Polysemy and Complementarity: Core Verbs and Their Uses in Numbami

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Abstract

Recent lexicographical works on Papuan languages on the New Guinea mainland have noted that a small number of core verbs combine with other elements to play a large role in verbal predicates. Verb-medial Oceanic languages in the Huon Gulf subfamily also display similar phenomena, relying heavily on a small core of multifunctional verbs. Moreover, cognates of some of the core manner-of-action verbs (such as 'hit', 'chop', 'hold', 'put') show up as derivational and classificatory prefixes in verb-final Oceanic languages elsewhere along the north coast. Close examination of Numbami, an Oceanic language in the Huon Gulf, reveals two main types of core verbs: (A) highly polysemous manner-of-action verbs that often serve as light verbs combining with nouns or adjectives to derive verbal predicates; and (B) positional verbs ('stay', 'dwell') that locate other event types, and path verbs ('go', 'ascend', 'reach') that describe complementary aspects of complex motion events.

1 Introduction[1]

A small number of Numbami verbs combine with many other elements to generate a wide array of verbal predicates. Some of these core verbs are highly polysemous and the combinations they appear in are often highly idiomatic. Other core verbs are ubiquitous because their semantic contributions complement so many other predicates that they tend to occur in many types of serial verb constructions (SVCs). This study will focus first on the most productive of the polysemous verbs and then on the most often serialized core verb classes. These semantic verb classes will be labeled in small caps (e.g., ACT, PUT, SAY, MOVE, GO) to indicate that they indicate semantic prototypes, not individual verbs.

The focus on polysemous verbs aims to facilitate comparison with two groups of languages in Papua New Guinea (PNG).

(A) The first group is the Oceanic languages with SOV word order where a small set of similarly polysemous core verbs has evolved into innovative derivational and "classificatory" prefixes that combine with other elements to generate new verbs (Bradshaw, 1982, 2010b). The SOV languages typically have a dozen or so such innovative prefixes, although they appear in many combinations. Most of the SOV languages also appear to have retained reflexes of their inherited derivational prefix, "causative" *pa(ka)-, but it is much less ubiquitous than it is in so many Oceanic languages outside New Guinea. (The SVO languages of the Huon Gulf subfamily have lost all trace of their inherited causative and reciprocal prefixes; Ross, 1988, p. 132.) For recent descriptions of the prefixes in a range of SOV languages, see Lichtenberk (1983, pp. 214–217) for Manam on the north coast of PNG, Olson (1992, pp. 287–290) for Gumawana, and Ezard (1992, 1997) for Tawala and other languages at the southeast tip of PNG. Earlier works by Dempwolff (n.d.) and Mager (1952) also contain evidence of classificatory prefixes in Gedaged, in Madang Province (see Bradshaw, 1982, pp. 56–60).

(B) The other group for comparison is Papuan languages of the Trans–New Guinea (TNG) family. In Lang's (1975) description of "classificatory verbs" in Enga, a TNG language in Enga Province in the highlands, she notes that a limited number of verbs combine with adjuncts to form complex predicates, which account for 66 per cent of all Enga verb forms in her corpus. Moreover, just three such verbs (*lengé* 'utter', *pingí* 'do', and *píngi* 'hit, strike') account for 63 per cent of the complex predicates (1975, p. 94). Similarly, Farr (1999, pp. 62–66) notes that Korafe, a TNG language in Oro Province, relies on a small number of generic verbs to derive verbal compounds: *e* 'do', *se* 'say', *de* 'hit', *gae* 'spear', *bu* 'get', *-ghe* 'repeat'. Pawley and Bulmer (2011, p. 38) observe of Kalam, a TNG language in Madang Province, that "fifteen verb roots account for nearly 90 per cent of all verb root tokens in Kalam text." Among these "generic verbs" they list *ag-* 'make a sound, emit, utter, say', *ay-* 'put, form, become, stabilise', *d-* 'hold, touch, have, get, control, stop, finish', *g-* 'happen, occur, act, function, work, do, make, build, create', *nŋ-* 'be conscious, perceive, know, see, hear, smell, feel', and *pk-* 'touch, contact, strike, kill', along with several basic motion verbs. In their (2017) chapter on TNG languages, Pawley and Hammarström confirm that "most, probably all TNG languages augment their stock of verbs by means of verb adjunct phrases" consisting of an uninflected adjunct and an inflected light verb, and that many lack any "purely morphological means of deriving transitive verbs" (2017, pp. 111–112).

Many Australian languages also rely heavily on complex predicates that include various elements that combine with light verbs (Bowern, 2014). After examining Numbami core verbs in greater detail, we shall briefly consider whether verbal patterns found in TNG languages might be distributed over a wider area than just New Guinea.

2 Verb morphology

Verbs constitute the only major lexical category in Numbami that exhibits distinctive morphology. They take prefixes that mark the person and number (singular or plural) of their subjects and that distinguish realis from irrealis events (with the former being unmarked). The inflectional prefixes are listed in Table 1. The free pronouns, which occur in subject or object NP position, are given for comparison.

Table 1. Numbami subject prefixes and free pronouns

PERSON	SUBJECT PREFIXES		FREE PRONOUN
	REALIS	IRREALIS	
1s	*wa-*	*na-*	*woya*
2s	*u-*	*nu-*	*aiya*
3s	*i-*	*ni-*	*e*
1EP(EXCL.)	*ma-*	*mana-*	*i*
1IP(INCL.)	*ta-*	*tana-*	*aita*
2P	*mu-*	*muna-*	*amu*
3P	*ti-*	*ina-*	*ai*

Numbami verbs show no distinctive morphology to mark object relations. There is no morphological distinction between transitive and intransitive verbs, as shown in (1); nor between verbs with direct or oblique objects, as shown in (2). It is thus not always easy to distinguish incorporated object nouns, as in (3a), from nominals with specific reference, as in (3b).

