



HAL
open science

Morphology in Trans New Guinea languages

Sebastian Fedden

► **To cite this version:**

Sebastian Fedden. Morphology in Trans New Guinea languages. Oxford Research Encyclopedia of Linguistics, Oxford University Press, 2020, <10.1093/acrefore/9780199384655.013.633>. <hal-03586038>

HAL Id: hal-03586038

<https://hal.science/hal-03586038v1>

Submitted on 23 Feb 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



HAL Authorization

Morphology of Trans New Guinea Languages
(for publication in Oxford Research Encyclopedia Linguistics)

Sebastian Fedden

Keywords: clause chaining, compounding, derivation, inflection, morphology, Papuan, switch reference, Trans New Guinea, word classes

Summary

The aim of this article is to present the morphology and morphosyntax of Trans New Guinea TNG languages to a wide audience of linguists. The TNG languages are a family of several hundred languages which are spoken across much of the New Guinea mainland. The morphology of Trans New Guinea languages shows a high degree of diversity, from mildly polysynthetic to almost isolating. I present language data from virtually all subgroups of TNG, giving preference to recent descriptions and new data.

TNG languages display a clear categorial divide between nouns and verbs. In terms of word formation, they typically allow N-N and V-V compounding. Category-changing derivational processes usually involve overt morphological means. TNG languages are rich in nominalization processes, verbalization processes are less common. Valency-changing derivational processes (causatives, applicatives) are widespread and involve affixation or verb serialization. Many TNG languages have a reduced inventory of verb roots, in extreme cases comprising only as few as 60 recorded roots. Serial verb constructions and light-verb constructions are used to increase the expressive power of the verb lexicon. Besides nouns and verbs, TNG languages have sizeable classes of adjectives, small classes of adverbs, and pronouns, directionals, numerals, postpositions and conjunctions.

Nouns have restricted inflectional morphology, with inflection for the possessor being the most widespread. Nominal number is expressed less often and gender is very rare. Peripheral case roles are signaled by postpositions. Many TNG languages show optional ergativity where transitive subjects can be marked by a special case depending on certain semantic or pragmatic factors, such as animacy, agentivity or focus. Verb morphology is extensive, yielding large paradigms. TNG languages use verbal affixes to express core arguments. Subjects are almost universally indexed with a suffix on the verb. The majority of TNG languages also indexes the object on the verb, either with a prefix or a suffix.¹ The majority alignment pattern in the clause is accusative. Most TNG languages employ distinct constructions for bodily and mental processes, depending on whether they are controlled by an animate agent (e.g. think) or whether they are manifestations of a stimulus beyond the control of the experiencer (e.g. be angry). Tense, aspect and mood categories can all be found in TNG languages with one of them usually being dominant. For the expression of aspect, serial verb constructions are common in which the last verb in the serialization has undergone grammaticalization into an aspect marker, e.g. a progressive marker which has developed from the verb ‘stay’.

Almost all TNG languages distinguish in clause chains between medial and final verbs. Medial verbs morphologically indicate co-reference or disjoint reference of key participants in the discourse, and final verbs provide morphosemantic information like tense, mood, or illocutionary force, which typically applies to the whole clause chain. Since this type of tracking system of continuity in discourse is highly characteristic of TNG in general and less common worldwide, I will treat it in more detail here.

1. The Trans New Guinea languages

The New Guinea Area (also called Papuasphere in the recent literature), comprising mainland New Guinea, the Bismarck Archipelago, Bougainville, the Solomon Islands, Halmahera, and the islands of Timor, Alor and Pantar) is linguistically the most diverse region in the world. Nowhere else do we find the same language density in such a small area. Of the well over a thousand languages spoken in this region, roughly one quarter are Austronesian. The remaining languages are commonly called Papuan, although this term does not make any claims about genealogical relatedness, but is meant to be understood as a shorthand to refer to the non-Austronesian and non-Australian languages of the southwest Pacific (see Foley, 1986, 2000, 2010a; Palmer, 2018a; Ross, 2017).

