ə-w-žə-s-ʔa-žə-a γ-ś (q'əbžəsʔažà fíś]
I you 3-abs 3-hor-you-again (= back at)-I-say-again-past-aff
'I said it to you again.'

The differing order of the subjunctive has already been noted in (18a) and (19d).

7.2. Differing Roles The verbal morphemes show differing roles. These maintain their semantics pretty much unaltered, but change their behaviour with regard to position and index government.

(42) Differing roles

- a. Regular horizon of interest
Hadaghat'la 1968, vol. 1, #17, pp. 137-40,
Shapsegh
ø-q-ø-ha-p'a-n+a-n ø-š'ə-mə-ʔa-w (qà hp'anana š'əmə ʔaw)
3-hor-3-pl-nose-remain+in-inf 3-deixis-not-be-pred
'There is no one to stand guard over them.'
- b. Horizon as a preverb governing an index
Hadaghat'la vol. 1, #17, pp. 137-40,
Shapsegh
s-ø-ha-qə-p'a-a-n+a-ma ø-x'ə-š'ə-t'ə-ba-ah (sahqəp'à anama š'əš'ə-t'əbà h)
I-3-pl-hor-nose-dat-remain+in-if 3-happen-durative-much-question
'Of course isn't it possible if I stand guard over them at their place?'

7.3 Homophony Affixes, just like words, can show homophony.

(43) Homophones

- a. K ø-z-a-p'λ+a-k'ə-γ'a ø-y-ə-mə-x'a-a γ-wa (zap'λak'ə γ'a yəməx'à fiwa)
3-self-dat-look+at-behind (or) exhaustive-time 3-3-non pr-not-fit-past-pred
(i) 'that he did not find the time to look behind himself'
(ii) 'that he did not find the time to look himself all over'
- b. tə-z(-)a-r-a-λa γ'ə-ž'a (təzaraλà γ'əž'a)
we- recip (or) how(-)dat-instr-dat-see-inst
(i) 'how we saw (something)'
(ii) 'with our seeing one another'

7.4 Transformations Most dramatically the Circassian verb can show a limited amount of shuffling due to transformations. The most extensive amount is in the present tense, jussive, and negative of subordinated, optative and irrealis forms, where these elements, normally expected to be suffixes, appear before the verb stem. Sometimes scrambling is accompanied by suppletion, as in (44b), the disability forms. One might also argue that the few inflectional affixes of jussive mood, present tense, and for Kabardian progressive aspect, that occur roots initially (44d, e), are also preposed from the usual inflectional clitic train by a transformation.

(44) Morphological transformations

a. Negative flip in optative and irrealis

(i) K wa a-bə wə-ø-śə-sə-mə-λaaγ°-aγ-...-śara-t (wəśəzəmə^λaaγ°afīsarà t)
 you 3-obl you-3-deixis-I-not-see-past-...-optative-irrealis
 'If only I had seen you there!'

(ii) K wə-q'ə-s-da-mə-ʔapəq'ə-aγ-...-ta-ma sa ø-q'ə-s-a-ħala-k'ʔə-n-ta
 (wəq'əzdaməʔapəq'ə^ħ fitama ... q'əzahalak'ʔə nta)
 you-hor-me-with-not-help-past-irrealis-if I 3-hor-me-dat-hard-exhaustive-fut-irrealis
 'If you had not helped me, it would have been very hard for me.'

b. Disability

i. ø-qə-w-fə-ø-t' -y-a-s-ħə-žə-śə-γa-ha-p (qəpfət'aysħəž'əs'ə^śə γà ħ'ə p)
 3-hor-you-for-3-surf-dir-dat-I-take-back-able-th v-past-pl-not
 'I was not able to take them back from him for you.'

ii. * ø-qə-w-fə-ø-t' -y-a-s-fa-ħə-žə-...-γa-ha-p (qəpfət'aysfaħəž'ə γà ħ'ə p)
 3-hor-you-for-3-surf-dir-dat-I-take-back-able-past-pl-not
 'I was not able to take them back from him for you.'