(1)   INTRANSITIVE VS. TRANSITIVE VERBS
a.   *Usana   i-lapa.*
       rain   3s-beat
       'It's raining/Rain is falling.'

b.   *Usana   i-lapa   atawa.*
       rain   3s-beat   roof
       'Rain is falling on the roof.'

(2)   DIRECT VS. OBLIQUE OBJECTS
a.   *Wa-lapa   kundu.*
       1s-beat   sago
       'I pounded sago.'

b.   *Wa-lapa   waŋinda.*
       1s-beat   sagoclub
       'I pounded (with) the sago club.'

(3)   GENERIC VS. SPECIFIC OBJECTS
a.   *Ti-lapa   manaŋgala   iya.*
       3P-beat   scales   fish
       'They scaled fish.'

b.   *Ti-lapa   iya   na   manaŋgala.*
     3P-beat   fish   GEN.SG   scales
     'They scaled the fish.'

3 Light verbs

Light verbs are not uncommon in the world's languages. They are often combined with other elements to form new or idiomatic verbal expressions. However, light verbs are not so common among Oceanic languages, which generally have quite productive means of deriving verbs from other parts of speech, often by means of reflexes of an inherited prefix *paka-, usually glossed 'causative' even though it has many other uses (Blust and Trussel, ongoing). (For more on the nature of light verbs more generally, see Butt, 2010; for historical perspective, see Bowern, 2008.)

Verbs in Numbami appear to be a closed class. The language lacks any morphological means to derive verbs from other parts of speech. Instead, a relatively small number of highly polysemous (often semantically bleached) light verbs combine with other elements to derive verbal equivalents.[2] (Pawley, 2006 notes the correlation between small, closed verb classes and high degrees of polysemy.) The most frequent of these light verbs in Numbami are listed in (4).

(4)   LIGHT VERBS IN NUMBAMI
      -lapa 'to beat, pound, hit, perform; affect or form over an extended area'
      -so 'to pierce, stab, plant; pass through or affect a restricted area'
      -ambi 'to take, hold'
      -ki 'to put, place, send, give, designate'
      -ŋgo 'to say, tell, utter, scold'
      -pai 'to do, make'

Compare the examples listed in (5) and (6) of light verbs that Hanks, Urbschat, and Gehweiler (2006) identify in English and German. They call light verbs *verblasste Verben* 'faded verbs'. Note that the same polysemous lexeme can function as a standard verb in some constructions, but as a light verb in others. This is also true of the light verbs in Numbami.

(5)   LIGHT VERBS IN ENGLISH
      have (in *have a look at something, have a chat, have a bath*)
      give (in *give a smile, give a groan*)
      take (in *take place, take account of something, take a photograph*)
      set (in *set something alight, set something in motion*)
      keep (in *keep someone company*)

(6)   LIGHT VERBS IN GERMAN
      leisten (in *gute Arbeit leisten* 'do good work')
      machen (in *ein Foto machen* 'take a photograph')
      erteilen (in *Unterricht erteilen* 'give a lesson')
      bringen (in *in Bewegung bringen* 'set in motion')

It is important to recognize that light verbs are real verbs, not inflectionally defective auxiliaries (Bowern, 2008, pp. 166–168; Butt, 2010). They occur independently as main verbs,

with or without complements. Their complements in Numbami are mostly nouns or adjectives that also occur independently, although a few occur only in combination with light verbs or other elements. (In TNG languages, by contrast, many of the complements to light verbs do not appear independently; Pawley & Hammarström, 2017, p. 112.)

Numbami relies on its core manner-of-action (ACT) light verbs to derive verbal equivalents for nouns and adjectives, as illustrated in Table 2. If unmodified, the complements of such verbs appear to be generic incorporated objects, but they can also be modified to become specific referential objects. One can thus say *Ti-so aeduga* 'They knelt' with a generic object noun, or *Wa-so naŋi aeduga* 'I planted my knee' with a referential object noun. A few of the incorporated-object constructions can be followed by referential object NPs.

Table 2. Numbami noun–verb counterparts

aeduga 'knee'	*-so aeduga* 'to kneel, plant the knee'
aga 'tabu'	*-ki aga* 'to place a tabu (on s.o./s.t.)'
ano 'fruit'	*-ambi ano* 'to bear fruit'
biŋa 'talk, word, speech'	*-ŋgo biŋa* 'to speak' *-ki biŋa* 'to send word'
dabola 'trunk; head'	*-lapa dabola* '(tree) to form a trunk'
dimila 'calking substance'	*-so dimila* 'to calk'
dodoŋa 'plug'	*-so dodoŋa* 'to plug'
gegeama 'play'	*-pai gegeama* 'to play'
gewa ('come-between'?)	*-pai gewa* 'to commit adultery' *-ki gewa* 'to mediate'
giliya 'debt'	*-ambi giliya* 'to receive payment of debt' *-ki/-lapa giliya* 'to repay debt'
kakalasa 'foam'	*-so kakalasa* 'to foam'
kowakowa ('feathers shed in molting'?)	*-so kowakowa* 'to molt, shed feathers'
kulakula 'work'	*-pai kulakula* 'to work'
lauwa 'fight, war, battle'	*-pai lauwa* 'to fight, do battle' *-ŋgo lauwa* (NP) 'to forbid (s.t.)'
luŋana 'steering oar, rudder'	*-ambi luŋana* 'to steer, guide, take the helm'
manaŋgala '(fish)scale'	*-lapa manaŋgala* (NP) 'to scale (fish)'
nali 'fixed date or time'	*-ŋgo nali* 'to set a date or time'
tolotolo 'cough'	*-so tolotolo* 'to (expel a) cough'
tuwaŋana 'measurement, assessment'	*-ambi tuwaŋana* 'to measure, assess' *-so tuwaŋana* 'to sound, fathom'

tuwatuwa 'story'	*-ŋgo tuwatuwa* 'to tell stories'
wawana 'heat; hot'	*-ki wawana* 'to torture, persecute'
wena 'theft'	*-pai wena* (NP) 'to steal (s.t.)'

