The Morphology of Yam Languages

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Subject: Language Families/Areas/Contact, Morphology Online Publication Date: Jul 2020
DOI: 10.1093/acrefore/9780199384655.013.677

Summary and Keywords

The Yam languages are a primary language family spoken in southern New Guinea across an area spanning around 180km west to east across both the Indonesian province of Papua and Papua New Guinea.

The Yam languages are morphologically remarkable for their complex verbal inflection characterized by a tendency to distribute inflectional exponence across multiple sites on the verb. Under this pattern of distributed exponence, segmental formatives, that is, affixes, are identifiable but assigning any coherent semantics to these elements is often difficult and instead the inflectional meanings can only be determined once multiple formatives have been combined. Despite their complex inflectional morphology, Yam languages display comparatively impoverished word formation or derivational morphology.

Nominal inflection is characterized by moderately large case inventories, the largest displaying 16 cases. Nouns are occasionally marked for number although this is typically restricted to certain case values. Verbal paradigms are much larger than nominal paradigms. Verbs mark agreement with up to two arguments in person, number, and natural gender. Verbs also mark complex tense, aspect, and mood values; in all languages this involves at least two aspect values, multiple past tense values, and some level of grammatical mood marking. Verbs may also be marked for diathesis, direction, and/or pluractionality.

The overall morphological pattern is that of fusional or inflectional languages. Nominal inflection is rather straightforward with nominals taking case suffixes or clitics with little to no inflectional classes. The true complexity lies in the organization of the verbal inflectional system, about which, despite individual variation across the family, a number of architectural generalizations can be made. The family displays a fairly uniform verbal inflectional template and all languages make a distinction between *prefixing* and *ambifixing* verbs. Prefixing verbs show agreement via a prefix only while ambifixing verbs via agreement with a suffix, for monovalent clauses, or with both a prefix and a suffix for bivalent verbs. These agreement affixes are also involved in the distributed exponence of tense, aspect, and mood.

Keywords: Yam, Papuan, morphology, inflection, distributed exponence

1. The Yam Languages

The Yam languages number around 15-25 languages or language varieties spoken in the southern New Guinea region spreading across both Indonesia and Papua New Guinea. This number changes depending on what classification is used to distinguish between languages and dialects. A map of the language family can be found in Figure 1.[1]

Figure 1. Map of Yam languages.

The language family is spoken across an area with a lateral distance of just over 150km. The westernmost language, Ngkolmpu Bedi, is spoken 25km east of Merauke in the extreme southeastern corner of the Indonesian province of Papua. The easternmost language, Nen, is spoken in an area that borders the Mae Kussa River in the Morehead District, Papua New Guinea. The family stretches to the coast to the south, and its most northern languages reach the Fly River in the east; the western side runs in a narrow corridor along the Indonesian side of the border, with Yei speaking villages located at a distance of around 180km north of the coast.

The current position is that the family consists of three primary groups: Tonda-Kanum, Nambu, and Yei. This organization is largely in line with Evans et al. (2017), although their Tonda group is referred to as Tonda-Kanum in this article. This change reflects updates in the research that suggest some internal structure within this group in which the western-most languages (Kanum) cluster more closely together than they do with the eastern-ones (Tonda) and vice versa. This grouping geographically aligns fairly closely to the border between Indonesia and Papua New Guinea.

Many of the varieties presented in Figure 1 form dialect chains. The two varieties of Ngkolmpu, Ngkontar and Bedi, are closely related, although Bedi is no longer used as a language of communication and as of 2017 only five elderly speakers still remember the language. Similarly, Smerki and Tamer are also closely related. Ranmo and Mblafe are also very closely related. The eastern Tonda languages are more complex, and Anta, Komnzo, Wèré, Kémä, and Kánchá can be considered to form a single dialect chain.

2. Sources and Level of Documentation

As of 2019, research on this entire family is still considered in its early stages. One language has a published description in the form of a reference grammar, that is, Komnzo (Döhler, 2018). Beyond this, there are the dissertation-length descriptions of Ngkolmpu (Carroll, 2016) and Komnzo (Döhler, 2016), which the previously mentioned published grammar supersedes, and a theoretical analysis of Ranmo (Lee, 2016). These are the primary references for the Tonda-Kanum group. A number of articles and chapters have been published on languages of the Nambu group, particularly on Nen (Evans, 2012, 2014, 2015A, 2015B, 2017; Evans & Miller, 2016) and Nama (Siegel, 2015, 2017). Earlier work on Ngkolmpu was published by Mark Donohue in Donohue (2009, 2011, 2015).[2] Before this, the only work on these languages consisted of a few word lists and sketches such as Boelaars (1950) and other limited work such as Boevé and Boevé (1999). Evans et al. (2017) is a broad overview of the entire region and includes comparative analysis on the family and is suggested reading for anyone interested in languages the region or the historical aspects of Yam languages. The most recent sources mentioned in this section serve as the main sources used in this article.

Tables 1 and 2 list the names of the languages, estimated speaker population numbers and the primary reference for that language. Many of the varieties have very small numbers of speakers. In some cases, this is the result of transition to a national language like Indonesian, as is the case for Bedi Ngkolmpu, or to another local language, as in Ndre.[3] In many cases, languages are still considered vital despite low speaker numbers, and people of the region are highly multilingual.

All effort has been made to compile resources from as broad a sample of languages as possible, although the more detailed examples will predominately be taken from Ngkolmpu as an appropriate exemplar language. Published sources have been preferred where available, although for the Tonda-Kanum languages this is largely taken from the dissertations discussed previously as well from Quinn (2014). Some examples from the Kanum languages and all the data on Yei are also drawn from the author’s own fieldwork. Naturally, the languages that have had more descriptive work on them feature more prominently in the discussion. Fortuitously, the best documented languages provide a broad sample, being the two most distant languages from the Tonda-Kanum group and two from the Nambu group.

Table 1. The Tonda-Kanum Languages

Language	Alternate Names	Numbers of Speakers	Primary Reference
Ngkontar Ngkolmpu	Ngkolmpu Kiki, Ngkntra Kiki, Kanum, Enkelmbu	150	Carroll (2016)
Bedi Ngkolmpu	Kanum, Enkelm-bu, Baedi	5 (moribund, extinct)	Carroll, field notes
Smerki	Smärky, Kanum	250	Carroll, field notes
Tamer	Smerki, Smärky, Kanum	80	Carroll, field notes
Nggarna	Ngar	50	Carroll, field notes
Rema		10? (moribund, extinct)	Evans et al. (2017)
Mblafe	Blafe, Wonana, Tonda	350	Evans et al. (2017)
Ranmo	Tonda, Renmo	200	Lee (2016)
Warta Thuntai	Guntai, Kan	430	Quinn (2014)
Wérè	Tokwe, Upper Morehead, Wórä	100	Evans et al. (2017)
Kémä	Upper Morehead	130	Evans et al. (2017)
Wára	Upper Morehead, Tjokwa, Wära, Mät	350	Evans et al. (2017)

Kánchá	Kunja, Lower Morehead, Perem-ka, Kénzä	350	Evans et al. (2017)
Anta	Tokwe, Upper Morehead, Thamnga	150	Evans et al. (2017)
Komnzo	Kamundjo, Upper Morehead, Zók-wasi, Farem	200	Döhler (2016)
Arammba		750	Boevé and Boevé (1999)

Table 2. The Nambu and Yei Languages

Language	Alternate Names	Numbers of Speakers	Primary Reference
Nambu Group			
Namat	Mibini	170	Evans et al. (2017)
Nama	Daraia, Mata, Ngarita	1,200	Siegel (2015)
Dre	Ndre	1 (extinct)	Evans et al. (2017)
Neme		200	Evans et al. (2017)
Namo		374	Evans et al. (2017)
Nambo	Nmbo, Keraki, Namna	710	Evans et al. (2017)
Nen		350	Evans (2015A)
Yei Group			
Yei		600	Carroll, field notes

The Tonda-Kanum group is the most diverse branch of the family; the best two sources on these languages are Carroll (2016) on Ngkolmpu and Döhler (2018) on Komnzo. These two languages are the westernmost and the easternmost languages of the group and belong to the distinct group of Kanum and Tonda, respectively; it is hoped that these should provide a sufficient characterization of the entire group when supplemented by the other materials available on languages of the region. The Nambu languages display considerably more uniformity and as such are assumed to be more closely related to each other than the Tonda-Kanum languages. The primary source for the Nambu group will be Nen, with all examples drawn from (Evans, 2014, 2015A, 2015B). This will be supported with evidence from Nambu from (Siegel, 2015, 2017). The state of research on the Yei language/s is only just beginning, and any examples provided on Yei come from the author’s

own fieldwork on the language. Additionally, data provided from lesser-known languages is drawn from Evans et al. (2017) unless otherwise noted.

3. A Note About Glossing

As noted, Yam languages display strong tendencies to distribute morphological exponence across multiple morphological sites. As such, it is typically very difficult, if not impossible, to establish any sub-word unit that might be labeled a ‘morpheme’. This has obvious theoretical and practical consequences, but the most pressing issue for this article pertains to the problem of providing precise glosses. Following practice in other Yam languages (Evans, 2015A; Carroll, 2016; Döhler, 2018), when not discussing verbal inflection, glosses for verbs are given as fully specified at the level of the word. Smaller units of analysis will only be invoked where needed, predominantly in section 7. An example of this gloss is given in (1).

(1)

Ngkolmpu (Carroll, 2016, p.18)

Markus-w	ŋko	nmaei=to	b\eibeⁿte/y
Markus-SG.ERG	1SG.ABS	before=ADV	SG>1SG.HOD\tell

‘Markus already told me.’

The first line is the language name and source. The second line is the morphologically segmented transcription. For non-verbs, this follows the practice in the Leipzig glossing rules. For verbs, the stem is separated from the other morphological material by a combination of slashes. The gloss line aligns segmental words and for verbs lists the features for the fully unified inflectional features. Arguments are separated by the symbol ‘>’, which is used to indicate that the argument to the left is acting on the argument to the right. The full gloss for the example in (1) would be ‘A singular argument acting on first person singular in the hodiernal past tense and in the perfective aspect’. The stem indicates the verb means ‘to tell’.

