

# Morphological Templates, Headedness, and Applicatives in Barupu

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The applicative construction in Barupu (Macro-Skou family from northern New Guinea) performs all the functions expected of an applicative: it is a valency-increasing construction that adds an object to a verb, similar to the relationship between the intransitive ‘be afraid’ and the transitive ‘fear’ in English. The applicative object behaves the same as the base object of a transitive verb with similar semantics, including the ability to appear indexed on the verb. Some of the applicatives are well behaved, and do not present a challenge to existing models, while another set of applicatives are more complex morphologically, and more problematic. In these constructions the entire applicative complex displays two features that are not expected: (1) the applicative morpheme, and the agreement for the applied object, appears *outside* all inflectional agreement for the arguments of the base verb; and (2) the applicative morpheme shows agreement not just for the object but also for the subject, in addition to the agreement for subject found on the main verb root. These applicatives thus display several serial-verb-like properties, but fail to meet the criteria used to test for serial verbs, both cross-linguistically and within Barupu. I examine the phonological, morphological, and syntactic patterns associated with these “applicatives,” and show that there is a phonotactic constraint in the language that motivates this apparent mismatch of properties, and a plausible pathway for the development of at least some of these morphemes. Nonetheless we must recognize that synchronically the language allows for multiply headed verbs, without evidence of synchronic incorporation processes.

**1. INTRODUCTION.** In this article I examine the morphological interpretation of an apparent applicative construction that appears both to involve bound morphology and to be a productive multiword construction. The construction in question involves the interpretation of certain applicative(-like) constructions in Barupu, a language of Sandaun province in Papua New Guinea.

In the discussion that follows I find evidence for complex internal structure in inflected words in Barupu, and present data that suggests that what was perhaps once a productive serial verb pattern has already partially grammaticalized to become a set of bound affixes. While grammaticalized to the extent that there is only one word, with the applicative root in most cases no longer being an independent lexical item, for at least some roots this construction is best analyzed as an unusual morphological relic (driven by a strict adherence to a phonological template) of a previously multiword construction. In addition to describing the Barupu data, I finish with a

brief survey of similar challenges to either the mirror principle (Baker 1985), which states that the addition of morphological material to a word must reflect the order of syntactic derivation, or the familiar notion of headedness that can be found in some other languages.<sup>1</sup>

**2. APPLICATIVES.** Applicative constructions involve bound morphemes that attach to a verb or auxiliary and are used to code a nonsubcategorized argument as a core argument, which is the (primary) P of the complex predicate.<sup>2</sup> They can occur in dynamic or nondynamic versions, depending on the other morphological parameters of the language. A dynamic applicative will be defined as one in which there is a dynamic and productive opposition between coding a participant with an applicative and coding with some form of oblique marker, and a nondynamic applicative is an applicative construction in which there is no alternative coding strategy for coding the participant. In this section I introduce the applicative construction as it is found in other languages, and summarize the key elements of such a construction.

**2.1 DYNAMIC: ALTERNATION WITH AN OBLIQUE CODING STRATEGY.** We can see the effect of the use of an applicative in the following pair of examples from Swahili (Comrie 1985:317). In (1) the transitive verb *lima* takes a subject, here indicated by the prefix *ni-*, and an object *shamba*, which appears following the verb.<sup>3</sup>

- SWAHILI
- (1) Ni-mc-lim-a                      shamba.  
 1SG-PFV-cultivate-FINALVOWEL    plantain  
 ‘I have cultivated the plantain.’

When an applicative—in Swahili marked by the derivational suffix *-i*—is added to the verb, the original arguments remain in the clause, but an additional beneficiary is added. This is clearly a core argument, shown by the position (immediately postverbal) and the fact that the animate beneficiary is coded on the verb by an object prefix, here *m-*.

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1. Thanks are owed, and hereby given, first to Miriam Corris, second to Melissa Crowther and Lila San Roque, third to two audiences that have commented on the ideas in this paper, a seminar audience at the University of Sydney in 2000 and an audience at the 2001 meeting of the Australian Linguistics Society, and finally to Avery Andrews and Rachel Nordlinger, for helpful suggestions and useful references to necessary data.
  2. O’Herin (2001), discussing the “applicative” construction in Abaza, presents data on a putative applicative construction in which the applied object is not (morphologically, at least) the primary P of the complex predicate. This calls for further investigation, as in this author’s reading experience this is not unique to Abaza.
  3. The following abbreviations have been used in glosses of sentences and elsewhere. Portman-teau agreement markers use the following abbreviations: 1, 2, 3: first, second, and third person; SG, DU, PL: singular, dual, and plural number; R, IRR: realis and irrealis mood; A, S, P: syntactic roles (Comrie 1978)—for definitions see Andrews (1985:68); D, DAT: dative; GEN: genitive; F: feminine; M masculine; v: class V of the Yimas class system. The other abbreviations used are: ACC, accusative; ACCOM, accompaniment; ALL, allative; APPL, applicative; ASP, aspect; BEN, benefactive; CORE, core case; DECL, declarative; ERG, ergative; EXTP, external possession; LOC, locative; NEG, negative; NOM, nominative; NOMZ, nominalizer; NRFPAST, near past; OBJ, object; PFV, perfective; PST, past; Q, interrogative; RED, reduplication; SUBJ, subject.

- (2) Ni-mc-m-lim-i-a Musa shamba.  
 1SG-PFV-3SG-cultivate-APPL-FINALVOWEL Musa plantain  
 ‘I have cultivated the plantain for Musa.’

A similar set of alternations can be observed in the following *Tukang Besi* examples (Donohue 2001:221). In (3) we have a plain transitive clause with the goal marked by the oblique *kua*. The applicative alternative to this clause has the verb suffixed with *-api* ‘directional applicative’, and the goal is now treated as a P (there are other semantic differences associated with these alternants as well). This status can be judged in this sentence by the optional presence of the object clitic =*e* that indexes this argument, an option available only to a P, and the case marker *te* ‘core’, which replaces the oblique *kua*. The case marker *te* can only be used on As, Ss, and Ps.

- TUKANG BESI
- (3) No-aso te bac **kua** tolida=no.  
 3R.S/A-sell CORE rice ALL cousin=3GEN  
 ‘She sold the rice to his cousin.’
- (4) No-aso-**api** te tolida=no te bac.  
 3R.S/A-sell-DIR CORE cousin=3GEN CORE rice  
 ‘She sold the rice to his cousin.’

Various other syntactic tests show that *tolida=no* in this sentence is a core argument (Donohue 1999a:chaps. 10, 20). Similarly, *Musa* in (2) can be shown to be a core argument by its behavior in passives.

Both the Swahili and the *Tukang Besi* examples here clearly show that the applicative morpheme is one that identifies a verbal predicate as having a core argument, a P, that is not normally part of the argument structure of the verb. In the *Tukang Besi* examples we have also seen that there is an alternative, oblique, coding strategy for these participants, and so we may term this a “dynamic” applicative construction (Donohue 2001). Other languages, or other constructions within the same language, might allow no such variation, and examples of this are presented in the following section.

**2.2 NONDYNAMIC: NO ALTERNATION.** The applicatives discussed in 2.1 can all be described as “dynamic applicatives” (Donohue 2001): they represent one of two possible coding choices by which an argument that does not appear in the verb’s subcategorization frame may be realized in a clause (the other being coding as an oblique argument). In the *Tukang Besi* example we can see that, in addition to the applicative coding strategy, the goal may also be realized as an oblique nominal with the oblique preposition *kua*.

In some languages an applicative is the only means of realizing a particular semantic role in the clause. Asmat, spoken in southwestern New Guinea, has only one coding option for beneficiaries, and that involves the use of an applicative construction, as in (5).

ASMAT (VOORHOEVE 1965)

- (5) Enám nes jimín akat jík-tam-por-m-í-n ...  
 fish flesh sago.stick good bind-BEN-try-TENSE-1SG.SUBJ-1/2OBJ  
 'I make tasty sticks of sago and fish for you ...'

This sort of nondynamic applicative construction is not uncommon in languages, and is the type of construction that we are examining here in Barupu.

We have seen that the following morphosyntactic features are relevant when positing an applicative construction: (1) an overt morphological affix on the predicate; in Swahili this was seen in the morpheme *-i*, in *Tukang Besi*, *-api*, and in *Asmat* *-tam*; (2) when this derivational affix is added, the resulting clause has one core argument more than otherwise: in the Swahili example, the beneficiary *Musa* was added to the clause, in *Tukang Besi* we saw the goal *tolida=no* treated as an object, and in *Asmat* a second person singular beneficiary object was added; (3) the additional core argument is treated as a P: this is evidenced in each of the examples above by the agreement on the verb; in *Tukang Besi* case marking, too, indicates the core status of the nominal; and (4) there might be changed status for the original P, typically to some form of an oblique argument, but this is not part of a cross-linguistic definition. This has not been shown in the examples above, but some languages (e.g., *Quiche*, *Enggano*, and many Australian languages) force a demotion of the original P (see *Craig 1978*).

In the next section I introduce the salient characteristics of *Barupu* verbal morphology, intending them as a guide to understanding the argumentation in section four. Following this, section 4 examines the constructions that are possible applicatives in the language. Section 5 presents the arguments against an alternative analysis, at least synchronically, of these problematic applicatives as serial verbs, and section 6 summarizes the previous sections and presents data from other languages that challenge the notion that a verb can only have a single head.

**3. BARUPU: BASICS.** *Barupu* is a language of the *Piore-River* family, *Macro-Skou* stock, spoken in the middle of the north coast of *New Guinea* in the vicinity of *Sissano lagoon* west of *Aitape* (*Donohue 2002c*). See figure 1. It is spoken by people living immediately south of the lagoon, most of whom previously occupied the village of *Warapu*, on the coastal edge of the lagoon. The nearby villages of *Ramo* and *Sumo* are home to related languages with many of the morphosyntactic features described here. *Barupu* has previously been mentioned only in *Laycock (1973)*, under the name *Warapu*. *Barupu* shows many morphosyntactic features typical of languages in the *New Guinea* area, such as *SOV* word order and a tendency toward head-marking. In this section I describe some of the essential features of *Barupu* verbal morphosyntax.