iii. ø-qə-s-fə-w-fə-ø-t' -y-a-...ħə-žə-γa-ha-p (qəsfəpfət'ayħəž'ə γà ħ'ə p)
 3-hor-you-for-3-surf-dir-dat-I-take-back-able-past-pl-not
 'I was not able to take them back from him for you.'

c. Contrastive scrambling (only in Kabardian)(Kardanov 1955: 1035)

i. K a-bə sa ś'aa^λa-ha-m sə-q'ə-ø-śə-ø-ħa-ħ'a-zə-aγ-ś (səq'əsahħ'əzə aś]
 3-obl I child-pl-obl I-hor-3-deixis-3-pl-for-turn-past-affir

‘I met the children there.’

ii. K sa ś’aaλa-ha-m a-bə sə-q’ə-ø-ha-śə-.....-x̂°a-zə-a γ-ś (səq’ahśəx̂°azà aś)

I child-pl-obl 3-obl I-hor-3-pl-deixis-...-for-turn-past-affir

‘I met the children there.’

d. Jussive pre-stem affix

ø-wara-k’°ə+a-... (warà k’°a)

3-jussive-come/go+intr-

‘May he go!’

e. Present progressive

K s-a-w-k’°ə+a-...-... (sà wk’°a)

I-pres-prog-come/go+intr-

‘I am going (along).’

The scrambling in disability forms (44b) is sensitive to ergative forms, since it does not occur when the relevant index is an absolutive (that is co-referential with a nominal in the absolutive) (45).

(45) Blocking of disability scrambling

a. *sa t̂xəλə-m sə-fə-y-a-mə-...-ž°a (səfaymə ž°a)

I(abs) book-obl I-for-3-dat-not-read

‘I cannot read the book.’

b. sa t̂xəλə-m sə-y-a-mə-ž°a-ś°ə (sayməž°à ś°ə)

I(abs) book-obl I-3-dat-not-read-able

‘I cannot read the book.’

Reciprocals show both movement (46a) and replacement transformations (46b). The exact derivation of these forms is unclear. They are clearly complex. Some are anti-transitives morphologically (46a) (traditionally termed “anti-passives” wherein the usual object becomes an indirect object and the force of the verb is weakened) even though the esyntax is still ergative, while others show scrambled causative forms (46b). Clearly in the case of (46b), with its causative affix, simple copying of some scrambled pronouns from the syntax is not enough to account for the behavior of the morphology. Whatever the exact

nature of their underlying derivation the morphology undergoes scrambling and suppletion in accord with the semantics of reciprocity. Therefore the morphology itself must permit transformations within its own component.

(46) Reciprocals

a. Two-place transitive

i. Underlying order

ze-m ze-r za-qa-y-ha-λaγ°ε-γα-ha

recip-obl recip-abs recip-hor-3-pl-see-past-pl

ii. Surface form

ø-qə-za-r-a-λaγ°ə-γα-ha (qəzaraλaγ°ə γà x̂')

3-hor-recip-inst-dat-see-past-pl

'They saw one another.'

b. Causative of three-place transitive

i. Underlying form

zə-m zə-m a-ha-r ø-qə-y-a-y-ə-t'ə-ž'ə-γα-ha

recip-obl recip-obl 3-pl-abs 3-hor-3-dat-3-non pres-give-back-past-pl

ii. Surface form

zə-m zə-m a-ha-r ø-qə-y-ha-za-r-a-γα-a-t'ə-ž'ə-γα-ha (qahzaraγat'əž'ə γà x̂')

recip-obl recip-obl 3-pl-abs 3-hor-3-pl-recip-inst-dat-cause-con-give-back-past-pl

'They men gave those things back to one another.'

7.5. Cross-Over Constraint The cross-over constraint reaches across a sentence and down into the morphology of the verb. In this regard the argument component of the morphology is globally sensitive to the syntax, and might in fact be called syntactical morphology. The cross-over constraint explains why the absolutive relative index /yə-/ is so rarely used: it complicates things for the speaker. In (47) traces are noted by the customary *e*.