When discussing verbal inflection, it will be necessary to provide a more precise gloss of each segmental element. However in the case of the verbal prefixes that both index person and number of the undergoer (glossed as U) and participate in the marking tense, aspect, and mood (hereafter TAM), the assignment of these prefixes to particular TAM values occurs in such a way that it is impossible to provide a coherent semantic description of this and as such they are given the opaque labels of α, β, and ɣ as per example (2). This lack of semantic coherency is what is known in the literature as morphomic (Aronoff, 1994).[4]

(2)

Ngkolmpu (Carroll, 2016, p.18)

Markus-w	ŋko	nmaei=to	b-eibeⁿte-y
Markus-SG.ERG	1SG.ABS	before=ADV	1SGU.β-tell-HOD.SG.A

'Markus already told me.'

In this example, the verbal prefix indicates the person and number of the undergoer argument (§ 7.2) as indicated in the gloss. Yet the TAM value of the segment is left unspecified. For details on how this system works see sections 7 and 8.

4. Part-of-Speech Systems

The morphological aspects of the part-of-speech systems are not overly complex. The primary part-of-speech distinction in Yam languages is between nominals and verbs. This distinction is sharp, with nominals able to be marked for case while verbs display clearly distinct inflectional morphology. This section will focus on the more common morphological distinctions between categories across the family.

Nominal is used here to refer to a number of word classes in Yam languages, which are labeled as nouns, adjectives, pronouns, and demonstratives with various languages drawing the divide between these classes in slightly different places. What unifies these classes is that all may be marked for case in the appropriate syntactic context. In some languages, case marked elements, especially pronouns and demonstratives, also indicate number, as discussed in section 6. Summaries of the pronouns and demonstratives are presented in section 6.2.

The distinction between nouns and adjectives is a subtle one in Yam languages. Any nominal element may serve an attributive function in the noun phrase, including nouns with concrete semantics (3) or property-like semantics (4); when functioning in this position nouns typically take a adjectivizing marker. Adjectives are distinct in that they may occur in this position without such a marker (5). These adjectives are typologically unusual in that they form a closed class with limited numbers. Just seven have been identified in Ngkolmpu; Komnzo contains around 'two dozen' (Döhler, 2018, p. 89).

(3)

Ngkolmpu (Carroll, 2016, p.66)

Salpius-w	sakl-wa	pr	pi	s\owo/ŋk
Salpius-SG.ERG	branch-ADJ	tree	DIST.ABS	SG>3.RMT.PFV\see.RS

'Salpius saw the branched tree.'

(4)

Ngkolmpu (Carroll, field notes)

tent-wa irepe ta\ wance/ y
tall-ADJ person SG.HOD.PFV\ fall.RS

'The tall man fell over.'

(5)

a. *Ngkolmpu* (Carroll, 2016, p.105)

sr\owr/^{n}tei ^{m}paeswm-nm, ^{n}top pepr, wutkl
1.NSG>3.IRR.DUR\chop.EX axe-INS, big yamstick, short
pr
wood

'We would chop with an axe, a large yamstick and a small stick...'

Pronouns and demonstratives are always marked for case and typically marked for number. Demonstratives also make a distance distinction between close to speaker, close to addressee, and close to neither addressee nor speaker. These may also serve textual or modal functions; for example, in Ngkolmpu there are three demonstratives: a proximal, a distal, and an ignorative (IGN). The proximal is used only to mark items in geographical space close to the speaker. The distal may be used to mark a nominal that is not close to the speaker or it maybe used anaphorically. The ignorative is used modally and serves to mark nouns that are out of sight (6) or otherwise unknown (6B). As this distinction relates to the knowledge of the speaker it can be thought of as a type of epistemic modality.

(6)

a. *Ngkolmpu* (Carroll, 2016, p.108)

^{m}pito ^{m}poi y\rar/
rat IGN.LOC 3.DUR.PRS\be.EX

'It's (probably) rats.' (in response to a sound in the wall)

b. epi mpoi Markus ye
DIST.TOP.ABS IGN.LOC markus 3.DUR.PRS.be

'(Maybe) it's Markus there.' (in response to a knock at the door)

Verbs are distinguished by their inflectional morphology, the most salient feature of which are the undergoer prefixes (§ 7.2). As discussed in the relevant section, undergoer prefixes indicate the person and number of O arguments and certain S arguments and in some

Tonda-Kanum languages they also mark gender. Examples (7A) and (8) show undergoer prefixes from Ngkolmpu alternating for the person and number of their O argument.

(7)

a. *Ngkolmpu* (Carroll, 2016, p.201)

Markus-w ᵑko w-merk-y
Markus-SG.ERG 1SG.ABS 1SGU.α-follow.DUR-SGA.HOD
'Markus followed me.' (earlier today)

b. Markus-w ni n-merk-y
Markus-SG.ERG 1NSG.ABS 1NSGU.α-follow.DUR-SGA.HOD
'Markus followed us.' (earlier today)

(8)

a. *Ngkolmpu* (Carroll, 2016, p.202)

Markus-w ᵐpu n-merk-y
Markus-SG.ERG 2SG.ABS 2SGU.α-follow.DUR-SGA.HOD
'Markus followed you.' (earlier today)

b. Markus-w pi y-merk-y
Markus-SG.ERG 3.ABS 3SGU.α-follow.DUR-SGA.HOD
'Markus followed him / them.' (earlier today)

Verbs are typically closed classes in these languages; they do not appear to accept loan words nor are there derivation mechanisms for deriving verbs. In terms of alignment of agreement morphology to grammatical roles, there are two broad classes of verbs classified by the locus of agreement, either prefixing verbs or ambifixing verbs (§ 7.1).

5. Word Formation

Yam languages are fairly impoverished when it comes to derivational and word formation morphology. The most common and consistent process across the language family is the derivation of infinitives.

Table 3. Summary of Infinitive Morphology

Language	Infinitive Marker	Example	Translation
Ngkolmpu	V-/-ai	*otnənoᵑ kai*	‘to write’
Ranmo	-se	*sikase*	‘to shout at’
Warta	-ai	*ðurai*	‘to examine’
Komnzo	-si	*ɸsisi*	‘to count’
Namo	-ð	*aβraᵑ goð*	‘to stop’
Len	-d	*abraᵑ god*	‘to stop’
Nen	-s	*abraᵑ* $\widehat{gb}$ *əs*	‘to stop’
Nambo	-h	*wiᵑ goh*	‘to see’
Nama	-ɣ	*raməɣ*	‘to make’
Namat	-ɖ	*raməɖ*	‘to make’
Neme	-s	*naɸremus*	‘to stop’
Dre	-s	*ŋaᵑ gos*	‘to return’
Yei	stem only	*ud*	‘to break’

Infinitives allow verb roots to participate in nominal constructions occurring with any relevant nominal morphology. Typically, infinitives are marked using a suffix on an otherwise bare verb stem; although for Ngkolmpu this involves a prefix and suffix, for Yei the most productive pattern of marking infinitives is simply a bare verb stem. The other manners of deriving verb stems in Yei will be discussed later in this section. Table 3 is the default infinitive morphology from a sample of Yam languages.

Only ambifixing verbs may form infinitives. In other words, prefixing verbs are defective in that they lack an infinitive form. Prefixing verbs are a typically semantically restricted class while ambifixing verbs are the more productive class. Verb classes are discussed in section 7.1.

While all languages display productive infinitive morphology, many languages from the western part of the family, that is, Yei, the Kanum languages, some western Tonda languages, and Arammba have a lexically specified infinitive that is not productively related to the verb stem. We can see this for the verb ‘to sit’ with the inflected verb in (9A) and the infinitive (9B). Yei is the most extreme example of this in which the vast majority of verbs collected so far behave in this manner.

(9)

a. *Ngkolmpu* (Carroll, 2016, p.65)

Markus nel-ni \eⁿska/en
Markus earth-LOC SG.MID.RCT.IPFV\sit.EX
‘Markus was sitting on the ground.’

b. *si kelua nti umanswa*

si kelua ⁿti umaⁿs-wa
eye flesh sore sit.INF-CAUS
‘(My) buttocks are sore from sitting.’

In addition to the nominalization functions discussed, infinitives are also used in a variety of complex clause constructions. One of the most common across the family are as the complements of phasal predicates, like ‘begin’ or ‘finish’. The most exuberant examples of this come from Nen (10).

(10)

a. *Nen* (Evans, 2015a, p.544)

yⁿd yergb̄-at one-s-t w-ŋ-m
1ABS river-ALL fish.with.net-INF-ALL 1SGU.α-away-be.NDU
‘I going to the river to net fish.’

b. yⁿdbem kk̄p-an nne y-s te
1.NSG.ERG garden-ALL yam plant-INF already
y-sne-ⁿd-m
3SGU.α-begin-PST.PFV.NDU-1NSGA
‘We (3+) have begun planting yams in the garden.’

In Ngkolmpu, adverbial clauses take infinitives marked with a case to indicate an action occurring simultaneously with the event of the main clause (11). The choice of case deter-

mines which argument in the main clause is performing the event of the subordinate clause. This is discussed further in section 6.1.

(11)

a. *Ngkolmpu* (Carroll, 2016, p.316)

ŋkai	mpowr	s\arm/y	warko-nm
1SG.ERG	cassowary	SGA>3U.HOD.PFV\shoot.PFV/	running-INS

'I shot the cassowary whilst *I* was running.'

b.

ŋkai	mpowr	s\arm/y	warko-ŋke
1SG.ERG	cassowary	SGA>3U.HOD.PFV\shoot.PFV/	running-ALL

'I shot the cassowary whilst *it* was running.'

6. Nominal Inflection

Yam nominals are marked for the appropriate case given their syntactic or semantic role in the clause. Case marked nominals may also be marked for number although typically this is restricted to certain case values. When it does occur, number marking is fused with case marking, that is, cumulative marked.[5] Case and number are marked on pronouns, demonstratives, and open class nominals, with number distinctions more common in a pronominal system than for nouns. Number is not found in demonstratives. Natural gender is occasionally relevant for verbal inflection across the Kanum-Tonda group (§ 6.3), yet in the nominal domain gender is only indicated on the third person singular pronouns of Smerki and Nggarna.

All Yam languages display a rich inflectional case system involving grammatical cases, which mark the syntactic role of an argument, and a range of semantic cases, which mark the semantic roles of non-argument nominal phrases. A general distinction is made here between arguments, that is, those nominal elements required by the verb, and non-arguments, that is, those nominal elements that are optional. For a discussion of the functions of case more broadly see Malchukov (2017).