Core ACT verbs also commonly appear with a small but very productive class of resultatives to form phrasal verbs. A resultative cannot stand as a predicate on its own, so must be combined with an inflected verb. Core verbs combined with the resultative *boda* 'blocked, covered over, closed off' are listed in (7), and phrasal verbs beginning with the core verb *-lapa* 'beat' are listed in (8).

(7) CORE VERBS WITH RESULTATIVE *boda* 'blocked, covered over, closed off'
    -ambi boda 'take (s.t.) over, come to dominate (s.t.)'
    -ki boda '[put] block (s.t.) from view; be blocked'
    -lapa boda 'cover up, cover over, close off (an opening)'
    -so boda 'plug (an opening), cap (a bottle)'

(8) PHRASAL VERBS WITH *-lapa* 'beat, pound, hit, kill' PLUS RESULTATIVES
    -lapa boda 'cover up, cover over, close off (an opening)'
    -lapa gi 'break off (a length) (of s.t.)'
    -lapa lele 'turn (s.t.) around'
    -lapa pale 'crush (s.t.)'
    -lapa sapu 'hit (s.t.) amiss, hit (s.t.) badly'
    -lapa tomu 'break (s.t.) off, draw off (water, etc.)'
    -lapa uni 'kill (s.t.)'
    -lapa wosa 'break/burst (s.t.) open, open (a box, etc.)'

Verbs such as *-lapa* 'to beat' are employed in many other idioms in which the postverbal element is a noun often uninterpretable in its literal sense or is a morpheme not independently productive. The verb *-lapa* is from POC *Rapu 'hit' (Ross, 1988), probably via *Rap (cf. Gitua *-rap* 'hit') with the later addition of a final vowel. The same root is also the source of the innovative Manam classificatory prefix *rau-* 'hitting' (Lichtenberk, 1983, p. 216) and the innovative Tawala derivational prefix *lu-*, as in *lu-mayau* 'collect firewood' (*mayau* 'fire, firewood') (Ezard, 1992, p. 162), whose semantics are otherwise hard to pin down, ranging from 'hit' to 'collect/catch' to 'pile up' to 'act like' (Ezard, 1997, p. 271). Gumawana (Olson, 1992, p. 289) has also added an innovative causative prefix *lu-*, as in *lu-kavave* 'cause to be finished', to its inherited causative prefix *va-* (from *pa[ka]). The exact contributions of the verb *-lapa* to the idiomatic compounds in (9) are just as hard to pin down as the semantics of causative *lu-* in Gumawana and Tawala.

(9) IDIOMATIC COMPOUNDS WITH *-lapa* 'to hit, etc.'
    -lapa abuabu (earth, mud?) 'to be covered with mud'
    -lapa dabata 'to be angry, ashamed; to sulk'
    -lapa eŋaŋa 'to clear the throat'
    -lapa guŋa (grass skirt) 'to be in heat, be horny'
    -lapa kayawa 'to wave, fan, gesture'
    -lapa masina (blood) 'to rust'
    -lapa motawi (custom, behavior) 'to preach'
    -lapa salau 'to run aground'

-lapa taluŋa 'to cloud over'
-lapa taŋanowa (ear) 'to cut off part of a branch of coconut or betel nuts'
-lapa wagena (NP) 'to overshadow, stunt the growth of (st)'
-lapa woya (singsing) 'to perform a singsing (traditional dance)'
-lapa yasawi 'to tattoo'

4 Polysemy of light verbs

4.1 SAY verbs

There are half a dozen related senses of the verb *-ŋgo* 'say' in Numbami, depending on the elements it combines with. When the direct object is an animate NP denoting the person spoken to, *-ŋgo* can be translated as 'to scold (s.o.)' or 'to tell (s.o.) off', as in (10). When the direct object is a noun that denotes a product of speech, then the verb and its object denote the activity required to generate that product, such as 'to talk' or 'to tell (a story)', as in (11). In this case, the person spoken to (the indirect object) is indicated by a dative prepositional phrase (PP).[3]

(10)   SPEECH VERB *-ŋgo* 'to scold (s.o.)'
       Awa   *i-ŋgo*   *ai.*
       mother   3S-say   3P
       'Mother scolded them.'

(11)   SPEECH VERB *-ŋgo* 'to say, tell (s.t.) (to s.o.)'
a.   *Nu-ŋgo*   *biŋa*   *de*   *woya.*
       IR.2S-say   word   to   1S
       'Talk to me!'

b.   *Nu-ŋgo*   *tuwatuwa*   *de*   *woya.*
       IR.2S-say   story   to   1S
       'Tell me a story!'

c.   *Nu-ŋgo*   *Ø*   *de*   *woya.*
       IR.2S-say   [it]   to   1S
       'Tell [it to] me!'