**3.1 BASIC CLAUSES IN BARUPU.** The word order and transitive agreement marking paradigms of *Barupu* can be seen in the following example. In this simple clause the object precedes the verb, and the verb is marked for person, number, and gender of both the subject and the object. If the subject is nominal and present in the

FIGURE 1. BARUPU ON THE NORTH COAST OF NEW GUINEA



clause, it will unmarkedly precede the object, as seen in (6), which (redundantly) has an independent first person singular masculine pronoun in subject position.<sup>4</sup>

- (6) Ru'u k-ana-peri-re.  
 bird R-1SG.M-stare.at-3PL.F  
 'I stared at the birds.'

- (6') Nena ru'u kanaperire

For both the prefixes and suffixes, a full paradigm marking distinctions in person, number, and gender is available. The affixing possibilities on simple verbs are shown in table 1. In general, Barupu verb agreement morphology distinguishes two numbers (singular and plural), three persons (first, second, and third), and two genders (masculine and feminine). However, in the first person nonsingular, there is no gender distinction, but there is a distinction between dual and plural. The left-hand side of table 1 shows the different forms of the subject prefixes on the verb *yara* 'see', with 3SG.F object (morphologically unmarked). By contrast, the right-hand side of the same table shows the different forms of the object suffixes employed on the same verb, with 3SG.F subject. The vowels of the singular feminine suffixes are

4. The Barupu examples are given in the orthography developed in Bakema et al. 2001. The contrast between /i/ and /e/ is reduced to *e*, and that between /u/ and /o/ to *a*. Consonants are represented phonemically, with the exception of intervocalic /b/, which lenites to [β], and is written as *v*, and the [tʃ] that occurs when the sequence *t/i,ɪ,e/V* is found, which is written with *ch*, rather than *ti*. Word tone is not marked for the L, H, LH, and HL melodies (other than in 4.2.1), apart from the complex tones (LHL and HLH) when they are realized on just one syllable. These are, following local orthographic preferences, shown by a doubling of the vowel symbol, with these letters separated by an apostrophe: *V'V*, as in the monosyllabic *ru'u* 'bird' in example (6), which is a single syllable with a rise-fall pitch contour (see Crowther 2000 for a description of tonal contrasts in Barupu). Where the phonological details are important to the analysis presented here, they are added separately to the orthographic representation. In addition to pronominal inflection, verbs are also obligatorily marked for mood, *k-* for realis and *n-* for irrealis.

often elided in casual speech, and the consonant of the 3SG.M suffix is only found following the vowel *a* in the verb root.

As can be seen, each of the different person/number/gender combinations for subject has a distinct marking pattern. With object, all but 3SG.F are overt.<sup>5</sup> Some allomorphy is associated with the affixes; table 1 shows the optional 2SG.F *om-* → *on-* / \_\_CORONAL, and in addition to this, vowel-initial roots cause glide formation on the vowel-final prefixes, and nasal-initial roots cause epenthetic vowel insertion with the nasal-final ones. Some of these processes are illustrated in the examples that follow, but as they do not bear on the topic of this paper they are not discussed in depth.

Although not illustrated here, these prefixes and suffixes can be productively used in combinations other than those shown in table 1, so that we can predictably form words such as *keveyarani* ‘you<sub>female, plural</sub> saw me<sub>male</sub>’, or *kepiyarai* ‘we<sub>dual</sub> saw them<sub>male</sub>’, and many more.

The same agreement patterns can be used to account for the inflection on the majority of intransitive verbs as well, as seen in table 2. Because it is the prefixes that are used to code the sole argument of these verbs, we can assign a nominative/accusative alignment to the language in terms of this morphological feature.

Negation is marked both preverbally and postverbally with two separate elements, *bea* and *vai*, as can be seen in (7). These typically appear clause-initially and clause-finally (though see 3.2 for discussion and exemplification of the other possibilities for these morphemes).

**TABLE 1. AGREEMENT FOR SUBJECT, OBJECT ON YARA ‘SEE (HER)’**

Changes for subject (3SG.F object)				Changes for object (3SG.F subject)			
	SG		NSG		SG		NSG
1 M	k-ana-yara	DU	k-epi-yara	1 M	k-o-yara-na	DU	k-o-yara-pi
F	k-en-yara	PL	k-emi-yara	F	k-o-yara-n[i]	PL	k-o-yara-mi
2 M	k-ama-yara		k-opu-yara	2 M	k-o-yara-ma		k-o-yara-pu
F	k-on-yara		k-eve-yara	F	k-o-yara-m[u]		k-o-yara-ve
3 M	k-a-yara		k-e-yara	3 M	k-o-yara-[k]a		k-o-yara-i
F	k-o-yara		k-ere-yara	F	k-o-yara		k-o-yara-re

**TABLE 2. AGREEMENT FOR INTRANSITIVES: RO ‘CRY’, RIRI ‘SHIVER’**

<i>ro</i> ‘cry’				<i>riri</i> ‘shiver’			
	SG		NSG		SG		NSG
1 M	k-ana-ro	DU	k-epi-ro	1 M	k-ana-riri	DU	k-epi-riri
F	k-en-ro	PL	k-emi-ro	F	k-en-riri	PL	k-emi-riri
2 M	k-ama-ro		k-opu-ro	2 M	k-ama-riri		k-opu-riri
F	k-om-ro		k-eve-ro	F	k-om-riri		k-eve-riri
3 M	k-a-ro		k-e-ro	3 M	k-a-riri		k-e-riri
F	k-o-ro		k-ere-ro	F	k-o-riri		k-ere-riri

5. For a minority of verbs there is a distinct 3SG.F suffix *-u*; this suffix is still productive in the closely related language Sumo, and is also found in other related languages (Donohue and San Roque 2003). Note that object suffixes only index animate objects; an inanimate object can be indexed, but only in exceptional circumstances. This variation is not relevant to this article.

NEGATION

- (7) *Bea ru'u k-ana-peri-re vai.*  
NEG bird R-1SG.M-stare.at-3PL.F NEG  
 'I didn't see the birds.'

The markers of negation, both pre- and postverbal, can intrude between clausal elements and the verb, but they cannot interrupt a word, including the verb with its varied inflectional affixes.

- (8) *Ru'u bea kanaperire vai.*  
 (9) *\*ru'u bea kanaperi vai re, etc.*

We can thus see that, in outline, Barupu has SOV word order, the verb inflects as s-V-o, and negation appears circumfixally, not interrupting word-internal morpheme boundaries. There are, however, complications even with nonderived verbs, as described in the following section.

**3.2 OTHER VERB TYPES.** While most verbs do appear in SOV clauses with the inflectional paradigms in tables 1 and 2, some low-transitivity verbs have the option of the P appearing in a postverbal position, as can be seen in example (10).

- (10) *Neni k-en-yara-ka rau.*  
1SG.F R-1SG.F-see-3SG.M pig  
 'I saw a pig.'

This position is the same one in which oblique arguments (locations, goals, and occasionally sources) are found, as can be seen in (11). Note, however, that these oblique arguments can be distinguished from postverbal objects in that they are not indexed on the verb, as (11), in which *oro ya ma-biam ya Cha Philip* is not marked with the 3SG.M *-a* on the verb.<sup>6</sup>

- (11) *Neni k-en-bovo-ni oro ya ma-biam ya Cha Philip.*  
1SG.F R-1SG.F-sleep-1SG.F house 3SG.M child-male 3SG.M Mr. Philip  
 'I slept in Philip's son's house.'

We should note that negation, described in 3.1 as being able to intrude between a nominal and the verb, is similarly circumfixal for postverbal Ps, and can similarly intrude between them and the verb. Negated versions of the previous two sentences are shown below, showing that the position of the negators is simply restricted to appearing outside the verb and not intruding into a nominal constituent, with *bea* preverbal and *vai* postverbal.

- (12) **Bea** *neni kenyaraka rau vai,*  
*Neni bea kenyaraka rau vai,*  
*Neni bea kenyaraka vai rau,*  
**Bea** *neni kenyaraka vai rau.*  
 'I didn't see a pig.'

6. Identical morphosyntactic patterns are found with goals, instruments, and sources, all of which may be coded simply by postverbal position.

- (13) **Bea** neni kenbovoni oro ya mabiam ya Cha Philip **vai**,  
**Bea** neni kenbovoni **vai** oro ya mabiam ya Cha Philip, etc.  
 ‘I didn’t sleep in Philip’s son’s house.’

In addition to displaying the postverbal position for NPs serving a locational function, we can also observe that the verb in (11) and (13) inflects with a different pattern from that expected from the data in table 1. A simple prefix for subject, such as has been seen for *ro* or *riri*, is not normal with this verb. We can see from (13) that this verb is inflected by means of both the prefixes and suffixes from table 1. While a minority pattern, this conjugation has been observed productively with *vovo* ‘sleep’, *taipe* ‘be bad’, and *aicho* ‘sneeze’. Further complications are found with small numbers of verbs that inflect with two affixal elements prefixal to the verb, one of which appears to be the vocalic part of the prefixal set (hence abbreviated to Pv), and the second of which appears to be the consonantal part of the suffixal set (Sc). Some verbs of motion (and the verb ‘vomit’) follow a pattern nearly identical to this except that while the Pv component behaves as expected, the Sc is found infixal, preceding a final vowel (all of these verbs end in a VV sequence, suggesting that further research might turn up a phonological condition for this allomorphy). The full range of pronominal affixes is given in table 3. The dual forms, and the plural feminine forms, are exceptions to the generalizations about relationships between the full prefixal forms and the members of the Pv and Sc columns.