All languages in the family except Yei mark grammatical roles on an ergative versus absolutive basis. The ergative is formally indicated through case marking while the absolutive does not have any formal component for open nominals. Pronouns and demonstratives have dedicated absolutive forms. In Yei, the overt marked case for grammatical roles is the accusative and the unmarked form is the nominative. It is worth noting that Yei's position as the smallest group of the family places it as an outlier in having accusative aligned case marking; all languages in the Tonda-Kanum and Nambu groups display ergative case alignment. Languages also display a dative case, which is used to mark both argument

and non-argument recipients or benefactives. In addition, languages typically display about 11 further semantic cases.

Nominal inflection is fairly straightforward with little allomorphy or inflectional classes and fairly clear one-to-one marking between case forms and their semantics. This is especially apparent when you compare this with the verbal inflection, which is considerable more complex.

6.1 Case

Case is the most prominent feature of nominal morphology in Yam languages, with languages marking both syntactic and semantic roles using case marking. Typically, languages display about 11 distinct cases, with all but Yei distinguishing between ergative and absolutive for grammatical cases and Yei aligning grammatical cases to nominative and accusative. Cases are marked on pronouns, demonstratives, and open class nominals in all languages. In this section, the focus is on the open class nominal case marking as the productive form of nominal inflection. Pronouns and demonstratives are discussed in more detail in section 6.2.

In all languages, one of the two syntactic cases is formally unmarked: either the absolutive or the nominative. As expected, the absolutive case serves to mark the single argument of an monovalent clause (12A), the non-agentive argument of a bivalent clause (12B), or the non-agentive, non-goal argument of trivalent clauses (12C). Similarly the ergative case marks the agentive argument of a bivalent (12B) or trivalent clause (12C). This is exemplified with Ngkolmpu but holds across all the languages of the family bar Yei.

(12)

a. *Ngkolmpu* (Carroll, 2016, p.74)

Markus n=t\awa^{n}sɛ/y
Markus FOC=SG.M.HOD.PFV\fall.RS
'Markus fell (earlier today).'

b. Markus-w pr pi s\toru/y
Markus-ERG tree 3.ABS SG>3.HOD.PFV\cut.RS
'Markus cut the log (earlier today).'

c. Markus-w pr kati Jon-ɛn s\æ/y
Markus-ERG tree leaf.ABS John-DAT SG>3.HOD.PFV\give.PFV
'Markus gave Jon the money (*lit. tree leaves*) (earlier today).'

In Yei, the nominative has no formal content and is used to mark the single argument of a monovalent clause (13A) or the most agent-like argument of a bivalent clause (13B). The accusative takes the form *-a* and is used to mark the least agent-like argument of bivalent clauses (13B).

(13)

a. *Yei* (Carroll, field notes)

Markus ɛra^{m}bu-pɔ an yin
Markus Erambu-ALL go.INF 3.SG.PRS.go
'Markus goes to Erambu.'

b. Markus Jon-a tar ʧ\ ɔwg/ø
Markus Jon-ACC hit.INF SG>3.PFV\ hit.NPL
'Markus hit Jon.' (field notes)

The case systems of these languages are notable for their large inventories of semantic cases more closely resembling systems common in Australian languages (cf. Dixon, 2002, p. 131). Yam languages typically display three local cases: locative, allative, and ablative and a number of relational cases. The case endings for selected Tonda-Kanum languages can be found in Table 4. In cells where two case forms are found divided by the slash '/' the first form represents the singular form and the form following the slash represents the non-singular form. Non-singular is used here rather than plural as in many languages there may be dual category marked on verbs. An absence of a case form in any of the tables here cannot be assumed as evidence for absence of that case in the language, as for most of the languages the level of documentation is still quite preliminary. There is not the space to go into the semantics and function of each case marker; the reader is encouraged to seek the further descriptive work on these languages for that information.

The case endings for the Nambu branch are presented in Table 5. Forms separated by the comma represent allomorphy; forms indicated by the asterisk (*) are reserved for use with personal names. The currently attested case endings for Yei are presented in Table 6. These must be taken as extremely preliminary in terms of the total number of cases in the language.

Table 4. Case Suffixes in Selected Languages of the Tonda-Kanum Group

	Komnzo	Wára	Arammba	Warta Thuntai	Nggarna	Taemer	Ngkolm-pu
Absolu-tive	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Ergative	ɸ / ə	o	o / wo	o	o / ɛ	w / ya	w / ya
Dative	n / nəm	n		a	on	ɛn	n
Genitive	ane / aneme	ane	i	an	anɛ	nɛ	nɛ
Comita-tive	‘			ʤom	tən		t
Associa-tive						i	wi
Propri-etive	karæ	karæ					
Privative	mare	mare	mɛmɛ				
Instru-mental	me	m	m		mə	nəm	nəm

Purposive	r	r			pəni	t	t
Locative	en	en	ɜ	i	aⁿtɛi	ni	ni
Allative	ɸo	ɸ	ɸo	aᵑk	ᵑgə	ᵑgɛ	ᵑkə
Ablative	ɸa	ɸa	ɸa	ᵐba	ᵐba	ᵐba	ᵐpa
Source	ma	ma	ma				
Causative					yɛ	wa	wa
Sembla-tive	ðaða						

Table 5. Case Suffixes in Selected Languages of the Nambu Group

	Nen	Nama	Namo	Dre
Absolutive	Ø	Ø		Ø
Ergative	(a)m	am, om, (ə)m*	om	(w)əm, (a)m
Genitive	e^{n}de, æ^{n}de, ^{n}de	(e)ne, oene*	ene	ene
Comitative	ba	aɸə, oɸə,		ba
Privative	pənær	oɸnar, eoɸnar*		ɸŋar
Instrumental		e		e
Oblique	ei			e
Dative1	eita			
Dative2	eipap	ot, eyot*		βaβ
Purposive/Dative	gta			
Locative (inessive)	(a)n, eipapn	ən	ən, an	

Locative (superessive)		an		an
Allative	t, eipapt	ət	ət	t
Perlative	ma, ama	amə		
Ablative	ᵑgama	ta	ta	
Source	məne	mən, (e)nemən		mən
Temporal	tawa	tau, tæwær		
Semblative	nis	nit		

Table 6. Case Suffixes in Yei as Spoken in Po

Case	Suffix
Nominative	Ø
Accusative	a, we, ɛ
Dative	e
Possessive	ni
Locative	t, tɛ
Allative	po
Ablative	bɛ
Instrumental	m
Causal	ani
Purposive	ʤe

The semantic cases in Ngkolmpu are classified as serving adnominal, relational, or subordinating functions. The analysis here is similar to what has been argued for Australian languages in Dench and Evans (1988).[6] The adnominal function is used to relate nominal constituents at the level of the noun phrase, that is, marking a single noun phrase as adjoined to another noun phrase forming a single constituent. The relational function is used to relate nominal constituents to the predicate. These two functions should be fairly familiar to the descriptions of case functions more generally. The subordinating function requires further explanation; in this function the case marks a nominalized clause, rather than a singe nominal, as related to the main clause or predicate. This subordinate clause consists of a case marked infinitive (§ 5) with an optional semantic complement. The case marker also indicates either a temporal or associative relation between the subordinate clause and the matrix clause (14). This has been exemplified with Ngkolmpu but is a common feature of the entire language family.

(14)

Ngkolmpu (Carroll, 2016, p. 316)

ŋkai	mpɔwr	s\ arm/ y	warko-nm
1SG.ERG	cassowary	SGA>3U.HOD.PFV\ shoot.PFV/	running-INS

'I shot it whilst I was running (earlier today).'

The semantic interpretation of the subordinating function of a case is often not immediately obvious. For example, in Ngkolmpu the instrumental case serves to mark a simultaneous action that was performed by the most agent-like argument of the matrix clause (14). In contrast, the allative case in Ngkolmpu serves to mark a simultaneous action that was performed by the most patient-like argument of the matrix clause (15).

(15)

a. *Ngkolmpu* (Carroll, 2016, p.316)

ŋkai	mpɔwr	s\arm/y	atka	ownɛ-i-ŋkə
1SG.ERG	cassowary	SG>3.HOD.PFV\shoot.RS	water	drink-INF-ALL

'I shot the cassowary whilst it was drinking water.'

b.

ŋkai	krar	s\rsɔ/y	umans-ŋkə
1SG.ERG	dog	SG>3.HOD.PFV\hit.RS	sit.INF-ALL

'I hit the dog whilst it was sitting.'

6.2 Number

Within the domain of nominal morphology, number marking is restricted compared to case marking. Number is marked on at least some pronouns for all languages and may also be indicated on case marked open class nominals. This section discusses number marking in pronouns first and then number marking for open class nominals.

Pronouns in Tonda-Kanum languages mark number on a singular (one) versus non-singular (more than one) basis. Table 7 contains the ergative and absolutive pronouns for a sample of Tonda-Kanum languages. From this table, we can make a few generalizations about number marking in Tonda-Kanum. First, number marking is restricted by both person and case values. In the absolutive case, number is only marked for the first person. The exception to this comes from Smerki and Nggarna which mark number in the third person absolutive forms as they also mark gender in singular; this can be seen in Table 8. In the ergative forms, number is either marked for all three persons (Komnzo, Warta Thuntai, Taemer, Ngkolmpu) or just the first and third persons (Wára, Wèré, Arammba, Kánchá, Ránmo, and Mblafe). Pronouns are only used for animates; demonstratives,

which can be used pronominally for non-animates, do not mark number. A full pronoun paradigm for all cases in Ngkolmpu is presented in Table 9.

The typical pattern for the Nambu group is that number is marked only on the non-absolutive pronouns. This can be seen for the ergative and absolutive pronouns for the Nambu languages presented in Table 10.

Only pronouns in the nominative, accusative, and possessive cases have been recorded for Yei as of July 2019. These are presented in Table 11. From these pronouns, we can see a basic pattern in which number is marked in first and second persons regardless of case yet is never marked in the third person. This contrasts with the patterns found in the other languages in which number marking is primarily dependent on case and then on person, that is, case is a more prominent condition on number marking then person. However, in Yei case has no bearing on number marking, at least given the available data.

Number marking is more restricted in open class nominals than in pronouns. In Nen, number marking only occurs with human-type nouns; there is insufficient data available on nominal morphology of other Nambu languages to confirm whether this is a pattern of the group or restricted to Nen. In Tonda, number is not restricted to certain semantic classes but rather to certain cases for all nouns. The exception is for Arammba, in which non-singular number marking is optionally possible for most nouns. As of July 2019, research suggests that number is never marked for open class nouns in Yei.