The complementizer *iŋgo* 'SAY' derives from the other two senses of *-ŋgo* 'to say', both of which are essentially quotative. In the strictly quotative sense, the complement of *-ŋgo* is a verbatim quote of whatever was or will be uttered, whether or not it constitutes a complete proposition. In this function, it often follows a verb of speaking in a same-subject serial construction. The first verb conveys the nature of the speech act, while *-ŋgo* introduces the content of what was said. However, *-ŋgo* also has a desiderative usage, translatable as 'to want (for NP) to', in which case it takes an irrealis complement that states the desired proposition.[4] In both these senses, *-ŋgo* can be followed by *ka(na)* 'like, thus'. In the following examples, the complements of *-ŋgo* are set off in square brackets.

(12)   QUOTATIVE *-ŋgo* 'to quote'
a.   *Kolapa   ti-ŋgo   [nomba sawa].*
     boy   3P-say   thing what
     'The boys said, "What (is it)?".'

b.   *Ti-kamba   e   ti-ŋgo (ka)   [Tinipa Kae].*
     3P-call   3S   3P-say (like)   Tinipa Kae
     'They call him "Little Tinipa."'

(13)   DESIDERATIVE *-ŋgo* 'to want'
a.   *Wa-ŋgo   [na-ŋgo   tuwatuwa].*
     1S-say   IR.1S-say   story
     'I want to tell a story'

b.   *Aiya   u-ŋgo   [nu-soloŋa   lumana].*
     2S   2S-say   IR.2S-enter   school
     'Do you want to go to school?'

The quotative function of fully inflected *-iŋgo (kana)* also comes into play to spell out the thought content when used with the verbal expression for 'to think'. This defective verbal construction is literally a noun+verb compound ('belly+hold') whose true verb inflects for realis vs. irrealis (*tae-wembi* 'belly-3s.hold' vs. *tae-nembi* 'belly-IR.3s.hold'), but whose subject prefix only agrees with (3S) 'belly', not with the person and number of the actual thinker(s). The latter is indicated by a free pronoun in subject NP position. When the verb 'to say' is paired with the defective verbal expression 'to think' to spell out the propositional content of the thought in a same-subject serial construction, the two verbs must share the same mood—realis or irrealis—and the same functional subject—in other words, the same Experiencer(s), or thinker(s).

(14)   COGNITIVE VERB + *-ŋgo* 'to wit'
a.   *Woya   tae-wembi   wa-ŋgo (ka)   [e   ni-wesa kote].*
     1S   belly-3s.hold   1S-say (like)   3S   IR.3s-go not
     'I want to tell a story.'

b.   *E   tae-nembi   ni-ŋgo (ka)   [i   ma-iye wai].*
     3S   belly-IR.3s.hold   IR.3s-say (like)   1EP   1EP-lie FIN
     'He'll think we've gone to sleep.'

This odd construction is the only case where the Numbami verbal complementizer regularly appears fully inflected. In every other case I have recorded, it takes the shape *iŋgo,* no matter what the mood or subject of its governing verb. In other words, it is no longer a serialized verb in a same-subject SVC.

4.2 PUT *verbs*

The semantics of the PUT class ranges from 'put' to 'send' to 'give' to 'appoint', each of which is rendered in Numbami by the same verb form *-ki* in combination with different elements.

With a locative goal complement, as in (15), *-ki* translates as 'put'. With an animate goal complement as in (16), *-ki* translates as 'give'. When combined with directional complements, as in (17–18), *-ki* translates as 'send'. When the direct object of PUT denotes one or more persons, as in (19), *-ki* translates as 'appoint' or 'nominate'. With complements indicating products or conditions, PUT verbs can even translate 'put out, emit, show', as in (20).

In every case, the PUT verb signals initiation of a transfer of position, status, ownership, or even sensation. It is compatible with a very wide range of different results, perhaps especially where motion along a path is involved. PUT verbs set things in motion. In discussing the semantics of motion events, Frawley identifies *Displace(x)* as "the elemental structure of a motion event" (1992, p. 171). If so, then PUT is its transitive counterpart, *Displace(x,y).*

(15)   PUT   ON (PLACE)
        Ina-ki   kundu   na   ano   suwa   nato.
        3P.IR-put   sago   its   fruit onto   there
        'They'll put the starch [extracted] from the sago onto it.'

(16)   PUT   TO (PERSON)
        Ti-ki   bani   de   e   kote.
        3P-put   food   to   3s   not
        'They didn't give him any food.'

(17)   PUT   GO (TO PERSON)
        Wa-ki   biya   i-uwa   kote.
        1S-put   beer   3s-go.to.2   not
        'I didn't send you any beer.'

(18)   PUT   AIM   GO
        Biŋsu   i-ki   biŋa   i-woti   i-wesa.
        missionary   3S-put   word   3s-descend   3s-go
        'The missionary sent word down (and out).'

(19)   PUT   (PERSON)
        Ina-ki   lawa   lomosaŋa   na   wa   lawa   ina-lapa   na.
        3P.IR-put   people   rinsing   of   and   people 3P.IR-beat of
        'They'll appoint people for rinsing and people to pound.'

(20)   PUT   (OUTPUT)
        Niwila   i-ki   dana.
        coconut   3S-put   sprout
        'The coconut is sprouting.'

4.3 FEAR verbs

Even the minor class of what one might call FEAR verbs show polysemy. The form *-mandi* 'fear' can combine with either nothing, translating 'be afraid', as in (21); or with a direct object, translating 'be afraid of, fear, flee (something)', as in (22); or with a destination, in which case

it translates as 'flee (to)', as in (23). Are there three verbs *-mandi* or is there a consistent emotion that can show up in three different event types? Inasmuch as Numbami (A) makes no morphological distinction between transitive and intransitive verbs, and (B) allows zero pronouns in object position, it is often hard to tell without discourse context whether a particular instance of *timandi* should be translated as 'they're afraid', 'they're afraid of it', or 'they flee'.