The classification of Papuan languages is still in its infancy. The current state of research suggests a number of families of different sizes, from a handful of members to dozens or (in one case) hundreds of languages, as well as a number of unclassified languages. One of these families of Papuan languages – by far the largest in terms of its members – is the Trans New Guinea (henceforth TNG) family, named for its wide geographical spread from the West Bomberai Peninsula in West Papua just below the Bird’s Head Peninsula to the far southeast tip of Papua New Guinea (map 1). The only areas of the island of New Guinea where no TNG languages are spoken are (i) the Bird’s Head Peninsula itself, (ii) the north coast west of Madang Province (the “back of the bird”), (iii) parts of the south coast (the “belly of the bird”) with some exceptions, e.g. Marori and Marind, and (iv) the tip of the “bird’s tail”. Areas (i) and (ii) form part of the (larger) area circumscribed by Ross’ (2017) term “northern arc”.²

As expected for a large and diverse family like TNG for which historical documentation is lacking, there has been and continues to be controversy about the inclusion or exclusion of certain groups of languages, which explains the large difference in membership numbers that one can find. For example, Pawley and Hammarström (2018, p. 21) give a range of between 300 and 500 languages. Since 1970 the hypothesis that there is a TNG grouping – and which languages should be included in it – has gone through various stages, based on different criteria and consequently different membership numbers (Pawley, 2005). An early version of the TNG hypothesis was advanced by McElhanon and Voorhoeve (1970), who posited a ‘Trans New Guinea phylum’ of about 140 languages based on impressionistic lexical resemblances, consisting of the Finisterre-Huon group of about 70 languages spoken in the north-east of Papua New Guinea and about 70 languages spoken several hundred kilometres further to the west in central New Guinea.

[Permission to use currently being sought]

Map 1. The TNG languages (Pawley and Hammarström, 2018, p. 32)

Criticism of the early arguments for the TNG hypothesis was often harsh. Systematic historical work by Andrew Pawley and Malcolm Ross began in the 1990s. It relied on top-down reconstruction, by comparing languages from distantly related low-order subgroups, but left unresolved many issues that need to be investigated by bottom-up comparisons. Research over the last three decades has produced the following suggestive evidence for TNG: (i) systematic form-meaning correspondences in free personal and (to a lesser degree) bound pronouns allowing the reconstruction of a complete personal pronoun paradigm and a partial bound object pronoun paradigm (Ross, 2005; Suter, 2012); (ii) about 200 putative cognate sets, mainly basic vocabulary (Pawley, 2011, cited in Pawley and Hammarström, 2018, pp. 141-146); (iii) sound correspondences allowing the partial reconstruction of the proto-TNG phoneme system (Pawley, 1995, 1998, 2001); (iv) similarities in verb morphology, namely subject agreement by suffixation, object agreement by prefixation, and a special suffix on medial verbs in clause chaining constructions which indicates subject coreference. More importantly, these similarities are not just typological but include a number of putatively cognate affixes.

The morphology of Trans New Guinea languages shows a high degree of diversity, from head-marking, triple-indexing Mian and Telefol (Mountain Ok), through morphologically much simpler Fuyug (Goilalan), to isolating Kimaghama (Kolopom).