The most extensive number marking can be found in Nen. According to Evans (2015A), human nouns, that is, nouns that either refer to humans or body parts, are described as marking four distinct number values: singular, dual, paucal, and plural. Table 12 gives the case forms across all four number values for the noun *ær* ‘arm’. We can see from this table that rarely are all four values fully contrasted. Instead, we see a number of patterns over this paradigm. There is a reoccurring form of *-be-* that marks various non-singular values depending on the case value. Note that this form is the same that predictably marks non-singular in the Nen pronouns. For certain cases this clearly marks non-singular (DAT2), others only the plural (ERG), paucal and plural (GEN), or only the dual (OBL).

Table 7. Core Case Pronoun Paradigms for Tonda-Kanum Group

	Komn-zo	Wára	Wèré	Aram mba	Kánch á	Rán-mo	Mblaf e	Warta Thunt ai	Tae-mer	Ngkol mpu
1 SG.ABS	ⁿdzæ	tse	se	gɛ	ⁿdzæ	ke	ᵑga	ᵑga	ᵑgo	ᵑkɔ
1 NSG.ABS	ni	ni	ni	ni	ni	ni	ni	ni	ni	ni
2 SG.ABS	ᵐbæ	ɸe	ɸe	be	ᵐbæ	ɸe	ᵐbu	ᵐba	ᵐbu	ᵐpu
2 NSG.ABS	ᵐbæ	ɸe	ɸe	be	ᵐbæ	ɸe	ᵐbu	ᵐba	ᵐbu	ᵐpu
2 SG.ABS	ɸi	ɸi	ɸi	bi	ɸi	ɸi	ɸi	pi	pi	pi

3 NSG.ABS	φi̋	φi̋	φi̋	bi	ɸi	ɸi	ɸi	pi	pi	pi
1SG.ERG	^{n}tse	tsən	sən	gɛnɛ	^{n}ʤən	kən	^{ŋ}gi	^{ŋ}gi	^{ŋ}gai	^{ŋ}kai
1NSG.ERG	ni	ni	ni	ninɛ	ni	ni	nə^{n}ʤe	nə^{n}ʤe	ni^{n}tæ	ni^{n}ta
2 SG.ERG	^{m}be	ɸən	ɸən	bɛnɛ	^{m}bən	fən	^{m}boi	^{m}bi	^{m}bai	^{m}pai
2 NSG.ERG	^{m}bənə	ɸən	ɸən	bɛnɛ	^{m}bən	ɸən	^{m}boi	^{m}bə^{n} ʤə	^{m}bu^{n}ta	^{m}pu^{n}ta
3 SG.ERG	naɸ	naβo	naβo	binɛ	ʧaɸ	naβo	na^{m}bo	pa^{m}bo	piɛ^{ŋ}go	piə^{ŋ}ku
3 NSG.ERG	naßa	naβai	naβa	bɛnɛ	ʧaɸ	naβa	na^{m}be	pa^{m}bu^{ŋ} k	pə^{n}tæ	pi^{n}ta

Table 8. Absolutive Pronoun Paradigms for Smerki and Nggarna

	1SG	1NSG	2SG	2NSG	3SG.M	3SG.M	3NSG
Smerki	ᵑgo	ni	ᵐbu	ᵐbu	pi	po	pe
Nggarna	ᵑga	ni	ᵐbu	ᵐbu	pi	po	pa

Table 9. Ngkolmpu Personal Pronouns

	1SG	1NSG	2SG	2NSG	3SG	3NSG
Absolutive	ᵑko	ni	ᵐpu		pi	
Ergative	ᵑkai	niⁿta	ᵐpai	ᵐpuⁿta	pieᵑku	piⁿta
Dative	ⁿson	ⁿsuen	ᵐpon	ᵐpan	pien	pⁿsen
Possessive	ⁿsone	ⁿsone	ᵐpone	ᵐpane	pene	pⁿsene
Purposive	ⁿsoⁿt	ⁿsueⁿt	ᵐpoⁿt	ᵐpaⁿt	pieⁿt	pⁿseⁿt
COM.ABS	ᵑkot	-	ᵐput	-	pit	-
COM.ERG	ᵑkait	-	ᵐpait	-	pieᵑkut	-
ASSOC.ABS	ᵑkowi	niwi	ᵐpuwi		piwi	
ASSOC.ERG	ᵑkaiwi	niⁿtawi	ᵐpaiwi	ᵐpuⁿtawi	pieᵑuwi	piⁿtawi
Locative	ᵑkoni	-	ᵐponi	-	poi	-
Ablative	ⁿsonᵐpa	ⁿsuenᵐpa	ᵐponᵐpa	ᵐpanᵐpa	pienᵐpa	pⁿsenᵐpa
Allative	soᵑke	ⁿsueᵑke	ᵐpoᵑke	ᵐpanᵑke	pieᵑke	pⁿseᵑke

Table 10. Core Case Pronoun Paradigms for Nambu Group

	Nen	Nambo	Neme	Nama	Dre	Namo
1SG.ABS	yəⁿd	yəⁿd	yəⁿd	yəⁿd	yəⁿd	yəⁿd
1NSG.ABS	yəⁿd	yəⁿd	yəⁿd	yəⁿd	yəⁿd	yəⁿd
2SG.ABS	bəm	bəm	bəm	ɸəm	bɪ$_{m}$b	fəm
2NSG.ABS	bəm	bəm	bəm	ɸəm	bɪᵐb	fəm
3SG.ABS	bæ	bæ	bæ	ɸæ	be	ɸæ
3NSG.ABS	bæ	bæ	bæ	ɸæ	be	ɸæ
1SG.ERG	yəⁿd	yəⁿdo	yəⁿdo	yəⁿdo(n)	yaⁿdo(n)	yəⁿdo(n)
1NSG.ERG	yəⁿdbem	yəⁿdəvem	yəⁿndbem	yəⁿdɸem	yəⁿdbem	yəⁿdbem
21SG.ERG	bəm	bəmo	bəmo	ɸəmo	bəmbo	ɸəmo
2NSG.ERG	bəmbem	bəmovem	bəmovem	ɸəmoɸem	bɪbem	ɸəmovem
31SG.ERG	yəmam	yəmo	yəmo	yəmo(n)	yəmo	yəmo
3NSG.ERG	yəmabem	yəmovem	yəmovem	yəmoɸem	yəbem	yəmovem

Table 11. Pronoun Paradigms for Yei as Spoken in Po Village

	1SG	1NSG	2SG	2NSG	3SG	3NSG
Nominative	ni	bi	bu	bi	ɛd	
Accusative	nia	bia	ba	bu	ɛdɛ	
Possessive	nianɛ	bini	banɛ	buni	ɛdɛni	

Table 12. Case and Number Paradigm for ær ’arm’ in Nen

	Singular	Dual	Paucal	Plural
ABS	ær	ær	ær	ær
ERG	æræm	ærm	ærm	ærbem / ærm
GEN	ærænde	ær(æ)bende	ærbende	ærbende
OBL	ærei	ærbet	ært	ært
DAT1	æreita	æræbet	ærbet	ærbeita / ærbegta
DAT2	æreipap	ærbepap	ærbepap	ærbepapt
LOC	æræn / æreipapn	æræan/ æræbepapn/ ær-bepapn	ærbepapn	ærbepapn
ALL	æreipapt	æræbepapt	ærbepapt	ærbepapt
COM	ærba	ærbeba (ærba)	ærbeba	ærbeba
ABL	ærngama	ærngama	ærngama	ærngama
SOU	ærmne	ærmne	ærmne	ærmne

Number marking in Tonda-Kanum is more restricted. The number contrast for open class nominals is based on clear singular versus non-singular basis. In the Kanum languages languages number marking in open nouns is restricted to the ergative case, as is the case of Ngkolmpu (16); other languages confirmed to pattern this way are Nggarna, Smerki, and Taemer.

(16)

a. *Ngkolmpu* (Carroll, 2016, p.75)

krar-w markus s\ra^{m}pu/y
dog-SG.ERG markus SG>3.HOD.PFV\bite.RS
'The dog bit Markus.' (Carroll, 2016, p.74)

b. krar-ya mɔ pɔi sw\rwɔ^{n}tn/ɛ
dog-NSG.ERG wallaby DIST.LOC NSG>3.RCT.DUR\hunt.EX
'The dogs hunted wallaby.'

The pattern in Komnzo is similar to what we find in Ngkolmpu except that number is also marked in the dative case as well as the ergative (17).

(17)

a. *Komnzo* (Döhler, 2016, p.166)

emoð=ɸ yariðr srak=n
girl=ERG 2|3SG>3SG.M.NPST.IPFV.give boy=DAT
'The girl gives (it) to the boy.'

b. saɸis kar-nm
safis village-DAT.NSG
'... for the Safis community.'

According to Boevé and Boevé (1999), in Arammba any noun may be optionally marked as plural through the use of the suffix *-a* (18). Boevé and Boevé (1999) only provide examples of this occurring with nouns that are not case marked, that is, in the absolutive forms, so we are unable to comment on the productiveness of this pattern.

(18)

a. *Arammba* (Boevé & Boevé, 1999, p.43)

mɛndɛ yam-ʌ yʌ thɜyrɜχ
how thing-PL FUT do
'Which things to do...'

b. ndʌni tay-ʌ mʌnʌ yɛɔmaχ
3.NSG ancestor-PL when live
'When our ancestors lived...'

Table 13. Absolutive Pronoun Paradigms for Smerki and Nggarna

	1SG	1NSG	2SG	2NSG	3SG.M	3SG.M	3NSG
Smerki	ᵑgo	ni	ᵐbu	ᵐbu	pi	po	pe
Nggarna	ᵑga	ni	ᵐbu	ᵐbu	pi	po	pa

Finally, in the Yei group evidence suggests that there is no number marking for open class nouns in any cases. This is demonstrated with examples in accusative as in (19). Note that in these examples, the non-singular form of the verb is used and therefore the plural interpretation of the accusative argument is unambiguous although not marked on the nominal element.

(19)

a. *Yei* (Carroll, field notes)

Markus dʒow-a tar ʧʃ\ ɔwg/
Markus Jon-ACC hit.INF SG>3.PFV\ hit

'Markus hit the dog.'

b. Markus dʒow-a tar y\ ira/
Markus Jon-ACC hit.INF SG>3.IPFV\ hit.PL

'Markus hit the dogs.'