(47) Cross-over and zero

a. English form (from the jacket of an old Beatles album)

*He sang a song which I forget how it goes *e*.

b. Form with overt relative index in the absolutive

*e₂ e₁ ø₁-z-a-r-a₂-z-a-âa-λ+ħa-a-γa-w śɔdawš^ʕt^ʕaw₂

(how)₂(song)₁ 3₁-what-dat-instr-dat₂-self-dat-mass-lie+active-th v-past-comp how₂

yø₁-z-a-š^ʕə-z-γa-g^ə+pša-a-γ-a zə-warad-g^əara-r ø-ø-ə-ʔ^əa-a-γ

which₁-self-dat-deixis-I-cause-heart+forget-th v-past-adj one-song-certain-abs 3-3-non pr-say -th v-past

*'He sang a song which I forget how it goes.'

c. Form with zero-relative index in the absolutive

e₂ e₁ ø₁-z-a-r-a₂-z-a-âa-λ+ħa-a-γa-w śɔdawš^ʕt^ʕaw₂

(how)₂(song)₁ 3₁-what-dat-instr-dat₂-self-dat-mass-lie+active-th v-past-comp how₂

ø₁-z-a-š^ʕə-z-γa-g^ə+pša-a-γ-a zə-warad-g^əara-r ø-ø-ə-ʔ^əa-a-γa

which₁-self-dat-deixis-I-cause-heart+forget-th v-past-adj one-song-certain-abs 3-3-non pr-say-th v-

past

'He sang a song, I forget how it goes.'

8. Conclusions and Proposals

A number of conclusions should be enunciated here. They offer important challenges for further linguistic research into morphological theory.

8.1. Autolexical Theory Autolexical syntax brings simplicity to such verbs if taken down into lexical structure. Verb Morphology for languages such as Circassian is made up of interacting autonomous sub-levels. As noted at the outset there is no $G_a \times G_b$ interaction (multiple parsing) as one has between two autonomous levels, but merely a union of sub-components. These sub-levels are: argument structure (syntactical morphology), derivational morphology (including compounding), clitic-like trains (inflectional morphology, including compounding), incorporation, and pragmatic morphology.

8.2. Governing principles The interaction of these sub-levels seems to be controlled by four principles.

First, what might be called information protocols, rank morphemes by their content, so that time precedes manner precedes place.

Second, position of head morphemes determines the direction in which an information protocol runs. Thus, the clitic train is right-headed because the syntax is right-headed, with place preceding manner preceding time, whereas the argument structure, being ergative, is left-headed, and thus the mirror image of

syntax.

Third, the cross-over constraints is true of syntax and morphology, indeed of information encoding at all levels.

Fourth, scope constraints on logic and sense work on all levels as well. Thus constraints become overall features of information encoding in all levels of grammar. This is predicted by Autolexical theory; which says that no one level can control it all.

The overall order is that in (48). Herein A = argument, P = pragmatical, D = derivational, and I = inflectional morphology.

(48) Overall order of morpheme types

[A]-[P]-[A]-[P]-[A]-[D]-[A]-[I]-[D (Stem)]-[I]

The consequences for lexical phonology (morphology) (see Spencer 1991: 105-119) are serious given the intercalation of levels in (48). In fact in Colarusso (1991) I assigned adverbial argument indices to the pragmatic morphology merely to avoid the alternating argument - pragmatic morphology at the beginning of the verbal complex, but this was a Procrustean abuse of the data. Some form of this theory might be preserved, but this would necessitate suspending the bracketing erasure convention (Spencer 1991: 113) and re-instituting some form of cyclic rule application to account for the alternation of argument and pragmatical morphology at the beginning of the verb complex. Such a theory would be a very weak form of lexical morphology, and yet with the small exception of a few stem-initial inflections (44d, e) lexical morphology works well for the inflectional clitic train. Further it works well for derivational morphology with the sole exception of the derivational preverbs. One might note similar variation in English between separable and non-separable intransitive prepositions that seem to have a derivational status (49a, b), and separable prepositions, [\pm transitive], (49c, d). Therefore such separability of derivational morphology is not an exocytic problem.