(21)   FEAR
        Aiya   u-mandi.
        2s   2s-fear
        'You're afraid (of it).'

(22)   FEAR (THING)
        Kolapa   kae   i-mandi   bumewe.
        boy   little   3s-fear   whites
        'The little boy is afraid of white people.'

(23)   FEAR   REACH   GO
        Ti-mandi   su   weni   ti-wesa.
        3P-fear   to   bush   3P-go
        'They fled into the forest.'

5 Complementarity

Two other groups of core verbs combine readily with many other predicate types because they indicate locations or directions of other event types. Complementary classes of motion and direction verbs cooccur in clauses that describe movement along a path. (For more on path constructions in Numbami, see Bradshaw, 2010a.)

5.1 STAY *verbs: location*

Among the most frequent and productive verbs are those in the STAY class (e.g., 'dwell, lie, sit, stay'). These positional verbs are used to indicate existence, location, and duration. They are the only verbs that can take the locative prefixes (proximal *ta-* 'here' and distal *ko-* 'there'), which are especially common in existential or presentational constructions.[5]
    Examples of the three most common verbs in this class follow.

(24)   *-ndo* 'sit, stay, dwell, remain, exist, be, be alive, be awake'[6]
a.   *Maŋoza   luwa   ti-ndo   ai.*
        hornbill   two   3P-stay   tree
        'Two hornbills are sitting in the tree.'

b.   *Awa   ko-i-ndo   kapala   lalo.*
        mother   there-3s-stay   house   inside
        'Mother is over there inside the house.'

(25)   *-mi* 'dwell, live, remain, stay, be'[7]
a.   *U-mi*   *wiya-ma?*
       2s-remain   good-ADV
       'How are you doing?' (TP *Yu stap i orait?*)'

b.   *Kolapa*   *ti-mi*   *tendana?*
       boy   3P-live   where
       'Where do the boys live?'

(26)   *-iye* 'lie, be on, be at; exist (of inanimates); lie inert, sleep (of animates)'
a.   *Biyaga*   *i-iye*   *tendana?*
       knife   3s-lie   where
       'Where is the knife?'

b.   *Ko-i-iye*   *kapala*   *zamoka.*
       there-3s-lie   house   veranda
       'It's over there on the veranda.'

All three of these STAY verbs are used in adverbial serial constructions to indicate the location or duration of events described earlier in the SVC, as in (27) and (28).

(27)   SERIALIZED LOCATIVE *-iye* 'lie (inert)'
a.   *I*   *ma-wasa*   *ma-iye weni.*
       1EP   1EP-go   1EP-lie bush
       'We went and slept in the forest' (animate subject + 'lie' = 'sleep')

b.   *I*   *ma-ki*   *bani*   *i-iye*   *weni.*
       1EP   1EP-put   food   3s-lie   bush
       'We put food in the forest' (inanimate subject + 'lie' = 'be at')

c.   *I*   *ma-pisa*   *ai*   *i-iye*   *weni.*
       1EP   1EP-find   3P   3s-lie   bush
       'We found them in the forest' (event + 'lie' = 'be at')

(28)   SERIALIZED DURATIVE *-ndo* 'stay', *-mi* 'dwell'
a.   *Ma-iye*   *ma-ndo,...* *ma-ndisa* *i-iye*   *koe*   *Ampo.*
       1EP-lie   1EP-stay   1EP-rise   3s-lie   there   Ampo
       'We slept on [aboard ship]... and woke up over at Ampo.'

b.   *Ina-lomosa*   *ka*   *ina-mi...*
       3P.IR-rinse   like   3EP.IR-dwell
       'They'll keep on rinsing…'

5.2 MOVE *verbs: manner of motion*

Verbs in the class MOVE describe manner of motion, include *-dodomu* 'run', *-kota* 'swim, wade', *-lapa goleme* 'row' (lit. 'hit oar'), *-lapa woya* 'dance' (lit. 'beat dance'), *-lowa* 'fly', *-ŋgewe* 'chase, hunt', *-ŋguni* 'punt, pole', *-nzolo* 'scatter, scram', *-paandalowa* 'walk' (< *-pai* 'do, make' + *andalowa* 'path, road'), *-so goloŋa* 'dive' (lit. 'stab deepwater'), *-tatala* 'sink', *-usi* 'tread, step', *-wose* 'paddle', and *-yele* 'steer, sail'.

These verbs indicate manner-of-motion, but not path-of-motion. To get manner and path in the same clause, both a manner verb and a path verb are needed in a serial construction.[8]

(29)

		MOVE	GO		
a.	*Ekapa-kolapa*	*ti-dodomu*	*ti-wesa*	*su*	*lumana.*
	girls-boys	3P-run	3P-go	to	school

'The children ran off to school.'

		MOVE	AIM	GO
b.	*Balus*	*i-lowa*	*i-leleu*	*i-ma.*
	airplane	3S-fly	3S-return	3S-come

'The airplane flew back here.'

5.3 GO *verbs: deictic direction*

Deictic verbs distinguish three directions: *-ma* 'come toward speaker', *-uwa* 'go toward addressee' (glossed here 'go.to.2'), and *-wasa* 'go away from either speaker or addressee'.[9] They are ubiquitous in Numbami discourse – although *-uwa* 'go toward addressee' is by far the rarest of the lot. Not only do these verbs cover the functional range of 'come' and 'go' in most other languages; they also add directionality to manner-of-motion (MOVE) verbs, and deictic directionality to other directional (AIM) verbs. Finally, they also perform functions like those of directional adverbs such as *here* and *there* in English (or *hither, thither, hence, thence,* and *yonder* in more archaic English).[10]

(30)

			AIM	GO
a.	*Inami*	*biŋsu*	*Lene*	*i-woti*	*i-ma.*
	GEN.1EP	missionary	Lehner	3S-descend	3S-come

'Our missionary Lehner came down toward us.'