6.3 Gender

Gender marking in the nominal domain is extremely restricted and currently only attested in for Smerki and Nggarna. Table 13 contains the absolutive pronouns for Smerki and Nggarna showing the gender marking in the third person. Similar patterns have been observed for pronouns in other cases although complete pronoun paradigms for all cases have yet to be collected on these languages.

The masculine forms are the default for all non-animate referents. Animate referents are then indexed according to their sex in a two-sex system. All male humans and animals are referred to as masculine and all females are referred to as feminine. A discussion of gender marker on verbs is found in the section on the undergoer prefixes (7.2).

7. Verbal Inflection

Verbal inflection is by far the most complex aspect of Yam morphology. This complexity is characterized not only by the large inventory of inflectional features, that is, the size of the paradigms, but also by the tendency to distribute the exponence of those features across multiple inflectional formatives (§ 8). This section will give an overview of the structures common to all Yam languages and then focus on a number of salient aspects of verbal inflection across the family. Section 7.1 discusses the major inflectional class distinctions. Sections 7.2, 7.3, and 7.4 discuss the three most prominent inflectional sites in Yam languages: the undergoer prefix, the actor suffix, and the TAM suffix, respectively. Finally, an overview of tense, aspect, and mood categories is discussed in section 7.5.

A basic verbal inflectional template for all Yam languages is presented in Table 14.

Table 14. Common Yam Verbal Template

Inflectional Prefixes		Lexical Prefixes		Stem		Inflectional Suffixes	
Undergoer $_{PERS/NUM}$ + TAM	(Direction-al)	(Diathetic)	(Direction-al)	Root	(Thematic)	(TAM suffix)	Actor$_{PERS/NUM}$ + TAM

Verbs take both prefixes and suffixes and mark agreement with up to two arguments. For standard transitive verbs, this involves marking the actor argument with a suffix and the undergoer argument with a prefix. The terms actor and undergoer have a special designation in the description of Yam languages that is clarified in Section 7.1. The particular forms for the undergoer are presented in section 7.2 and for the actor in section 7.3. Valence alternations are typically marked with a diathetic prefix; in the Nambu languages this occurs directly before the stem while in the Tonda-Kanum languages it occurs directly before the directional. Distinctions in valence constructions are discussed in section 7.1.

In most Yam languages, direction is marked with a prefix. In Ngkolmpu, a single prefix occurs directly before the stem and following any marking of valency (20), here glossed as *diathesis*, and indicates that the event occurred in a motion toward the speaker. This is a fairly typical system for the western languages of the family. Nen has two prefixes; the first, *n*, is used for toward the speech event and the other, *ŋg*, for away. Komnzo displays a less typical direction system for Yam languages involving both a prefix *n* meaning toward the speaker and a suffix *o* meaning away from the speaker; these can both be seen in the example in (20B).

(20)

a. *Ngkolmpu* (Carroll, 2016, p.199)

pr pi t-a-**n**-wance-y
tree 3.ABS MID.PFV-DIA-**TOW**-fall.RS-SGA.HOD
'The tree fell toward us.' (earlier today)

b. *Komnzo* (Döhler, 2016, p.264)

tsba nezæ e-a-ri-ðr-**o**-ð fæms
PROX.ABL in.return 2|3NSG.α-DIA-give.EX-NDU-**AWA**-NSG exchange
ŋare=r boba netsæ
woman=PURP MED.ABL in.return
e-a-**n**-ri-ðr-ð fæms nare=r
2|3NSG.α-DIA-**TOW**-give.EX-NDU-2|3NSG exchange woman=PURP
'From here, they give them girls to exchange. In return, they give them girls to exchange from there.'

Stems in Yam languages are typically complex, consisting of a root and a stem mutation labeled thematic. This is especially the case for Tonda-Kanum languages, which use stem alternations to indicate distinctions in aspect and various domains of number. Example 21 shows the three stem system of Ngkolmpu with one stem marking perfective (21A), an-

other marking the durative aspect (21B), and finally the third stem marking either imperfective aspect (21C) or pluractional events (21D).

(21)

a. *Ngkolmpu* (Carroll, field notes)

Markus-w John s\ merba/^{n}t
Markus-SG.ERG John SG>3.RCT.PFV\ follow.RS
'Markus followed John (yesterday).' Perfective

b. Markus-w John sw\ merk/
Markus-SG.ERG John SG>3.RCT\ follow.DUR
'Markus followed John (yesterday).'

c. Markus-w John y\ merk^{n}tn/ en
Markus-SG.ERG John SG>3.RCT.IPFV\ follow.EX
'Markus was following John (yesterday).'

d. Markus-w John yuow^{m}pr sw\ merk^{n}tn/
Markus-SG.ERG John three.times SG>3.RCT\ follow.EX
'Markus followed John three times (yesterday).'

7.1 Valence and Inflectional Classes

There are two broad morphological classes of verbs in Yam languages, which are known as prefixing and ambifixing following terminology established for Nen by Evans (2015A). These labels refer to the locus of argument agreement: either by prefix alone or with both a prefix and a suffix, respectively. Prefixing verbs are typically stative and strictly monovalent whereas ambifixing verbs are all dynamic and may be monovalent, bivalent, or trivalent.

The distinction between these two broad inflectional classes results in a rather unusual split-S system or split-intransitive system (Donohue, 2008) based around stativity-dynamicity. Under such a system dynamic S, that is, the sole argument of monovalent ambifixing verbs, is indexed via the actor suffix. The stative S, that is, the sole argument of prefixing verbs, is indexed via the undergoer prefix.

Prefixing verbs are small class monovalent verbs that typically display stative semantics along with the verbs for 'go / come' and 'walk' and a few other language specific verbs. Within this set, all languages display a set of positional verbs that indicate position or posture, with Nen displaying the largest set at around 40 verbs, whereas in Ngkolmpu on-

ly 11 have been identified. Prefixing verbs follow the same basic template as ambifixing verbs but because they only index a single argument they do not inflect for actor agreement. Examples of prefixing verbs can be seen in (22).

(22)

a. *Ngkolmpu* (Carroll, 2016, p.176)

ᵐpu poi n-oume
2.ABS DIST.LOC 3U.α-is.located.NPL
'You are sitting there.'

b. *pi poi youme*

pi poi y-oume
3.ABS 3.ABS DIST.LOC 3U.α-is.located.NPL
'He is sitting there.'

c. *Nen* (Evans, 2015b, p.1079)

Yⁿd wensde-wan naᵐbt q-ᵑg-m
1ABS Wednesday-LOC a.few.days 1SGU.β-AWA-be.DU
'I went last Wednesday.'

d. Yⁿd wensde-wan naᵐbt tn-ᵑg-ren
1abs Wednesday-loc ±a.few.days 1NSGU.β-AWA-be.DU
'The two of us went last Wednesday.'

Ambifixing verbs are dynamic verbs and are named because they potentially index arguments with both a prefix and a suffix. In transitive constructions, the verbs index their most agent like argument (A) with a suffix and their most patient like argument (O) with a prefix. This can be seen in the alternations for Ngkolmpu in (23). Ambifixing verbs often participate in monovalent constructions in which they mark their sole argument (S) with a suffix and in place of the agreement prefix they take a person and number invariant prefix known as a middle prefix (24).

(23)

a. *Ngkolmpu* (Carroll, 2016, p.136)

pie extsuperscriptŋu ŋ^{ko} w-^{m}plae-ø
3SG.ERG 1SG.ABS 1SGU.α-hit.EX-SGA

'He is hitting me.'

b. pie^{ŋ}ku ni n-^{m}plae-ø
3SG.ERG 1NSG.ABS 1NSGU.α-hit.EX-SGA

'He is hitting us.'

c. pi^{n}ta ni n-^{m}plae-i
3NSG.ERG 1NSG.ABS 1NSGU.α-hit.EX-NSGA

'They are hitting us.'

(24)

a. *Ngkolmpu* (Carroll, field notes)

pi t-a-wa^{n}se-y
3.ABS MID.PFV-DIA-fall.RS-SGA.HOD

'He fell (earlier today).'

b. pi t-a-wa^{n}se-ns
3.ABS MID.PFV-DIA-fall.RS-NSGA.HOD

'They fell (earlier today).'

7.2 Undergoer Prefixes

The most morphologically salient element of the entire language family are the undergoer prefixes. These index the person, number, and, for some languages, gender. As established in section 7.1, the undergoer argument is the O argument of ambifixing verbs and the S argument of prefixing verbs. The forms of these prefixes are cognate across the family. In addition to marking agreement, these prefixes occur in multiple distinct series that mark TAM. As discussed in section 3, the exact TAM contribution of a given undergoer prefix is complex and as such these are given labels α, β, and γ.

The Tonda-Kanum α-series and β-series prefixes are presented in Tables 15 and 16, respectively. As stated, the prefixes index person, number, and gender. They also display a number of distinct syncretisms that are typically consistent across each of the three series. Second and third non-singular are never distinguished for undergoer prefixes across the entire family. There is an uncommon syncretism between second singular and first

non-singular. This holds for most of the languages of the Tonda-Kanum group but not for Smerki or Arammba, which display only a partial syncretism in this position. Finally, Tonda-Kanum languages mark gender in the third person. This form is typically syncretic with the first singular except for Nggarna and for certain verbs in Ngkolmpu. In Ngkolmpu, most verbs follow this pattern, marking both first singular and third singular feminine with a *w-* prefix; however, about 30% of verbs indicate third singular feminine through the lack of any prefix in this position. As discussed in section 6.3, masculine is the default gender and all nouns are indexed as masculine except for female humans and animals, which are indexed as feminine.

The β-series prefixes for Tonda-Kanum largely display the same patterns as the α-series prefixes. A few key differences are worth pointing out at this point. The first is that Smerki displays a full syncretism for the second singular / first non-singular syncretism, while Warta here displays no syncretism for this combination.

The α-series and β-series prefixes for Nambu are presented in Tables 17 and 18, respectively. There are a number of key differences between the Nambu branch and the Tonda-Kanum branch. The most notable is that Nambu languages do not indicate gender in the undergoer prefix. The second is that the second singular and first non-singular syncretism is only partial in the Nambu languages.