We have seen instances of the use of the simple prefixes and suffixes, either alone or in combination, in (6)–(13). Other verbs with the inflectional patterns mentioned before table 3 will now be exemplified. A verb such as ‘eat’ inflects by (proceeding outwards from the verb root) prefixing first an element from the Sc column, then

TABLE 3. MORE PRONOMINAL PARADIGMS\*

VERB CLASSES:		Ia, b, c	Ib, TR	Ila, b	Ic, Ila, b	
FREE		PREFIX	SUFFIX	Pv	Sc	
1	SG M	nena	ana-	-na	a-	-n
	SG F	neni	en-	-ni	e-	-n
2	SG M	mema	ama-	-ma	a-	-m
	SG F	momu	om-	-mu	o-	-m
3	SG M	ya	a-	-ka / -a	a-	-θ / -r
	SG F	bo	o-†	-θ / -u	o-	-θ / -r
1	DU	mepi	epi-	-pi	epi-	-p
1	PL	memi	emi-	-mi	e-	-m
2	PL M	mopu	opu-	-pu	o-	-p
	PL F	beve	eve-	-ve	eve-	-r
3	PL M	yei	e-	-i	e-	-p
	PL F	rere	ere-	-re	ere-	-r

\* The second person nonsingular *mopu* is also used as a polite address for a person who, by virtue of their kin relationship to the speaker, commands respect. Additionally, nonfirst person dual is also distinguished for some verb classes, using combinations of the singular and plural morphology for the appropriate person (but not gender). These duals lack any dedicated morphology of their own. Because the dual morphology does not bear on the issues discussed here they will not be presented as they distract from the discussion.

† The 3SG.F is represented orthographically as <u> when it precedes another vowel, and is pronounced as a labiovelar glide, [w].

one from the Pv column, and finally a mood prefix. The regular subject-marking prefixes that are used with verbs of class I (a–c) are not used. This yields the paradigm shown in table 4 in the realis.

Here we can see that the verb takes two contiguous prefixes, one of which corresponds to the vowel found in the normal prefix set from table 1, and the other of which is the consonant normally found in the suffixal set. The other patterns of verbal inflection are shown in table 5, in which the verbs *ko\_i* ‘ascend’ and *kua\_u* ‘vomit’ appear. Of these *ko\_i* takes inflection by means of a Pv preceding the verb root, and a Sc following the *ko-*. *Kua\_u* inflects by a full regular prefix and a Sc following the *kua-*.

We can thus distinguish, in addition to the regular intransitive verbal paradigms, such as *ro* and *riri* in table 2 (henceforth type Ia), and the regular transitive verbs (such as *yara* in table 1 [type Ia TR] which make up the overwhelming majority of verbs), verbs that take both full prefix and full suffix, such as *vovo* ‘sleep’ (type Ib) (and which may be a kind of false reflexive), verbs with a full prefix and an Sc inflection such as *kua\_u* ‘vomit’ (type Ic), verbs with the Sc inflection combined with a Pv inflection such as *ko\_i* ‘ascend’ (type IIa, somewhat more numerous), and verbs with the same inflectional ingredients that apply them both prefixally, such as *a* ‘eat’ (type IIb). The other classes are very small, and may be listed as in table 6.<sup>7</sup>

Some semantic basis to the classification is obvious. While class Ia, both transitive and intransitive, is a grab bag of semantic concepts with no unifying theme, the other classes are more unified internally. Class Ib presents too few exemplars to

**TABLE 4. AGREEMENT FOR THE VERB A ‘EAT’ (IIB)**

		<i>a</i> ‘eat’	
		SG	NSG
1	M	k-a-n-a	DU k-epi-p-a
	F	k-e-n-a	PL k-e-m-a
2	M	k-a-m-a	k-o-p-a
	F	k-o-m-a	k-eve-r-a
3	M	k-a-r-a	k-e-p-a
	F	k-o-r-a	k-ere-r-a

**TABLE 5. AGREEMENT FOR INTRANSITIVES: *KO\_I* ‘ASCEND’, *KUA\_U* ‘VOMIT’ (IIA AND IC)**

<i>ko_i</i> ‘ascend’				<i>kua_u</i> ‘vomit’			
		SG	NSG			SG	NSG
1	M	k-a-ko<n>i	DU k-epi-ko<p>i	1	M	k-ana-kua<n>u	DU k-epi-kua<p>u
	F	k-e-ko<n>i	PL k-e-ko<m>i		F	k-en-kua<n>u	PL k-emi-kua<m>u
2	M	k-a-ko<m>i	k-o-ko<p>i	2	M	k-ama-kua<m>u	k-opu-kua<p>u
	F	k-o-ko<m>i	k-eve-ko<r>i		F	k-om-kua<m>u	k-eve-kua<r>u
3	M	k-a-ko<∅>i	k-e-ko<p>i	3	M	k-a-kua<r>u	k-e-kua<p>u
	F	k-o-ko<∅>i	k-ere-ko<r>i		F	k-o-kua<r>u	k-ere-kua<r>u

7. These “classes” are intended as purely descriptive classifications.

allow for meaningful generalizations.<sup>8</sup> Class Ic is a group of verbs of ‘partial involvement’. Class IIa includes mostly verbs of motion or posture; IIb represents a group of diverse verbs that in some way can be classified as low transitive.<sup>9</sup>

This does not exhaust the inflectional possibilities for Barupu verbs; a whole extra set of genitive marking options is possible, in which both subject and object are shown prefixally (this is seen briefly in 5.2.5, but is not directly relevant to the issue of the status of the suffixal applicatives, which concerns us here). There are also, as is typical of many New Guinea area languages, many predicates involving N+V structures (Mohan 1997), such as *Monrai k-e-n-a*, singsing. R-<ISG.F>-DO ‘I<sub>1cm</sub> sing.’ (the use of the glossing convention with <...> is explained in 3.3), in which the fully inflected verb ‘do’ appears with the adjunct nominal ‘singsing’, to mean ‘sing / celebrate’.

**3.3 GLOSSING CONVENTIONS.** In the examples that follow I do not gloss every morphemically distinct segment in the inflectional paradigms, because in many cases the individual elements of inflectional morphology are not highly specified, and present a glossing challenge of a high order (see below). Rather, for the purpose of glossing the inflection on the verb root the underlying specification for inflectional features will appear once in angle brackets (<>) immediately preceding the gloss for the verb root, regardless of the amount or position of agreement

**TABLE 6. LEXICAL GROUPS AND VERB CLASSES**

CLASS	EXAMPLES	INFLECTION
Ia	(over 100 verb roots)	prefix <sub>i</sub> -V
Ib	<i>vovo</i> ‘sleep’, <i>taipe</i> ‘bad’	prefix <sub>i</sub> -V-suffix <sub>i</sub>
Ic	<i>aicho</i> ‘sneeze’, <i>bariko</i> ‘get up’, <i>kua_u</i> ‘vomit’	prefix <sub>i</sub> -V<infix <sub>i</sub> ;Sc>
IIa	<i>e</i> ‘curse’, <i>ka</i> ‘come’, <i>ke</i> ‘sit’, <i>ko_i</i> ‘ascend’, <i>ni</i> ‘wash’, <i>no</i> ‘go along’, <i>ra</i> ‘die (SG)’, <i>re</i> ‘fall’, <i>ro</i> ‘stand’, <i>u</i> ‘dig’	PV <sub>i</sub> -V<infix <sub>i</sub> ;Sc>
IIb	<i>aro</i> ‘go down’, <i>itoro</i> ‘think’	PV <sub>i</sub> -Sc <sub>i</sub> -V
Ia TR	(over 60 verb roots)	prefix <sub>i</sub> -V(-suffix <sub>i</sub> )
Ic TR	<i>tuwo</i> ‘remove (lumps from a chunk) (of sago flour)’, <i>risi</i> ‘smell’, <i>ti</i> ‘skin (FEM.OBJ)’	prefix <sub>i</sub> -V<infix <sub>i</sub> ;Sc>
IIa TR	<i>u</i> ‘fish with net’, <i>u</i> ‘spit on’, <i>o</i> ‘fight’	PV <sub>i</sub> -V<infix <sub>i</sub> ;Sc>
IIb TR	<i>a</i> ‘eat’, <i>a</i> ‘make’, <i>a</i> ‘want’, <i>awoto a</i> ‘laugh at’, <i>e’e</i> ‘carve, write’, <i>ere</i> ‘put’, <i>iya</i> ‘fetch water’, <i>o</i> ‘give’, <i>ori</i> ‘sharpen’, <i>una</i> ‘buy, get (mass noun OBJ)’, <i>u</i> ‘get (count noun P)’, <i>uru</i> ‘rub (paint)’	PV <sub>i</sub> -Sc <sub>i</sub> -V

8. Class Ia is also the destination of borrowed words, such as *save* (< Tok Pisin, ‘know’) and *wokim* (< Tok Pisin, ‘work, make’) that appear in class Ia: *k-ana-save* ‘I know’, *k-en-wokim* ‘I make (it)’. The latter example is particularly interesting in that the native Barupu lexeme for ‘make’, *a*, is a class IIb word. The semantics of the borrowed lexeme do not lead to it being included in this class, but rather in the open generic class. It is also worth noting that all the verbs in class IIb are vowel-initial.

9. The parameter by which they count as low transitive (in Hopper and Thompson’s 1980 criteria) varies, and includes nonpunctual predicates and low individuation of P.

units. Thus, for instance, *nora* ‘she will eat’, composed of four identifiable morphemes, is glossed as shown in (14a), not as in (14b).