(49) English prepositions [put-on]

- a. Inseparable, derivational, [- transitive] preposition
 - i. He is putting on airs.
 - ii. *He is putting airs on
- b. Separable, derivational, [- transitive] preposition
 - i. He is putting on a show.
 - ii. He is putting a show on.

- c. Separable, syntactic, [- transitive] preposition
 - i. He is putting on his coat
 - ii. He is putting his coat on.
- d. Separable, syntactic, [+transitive] preposition
He put his coat on the table.

Clearly an interacting set of morphological (and phonological) sub-components with links to syntax (see Baker 1988b) and the lexicon, as well as to pragmatic, logical and scope dimensions of the grammar is necessary to give a principled and complete account of morphology. Autolexical theory, with its system of parallel processing, if modified to allow the union of sub-components working within Cartesian products of full-sized components, offers the simplest and yet most powerful overall framework for building such a theory.

8.3. Zero Morphemes as Defaults The results in (47) also strongly suggest that zero morphemes are not real (have no theoretical status) and that such forms might be best seen as default values of forms in a system of interpretation. If morphological zeros may not be real, then the same negative conclusion may be held for syntactic traces as well (for traces see Haegeman 1991: 393-436). This would require a radical rethinking of current syntactic theories, somewhat along lines suggested by Mithun (1986).

8.4. Word Phrases The study of the Circassian verb makes it useful to coin a new notion for morphology, that of the word phrase.

8.5. Morphological Features The complex verbs can show eight features that make them similar to whole sentences:

- (1) ordering/scope variation,
- (2) variation in roles for morphemes,
- (3) internal (hierarchical or linear) structure within morphemes,
- (4) homophony of morphemes,
- (5) transformations (or some topologically equivalent mechanism),
- (6) context sensitivity,
- (7) referential function (variables and generalised quantifiers), and
- (8) constraints similar to those operating on syntax.

8.6. Global Features of the Verb The verbs are phonologically and cognitively a unit. They have an expressive capacity rivalling a sentence, (lacking only the full referential power of a sentence). They have hierarchical or linear structure within their morphemes. They have a modicum of syntax-like flexibility, namely, varying morpheme-order. They are best described by a G_2 PS grammar with a dash of G_1 and G_0 (Wall 1972). They have nevertheless extreme productivity. They can even surpass the sentence in so far as

they can contain pragmatic material not necessarily found in the sentence. Therefore, such verbs are better termed "word phrases" or WPs. In a most general sense we may therefore look upon morphology as biologically distinct from syntax, but not formally distinct from it (both are G_0 's).

8.7. Effects of Complex Verbs Such verbs are virtual microcosms of the sentence. They enrich the expressive capabilities of the language in that they alter discourse structure. Typically a discourse proceeds by laying out the referents by full sentences with nouns. Once the referential world is delineated one then proceeds largely by verbs. As the inter-relationships within a discourse grow more complex, so do these verbs until they reach a rhetorical climax which is usually coincident with that of the narrative. These verbs provide an enormously efficient (rapid) means of delivering information. They therefore offer a degree of cognitive force and facility lacking in less endowed languages. As a young speaker of Abadzakh West Circassian, Mr. Adnan Saygili (Circassian name Zhazhy Adnan), once told me, "Circassian is a beautiful language. You can say everything in one word."

Notes

¹This paper is an elaboration of part of chapter six of Colarusso (1991). Circassian is a member of the Northwest Caucasian language family, which also includes the nearly extinct Ubykh, and Abkhaz and Abaza, which are closely related. Circassian is a cover term for Adyghe or West Circassian, a diverse complex of roughly seven dialects, and the distinct Kabardian (East Circassian), which is quite uniform. Belseney is transitional between Kabardian and West Circassian, but is closer in crucial respects to Kabardian than to any Western dialect.