	MOVE		GO
b.	*Mana-paandalowa*	*bouna*	*mana-uwa.*
	1EP.IR-walk	overland	1EP.IR-go.to.2

'We'll walk overland in your direction.'

Although deictic directional verbs in many languages are intransitive, GO verbs can take overt direct objects, so long as (a) those objects indicate target locations, and (b) those target locations are compatible with the deictic target direction of each verb: toward speaker, toward addressee, or away from either.

Another important point to note about GO verbs is that they denote movement toward a target location, but make no claim about arrival at that target. Thus, *ti-wesa Lae* (lit. 'they went Lae') is more precisely translated 'they left for Lae' or 'they went Lae-ward' instead of 'They went to Lae'. The presence of a REACH verb or preposition is required to specify arrival at the endpoint of a path.

5.4 AIM *verbs: trajectory of motion*

The other directional verbs resemble the deictic directionals but lack any correlation with first, second, or third person. They include *-kawewe* 'steer, turn toward', *-kole* 'turn around', *-leleu* 'return', *-pi* 'ascend, climb up', *-woti* 'descend, climb down', *-sakiya* 'embark, climb up onto', *-kosa* 'disembark, climb down from', *-sake* 'ascend into', *-supula* 'round (a point)', *-weke* 'leave, abandon', *-yowa* 'move aside'.

(31)
	MOVE		AIM	
a.	*Ma-kota*	*tina*	*ma-sakiya*	*teulu.*
	1EP-wade	river	1EP-embark	side

'We waded the river and climbed up the other side.'

		AIM		REACH	
b.	*Waŋga*	*i-supula*	*bubusu*	*i-soloŋa*	*molou.*
	canoe	3S-round	point	3S-enter	cove

'The canoe rounded the point into the cove.'

Like the GO verbs, these AIM verbs can take transitive objects, so long as those objects denote locations appropriate to the trajectory. These would denote target locations in the case of *-kawewe* 'steer, turn toward' or *-sakiya* 'embark, climb up onto'; source locations in the case of *-kosa* 'disembark, climb down from' or *-weke* 'leave, abandon'; and site locations in the case of *-pi* 'ascend, climb up' or *-supula* 'round (a point)'.

5.5 REACH *verbs: goal or destination*

The roots of the two specialized REACH verbs double as prepositions. The path verb *-su(wa)* 'reach; arrive at, onto, into' is matched by the more general locative/goal preposition *su(wa)* 'at, onto, (up)on, to'.[11] The latter is far more common. In fact, I have no examples of the verb except in path constructions. Both the verb and the preposition take locative objects, but the object of the verb designates only a locative goal, while the object of the preposition can designate either a locative goal or the location or time of an event. Either the verb or the preposition can occur at the end of path constructions, but in either case its object must designate a goal, not a static location.

(32)
	MOVE	STAY	REACH		
a.	*Wa-dodomu*	*wa-mi*	*wa-su*	*naŋgi*	*kapala.*
	1S-run	1S-stay	1S-reach	GEN.1S	house

'I ran on down to my house.'

REACH

b.   *Tiyamama   ti-su   weni   wai.*
     everyone   3P-into   bush   FIN
     'Everyone had gone into the forest.'

The rather rare path verb *-ndeŋa* 'reach; arrive at' is matched by the far more common generalized dative preposition *de(ŋa)* 'to, at'.[12] The verb appears limited to path constructions, as in (33). Both the verb and the preposition take dative goals as their object complements.

(33)   ACT   GO   REACH
       Na-so   pepa   ni-wesa   ni-ndeŋa   naŋgi   luŋgewe.
       IR.1S-stab   paper   IR.3S-go   IR.3S-reach   GEN.1S   sister
       'I'll write a letter to my sister (far away).'

The same root *-ndeŋa* appears in the multifunctional verb *-ndeŋama* 'reach, match, suffice; be possible', often intertranslatable with Tok Pisin *inap.*[13]

(34)   ACT   REACH
a.   *Nu-ambi   buwa   ni-ndeŋama   aito   toli.*
       IR.2S-hold   betelnut   IR.3S-suffice   1IP   three
       'Get betelnuts enough for the three of us.'

                             REACH   AIM   GO
b.   *Yawela   gedo   i-ndeŋama   12 kilok   nu-leleu   nu-ma.*
       sun   shadow   3S-reach   12 o'clock   IR.2S-return   IR.2S-come
       'Come back at 12 noon.'

6 Frequency in narrative text

To test how frequent these core verbs are relative to other verbs in narrative text, I counted the verbs in two Numbami texts published in *Oceanic Linguistics* (Bradshaw, 1999), one on women's work preparing food (Text A, 53 lines) and the other on sago work (Text B, 77 lines). Over 57% of the 82 verbs in Text A and 61% of the 119 verbs in Text B are from the five core classes listed in Table 3. (Two less common verbs, one in the AIM class and one in the REACH class, were lumped into the "all other" category.) Core verbs thus outnumbered all other verbs combined in each text.