- |  |  |
|--|--|
| (14) a. <i>n-o-r-a</i><br>IRR-<3SG.F>-eat<br>‘She will eat.’ | b. <i>n-o-r-a</i><br>IRR-2/3SG.F~2PL.M-3SG~2/3PL.F-eat |
|--|--|

Even when the second morpheme follows the verb (such as class II verbs), this glossing convention is followed. Thus for *kakani* ‘I came’, (15a) the combined morphological features of the subject are glossed just once; the glossing convention seen in (15b) is not followed.

- |  |   |
|--|---|
| (15) a. <i>k-a-ka-n-i</i><br>R-<1SG.M>-come<br>‘I came.’ | b. <i>k-a-ka-n-i</i><br>R-SG.M-come-1SG |
|--|---|

This convention simplifies the glossing, and makes the relevant information (what agreement pattern the verb displays) more accessible. Further, it does not force a decision to analyze the individual elements of inflectional morphology as incrementally supplying information to the inflected verb, and thus force us to identify the set of features that characterizes each element. For instance, from table 3 we can see that the element *-n* appears in the (rightmost) SC column for 1SG.M and 1SG.F, and no other cells: it is clearly an exponent of the features first person and singular, and so might be easily and uncontroversially glossed as 1SG; similarly *a-*, for instance, in the PV column is clearly an exponent of the feature bundle SG.M. But what are we to make of *-m* in the same column, which is used for 2SG (both M and F), and IPL? A possible solution would be to assign it the features [SECOND PERSON  $\alpha$ ], [PLURAL  $-\alpha$ ] to account for the identity of 2SG and IPL, a conflation not unheard of in New Guinea (see Foley 1986:72ff). Or, even more problematic, the vowel *e-* in the PV column, which is used for 1SG.F, IPL, and 3PL.M, a combination that is less amenable to feature analysis, even with alpha notations. The fact is that the PV and SC paradigms are never found alone, but only in combination with another set, and it is the sum of these two pieces of inflectional morphology that realizes the features of the argument that is being coded for, and so uniquely identifies it. A realizational model of morphology is clearly more likely as a solution to both analysis and glossing in Barupu, and so the glosses reflect the features that have been realized by the inflectional unit, whether that is a single morphological affix or a combination of less specified affixes. In the example above the values [first person] and [singular] are contributed by the *-n*, and [singular] (featurally [PLURAL  $-$ ]) and [masculine] are supplied by *a-*. Where the verb shown does not have complications in the exponence of its subject marking, with just a single morpheme being the sole marker for the verb root, then the angle bracket convention will not be followed, because it adds nothing to the exposition.

In the next section I present data on applicatives, separated into two parts, simple applicatives, which do not require much more than listing, and complicated constructions that are suggestive of a more controversial structure, and that are the main focus of this paper.

**4. APPLICATIVES.** Barupu has four “basic” applicatives, that is, four morphemes that attach directly to the verb and add a core argument, a P, to the predicate. When this argument is an overt nominal it occurs postverbally in the oblique position and is cross-referenced on the verb as the P of a Ia TR verb, making the argument look exactly like the less-affected postverbal core arguments that are found in other transitive constructions, and that have been exemplified in 3.2. In addition to the basic applicatives, which adhere closely to the applicative prototype outlined in 2.2, there are five other similar morphemes that show applicative functions, but that deviate radically from the expected pattern. Section 4.1 presents data on the basic applicatives, and 4.2 illustrates how the putative applicatives in the second set behave.

**4.1 BASIC APPLICATIVES -ya, -ke, -ta, -na.** This section introduces the basic applicatives. Of these four, one, *-ya*, has a restricted meaning that will be glossed as ‘above’; two others, *-ke* and *-ta*, both indicate ‘on-ness’, while the last, *-na*, has a much broader range covering accompaniment, purpose, and relation.

The first of the basic applicatives, *-ya*, has a very specific meaning as can be seen in examples (16) and (17), taken from the beginning and end of the same (long) sentence in a traditional narrative about a sugar glider demon.

- |  |  |
|--|--|
| (16) K-o-vovo.<br>R-3SG.F-circle<br>‘She circled.’ | (17) K-o-vovo-ya-i.<br>R-3SG.F-circle-ABOVE-3PL.M<br>‘She circled above them.’ |
|--|--|

Here the intransitive verb is *vovo* ‘circle’; when *-ya* is added, it is able to take an object, here 3PL.M. The applicative attaches directly onto the verb, resulting in a transitive complex predicate. Another example of this can be seen in (18).

- (18) K-en-ute k-e-no-n-ya-mu.  
R-1SG.F-walk R-<1SG.F>-go.along-ABOVE-2SG.F  
‘I walked past you (while you were lying down).’

Here the addition of the applicative *-ya* allows a core locational argument to be cross-referenced on the IIa intransitive verb *no\_i* ‘go along’, in addition to the subject. Without the applicative, the verb *k-e-no-n-i* would not allow a second argument to be indexed: \**kenonimu*.

The applicatives *-ta* and *-ke* overlap somewhat in meaning. The following examples show their range of use.

- |   |   |
|---|---|
| (19) A k-u-ai.<br>rain R-3SG.F-rain<br>‘It’s raining.’                      | (20) A k-u-ai-ke-ni.<br>rain R-3SG.F-rain-UPON-1SG.F<br>‘It’s raining on me.’ |
| (21) A k-u-ai-ta-ni.<br>rain R-3SG.F-rain-ON-1SG.F<br>‘It’s raining on me.’ |   |

In examples (20) and (21) either *-ke* or *-ta* is acceptable; no differences in meaning are reported. The following sentences, however, show an environment in which only *-ta* is appropriate. While it is possible to use *-ta* or *-ke* in the sense of being rained on, *-ke* is never used for sitting or standing on.<sup>10</sup>

(22) Bio=venavena k-o-ke-i pita.  
 woman=witch R-<3SG.F>-sit down  
 ‘The witch sat down.’

(23) Bio=venavena k-o-ke-ta ai.  
 woman=witch R-<3SG.F>-sit-ON tree  
 ‘The witch sat on a log.’

The fourth applicative in the basic set is *-na*. It has the widest range of meaning; here it will be glossed simply as APPL.<sup>11</sup> In the following pair the addition of the applicative shows the purpose for an action:

(24) K-en-tove.  
 R-1SG.F-walk.around  
 ‘I’m walking around, for no reason.’

(25) Biyo k-en-tove-na-re.  
 cassowary R-1SG.F-walk.around-APPL-3PL.F  
 ‘I’m walking around (looking) for cassowaries.’

In addition to purpose, accompaniment and association are also possible meanings for the general applicative.

(26) Ya n-a-r-aro.  
 3SG M IRR-<3SG.M>-descend  
 ‘He will descend.’

(27) Nape n-a-r-aro-na-mi.  
 who IRR-<3SG.M>-descend-APPL-1PL  
 ‘Who will descend with us?’

(28) Era k-ama-yoyo-na-ni.  
 Q R-<2SG.M>-dream-APPL-1SG.F  
 ‘Do you dream about me?’

As mentioned earlier, in addition to these unproblematic applicative constructions, there are some morphemes with more problematic morphosyntax.

**4.2 MORE APPLICATIVES.** In addition to the applicative constructions presented in 4.1, which show no deviations from the applicative prototype, there are other morphemes that we need to discuss as applicatives. These additional morphemes are

10. Note, however, the similarity in form between the applicative *-ke* and the verb ‘sit’ *ke*. This will be raised again in section 6.

11. The range of meaning might reflect its antiquity. It probably is the reflex of the proto-Macro Skou applicative \*na, also attested in I’saka (Donohue and San Roque 2003) and Skou (Donohue 2002a, 2002b).

used to express benefactive/allative, accompaniment, and ablative/adversative functions. They appear following the verb root, and they code their applied P with suffixes on the applicative morpheme. Unlike the four basic applicatives, however, these applicatives also indicate subject by means of a prefix to the applicative root. The following examples emphasize the point that the consonantal variation in the applicative is in fact subject agreement. In all cases the consonants are those found in the Sc column of table 3, typically occurring (outside these morphemes) with Ic, IIa, and IIb verbs. Furthermore, all this appears following any suffixes that indicate the object (theme) of the base verb. Although not illustrated here, a nominal would appear postverbally if introduced by the applicative, just as with the constructions seen in 4.1.

- (29) N-e-n-aro-**n-i**-mu.  
IRR-<1SG.F>-descend-1SG-TOWARD-2SG.F  
'I'm descending toward you.'
- (30) N-o-m-aro-**m-i**-ni.  
IRR-<2SG.F>-descend-2SG-TOWARD-1SG.F  
'You're descending toward me.'
- (31) N-o-r-aro-**r-i**-ni.  
IRR-<3SG.F>-descend-3SG-TOWARD-1SG.F  
'She's descending toward me.'

Other applicative roots that show this alternation are listed below.

- (32) N-o-m-aro-**m-e**-ni.  
IRR-<2PL.F>-descend-FROM-1SG.F  
'You're descending away from me.'
- (33) N-epi-p-aro-**p-o**-pu.  
IRR-<1DU>-descend-WITH-2PL.M  
'We will descend with you (two).'
- (34) N-ere-r-aro-**r-o**-mu.  
IRR-<3PL.F>-descend-FOR-2SG.F  
'Those women will descend on your behalf.'

This possibility for further subject agreement on the applicative is the first, rather serious, deviation from the applicative criteria outlined in 2.2. Note that the meaning of the applicatives changes depending on a loosely formulated notion of motion versus nonmotion; table 7 outlines the differences. It seems that *e* and *o*<sub>2</sub> remain fairly constant in their semantics, expressing adversative and benefactive respectively, but *i* and *o*<sub>1</sub> swap in their assignment of an accompaniment semantic role completely.<sup>12</sup> The forms *o*<sub>1</sub> and *o*<sub>2</sub>, while segmentally identical, are differentiated by tone (the [*o*<sub>1</sub>] applicative realizes its own HL melody, while the [*o*<sub>2</sub>] applicative carries no tone

12. In addition, the *-e* applicative forms comparative constructions when used on inflecting adjectives:

(i) *K-en-pako-n-e-mu*  
R-1SG.F-big-1SG-APPL-2SG.F  
'I am bigger than you.'

melody of its own, and merely continues the melody of the verb root to which it is attached), and by the allophones that are found (tonally conditioned) when preceding a vowel (see table 7 for instances). Examples of these changing semantic designations are shown in table 8, which also illustrates the allophonic differences between the  $o_1$  and  $o_2$  applicatives.