²The complex phonology is hinted at in the parenthetical forms (see Smeets 1984). Most importantly /aa/ is realized as [a·] or [a] (Catford 1984), with the effect of spilling over from the syllable nucleus into the coda so that a following consonant does not color the preceding vowel, as would otherwise be the norm. It reduces to /a/ when unstressed. /ah/ and /afi/ have the same realization as except that they do not reduce when unstressed. Nominal phonology is metrical (stress assignment is governed by feet), whereas verbal is not and several "primary" stresses can accumulate at the end of a verb. In Bzhedukh alone the sequence of /-s-/ followed by a stem initial coronal fricative (for example /š/) can result in an affricate (for example /č/). This nice example of an autosegmental process, while considered to be "real Bzhedukh," was not used by either of my two Bzhedukh friends, so I have not recorded it. In the glosses I have used either 'he' or 'it' to render the third person forms which are gender-blind in Circassian. No anti-feminist posture on my part should be assumed from this.

As to the plethora of sounds involved, the segmental inventory of Bzhedukh is as follows:

(A) Bzhedukh West Circassian segmental inventory

labial	p [◌]	p	b	p'	f	m	w	
dental (alveolar)	t [◌]	t	d	t'		n		
alveolar	c [◌]	c	ʒ	c'	s	z	r	
lateral					ʎ	λ	ʎ'	
alveolo-palatal					ś	ź	ś'	
rounded	č ^{◌◦}	č [◦]	ʒ [◦]	-	ś [◦]	ź [◦]	ś' [◦]	
palato-alveolar (laminal)	č ^{◌y}	č ^y	ʒ ^y	č' ^y	š ^{◌y}	š ^y	ʒ ^y	
retroflexed	č [◌]	č	ʒ	č'	š [◌]	š	ʒ	
velar (palatal)	-	k	-	k'	(x [◌])	χ	ġ	y
rounded	k ^{◌◦}	k [◦]	g [◦]	k' [◦]	χ [◦]	-		
uvular	q [◌]	q	-	-	χ̣	ʁ		
rounded	q ^{◌◦}	q [◦]	-	-	χ̣ [◦]	ʁ [◦]		
pharyngeal					ħ	ʕ		
laryngeal				ʔ	h			

rounded ʔ°

vowels ə a

The system of Kabardian (B) is a much simpler.

(B) Kabardian segmental inventory

labial	p	b	p'	f	v	f'	m	w
dental (alveolar)	t	d	t'				n	
alveolar	c	ʒ	c'	s	z			r
lateral				ʎ	ʌ	$\text{ʎ}'$		
alveolo-palatal				ʃ	ʒ	$\text{ʃ}'$		
palato-alveolar (laminal)				ʂ	ʐ			
palatal	k^y	g^y	k'^y	χ	ġ			y
rounded	k°	g°	k'°	χ°	-			
uvular	q	-	q'	χ	ʁ			
rounded	q°	-	q'°	χ°	ʁ°			
pharyngeal				ħ	ʕ			
laryngeal			ʔ	h				
rounded			ʔ°					

vowels ə a

³I call these terms clitics with some reservation. There seem to be three criteria for clitics currently in use. The oldest, (A), goes back to the original use of the term to denote a word that sometimes appeared as an affix. In this and the following criteria the order of the elements is immaterial. Many languages exhibit such clitics, including French, Ancient Greek, and the West Flemish dialect of Veurne (Sadock 1991: 59, quoting Smessaert (1988)).

(A) Detachability

X-i <> X i.

One can have detachability with suppletive complications in the clitic, so that the clitic does not look exactly like its independent form, (B). This is actually fairly common, and would seem to play a role in some of the Circassian suffixes.

(B) Detachability with suppletion

X-j <> X i

A newer criterion is that of shifting affixation, wherein a set of affixes can appear on a different word if it is inserted in a sentence, (C). The best example of this is Bella Coola, wherein verbal inflection can appear on the negative particle and not on the usual verb, (D).