Table 3. Verb class counts in narrative text

Verb Class	Text A	Text B
ACT (*-so, -pai, -lapa, -ambi*)	11	30
PUT (*-ki*)	10	8
SAY (*-ŋgo*)	4	5
STAY (*-iye, -mi, -ndo*)	13	10
GO (*-wasa, -ma*)	9	20
Core verbs sum	**47**	**73**
All other verbs	**35**	**46**

7 Implications[14]

What accounts for the heavy reliance on a small number of core verbs in Numbami and many other Oceanic languages on the mainland of Papua New Guinea? Farr's (1999) observations about Korafe, Pawley and Bulmer's (2011) about Kalam, and Pawley and Hammarström's (2017) about Trans–New Guinea verbal systems more generally suggest that Papuan languages may have influenced much more than the linear position of verbs in neighboring Oceanic languages on the New Guinea mainland.

Bradshaw (2010b) suggested that the recruitment of manner-of-action verbs to form serial causative constructions (and later "classificatory" prefix constructions) arose in response to the loss of the inherited Proto-Oceanic *pa(ka)- prefix that is typically used to derive nouns, verbs, and adjectives from other word classes in so many Oceanic languages elsewhere. However, even though all Oceanic languages of the Huon Gulf subfamily have indeed lost all inherited verb-deriving prefixes (Ross, 1988, p. 143), reflexes of *pa(ka)- have survived elsewhere on the New Guinea mainland, even in the languages that have made the change from to SVOV to SOVV word order.

The Manam inherited causative prefix *aʔa-* is less productive than in many Oceanic languages outside New Guinea, but it still serves to transitivize some statives and a few psychological verbs (Lichtenberk, 1983, p. 217). Manam also has a range of manner-causative prefixes, only one of which cannot occur as an independent verb: *rau-* 'hitting' < *Rapu (Ross, 1988). Reflexes of *Rapu 'hit' seem to have become the most common light verb in many languages, so much so that its reflex *lu-* has evolved into a derivational prefix in several Southeast Papuan languages: Gumawana (alongside *va-, ve-, vai-* < causative *pa- and reciprocal *paRi-); Iduna (alongside *ve-, luve-, kive-,* etc.); and Tawala (alongside *ki-, wi-, wo-*), whereas most other manner-causative prefixes have retained their instrumental (or "classificatory") semantics, such as Gumawana *bisi-* 'by touch', *ka-* 'with teeth', *ki-* 'with hand', *tu-* 'by sitting' (Ezard, 1992, Olson, 1992).[15]

The decomposition of path constructions into multiple, mutually complementary serial verbs may also be due to Papuan influence, if Pawley and Lane's (1998) account of Kalam and Farr's (1999) account of Korafe are typical of TNG languages more generally. If so, it would appear that Numbami and the other Oceanic languages of the Huon Gulf subgroup have adapted their verbal resources to TNG idiomatic styles even without changing their basic word order.

8 Wider implications[16]

Complex predicate constructions and light verb constructions in particular, are common in Australian languages, especially those in the north (Bowern, 2014). This might suggest the possible existence of a Sprachbund that includes pre-Austronesian languages of New Guinea and Australia. The following paragraphs will briefly examine some similarities and differences between the verbal patterns described above and those found in Australian languages.

Some languages, like Japanese or Turkish, tend to rely on just one or two light verbs, but many languages in Australia, New Guinea, and elsewhere around the world rely on a range of light verbs with very similar basic meanings ('do', 'say', 'make', 'bring', 'take', 'go') that

make them easy to employ in complex predicates (Bowern, 2014, p. 273). Similar inventories of light verbs are thus not unique to Australia and New Guinea.

The morphemes that combine with light verbs to form complex predicates in Australian languages seem to be somewhat verblike. Bowern's first example of these "uninflecting coverbs" is Bardi *wajim* 'wash', a verb borrowed from English (2014, p. 264). Moreover, about half the languages in her sample "allow some kind of inflection on coverbs" (2014, p. 279), with aspect-marking the most common. For Trans–New Guinea languages, Pawley and Hammarström (2017, p. 112) call the light verb constructions "verb adjunct" phrases, noting that most of the adjuncts are not inflected and do not appear independently. They do not otherwise behave like either nouns, verbs, or adverbials.

In the Oceanic languages of the Huon Gulf subgroup, which have retained VO word order but lost derivational prefixes, light verbs are most productive when combined with deverbal resultatives to form phrasal verbs, or when combined with nouns or adjectives to form their verbal counterparts. Among the Oceanic languages along the north coast of PNG that have changed from SVOV to SOVV word order, light verb constructions have evolved in two directions. Manner-of-action light verbs ('pinch', 'chop', 'bite', etc.) have become instrumental ("classificatory") prefixes when combined with verbs or adjectives that denote the results, but they can also function as independent verbs in their own right. Meanwhile a few of the most common and most polysemous light verbs ('hit', 'hold', 'put', etc.) have evolved into derivational prefixes that make new verbs when combined with nouns, adjectives, or other verb stems, but have lost their former status as independent verbs. (Motu and its congeners on the south coast are exceptions in continuing to rely more heavily on the derivational prefix they inherited from POc.) These innovations may have been set in motion by influence from patterns commonly encountered in many Australian and Papuan languages, but the pathways of change have also been channelled by the internal logic of patterns inherited from Proto-Oceanic.

Notes

1. Initial research on Numbami was supported by National Science Foundation grant no. BNS 75-1945-1 to the University of Hawai'i Oceanic Comparative Linguistics Project under the direction of George W. Grace and Andrew K. Pawley. Frank Lichtenberk was my fellow junior researcher on that project and we first met at the Linguistic Society of Papua New Guinea meeting in Port Moresby in September 1976, where we briefly reported on our initial fieldwork. We went on to become classmates, officemates, roommates, drinking buddies, and lifelong friends. We even became fathers within a year of each other. I had some experience of life behind the Iron Curtain, where he grew up; and he had marriage ties to Japan, where I grew up. In fact, our last get-together was in Osaka in 2012, where we shared fine food and drink, and many pleasant memories.