Ignoring the details, the important difference between the putative applicatives described in this section and the applicatives seen in 4.1 is that the ones here agree for subject, in addition to the object that they introduce, and regardless of any inflection on the main verb. The following section briefly sketches the appearance of this style of applicative with a transitive verb, and discusses the most immediate objections to their analysis as applicatives.

**4.3 TRANSITIVE VERBS AND “APPLICATIVES.”** A second exception to the applicative prototype arises when these applicatives are used with transitive verbs. Rather than appearing within the bounds of inflectional morphology, here the putative (inflected) applicatives occur *outside* inflection for the object of the base verb.

- (35) K-ana-yara-ka-n-i-mu.  
R-1SG.M-see-3SG.M-1SG-WITH-2SG.F  
 ‘I saw him (while I was) with you.’
- (36) \*k-ana-yara-(n)-i-mu-ka, \*k-ana-yara-(n)-i-ka-mu, etc.

**TABLE 7. THE SEMANTICS OF APPLICATIVES WITH MOTION AND OTHER VERBS**

	MOTION VERBS	OTHER VERBS
[ε]	‘source’	‘malefactive’
[i]	‘goal’	‘accompaniment’
[o <sub>1</sub> ]	‘accompaniment’	‘relational’
[o <sub>2</sub> ]	‘benefactive’	‘benefactive’

**TABLE 8. APPLICATIVES WITH MOTION AND OTHER VERBS**

	MOTION VERBS	OTHER VERBS
[ε]	k-en-ute-n-e-mu <small>R-1SG.F-walk-1SG-APPL-2SG.F</small> ‘I walked away from you.’	k-en-raivi-n-e-mu <small>R-1SG.F-cook-1SG-APPL-2SG.F</small> ‘I cooked all the food, despite you.’
[i]	k-en-ute-n-i-mu <small>R-1SG.F-walk-1SG-APPL-2SG.F</small> ‘I walked toward you.’	k-en-raivi-n-i-mu <small>R-1SG.F-cook-1SG-APPL-2SG.F</small> ‘I cooked with you.’
[o <sub>1</sub> ]	k-en-ute-n-o-a [kenutenəβa] <small>R-1SG.F-walk-1SG-APPL-3SG.M</small> ‘I walked with him.’	k-en-irai-n-o-a [kenirajnoβa] <small>R-1SG.F-talk-1SG-APPL-3SG.M</small> ‘I talked about him.’
[o <sub>2</sub> ]	k-en-ute-n-o-a [kenutenwa] <small>R-1SG.F-walk-1SG-APPL-3SG.M</small> ‘I went on his behalf.’	k-en-raivi-n-o-a [ken <sup>d</sup> rajuinwa] <small>R-1SG.F-cook-1SG-APPL-3SG.M</small> ‘I cooked for him.’

It could be argued that this is not an applicative construction at all (that is, it is not a single word), but is actually a serial verb construction of the sort widely attested in the Melanesian region. By this analysis, a better glossing of (35) would be that seen in (37).

- (37) K-ana-yara-ka            n-i-mu.  
 R-<1SG.M>-see-3SG.M    1SG-accompany-2SG.F  
 'I saw him, I was with you.' (= 'I saw him [while I was] with you.')

The obvious objection to this would be that the inflectional paradigm of the putative second verb is of a type unknown elsewhere in the grammar, but given the abundance of verbal conjugations this is a rather weak argument. A more convincing argument against the serial verb analysis is the lack of mood marking on the putative second verb.

- (38) \*k-ana-yara-ka            k-n-i-mu.  
 R-<1SG.M>-see-3SG.M    R-1SG-accompany-2SG.F  
 'I saw him, I was with you.'

- (39) \*kanayaraka kanimu, \*kanayaraka n-nimu, etc.

This presupposes an analysis of serial verbs, and that type of analysis is presented in the following section so that the two analyses can be more easily compared.

## 5. CHARACTERISTICS OF SERIAL VERBS CROSS-LINGUISTICALLY.

Before assuming a serial verb analysis of the putative applicatives in Barupu, we need to examine the sorts of properties that could be expected from serial verb constructions. The literature suggests the following as being major functions of serial verb constructions cross-linguistically: (1) show results of causing events; or (2) add beneficiary, instrument, or other noncore arguments to the clause; or (3) add motion components to events.<sup>13</sup>

The following morphosyntactic properties are characteristic of serial verb constructions: (1) share one or more core arguments; (2) neither verb is subordinate to the other; (3) no dividing intonational or morphological mark of a clause boundary; (4) the verbs cannot have separate scope for tense, mood, aspect, illocutionary force, or negation (Durie 1988:3)

Finally, it is important to note that serial verbs come in two forms: there can be a construction with two fully inflected verbs, constrained so that they meet the above criteria, or, in some languages, the two verb roots can be adjacent, sharing a single set of inflectional affixes.<sup>14</sup>

We shall examine certain constructions that appear to meet these criteria in Barupu, and then compare these somewhat likely SVC candidates' behaviors with the behavior of the putative applicatives.

13. See Foley and Van Valin (1984), Foley and Olson (1985), Crowley (1987), Durie (1988, 1997), Lord (1993).

14. The latter has been called "compounding" by some authors. Crowley (1987) presents arguments that, in Paamese at least, compounding is a third process distinct from both contiguous or nuclear serialization and noncontiguous or core serialization.

**5.1 SVC CANDIDATES IN BARUPU.** The following are, according to the typical functional and semantic criteria discussed in the preceding section, the sorts of predicates that could be analyzed as serial verbs in Barupu (apart from the putative applicatives of 4.2). Note that I am not interested here in arguing for the claim that these *are* serial verb constructions, but rather that they are at least language-internal instantiations of the criteria that are commonly used to establish SVCs, thus establishing how, from a cross-linguistic perspective, we would expect a serial verb construction to appear in Barupu.

CAUSE-EFFECT

- (40) Rau k-e-ch-a (k)-a-ra-i.<sup>15</sup>  
 pig R-3PL.M-shoot-3SG.M R-<3SG.M>-die.SG/DU  
 ‘They shot the pig and it died.’

MOTION-DIRECTION

- (41) K-ana-parara k-a-n-aro kikom.  
 R-1SG.M-run R-<1SG.M>-descend mangrove  
 ‘I ran down toward the mangroves.’

MANNER OF MOTION-MOTION

- (42) Ta n-epi-ko-p-i.  
 paddle(v.) IRR-<1DU>-go  
 ‘Paddling we will go.’(cf. *Nepita*, ‘We’ll paddle.’)

ACTION-DIRECTION

- (43) Pi n-en-bere n-e-n-aro bakt.  
 water IRR-1SG.F-pour IRR-<1SG.F>-descend bucket  
 ‘I’ll pour the water into the bucket.’

All of these have been presented as being two words, at least orthographically. In the following sections I present arguments that these four construction types represent separate words at the phonological and grammatical levels as well. In section 5.2.4 we shall see that there are no constructions in Barupu analogous to the contiguous serial verb constructions found in other languages, in which two lexical roots appear bound in a single set of inflectional morphemes.

**5.2 EVIDENCE FOR WORD BOUNDARIES.** In order to establish the behavior that we would expect of the putative applicatives if they were actually serial verbs in Barupu we need to establish whether or not they are contiguous serial verbs (also referred to in the literature as “compound” serial verbs or “nuclear” serial verbs—e.g., Early 1993), or if they are noncontiguous (“core,” in the terminology of Foley and Van Valin 1984). In this section I examine data, phonological and syntactic, that indicate that the putative applicatives are not separate words, unlike the other serial verb candidates in the language.

15. The initial realis marker of the second verb shows a strong tendency toward lenition ( $k > \gamma > \emptyset$ ) between two low vowels. In irrealis sentences, or in very slow speech, it is clear that the mood marker is present morphologically, *Rau kecha karai*: in the irrealis, *Rau necha narai*, which may not be pronounced with an elided *n-*: \*[raw netʃa araj]. Note that the *ch* in *kecha* represents an underlying *ti*; the form of the verb with a feminine object (unmarked) is *keti* (see footnote 4).

**5.2.1 Tone in compounds.** When two lexical nominals are compounded together, the tone of the unit is that of the right-most morpheme, spread over the whole word. The following example shows that when *ru'u* 'bird', with a rise-fall tone (the tone melody is LHL), is compounded with *u* 'nest, lair, house (of animal)', which has a rising tone (a LH melody), the compound does not preserve both the lexical tones, as in (45a), nor is the tone of the compound that of the first element spread over the resulting word, as in (45b). What is heard is the LH melody spread over the two syllables, resulting in a disyllabic word with a low pitch on the first syllable and a rising pitch on the second.<sup>16</sup>

(44) *ru'u* [Λ] 'bird' + *u* [l] 'nest': *ru'u-u* 'bird's nest': [ \_ l ]

(45) a. \* [Λ l]

b. \* [ \_ \]

By contrast, when other modification occurs, such as when an adjective modifies a noun, or a noun is possessed, both lexical items preserve their original tones.