(C) Shifting affixation

Y X-i <> Y-i X

(D) Bella Coola shifting affixation (after Davis and Saunders 1980: 44, 51, with slight changes in font).

i. Positive

ʔay-uc-m-tma[°]-a-k[°]-i-c'i-k t'a[°]č[°]

do-mouth-mediopassive-reciprocal-they-quotative-contrastive-perfective-un glossed those ones

'They were talking to each other while ...'

ii. Negative

ʔa[°]č[°]-k[°]-i-lu-c'i-k ʔii[°]č[°]-anm-aw t'a[°]č[°]

not-quotative-contrastive-expectative-perfective-unglossed far-limited control development-they those ones

‘They had not gotten far when ...’

The third criterion is that of exclusion: one cannot have a word and its clitic form co-existing in the same phrase, (E).

(E) Exclusion

*X x-Z

This criterion can also occur with suppletion. It is the criterion that I used to argue that most of argument morphology was non-cliticizing.

The fourth criterion that one might put forward would be that of scrambling within a string of affixes,(F).

(F) Affix scrambling

X-i-j <> X-j-i

To assume that (F) implies cliticization, however, is to beg the question regarding the nature and power of morphological grammars. It is possible that transformational shuffling of affixes, as we shall see in §7.4, is entirely within the scope morphology. (F) would only seem to imply cliticization if the scrambling of affixes had a correlate in the scrambling of syntactical variants, for here the Exclusion criterion would have to hold. We shall see that it does not hold for index scrambling in Kabardian (44,c).

Sadock (1991: 61-62) also discusses two constraints on clitics and the configurational outcome of those constraints (page 69).

⁴Horizon of interest also is used to attest to the veracity of what is being said. A remote past, by definition falls beyond the sphere of personal knowledge and so normally cannot take a horizon prefix. The forms for verbs of atmospheric phenomena carry a special horizon preverb, and so constitute an exception to this rule of the distal past. The exact sense of the horizon preverb on weather verbs is not clear. See Colarusso (1984) for more details.

Appendix

Symbols and Abbreviations

Ⓔ _{v%}	=	vowel with primary stress
v#	=	vowel with secondary stress
3	=	'he,' she,' 'it;' 'him,' 'her,' 'it'
A	=	adverb node
abs	=	absolutive case
act	=	active
adv	=	adverb
aff	=	affirmative mood
afx	=	affix
C	=	complementizer
cause	=	causative
conj	=	conjunction
con	=	connective
dat	=	dative
def	=	definite time
dir	=	direction
dist	=	distributed through space or time
dyn	=	dynamic
emph	=	emphatic
fut	=	future
ger	=	gerund (a participle-like form that can take case endings)
hor	=	horizon of interest
incept	=	inceptive (or change of state)
imp	=	imperative
inf	=	infinitive
INFL	=	inflection node (much like the old Aux(iliary) node)
intr	=	intransitive
io	=	indirect object
irreal	=	irrealis
loc	=	locative
<u>m</u>	=	marked
N	=	noun node
neg	=	negative

non pr	=	non-present tense vowel (/e/)
num	=	number (plural)
obl	=	oblique case
opt	=	optative
perf	=	perfect
pl	=	plural
poss	=	possessive
pot	=	potential
pred	=	predicative case
pres	=	present tense
pro	=	pronominal suffix
prog	=	progressive aspect
Q	=	question complementizer
recip	=	reciprocal
ref	=	referential
S	=	sentence node
subj	=	subjunctive
surf	=	surface
V	=	verb node

References

Baker, Mark. 1988a. *Incorporation, a Theory of Grammatical Function Changing*. Chicago: University of Chicago.

_____. 1988b. Morphology and Syntax. In *Morphology and Modularity: in Honour of Henk Schultink*. eds. Martin Everaert, Arnold Evers, Riny Huybregts, and Mieke Trommelen. 9-32. Dordrecht, Holland: Foris.