Table 15. Summary of α-Series Undergoer Prefixes for Tonda-Kanum

	Ngkolm-pu	Smerki	Nggarna	Ranmo	Warta	Komnzo	Arammba
1SG	w	w	wo	w	w	wo	wɐ
2SG	n	nu	no	n	n	n	nɐ
3SG	y	ya	yi	y	s	y	θɐ
3SG.F	w, ø	w	a	w	w	w	wɛ
1NSG	n	nɛ	no	n	n	n	nɛ
2NSG	y	ya	e	ð	y	e	ya, yɛ
3NSG	y	ya	e	ð	y	e	ya, yɛ

Table 16. Summary of β-Series Undergoer Prefixes for Tonda-Kanum

	Ngkolm-pu	Smerki	Nggarna	Ranmo	Warta	Komnzo	Arammba
1SG	b	bu	b	b	b	kwo	χuf
2SG	kən	kən	g	ᵑg	gaᵐb	ᵑg	ᵑgɐf
3SG	s	su	s	s	s	s	θɐf
3SG.F	b, t	bu	t	k	b	z	gʉf
1NSG	kən	kən	g	ᵑg	g	ⁿdzən	ᵑgɛf
2NSG	s	tu	ø	ð	θ	θ	sɐf, sɛf
3NSG	s	tu	ø	ð	θ	θ	sɐf, sɛf

Table 17. Summary of α-Series Undergoer Prefixes for Nambu

	Nen	Nambo	Neme	Namo	Nama	Dre
1SG	w	wə	wə	wə	wə	wə
2SG	n	nə	nə	nə	nən	n
3SG	y	yə	yə	yə	yə	y
1NSG	yən	yən	yən	yən	yən	yan, yən
2NSG	yæ, ya, e	e	e	e	e	ya, e
3NSG	yæ, ya, e	e	e	e	e	ya, e

Table 18. Summary of β-Series Undergoer Prefixes for Nambu

	Nen	Nambo	Nama	Dre
1SG	k͡p	k͡p ə	kwə	χʷ
2SG	kn	kənə	kə(n)	χana
3SG	t	tə	tə	t
1NSG	tən	tən	tən	tən
2NSG	tæ, ta	ta	tæ	ta
3NSG	tæ, ta	ta	tæ	ta

Finally, Yei α-series and β-series prefixes are presented in Table 19. The α-series forms are identical to the Ngkolmpu prefixes, maintaining all the same distinctions. The β-series prefixes resemble elements of both Nambu and Tonda-Kanum β-series prefixes; the first non-singular form from Tonda-Kanum is used in Yei for both the first non-singular and the second-singular.

The various series of undergoer prefixes also contribute to TAM marking in addition to indexing the undergoer argument. Each series typically occurs with a language-specific cluster of semantically disparate categories. Since the alignment of undergoer prefixes to TAM semantics is both complex and language specific, we will simply highlight the lack of transparency of these categories in Ngkolmpu and in Nen rather than exhaustively showing the TAM systems of each language.

The various uses of the undergoer prefixes for Ngkolmpu are presented in Table 20. The α-series prefix may be considered the default form and may be used for a range of TAM values. It can be used for both durative and imperfective aspect. It may also be used in the present, hodiernal past, and remote past tenses. All these are examples of realis mood, yet it may also be used for irrealis mood in the case of the past-potential mood. The distribution of the β-series prefix is slightly more clear: it may be used for perfective aspect in any tense or durative aspect in the future tense. It is also used for all imperatives and future irrealis forms. The ɣ-series prefix is much more restricted in distribution and is used for recent past durative aspect and remote past imperfective aspect.

Table 19. Summary of Undergoer Prefixes for Yei

	α-series	**β-series**
1SG	w	t
2SG	n	tən
3SG	y	ʧ
3SG.F	w	t
1NSG	n	tən
2NSG	y	t
3NSG	y	ʧ

The uses of the Nen prefixes are presented in Table 21. In Nen, the α-series prefix may be used for imperfective, neutral, and perfective aspects. It may be used for various degrees for past tense. It may be used for the realis moods and for certain types of imperatives. The β-series prefix may be used for imperatives in either imperfective or perfective as-

pect. It is also used for recent past imperfective. The ɣ-series prefix is used for future tense, a self-imperative, mediated imperative, and the remote tense.

Table 20. Functions of Ngkolmpu Undergoer Prefix

	Example	**Translation**
α-series		
Present durative	*w-merk*	'(SG) follows me.'
Imperfective	*w-merk^{n} tn-en*	'(SG) was following me.'
Hodiernal past	*w-merk-y*	'(SG) followed me.' (earlier today)
Remote past	*w-merk-u*	'(SG) followed me.' (2+ days ago)
Past potential	*w-merk-^{ŋ}k*	'(SG) might have followed me.'
β-series		
Perfective	*b-merba-y*	'(SG) followed me.' (earlier today)
Future-irrealis	*b-r-merba*	'(SG) will follow me.'
Future-potential	*b-r-merk-^{n}t*	'(SG) might follow me.'
Imperative-hortative	*b-merk-^{n}t*	'Follow me.'
ɣ-series		
Recent past	*kw-merk*	'(SG) followed me.' (yesterday)
Imperfective past	*kw-merk^{n} tn-en*	'(SG) was following me.' (2+ days ago)

Table 21. Functions of Nen Undergoer Prefix

	Example	**Translation**
α-series		
Imperfective hodiernal	*y-apr-t*	‘You (2) are/were making it.’
Perfective hodiernal	*y-apr-^{n}d-t*	‘You (2) make/made it.’ (perfective)
Neutral remote past	*y-apr-anzt*	‘You (2) made it.’ (3+ days ago)
β-series		
Imperfective imperative	*t-apr-e-^{ŋ} g*	‘You (2) make it!’
Perfective imperative	*t-apr-a^{n} d*	‘You (2) start making it!’
Neutral remote past	*t-apr-t*	‘You (2) made it.’ (3+ days ago)
ɣ-series		
Future	*d-apr-anzt*	‘You (2) will make it.’
Imperfective remote past	*d-apr-t*	‘You (2) were making it.’ (3+ days ago)

We have seen specific examples of the broad range of uses of the various prefix series; from this it is possible to make some general comments about the distribution of these prefixes across the systems. In all languages, the α-series prefix is the default form that captures the broadest array of meanings. It is typically more associated with neutral and imperfective meanings rather than perfectivity, although not exclusively and more so in Tonda-Kanum than Nambu. The β-series prefix is typically use for irrealis, future, and imperative forms. The ɣ-series prefix has a tendency to be highly restricted and language specific since not all languages display a clear ɣ-series and it is not currently clear if all the ɣ-series prefixes are a single cognate set or a rearrangement of the other sets. What should be clear from the examples presented is that assigning clear semantic meanings to each series in either a single language or across the family is not a simple task.

Table 22. Actors Suffixes for the Nambu Languages

	Nen	Nambo	Neme	Namo	Len	Nama	Dre
1SG	n	ən	en	ən	ən	ən	n
2SG	e	ø	e	e	e	e	e
3SG	e	ø	ø	e	e	e	e
1NSG	m	əm	əm	əm	əm	əm	m
2NSG	t	te	te	t	d	ət / əti	t / te
3NSG	t	te	te	t	d	ət	t

7.3 Actor Suffixes

As with the undergoer prefixes, the actor suffixes index person and number as well as alternate for TAM. The actor suffixes are more highly variable across the family and as such the full range of variation of actor suffixes will not be examined; rather, the focus will be on the default set from each language, that is, the set that displays the most general distribution from each language. However, the full set of actor suffixes across all TAM values has been provided for Ngkolmpu in Table 24.

The Nambu branch, Table 22, display considerable uniformity in the actor suffixes with a few patterns worth discussing in more detail. The first is that number is always distinguished for all person values. Secondly, most languages collapse non-first-person agreement markers in the singular; the single exception is Neme, which has distinct second and third person forms. Rather intriguingly, Nama and Dre display an unusual pattern in the second person non-singular in which the dual forms (before the slash) are syncretic with the third person non-singular while the plural forms (following) are unique. These are the only languages that display distinct marking between dual and plural in the actor suffixes.

Table 23. Actors Suffixes for the Tonda-Kanum Languages and Yei

	Ngkolmpu	Ranmo	Warta Thuntai	Komnzo	Yei
1SG	ø	ø	a	ə	ø
2/3SG	ø	ø	ø	ø	ø
1NSG	i	e	ø	e	i
2/3NSG	ɛ	ai	i	ð	ɛ

The actor suffixes for most of the Tonda-Kanum languages have yet to been recorded as of July 2019. However, a sample of the default actor suffixes for both this group and for Yei can be seen in Table 23. For the western Tonda languages, Ngkolmpu, Ranmo, and Yei person is never marked in the singular while the non-singular follows the regular pattern of collapsing the non-first non-singular forms. The other two languages, Warta and Komnzo, maintain a distinction between first and non-first person in both numbers.

It is worth noting however, that these syncretisms aren't always maintained in the actor suffix; in Ngkolmpu, for instance, person is rarely marked in the actor suffix and for future forms the non-singular forms contrast first non-singular and second non-singular rather than the typical pattern collapsing second and third. The full set of Ngkolmpu actor suffixes can be found in Table 24.

7.4 TAM Suffixes

Immediately following the stem are a series of suffixes, which here are called the TAM suffixes following Carroll (2016) and Döhler (2016, 2018). These are equivalent to what Evans (2015A) labeled the thematic.[7] These serve to mark TAM along with the agreement affixes and are not the only locus of TAM marking. Since there is so much variability in both TAM systems and the particular forms of these affixes across the languages, these will not be listed in this section; rather, general comments will be made on their behavior in a sample of languages.

Table 24. Paradigm of Non-Singular Actor Suffixes

	SG	1NSG	2NSG	3NSG
default	ø	y	e	e
future	ø	ei	ei	me
future potential	ø	y	y	y
imperfective	ø	e	e	e
recent perfective	ø	ra^{n}s	ra^{n}s	ra^{n}s
remote past	ø	ai	ai	ai
hodiernal perfective	ø	me	me	me
past potential	w	ai	ai	ai
hodiernal durative	y	ns	ns	ns

Ngkolmpu displays at least seven affixes that might occur in this slot, but Komnzo displays only two. Similarly, Nen displays around eight suffixes in this position whereas its close neighbor Nama has only two. As we would expect, the forms in the Nambu branch are much closer in form to each other, Tonda-Kanum displays far greater variability than the Nambu languages, and not enough data has been collected on Yei to comment. These elements are typically the most transparent markers of TAM in these languages. As stated, the marking of TAM is typically distributed over multiple inflectional formatives. What is remarkable, however, is how little uniformity there is for affixes occurring in this position across the family.