NOUN + ADJECTIVE

(46) *ru'u* [Λ] 'bird' + *pako* [ \_ \_ ] 'big': *ru'u pako* 'big bird': [Λ \_ \_]

(47) a. \* [ \_ \_ \_ ]

b. \* [ \_ - \_ ], \* [ \_ \_ \]

NOUN + POSSESSIVE

(48) *ru'u* [Λ] 'bird' + *neni* [ l - ] 'my (fem.)': *ru'u neni* 'my bird': [Λ l -]

(49) a. \* [ \_ \_ / - ]

b. \* [ \_ \_ - \_ ], \* [ \_ \_ \_ \]

We can see that tone spreading in Barupu is principled, and that the rightmost lexical tone of a compound dominates the entire compound. This regular principle enables us to distinguish compounds from two separate words in a modifying relationship. When we apply these tests to the serial verb candidates identified in 5.1, and to the putative applicatives from 4.2, we find that they behave differently. The putative applicative construction is tonally one word, with the tone associated with the lexical root spread over the whole verb, as seen in (50).

(50) N-epi-ko-p-i-p-o-mu. [ \_ \_ \_ \_ - \_ ], \* [ \_ - \_ \_ \_ ], etc.  
 IRR-<1DU>-go-1DU-WITH-2SG.F  
 'We'll go with you.'

By contrast we find that the tone of the serial verb candidates indicates clearly two separate words. This is seen in the following example (< [42]), using the bare root *ta*, associated with a falling tone, and the inflected *ko*, associated with a wavy tone. The

16. In the examples that follow an approximation of the pitch contour is given inside square brackets, with higher pitch shown at the top and lower pitch at the bottom. Thus a low pitch is represented as [ \_ ], and a high pitch as [ - ]. Contours are shown by diagonal lines: [ \ ], for instance, is a fall.

wavy tone is not spread over the whole unit, but rather the fall is still maintained on *ta*, and the rise-fall is realized over *ko* and its associated bound morphology, and not beyond.

- (51) Ta n-epi-ko-p-i.                    [ \ \_ \_ \_ \_ ], \* [ \_ \_ \_ \_ ]

Applying the same tests to the other SVC candidates seen in 4.2, we find that in all cases they behave as separate words (only the pitch levels on the syllables of the verbs are shown):

SHOOT-AND-DIE

- (52) Rau **kecha karai**.                    [ \ \_ \_ \_ \_ ], \* [ \_ \_ \_ \_ ]

RUN-AND-DESCEND

- (53) **Kanaparara kanaro** kikom. [ \_ \_ \_ \_ \_ \_ \_ \_ ], \* [ \_ \_ \_ \_ \_ \_ \_ \_ ]

POUR-AND-GO DOWN

- (54) Pi **nembere nenaro** baket. [ \_ \_ \_ \_ \_ \_ ], \* [ \_ \_ \_ \_ \_ \_ ]

This test, that of wordhood based on the behavior of tonal patterns, shows that all the serial verb candidates in Barupu are constructions consisting of two words. The putative applicatives, on the other hand, are single-word units, and so quite different.

**5.2.2 Negation, TAM.** In 3.2 we saw that the second element of negation was applied to the end of a clause, but could appear anywhere from the clause-final position to the right edge of the verb. Despite this relative freedom, it cannot intrude into the verb, that is, between suffixal material and the verb root. With a putative applicative this results in the following possibilities for negation. Given the positive sentence in (55),

- (55) K-om-raivi-m-o-na.  
R-2SG.F-COOK-2SG-FOR-1SG.M  
'Cook it for me!'

we have exactly one way for the negative circumfixes to appear, as in (56); no intrusion into the verbal unit is allowed.

- (56) Bea=komraivimona=vai,  
\*bea=komraivi=vai mona,  
\*komraivi bea=mona=vai

Applying a similar test to the serial verb candidates, however, we find that they behave differently. Given the sentence in (57), which is ambiguous between a serial verb interpretation and a biclausal interpretation, we may negate in only one way, shown in (58). Negation with the first part of the negator preceding the object is ungrammatical, or at best infelicitous, and when the second part of the negative is placed between the two verbs it is completely ungrammatical.<sup>17</sup>

17. We can note parenthetically that one argument for this being a putative serial verb construction, and not just a sequence of two clauses, is the ungrammaticality of the string if the two verbs are inflected for different values of the feature mood, marked by *k-* or *n-* at the beginning of the verb. Thus a combination of realis and irrealis is ungrammatical: \**rau kanacha narai*. The only cases that do allow a series of two verbs with different specifications for realis/irrealis are clearly complements, such as 'I want to eat', *K-a-n-a n-a-n-a R-<1SG.M>-want IRR-<1SG.M>-eat*.

- (57) Rau k-ana-ch-a k-a-ra-i.  
 pig R-1SG.M-shoot-3SG.M R-<3SG.M>-die.SG/DU  
 'I shot the pig dead.' / 'I shot the pig and it died.'
- (58) Rau kanacha bea=(k)arai=vai,  
 \*/#bea=rau kanacha karai=vai,  
 \*bea=rau kanacha=vai karai, etc.

The other serial verb candidates show similar behavior with respect to the intrusion of the negative: all allow intrusive negation, though some also allow completely circumfixal negation.

- PADDLE-AND-GO  
 (59) Ta **bea**=nepikopi=**vai**.
- RUN-AND-DESCEND  
 (60) Kanaparara **bea**=kanaro kikom=**vai**.  
**Bea**=kanaparara kanaro kikom=**vai**.
- POUR-AND-GO DOWN  
 (61) Pi nenbere **bea**=nenaro baket=**vai**.

The position of the negative, like the results of examining tone patterns, indicates that the putative applicatives behave differently from the other serial verb candidates.

**5.2.3 Intrusion of nominals.** We can also test the status of the putative applicatives compared to the SVC candidates by examining them for the possibility of nominals intruding between the elements of the so-called serial verb unit. With the putative applicatives in the clause, nominals may not intrude. Examine the post-verbal placement of the object *wa* in the following sentence:

- (62) K-ana-yara-n-i-mu wa.  
 R-1SG.M-see-1SG-WITH-2SG.F ocean.canoe  
 'I saw the canoe with you.'

This can be compared with the ungrammaticality of the same clause with *wa* intruding between the main predicate and the accompaniment morpheme, as seen in (63).

- (63) \*kanayara wa nimu  
 'I saw the canoe with you.'

Similarly with an accompaniment applicative, the accompanier cannot intrude between the base verb root and the inflected applicative (here *yara* and *ni*, respectively).

- (64) \*kanayara Kua Mi'i ni wa, etc.  
 'I saw the canoe with Mim.'

At least some of the SVC candidates allow for an intrusive nominal:

- (65) Mevova k-ere-parara rara k-ere-ko-r-i Atavoi.  
 youth R-3PL.F-run road R-<3PL.F>-ascend Ramo  
 'The girls run up the road to Ramo.'

In sum, the “applicatives” look (morphologically) like sequences of verbs (though with otherwise unattested agreement), yet they behave syntactically and phonologically as single words. The similarities and differences between single verbs, unambiguous applicatives (as presented in 4.1), the putative applicatives of 4.2, and the likely candidates for analysis as serial verb constructions, are summarized in table 9. In this table the number indicates that number of words that are identified, following the different criteria presented in 5.2.1–5.2.3 (set along the left side of the table), for different test cases, shown along the top row of the table. For instance, the applicatives described in section 4.2 test for single word status according to the phonological and syntactic tests that we have proposed, but appear to be two separate words according to the morphological standards that have been put forward. Simple verbs, on the other hand, test for single word status for all of the three different tests.

As can be clearly seen, the putative applicatives do not fit all the tests for single words, failing at the expected morphological inflection criterion. In the following section we examine the reasons why this is problematic, and why this may have come about.

**5.2.4 Serial verbs or something else?** We have established that the putative applicatives do not behave in the same way as the likely serial verb candidates in Barupu, mainly because they are single words, as established by syntactic and phonological criteria. Single word SVCs (nuclear, contiguous) that have been reported for other languages typically show one agreement complex that applies to the whole complex predicate. Each verb root does not take its own inflection. An example of this can be found in Yimas:

YIMAS (Foley and Van Valin 1984:201)  
 (66) Uraŋ ki-mpu-kra-yawra-ŋa-t.  
 coconut.V.SG V.SG.P-3PL.A-IPL.D-get-give-PFV  
 ‘They got the coconut for us.’

(67) \*uraŋ [ki-mpu-yawra]-[mpu-kra-ŋa]-t

The structure of the verb in this example, typical of contiguous serial verb constructions, is shown in figure 2, loosely following Foley (1991). In these cases the inflectional morphology, consisting of agreement for three arguments and for aspect in this example, has scope over both of the verbs; even though, for instance, *kra-IPL.D* is not an argument of the verb *yawra* ‘get’, it is shown in the inflectional slot for the combined verbal complex, not distinguished positionally from the other arguments that are subcategorized for by this verb.

**TABLE 9. WORDHOOD TESTS AND THE PUTATIVE APPLICATIVES**

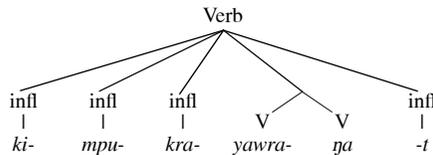
	SIMPLE VERBS	4.1 APPLICATIVES	4.2 APPLICATIVES	SVC CANDIDATES
PHONOLOGICAL	1	1	1	2
MORPHOLOGICAL	1	1	2	2
SYNTACTIC	1	1	1	2

By contrast, a Barupu verb such as that seen in (35), *Kanayarakanimu* ‘I saw him with you’, could be presumed to have the structure seen in figure 3 (assuming that mood has scope over both predicates) (I will later show that this is in fact not the most appropriate representation of the internal structure of the verb in Barupu). While the individual predicates take their own inflection for subject and object, mood is marked only once, presumably applying to the entire verbal complex, because it does not conceivably have scope over only a sub-part of the verb.