Catford, J. C. 1984. Instrumental Data and Linguistic Phonetics. In *Topics in Linguistic Phonetics in Honour of E. T. Uldall*, ed. Jo-Ann W. Higgs and Robin Thelwall. *Occasional Papers in Linguistics and Language Learning*, no. 9, March 1984. Ulster: The New University of Ulster.

Colarusso, John. 1991. *A Grammar of the Kabardian Language*. Calgary, Alberta: University of Calgary Press.

_____. 1984. "Circassian /-qa-/ Meets Semantic Algebra and Ergativity." Aronson, Howard I. (ed.) *Folia Slavica, Papers from the Third Conference on the Non-Slavic Languages of the USSR* 7: 49-90.

Davis, Philip W. and Saunders, Ross. 1980. *Bella Coola Texts, Heritage Record No. 10, British Columbia Provincial Museum*. Victoria, B.C.: British Columbia Provincial Museum.

Dumézil, Georges and Namitok, Aytok. 1939. *Fables de Tsey Ibrahim (tcherkesse occidentale)*.

*Hadaghat'la Asker [ħada ɣaλ'a askar]. 1968. Nartxer [The Narts], vol. 1. Maikop: Adyghe Nauchna Issledovatel'ska Institut, Sektor Literatura. (in Circassian).

Haegeman, Liliane. 1991. *Introduction to Government and Binding Theory*. London and Cambridge, Massachusetts: Basil Blackwell.

Kardanov, B. M. 1955. "Kratkij grammaticheskij ocherk kabardino-cherkesskogo jazyka." B. M. Kardanov and A. T. Bichoev (eds.), *Russko-kabardinsko-cherkesskij slovar'*. Moscow: Gosudarstvennoe izdatel'stvo inostrannyx i nacional'nyx slovarej. Pp. 993-1054.

Kerasheva, Z. I. 1960. "Kratkij grammaticheskij ocherk adyghejskogo jazyka." Kh. D. Vodozhdokov (ed.), *Russko-adygejskij slovar'*. Moscow: Gosudarstvennoe izdatel'stvo inostrannykh i nacional'nykh slovarej. Pp. 1059-1098.

McCawley, James D. 1988. *The Syntactic Phenomena of English*. Chicago: University of Chicago.

Mithun, Marianne. 1986. "When Zero Isn't There." Vassiliki Nikiforidou, Mary VanClay, Mary Niepokuj, and Deborah Feder (eds.) *Proceedings of the Twelfth Annual Meeting of the Berkeley Linguistics Society*. Berkeley: Berkeley Linguistics Society. Pp. 195-211.

Paris, Catherine. 1974. *La princesse Kahraman, Contes d'Anatolie en dialecte chapsough (tcherkesse occidentale)*. Paris: Société d'Études Linguistique et Anthropologiques de France (SELAF).

Sadock, Jerrold M. 1991. *Autolexical Syntax*. Chicago: Chicago University.

Scancarelli, Janine. 1986. "Pragmatic Roles in Cherokee Grammar" Vassiliki Nikiforidou, Mary VanClay, Mary Niepokuj, and Deborah Feder (eds.) *Proceedings of the Twelfth Annual Meeting of the Berkeley Linguistics Society*. Berkeley: Berkeley Linguistics Society. Pp. 225-234.

Sells, Peter. 1985. *Lectures on Contemporary Syntactic Theories*. Stanford, California: Stanford University, Center for the Study of Language and Information.

Smessaert, Hans. 1988. *An Autolexical Approach to Pronominal Cliticization in West Flemish*. Master's Thesis, University of Chicago.

Smeets, Riexs. 1983. "On Location and Direction in Circassian: Five Directional Suffixes," *Folia Slavica* 5: 384-394.

_____. 1984. *Studies in West Circassian Phonology and Morphology*. Leiden: The Hakuchi Press.

Spencer, Andrew. 1991. *Morphological Theory*. London and Cambridge, Massachusetts: Basil Blackwell.

Wall, Robert. 1972. *Introduction to Mathematical Linguistics*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

*Following the ethnic conventions of Circassian this name is automatically in the order surname - given name, and therefore does not take a comma between the two terms.