7.5 Tense, Aspect, and Mood

Yam languages all display complex intertwined TAM systems. Rather interestingly, each language displays quite distinct organization of these systems; however, a number of generalizations about the semantics and organization of these categories can be drawn. Languages distinguish either two or three aspects and between three and five tenses with multiple tense distinctions in the past. Mood distinctions are typically less orthogonal and involve specialized imperative and irrealis forms.

Core to the organization of inflectional systems of Yam languages are aspect distinctions. All languages of the family display a distinction between perfective and imperfective. Some languages also display a third value labeled either neutral or durative. The perfective aspect is used for describing situations as a complete whole without making reference to the internal structure of the event (Comrie, 1976, p. 16). Punctual, non-iterative situations are typically realized with the perfective aspect; however, complex durative events may also be used with the perfective if the speaker chooses not to make reference to that internal structure. In example 25, the speaker describes a story in which a man is hunting a cassowary; in this utterance he describes how the man raised his club and struck the cassowary. Here the verb ‘to hit’ *omplaei* is in the perfective form as it is a single punctual strike. Although a non-punctual event, the action of raising the club is also described here in the perfective to highlight the single swift action of striking the cassowary.

(25)

Ngkolmpu (Carroll, 2016, p.179)

bpe	pieᵑku	moro	s-ye-ᵑk-ø	pi
club	3SG.ERG	FOC	3U.β-raise.RS-RMT.PFVSGA	3.ABS
s-rso-ᵑk-ø			naeimam	
3U.β-hit.RS-RMT.PFV-SGA			dead	

‘He raised his club and he hit it dead.’

An extremely common feature of perfective semantics in Yam languages, especially in the Nambu languages, is to indicate an inceptive or inchoative meaning as demonstrated for Ngkolmpu in (26).

(26)

Ngkolmpu (Carroll, 2016, p.179)

boaror ko^{ŋ}ko-nm t-e-n-kre-^{n}t-ø
late.afternoon sun-INS MID.PFV-DIA-TOW-return.RS-RCT.PFV-SGA
se^{m}po ye^{n}tun=to kelimu-^{ŋ}ke
again continue=ADV forest-ALL

The imperfective and durative, by contrast, classify the event as occurring with internal duration. The durative may portray events that are either non-punctual (27A) or iterative (27B).

(27)

a. *Ngkolmpu* (Carroll, 2016, p.181)

moro sw-makr-ø pnm mens-nm
FOC 3U.γ-burn.EX DEM.INS fire-INS
'I was cooking (the fish) with the fire.'

b. yempoka-nm=to s-r-yantn-nt, soro ^{m}pu,
two-INS=ADV 3U.β-N2.FUT-go.PL-FUT women 2SG.ABS,
k-a^{m}plae-nt-ei, pna prur-wa
MID.FUT-hit.EX-FUT-NSGA.FUT because lazy-ADJ
'Off you go two at a time, you women, hit yourselves because you are lazy.'

The category of imperfective covers a more extended sense of imperfectivity than the durative and involves habituals (28); it is also used for sufficiently extended events, either in duration (29A) or iteration (29B).

(28)

Ngkolmpu (Carroll, 2016, p.182)

pne	krar-w	Markus	pi	y-merk^{n}tn-rnt-ø
DIST.DEM.FOC	dog-ERG.SG	Markus	3.ABS	3U.α-follow.EX-IPFV.RCT-SGA
ye^{n}tun=to				
continue=ADV				

'That dog always followed Markus.'

(29)

a. *Ngkolmpu* (Carroll, 2016, p.182)

Kiror	poi	sw-o^{n}ta-rnt
Kiror	DIST.DEM.LOC	3U.γ-live.PL-RMT.IPFV

'They lived there in Kiror (old village).'

b.

Ale	pi^{n}ta	pr	o^{n}to	sw-so-r^{n}t-e
fathers	3.NSG.ERG	tree	can	3U.γ-mince.PL-RMT.IPFV-NSGA.IPFV
^{m}paeswm-nm				
axe-INS				

'The men chopped the wood with axe heads.'

All languages of the family display multiple past tenses. Ngkolmpu is fairly typical in having three past tense distinctions, with a hodiernal past tense, a recent past, and a remote past. The hodiernal past is used to refer to events that occur before the speech event yet earlier today (30A). Speakers will often say this event may occur at any time from midnight until the speech moment. In practice, it refers to an event from when the speaker had woken up that day; when discussing an event that happened before going to sleep but after midnight rather than the hodiernal past, the speaker will typically use the recent past. The hodiernal past can also be used as a relative tense (Comrie, 1985) for an event that occurs before the context time (30B).

(30)

a. *Ngkolmpu* (Carroll, 2016, p.184)

Oml ᵑki ᵐpan-ᵐpa ann-y, mwa-ᵐpa
mother PROX.DEM.ABS side-ABL come.NPL-SGA.HOD house-ABL
'This woman has come from over the side, from (her) house.'

b. ⁿtop meⁿs s-iker-ai poi, ᵑkai
big fire 3U.β-build.fire.RS-NSGA.RMT DIST.LOC 1SG.ERG
y-maker-y
3U.α-burn.EX-SGA.HOD
'We made a big fire there, then I grilled (the fish).'

The recent past tense is used to indicate an event that occurred yesterday and potentially the day before. The proximal boundary of the time reference is strict and refers to an event that occurred before the start of the day of the speech event (31A). However, the distal boundary is slightly less clear; in elicitation speakers typically state that the recent past tense is used for only yesterday. In practice this is less clearly adhered to; the example in (31B), taken from field notes, was uttered two days after the event.

(31)

a. *Ngkolmpu* (Carroll, 2016, p.185)

moⁿtena moro kw-n-ya=ni
yesterday FOC RCT.DUR-1NSGU.α-walk.PL=1.NSG.ABS
klaeᵐpi-wi liko-ᵑke
children-ASSOC river-ALL
'Yesterday, we walked to the river with the children.'

b. poi kw-w-aⁿtn, yuai-yuai
DIST.DEM.LOC RCT.DUR-1SGU.α-go.PL go.INF-go.INF
'I was travelling around there.'

The remote past tense is used to indicate an event that occurred two days ago or earlier. There is no distal boundary to this category and it can refer to events that can be two days ago, such as in the story in (32A), or at the dawn of time as in (32B).

(32)

a. *Ngkolmpu* (Carroll, 2016, p.185)

ŋko yuai=to moro t-e-iye-ŋk-ø
1SG.ABS go.INF=ADV FOC PFV.MID-DIA-mention.RS-RMT.PFV-SGA
yirow
Rawa.Biru
'I mentioned that I was going on a trip to Rawa Biru.'

b. nmaei ni ŋkoro kw-n-o^{n}ta-r^{n}t
before 1NSG.ABS thus RMT.IPFV-1NSGU.α-ys.loc.PL-RMT.IPFV
'Long ago, we lived like this...'

Other languages follow similar systems with a few notable examples; some languages simply display a hodiernal tense that covers both the semantics of a present tense, that is, including a speech event, and the hodiernal past. Examples of this include Nen and Smerki. Nen is also notable for having a primordial tense, which indicates an event occurred for the first time, that is, a founding event, or actions carried out by their agent for the first time. In his description of Nama tense and aspect, Siegel (2015) claims that labels such as past, future, and non-past are not appropriate for the description of Nama. Instead Siegel uses the terms immediate, proximate, and remote.

Yam languages often display various non-realis moods including a standard future-irrealis and a range of imperatives and potential moods. In Ngkolmpu, the future-irrealis is used for basic future time reference (33A). It is also used to mark hypothetical statements or instructions in procedural texts. Example 33B comes from a text on how to properly start a garden. In these examples, we have future-irrealis forms, which are indicated by the generic future markers glossed as FUT. The future-irrealis is the typical form given in elicitation when no context is given.

(33)

a. *Ngkolmpu* (Carroll, 2016, p.186)

ŋko po-wa k-r-eibe^{n}t-^{n}t ^{m}pon
1SG.ABS coconut-CAUS MID.FUT-N2.FUT-tell-FUT.DUR-SGA 2SG.DAT
'I will tell you of the coconut.'

b. me^{n}s-me^{n}s k-r-e-e poi
fire-fire FUT.MID-N2.FUT-make.DUR-1NSGA DIST.DEM.LOC
'We would make a big fire there.'

Nen displays multiple distinct imperatives. The standard imperative can be formed in both imperfective (34A) and perfective (34B) aspects and represents a distinction between an event in progress and an event that is commencing. Nen also boasts a future imperative (34C), used for events that should occur well after the speech event. Evans (2015A) discusses a dedicated mediated imperative, that is, sent by a messenger, but provides no example of it to produce here.

(34)

a. *Nen* (Evans, 2015a, p.558)

bm o^{m}bte nu t-z-ya-ø
2 hot water 3SGU.β-cook-ND.IPFV.IMP-2SGA
'Boil the hot water!' (it's already over the fire; heat it up more)

b. bm o^{m}bte nu t-z-ø
2 hot water 3SGU.β-cook-PFV.IMP-2SGA
'Boil (some) hot water!'(put it over the fire, boil it from the start)

c. *Nen* (Evans, 2015a, p.566)

kores n-a^{ŋ}g-a-waka-ta-ø
careful 3MID.α-FUT.IMP.SG-R/R-see-IMP-2SGA
'Look out for yourself.' (lit. Keep looking at yourself carefully)

8. Distributed Exponence

One of the recurring structural problems in Yam inflectional morphology is the tendency to distribute the exponence of morphosyntactic and morphosemantic meanings across multiple inflectional formatives. This phenomena pervades the complex inflectional morphology of verbs in Yam, but to illustrate we will simply consider the way that number is marked on prefixing verbs in Nen, although the same approach can be used to account for a range of inflectional properties across the family.

Table 25. Third Person Present Forms of Nen tromngr ‘Be Erected’

Number	**Word**
SG	*y-trom-ŋgr*
DU	*yæ-trnm-aran*
PL	*yæ-trom-ŋgr*
LPL	*y-trom-aran*

The verb in Table 25 is a prefixing verb (§ 7.1) and as such marks agreement with its single argument through the undergoer prefix (§ 7.2). In addition, there is a suffix that occurs on these verbs that is also sensitive to number. Returning to the paradigm, it is clear that each number value corresponds to a single unique word form justifying the four-way system. Yet, there is no *single* affix that can be said to be a marker of any given value; instead, values are only interpretable once both the prefix and the suffix have been taken into consideration.