We must seek an explanation for why the Barupu examples, if they are serial verbs (or at least derived from historically recent serial verbs), show such a different morphosyntactic pattern from that attested in Yimas (and other languages) for contiguous, that is single-word, serializations; we have already summarized the differences in table 9. The answer that springs to mind, based on the discussion in 4.3, is of a contiguous serial verb construction that has become reanalyzed as one word, given that marking mood is redundant on the second “verb” in the sequence, because it must always be identical to the first verb. This is accurate, but not the complete story: we need to explain both why the roots are not adjacent to each other, and why they both retain full inflection for both subject and object.

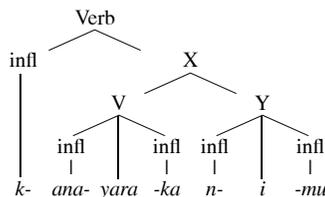
The answer lies in a phonological restriction found in the language. Examine examples (68)–(71), and their agreement patterns. Here we see the serialization of the verbs *irai* ‘speak’ and *ko\_i* ‘ascend’ to give the compound ‘speak up to’. First, the verbs are serialized as one word. This is different from the serial verb candidates examined in the preceding sections, which were all analyzed as involving two words. The morphological peculiarity lies in the fact that *ko\_i* is a verb that takes circumfixal subject agreement, as has been seen earlier in table 3, and the example given here as (68). Despite this, it is not possible for the two verbs to be serialized together with the full set of agreement marking affixes appearing on *ko\_i*, as seen in the ungrammaticality of (70). Nor is it possible, as seen in (71), for the verbs to appear in a noncontiguous serialization.

FIGURE 2. STRUCTURE OF A SINGLE-WORD SVC IN YIMAS\*



\* From Foley 1991.

FIGURE 3. APPARENT STRUCTURE OF A PUTATIVE-APPLICATIVE WORD IN BARUPU







guarantees that there will be agreement between the V(C(V))- agreement prefix and subsequent agreement markers, none of which can morphologically mark all the distinctions present in the main prefix (if present). The V(C(V))- prefix, then, represents the sum of all personal agreement material. Secondly, when we do find serialization of two fully inflected verb roots, such as in (41) and (43), the features of this V(C(V))- prefix are shared over two verbs, and so can be taken as more “transparent” to the syntactic environment in which they occur.

We have thus identified a phonotactic reason for the putative applicative in (68) to be derived from a verb of elevational motion, seen in (69) (‘I go up’), and through this analysis we can account for the otherwise aberrant morphology that it displays in the “applicative” construction. We have seen that there is a minimal unit that may be referred to by the grammar, and that that unit does, in the case of a vowel-initial verb, contain some inflectional material. The integration of a verbal base into a predicate with another verbal base, then, involves the assignment of pronominal agreement to both bases in cases when the second base does not fulfill the phonotactic conditions that are set for the “reduplicant.”

We can thus see that, despite being neither fully independent verbs, nor strings of verb roots sharing a common set of inflectional morphology, the structures such as those seen in (48) can be plausibly related to series of verbs. The following section examines another such possible grammaticalization path, showing an independent verb grammaticalizing as a semantically bleached grammatical morpheme.

**5.2.5 Sources of some serial verbs.** Applying this knowledge of verb structure and phonotactically conditioned morphological units to the question of the ‘applicatives’ in 4.2, we notice that the structure of the applicative plus its associated inflectional morphology is the same size as the ‘reduplicant’ that we have identified in the preceding section. This leads us to question the possible origins of some of the putative applicatives from 4.2, and in this light it is worth noting that the benefactive applicative, seen in (34) (among others), bears a strong likeness to the verb ‘give’, as seen in (78).

- (78) Nape oi-a            k-o-r-o-ma?  
       who sago-CASE R-<3SG.F>-give-2SG.M  
       ‘Who gave you the sago?’

The verb ‘give’ takes compound prefixal inflection, just like ‘eat’ and ‘want’, with both a vowel prefix for subject and a consonant prefix. If this lexical root was to be used as part of a single-word multiple-predicate construction, as in (68), we would expect the vowel prefix not to appear, but the consonantal prefix to be part of the construction, due to the phonotactic constraints examined earlier. If we examine the form of a predicate involving the beneficiary applicative, this is exactly what is found: a root *o*, with single consonant prefixation, added to the end of the inflected verb root.

- (79) Nape oi-a            k-o-raivi-r-o-ma?  
       who sago-CASE R-<3SG.F>-cook-3SG-DAT-2SG.M  
       ‘Who cooked the sago for you?’

On the basis of this example alone, we would assume the following structure:

$$(80) \text{VERB} \left[ \text{mood-} \text{SUBJ. AGR} \left[ \text{V}(\text{C}(\text{V}))\text{-REDUPLICANT} \left[ (\text{C-}) \sqrt{\text{verb}} \text{C- APPL -CV} \right] \right] \right]$$

The argumentation presented in the preceding section forces us to conclude that the structure of (79) is that shown in figure 5.

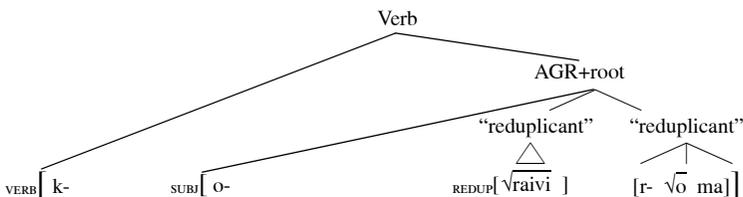
We still need to account for the positioning of the putative applicative: why does it appear following the inflected verb, and not with the applicative attached to the verb root directly, as is found with all the applicatives seen in 4.1. In terms of positioning of the applicative with respect to the inflectional morphology these applicatives, *ya-*, *ke-*, *ta-*, and *na-*, are well-behaved applicatives, conforming to expected norms. They also all begin with a consonant, and so are phonotactically able to appear following the inflection. This phonotactic constraint, then, dictates the unusual formation of complex predicates in Barupu.

Another point that might be predicted concerns iterativity: given that I am positing the existence of a phonologically self-contained, and inflectionally independent unit within the verb, we would predict that the addition of “reduplicant” units to the verb should be iterative. That is to say, in addition to the root, it should be possible for more than one of the self-contained units to be present on the one verb. This prediction is borne out by the data. In the following example we can see one “true” applicative, *-na*, followed by two of the more controversial applicatives. The *-na* is inflected for its object, as would be expected, and each of the subsequent reduplicant units appears with its own inflection for both the subject of the complex predicate and for the applicative object associated with that unit. The sentence in (81) merely illustrates one of the more extreme morphological consequences found in a language that allows its verbs to appear with multiple applicatives, and that does not in the main have alternatives other than applicatives to code for nonsubcategorized participants. Less extreme examples can readily be found in naturally occurring texts, illustrating the same point.

- (81) Naki k-en-ore-na-ka-n-o-mu-n-i-a.  
 dog R-look-APPL-3SG.M-1SG-DAT-2SG.F-1SG-WITH-3SG.M  
 ‘I looked for the dog with him for you.’

$$(81') \left[ \text{k-} \left[ \text{en-} \left[ \sqrt{\text{ore}} \text{-na-ka} \right] \left[ \text{n-} \sqrt{\text{o}} \text{-mu} \right] \left[ \text{n-} \sqrt{\text{i}} \text{-a} \right] \right] \right]$$

FIGURE 5. STRUCTURE OF A VERB WITH A “PUTATIVE APPLICATIVE”



Examples such as this make it plain that we cannot sustain an analysis in which it is assumed that the subject inflection *n-* is a rogue suffixal element on the verb. That is, given the verb form *koraiwiroma* from (79), we might have analyzed the inflection as showing the structure  $[k [ [ [ o [ raivi ] r ] o ] ma ] ]$ . This would lead us to assign both instances of subject marking to the base verb, and would make the claim for the marked status of the Barupu applicatives much less strong. The fact that we find forms with subject marking on the second applicative, completely separated from the main verb root by an object agreement marker, shows that we must assign the *n-* in examples like (81), and by extension (79) as well, to the applicative. Furthermore, the fact that in at least one case we can identify a verbal construction as the basis for the applicative, and a phonotactic constraint that would dictate the conditions for the monoconsonantal prefix being maintained on the grammaticalizing verb stem/applicative, makes it historically less surprising that we witness an inflection for subject here.<sup>19</sup>

It should be noted that the Barupu arrangement, having each applicative with its own inflection appear following all inflection for the main verb, does lead to a rather simple processing equation. Rather than, say, the (Great Lakes) Bantu model in which multiple prefixes marking object precede the suffixally inflected base, we have a simple sequence of arguments adjacent to the predicate that introduces them. This is schematized in (82) and (83). In (82) we can see that, in the Bantu-style applicative, the meaning of the object prefixes on the verb can only be determined after the verb root and the applicative suffix have been processed—this is also the case in Mayan languages (Aissen 1983, 1987; Craig 1977, 1978; Dayley 1985) and in Yimas (Foley 1991).

- BANTU: KINYARWANDA  
 (82) Yohani y-a-yi-mw-oher-cr-ejc.  
 John SUBJ-PAST-OBJ:it-OBJ:her-send-APPL-ASP  
 ‘John sent it to her.’  
 SUBJ- TENSE- OBJ<sub>1</sub> - OBJ<sub>2</sub> - V-APPL
- 

In contrast to this, the Barupu template marks the object by suffix following the marking of the applicative.

- BARUPU  
 (83) K-ana-yara-n-i-a.  
 R-1SG.M-sec-1SG-WITH-2SG.F  
 ‘I saw him (while I was) with you.’  
 MOOD-SUBJ-V-OBJ<sub>1</sub> - SUBJ-APPL-OBJ<sub>2</sub>
- 

19. It is perhaps also worth noting that this applicative, referred to earlier as *o<sub>2</sub>*, is the most regular one in terms of its meaning (see table 8). This might reflect its putative recent status as an applicative grammaticized from a still-extant verb. The other applicatives, all of which show variation in their meaning depending on the semantics of the verb root that they appear with, do not match contemporary free verb roots that are plausible sources for their applicative role.