2. The verbs *-jac/-nac* 'to hit', *-jam/-nam* 'to do, make', and others play a similar role in Jabêm, as do the verbs *-la* 'to hit' and *-ngka* 'to take, hold' in Tami. In fact, Bamler (1900, p. 243) gives separate entries for Tami *-la.* The first he glosses 'to hit'. The second he compares to Jabêm *-jam/-nam,* saying that it combines with nouns to make them into verbs. The core verb entries in Streicher's (1982) comprehensive *Jabêm–English dictionary* tend to be multicolumn entries, while those of other verbs are typically less than half a column long: *-gôm* 'make, do' 5 cols., *-guŋ* 'spear' 2 cols., *-ja/-na* 'go' 3 cols., *-jac/-nac* 'hit' 3 cols., *-jam/-nam* 'do, make, hold' 2 cols., *-kêŋ* 'put, give, send' 3 cols., *-sôm* 'say' 4 cols.

3. The first two senses of *-ŋgo* 'to scold' and 'to tell' match the two senses of Jabêm *-sôm,* as in *sê-sôm aêàc* 'they scolded us' and *sê-sôm biŋ (gêdêŋ aêàc)* 'they talked (to us)'. However, Iwal differentiates the two. Compare IWA *-go* 'to scold' (which may be cognate with NUM *-ŋgo* 'to scold') and IWA *-nei* 'to tell, say' (which also introduces quotes). Compare also IWA *ginei* (lit. 'R.3S.SAY') 'if', NUM *iŋgo* (lit. '3S.SAY') 'if'.

4. The Jabêm quotative verb *-be* 'to say', from which the complementizer *gebe* 'SAY' derives, also has the same desiderative usage with an irrealis complement, as in *aê ga-be* [*ja-sôm biŋ*] (1S 1S.R-SAY [1S.IR-SAY word] =) 'I want to say something'. Iwal has a multifunctional complementizer and preposition *ve* (*ve* 'because, in order to', *ve-ik* 'so that', *ve-lob* 'in case, lest', *lo-ve* 'until', *ve* 'with', *ve ... ane* 'for') that also serves as a desiderative verbal auxiliary, as in *ayeu ve na-vang* (1s *ve* IR.1S-go) 'I want to go'.

5. Many TNG languages also make elaborate use of various posture verbs, choosing one or the other depending on the nature of the nominal whose existence or location is being predicated (Pawley & Hammarström, 2017, pp. 115–116). Lang (1975) considers them to be noun-classifying verbs.

6. Cf. Jabêm *-ŋgôŋ* "sit, live, dwell, remain, stay" (Streicher, 1982, p. 448).

7. Cf. Jabêm *-moa* "abide, remain, stay, exist, live (in a certain place, cf. *-ŋgôŋ*), when used … after other verbs it indicates the durative" (Streicher, 1982, p. 365).

8. The lexical encoding of manner and path yields an interesting typology of motion events first proposed by Talmy (1985, 2000), who divides languages into those that tend to encode path in the main verb while relegating manner to a satellite role (as in 'They entered the house running'), and those that tend to encode manner in the main verb, while relegating path to a satellite role (as in 'They ran into the house'). Bradshaw (2010a) discusses the Talmy typology as it relates to Numbami.

9. Jabêm also exhibits a three-way distinction in its deictic verbs (see Bradshaw & Czobor, 2005, p. 19–20). The initial vowel of the verb stem *-wasa* assimilates to the vowel of its subject prefix, thus: *wa-wasa* '1S-go', *u-wosa* '2S-go', *i-wesa* '3S-go'.

10. Lichtenberk (2003) describes a division of directional duties in Toqabaqita that is typical of many other Oceanic languages, in which there is no simple verb 'come', while the verb 'go' lacks any deictic orientation. Instead, two deverbal directional particles, andative *kau* and venitive *mai,* do most of the deictic work, and much else besides.

11. The same root shows up in the lexical compound *-ndosuwa* 'sit down', from *-ndo* 'stay, sit' + *suwa* 'onto, upon'. The compound is used intransitively, although of course it implies a locative goal, a place upon which to sit down. Nor is the *suwa* in the compound truncated to *su,* as the preposition usually is. The compound *-ndosuwa* is thus distinguishable from the sequence of *-ndo + su(wa),* as in *-ndo su zamoka* 'sit on veranda'.

12. My impression is that the preposition *denga* 'to' is most often truncated to *de,* while the much rarer verb *-denga* 'reach' is never shortened. In this respect, the verb–preposition pairs *-denga* 'reach (a dative goal)' and *de(nga)* 'to', and *-su(wa)* 'reach (a locative goal)' and *-su(wa)* 'at, onto, (up)on, to' are not parallel.

13. Jabêm has a cognate adverbial verb form *-(n)dêŋ* 'move toward a goal; reach; to, at; when', which likewise can only be inflected for third person *(gêdêŋ/êndêŋ)* and has a wide range of functions, such as introducing datives, specific times, and time clauses (Bradshaw & Czobor, 2005, pp. 41–42, 48–49, 112).

14. I wish to thank an anonymous referee who provided additional sources on TNG languages.

15. However, the thoroughly SOV Oceanic languages on the south coast of Papua show little evidence of manner-causative prefixes or heavy reliance on light verbs. The Motu causative *ha-* is quite productive in deriving transitive verbs from intransitives and adjectives (Dutton & Voorhoeve, 1974, pp. 138–143). Nor does Motu show much evidence of earlier verb serialization.

16. I wish to thank an anonymous referee who suggested I compare similar structures in Australian languages.

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