This can be exemplified by considering the exponence of the inflectional meaning of *dual* in the paradigm. This is realized on the fully inflected word as *yæ-trom-aran*; the prefix *yæ* marks this as either dual or plural and the suffix *aran* marks this as either dual or large plural. Thus if the word is either dual or plural by virtue of the prefix *and* it is either dual or large plural by virtue of the suffix, then there is only a single interpretation compatible with both elements, that is, dual. Thus, it is in this way that we say that the *exponence* of dual is *distributed* over the prefix and the suffix.

Distributed exponence might be defined in broad terms as in (35) following terminology introduced in Caballero and Harris (2012).

(35)

Distributed exponence is the phenomenon in which an inflectional meaning is indicated multiple times within a word yet no single part of that word can be identified to that meaning.

From a typological perspective, distributed exponence represents an interaction between two phenomena: multiple (or extended) exponence and a specific pattern of syncretism. A more detailed discussion of these terms can be found in Stump (2017), but each is discussed further here.

Multiple exponence is when inflectional meanings, like number, are indicated multiple times within a single word (Harris, 2017). Consider the marking of gender in certain adjectives in Avar, a Nakh-Daghestanian language (36) discussed in Harris (2017).

(36)

a. *Avar* (Harris, 2017, p.215)

y-ac':ada-y ʕadan
F.SG-clean-F.SG woman
'clean woman'

b. v-ac':ada-v ʕadam
M.SG-clean-M.SG man
'clean man'

In these cases, the adjective agrees with the head noun in gender and number, indicated through both a prefix and a suffix as visible in the glosses. Thus, we have a single meaning indicated multiple times, yet unlike in Nen either marker would be sufficient to determine the grammatical meaning indicated on the word.

What distinguishes distributed exponence from multiple exponence is a specific type of cross-cutting partial word syncretism. Syncretism is when a word's morphology fails to make an inflectional distinction (Baerman, Brown, & Corbett, 2005). Consider Yei pronouns, which fail to make a distinction in third person; this is shown for accusative pronouns in Table 26. This lack of a distinction can be described as involving a syncretism between third singular and third plural.

Table 26. Yei Accusative Pronouns

	1	**2**	**3**
SG	nia	ba	ɛdɛ
NSG	bia	bu	ɛdɛ

It is also possible to display a partial-word syncretism. This is when part of a word, such as an affix, fails to make a distinction relevant for that position in the word. Returning to our Nen example from Table 25, we can describe the prefix *yæ* as involving this type of syncretism between dual and plural. Similarly, the suffix *aran* can be described as a syncretism between dual and large plural. That is, the prefix fails to make a distinction between those values while the suffix fails to make a distinction between another set of values.

Thus, the Nen example is clearly multiple exponence; we have the marking of number on both prefixes and suffixes. Yet, what distinguishes it from typical cases of multiple exponence such as the Avar example is this cross-cutting partial-word syncretism. That is, each affix marking dual is also syncretic with another value of number distinct from the other. Note that any interaction between such multiple exponence and syncretism is not sufficient to describe distributed exponence; rather it is only when the syncretisms of each affix or morphological formative cross-cut each other as we see in the Nen example that we may describe an example as distributed exponence.

Further Reading

Carroll, M. J. (2016). *The Ngkolmpu language with special reference to distributed exponence* (Unpublished doctoral dissertation). School of Culture, History & Language, College of Asia & the Pacific, the Australian National University.

Döhler, C. (2018). *A grammar of Komnzo*. Berlin, Germany: Language Science Press.

Evans, N. (2014). Positional verbs in Nen. *Oceanic Linguistics*, *53*(2), 225–255.

Evans, N. (2015a). Inflection in Nen. In M. Baerman (Ed.), *The Oxford handbook of inflection*. Oxford, U.K.: Oxford: Oxford University Press.

Evans, N. (2015b). Valency in Nen. In A. Malchukov & B. Comrie (Eds.), *Valence classes in the world's languages* (Vol. 2, pp. 1069–1116). Berlin, Germany: Mouton de Gruyter.

Evans, N. (2017). *Quantification in Nen*. In D. Paperno & E. L. Keenan (Eds.), *Handbook of quantifiers in natural language* (Vol. 2, pp. 571–607). Cham: Springer International.

Evans, N., Arka, W., Carroll, M., Choi, Y. J., Döhler, C., Gast, V., . . . van Tongeren, C. (2017). The languages of southern New-Guinea. In B. Palmer (Ed.), *The languages and linguistics of the New Guinea area* (pp. 641–774). Berlin, Germany: Mouton de Gruyter.

Siegel, J. (2015). The morphology of tense and aspect in Nama, a Papuan language of southern New Guinea. *Open Linguistics*, *1*(1).

Siegel, J. (2017). Transitive and intransitive verbs in Nama, a Papuan language of southern New Guinea. *Oceanic Linguistics*, *56*(1), 123–142.

References

Aronoff, M. (1994). *Morphology by itself: Stems and inflectional classes*. Cambridge, MA: MIT Press.

Baerman, M., Brown, D., & Corbett, G. G. (2005). *The syntax-morphology interface: A study of syncretism*. Cambridge, U.K.: Cambridge University Press.

Boelaars, J. (1950). *The linguistic position of south-western New Guinea*. Leiden, The Netherlands: E. J. Brill.

Boevé, A., & Boevé, M. (1999). *Arammba grammar essentials* (Unpublished manuscript).

Caballero, G., & Harris, A. C. (2012). A working typology of multiple exponence. In F. Kiefer, M. Ladányi, & P. Siptár (Eds.), *Current issues in morphological theory: (ir)regularity, analogy and frequency*. Amsterdam, The Netherlands: John Benjamins.

Carroll, M. J. (2016). *The Ngkolmpu language with special reference to distributed exponence* (Unpublished doctoral dissertation). School of Culture, History & Language, College of Asia & the Pacific, Australian National University.

Comrie, B. (1976). *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge, U.K.: Cambridge University Press.

Comrie, B. (1985). *Tense*. Cambridge, U.K.: Cambridge University Press.

Dench, A., & Evans, N. (1988). Multiple case-marking in Australian languages. *Australian Journal of Linguistics*, *8*, 1–47.

Dixon, R. (2002). *Australian languages: Their nature and development*. Cambridge, U.K.: Cambridge University Press.

Döhler, C. (2016). *Komnzo: A language of southern New Guinea* (Unpublished doctoral dissertation). School of Culture, History & Language, College of Asia & the Pacific, Australian National University.

Döhler, C. (2018). *A grammar of Komnzo*. Berlin, Germany: Language Science Press.

Donohue, M. (2008). Semantic alignment systems: What's what, and what's not. In M. Donohue & S. Wichman (Eds.), *The typology of semantic alignment* (pp. 24–75). Oxford, U.K.: Oxford University Press.

Donohue, M. (2009). Syllables, morae and vowels in Kanum. Seminar, Department of Linguistics, Research School of Pacific and Asian Studies, Australian National University.

Donohue, M. (2011). Case and configurationality: Scambling or mapping? *Morphology*, *21*, 499–513.

Donohue, M. (2015). Morphological opacity: Rules of referral in Kanum verbs. In M. Baerman, D. Brown, & G. G. Corbett (Eds.), *Understanding and measuring morphological complexity* (pp. 53–68). Oxford, U.K.: Oxford University Press.

Evans, N. (2012). Nen assentives and the phenomenon of dialogic parallelisms. In A. C. Schalley (Ed.), *Practical theories and empirical practice. A linguistic perspective* (pp. 159–184). Amsterdam, The Netherlands: John Benjamins.

Evans, N. (2014). Positional verbs in Nen. *Oceanic Linguistics*, *53*(2), 225–255.

Evans, N. (2015a). Inflection in Nen. In M. Baerman (Ed.), *The Oxford handbook of inflection* (pp. 543–575). Oxford, U.K.: Oxford: Oxford University Press.

Evans, N. (2015b). Valency in Nen. In *Valence classes in the world's languages* (Vol. 2, pp. 1069–1116). Berlin, Germany: Mouton de Gruyter.

Evans, N. (2017). *Quantification in Nen*. In D. Paperno & E. L. Keenan (Eds.), *Handbook of quantifiers in natural language* (Vol. 2, pp. 571–607). Cham: Springer International.

Evans, N., Arka, W., Carroll, M., Choi, Y. J., Döhler, C., Gast, V., . . . van Tongeren, C. (2017). The languages of southern New-Guinea. In B. Palmer (Ed), *The languages and linguistics of the New Guinea area* (pp. 641–774). Berlin, Germany: Mouton de Gruyter.

Evans, N., & Miller, J. (2016). Illustrations of the IPA: Nen. *Journal of the International Phonetics Association*, *46*(3), 1–19.

Harris, A. C. (2017). *Multiple exponence*. Oxford, U.K.: Oxford University Press.

Lee, J. (2016). *Split-intransitivity in Ranmo* (Unpublished doctoral dissertation). Harvard University, Graduate School of Arts & Sciences.

Malchukov, A. L. (2017). **Case**. In *Oxford research encyclopedia of linguistics*. Oxford University Press.

Quinn, K. (2014). *A description of the verbal morphology of Wartha Thuntai* (Unpublished master's thesis). Australian National University.

Rogers, C., & Campbell, L. (2015). **Endangered languages**. In *Oxford research encyclopedia of linguistics*. Oxford University Press.

Siegel, J. (2015). The morphology of tense and aspect in Nama, a Papuan language of southern New Guinea. *Open Linguistics*, *1*(1).

Siegel, J. (2017). Transitive and intransitive verbs in Nama, a Papuan language of southern New Guinea. *Oceanic Linguistics*, *56*(1), 123–142.

Stump, G. (2017). **Inflectional morphology**. In *Oxford research encyclopedia of linguistics*. Oxford University Press.

Notes:

(1.) Map provided by CartoGIS Services, ANU College of Asia and the Pacific, the Australian National University.

(2.) Donohue uses the name Kanum in these articles but clarifies in the body of those papers that the language data is drawn from the variety that is referred to as Ngkontar Ngkolmpu in this article.

(3.) See Rogers and Campbell (2015) in this collection for a discussion of endangered languages.

(4.) See Stump (2017) in this collection for a brief introduction to this topic.

(5.) See Stump (2017) in this collection for an overview of types of exponence.

(6.) Dench and Evans (1988) use the term *complementising* for what is referred to here as *subordinating*; in all other respects the analyses are identical.

(7.) This is distinct from the usage in this article of thematic referring to the compositional stem elements.

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