This pattern, of having the applicative morpheme transparently located between the verb root and the object marking for the applied object can also be seen in Warembori (example [87] below), and other head-marking languages with suffixal applicative and object marking, such as Muna (van den Berg 1989) and *Tukang Besi* (Donohue 1999a).

**6. CONCLUSIONS.** I have presented data on the applicatives in Barupu, which initially appear to display just one morphosyntactic pattern, but actually represent two distinct patterns. One pattern is that of a simple applicative, but the other shows features of both applicatives and serial verbs.<sup>20</sup>

In 5.2.5 I have presented evidence that for at least some of the applicatives, both problematic and unproblematic, there are independent verbs that are likely sources for the applicative construction, based on the semantics of the two predicates and our knowledge of general patterns of grammaticalization. Nonetheless, the constructions that I have here named applicatives are clearly no longer simply independent verbs, nor yet are they completely bound affixes, a status that is attested in the morphemes in 4.1. It is highly likely, however, that the complicated applicatives were serial verb constructions in the recent past, and are heading to a more grammaticalized applicative function, just as is found with the 4.1 applicatives.

As it stands, however, it seems that the Barupu constructions discussed here represent an in-between stage, between the serial verb ancestor and the applicative target. The language shows signs of conforming to the cross-linguistic norm, in that there are already four applicatives, including one that appears to be derived from a verb (*-ke* ‘on’, plausibly related to *ke* ‘sit’), which show an expected pattern (affixation to the verb root, no subject inflection, not appearing outside inflectional morphology). The applicatives presented in 4.2 are also sometimes found with 3SG inflection regardless of their actual subject, as in (84) (compare with [79]):

- (84) K-om-raivi-r-o-na.  
 R-2SG.F-cook-3SG-DAT-1SG.M  
 ‘Cook it for me!’

This suggests that, while still appearing outside object agreement suffixes, the complicated applicative structures might be regularizing in favor of a less unusual structure. It might be that the phonological constraints that allow (indeed, require) the subject inflection to appear on these grammaticizing verbs will eventually be satisfied by a dummy subject marker. As it stands, however, these applicatives occupy an intermediate position in terms of the grammaticalization pathway from serial verb to bound affix.

How likely is an analysis that posits a morphological (and, further, derivational) applicative appearing outside verbal inflection? Cases of derivational morphology appearing outside inflectional morphology are attested elsewhere. To give just a

20. An additional applicative-like construction codes the possessor of the object on the verb by means of a genitive “preverb,” appearing, with subject and object inflection, between the mood prefix and the verb root. This is typically used to mark external possession, but is the sole means of showing agreement with the Ps of some verbs.

brief mention of these similar constructions, I present examples from Australian, other New Guinea languages (unrelated to Barupu), and Siouan.

Many Australian languages have “nominalization” strategies that effectively take a fully inflected verb, and then further derive it by means of a suffix that follows the tense-aspect inflection. An example of this, from Manjiljarra (Clendon 1988:196), can be seen in (85), in which the nominalizing suffix *-nja* appears outside the tense inflection.

- MANJILJARRA  
 (85) Mutuka punkarnu karru-ngka wati-wayi-rnu-nja-ngka.  
 car fell creek-LOC across-flow-PAST-NOM-LOC  
 ‘The car fell into the creek, which was in flood.’

Other varieties of the Western Desert language, such as Wangkajunga, also show this pattern of derivational morphology outside inflectional morphology (Jones 2002:243):

- WANGKAJUNGA  
 (86) Tilpu-lu=rni pawu-rnu yu-ngu ju-nu-ya-nku-nja-ngka kilyirr-ja.  
 mother-ERG=1SG cook-PST give-PST put-PST-go-IRR-NOMZ-LOC coals-LOC  
 ‘My mother had cooked the [meat] for me that was left in the coals.’

Further examples of this sort of construction in Australian languages are described and analyzed in Nordlinger (2001).

In Warembori (Donohue 1999b:34) a construction similar to the Barupu inflecting applicatives can be found. In Warembori the applicative appears following any inflection for object of the base predicate, and takes its own inflection for object. There is, however, no inflection for subject on the applicative.

- WAREMBORI  
 (87) E-per-i-ta-e.  
 1SG-throw-3SG-APPL-3SG  
 ‘I threw it into it.’ (i.e., a fish into the water)

Awa, a highlands language of the Kainantu family of eastern Papua New Guinea (McKaughan 1973:46–47, 83–84), has an applicative construction that is perhaps typical of many languages of the highlands of New Guinea, in which the agreement marker for the object of the applicative appears between the verb root and the applicative suffix. Given that normal object marking in the language is prefixal to the verb, as in (88), we must assume that the marking for the beneficiary object in (89) is prefixal to the *applicative*, but not (as would be expected cross-linguistically) to the entire verb complex. Interestingly, this means that there must be a morphological unit that is minimally composed of the 3PL object prefix *di-* and the applicative *-t*, distinct from the verb (I shall not address the question of the morphological status of the subject suffix due to lack of information).

- AWA  
 (88) N-ubiq.  
 1SG-hit.3SG  
 ‘He hit me.’

- (89) Keki-di-t-chq.  
burn-3PL.OBJ-BEN-3SG.SUBJ.NRPAST  
'He burned it for them.'

PUTATIVE STRUCTURE OF (89)

- (89') [<sub>VERB</sub> [<sub>VERBROOT</sub> keki- ] [<sub>APPLICATIVE</sub> di- t ] -chq ]

The Kolana language, spoken on the east of Alor Island in Indonesia, shows an interesting pattern with agreement morphology and applicatives (Donohue and Makoenimau 1997). Verbs in Kolana inflect with an absolutive agreement prefix; the applicative is also prefixal. The sentence below shows an agreement prefix outside the applicative prefix, as would be expected, given that the agreement prefix is licensed by the applicative (the absolutive prefix is also used to mark possession).

- (90) a. Pansi gaida anin-a g-ken g-pai ga-le-suru.  
and.SO 3SG.EMPH person-DEF 3ABS-cloth 3ABS-make 3ABS-APPL-be.removed  
'And so he made that person remove his cloth.'

In addition to this pattern there is an alternative, however, in which the agreement prefix follows the applicative prefix. Both orderings are possible with all verbs that appear with applicatives

- (91) a. Wdi-saku medi Tumuru-saku g-biki le-g-suku.  
sun-HON take east.wind-HON 3ABS-strong APPL-3ABS-test  
'The Sun and the East Wind tested their strength.'

- (90) b. ... le-ge-suru.  
(91) b. ... ge-le-suku.

Kolana thus has two alternative patterns on its verbs with applicatives: the agreement affix in (91a) must be interpreted either as being prefixal to the verb root, or suffixal to the applicative.

PUTATIVE STRUCTURE OF (90A)

- (90a') [<sub>VERB</sub> g- [<sub>APPLICATIVE</sub> le- ] [<sub>VERBROOT</sub> suru ] ]

PUTATIVE STRUCTURES FOR (91A)

- (91a') [<sub>VERB</sub> [<sub>APPLICATIVE</sub> le- ] g- [<sub>VERBROOT</sub> suku ] ]  
(91a'') [<sub>VERB</sub> [<sub>APPLICATIVE</sub> le- -g ] [<sub>VERBROOT</sub> suku ] ]

In Crow (Andrews 1973:29) we can also see fully inflecting units very similar to those described here for Barupu. We can see that two inflected forms (the difference between *ba:-* and *w-* is phonological, not grammatical) appear in the scope of a single suffixal declension marker.

CROW

- (92) ba:-xalússhi-w-issshi-k  
I-run-I-feel.like-DECL  
'I feel like running.'

These examples are enough to show that the phenomenon of agreement appearing on an element other than the root is attested in other, geographically and genetically unconnected, languages. It is also true that apparently inflectional material can appear on an inflectional affix: in many languages of northern Australia verbs take prefixes that themselves can apparently inflect for case; one such example is Maung (Capell and Hinch 1970, Donohue 1998), in which the first and second person prefixes (and the class III animate plural) show a clear relation between the unmarked nominative prefixes and the accusative prefixes that are marked by *-(V)n*, shown in table 10. Note that these forms all serve as prefixes to the verb, as in (93).

It is clear that the accusative marker is attached to the prefix, not to the verb, even though it appears closer to the verb root, and so apparently violates the Mirror Principle (though see Alsina [1999] or Stiebels [2002] for other challenges to this principle).

MAUNG  
 (93) Gu-n-ajaw-ng.  
 2SG-ACC-sec-PST  
 'I saw you.'

The only conclusion that we may make is that there is ample evidence for multiple heads inside a single word, even when there is no obvious evidence for a multiply headed origin for these different heads. This is what we might expect to find based on our knowledge of the grammaticalization pathways involved in, for instance, noun-incorporation structures, yet in the structures described here there is not any evidence for the independence of both of these putative heads as separate lexical items. This has ramifications for our understanding of the possible structures of morphologically complex verbs, as possibly consisting of a lexically unbound head and a morphologically bound item.

FIGURE 6. APPARENT STRUCTURE OF THE MAUNG VERB IN (93)

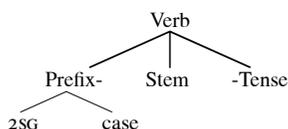


TABLE 10. SOME MAUNG PRONOMINAL PREFIXES

		NOMINATIVE	ACCUSATIVE
1	SG	ŋ(a)-	ŋa-n-
	PL.EX	ŋar-	ŋar-un-
	PL.IN	(g)ar-	(g)ar-un-
2	SG	gu-	gu-n-
	PL	gur-	gur-un-
Class	I	ni-	(g)i-
	II	ŋa-	(g)inj-
	III	wu-	((g)a)wu-n-

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