The present article complements two recent publications: Pawley and Hammarström (2018) on TNG languages, and Foley (2018) on the morphosyntactic typology of Papuan languages. The former is an extensive 170-page book chapter on the TNG family, roughly half of the chapter being a complete genealogical classification and list of data sources and pertinent literature, the other half comprising an overview of common phonological, morphosyntactic, syntactic and lexical properties, as well as a section on reconstructing proto-TNG. The latter (updating parts of Foley 2000) is a typological overview of morphological and syntactic structures in Papuan languages, without a focus on TNG. The present article adds to these two publications by offering an in-depth treatment of the morphology (particularly word formation) and morphosyntax of TNG languages, based on a data sample that systematically covers TNG subgroups (see Section 2 below) with a heavy emphasis on new data. I will concentrate on a set of properties that is typical of TNG languages. Almost all TNG languages have subject indexing suffixes on the verb. Likewise, almost all distinguish in clause chains between medial and final verbs; medial verbs morphologically indicating co-reference or disjoint reference of key participants in the discourse, and final verbs providing morphosemantic information like tense or mood. Grammaticalized evidentiality, on the other hand, can only be found in a small subset of TNG subgroups (San Roque & Loughnane, 2012). This is a local phenomenon based on areal diffusion and I will not say much about it here.

The article is structured as follows. Section 2 is an overview of the data sample. Section 3 goes into word classes in TNG languages. Section 4 discusses word formation. Sections 5 and 6 look at inflection of nouns and verbs, respectively. Section 7 deals in some detail with clause chaining constructions and medial verb morphology. Finally, Section 8 offers some concluding remarks.

2. Language data sources

Despite the progress in the last few decades most TNG languages are still poorly described, along with other Papuan languages. Based on Pawley and Hammarström's (2018) comprehensive listing of published TNG materials, the 300-500 languages only have 160 grammatical descriptions between them, with almost two thirds of these being listed as grammatical sketches (sometimes short and of questionable quality).

I follow here the classification of TNG languages proposed in Pawley and Hammarström (2018, pp. 31-71), who mainly follow Ross (2005). I look exclusively at languages belonging to Pawley and Hammarström's category "Groups with relatively strong claims to membership in TNG". I will however neglect Kiwalian, which is structurally very different and which they include only because of a number of cognates in basic vocabulary, rather than cognate pronouns or typical structures. I refer the reader to the appendix for a full list of the 32 TNG languages whose data will figure prominently in this article, together with information on the subgroups to which they belong, where they are spoken, and the data sources I used for each. I have taken care to include almost all TNG subgroups with one language each. In choosing the language representing its subgroup I tried to favour recent publications and languages which have not yet figured prominently in the literature. I will however also draw on other materials for the purposes of illustration. These languages are introduced at first mention with information on subgroup, area and source. Although this account is synchronic in nature I have also consulted recent historical-comparative work on the morphology of certain TNG subgroups, such as Wester (2014) on Awyu-Dumut, Daniels (2015) on Sogeram and Suter (2018) on Huon.

In a few linguistic examples I have carefully changed the glossing, segmentation or translation in order to present a more consistent morphological and morphosyntactic analysis of TNG languages. I follow the Leipzig Glossing Rules.³

3. Word classes

This section gives an overview of the word classes: nouns, verbs, adjectives, adverbs, pronouns, directionals, numerals, postpositions and conjunctions. On the word class of verb adjuncts, see section 4.2.2.

TNG languages (as is typical of Papuan languages in general) show a clear divide between nouns and verbs, in that roots are lexically either nominal or verbal and require category-changing derivational morphology, if used contrary to lexical categorization (Foley, 2000, pp. 370-371). It is common for nouns to have restricted inflectional morphology; inflection for the possessor is the most widespread type of nominal inflection. TNG languages typically do not

have articles. Verb morphology can be highly elaborate, yielding paradigms with many hundreds if not thousands of word forms.

Nouns are a large and open word class in all TNG languages. The stock of verb roots, on the other hand, tends to be smaller, and in some cases, it is extremely restricted. Often serial verb constructions and light-verb constructions are used to describe events where other languages use a single verb (Foley, 2018, p. 926).

TNG languages have intransitive and (mono)transitive verbs. The number of (underived) ditransitive verbs is always small, often only ‘give’. Some languages have ambitransitive verbs, which can be used transitively or intransitively without any overt morphological marking, e.g. Mian *dòu* ‘close’, *fibâ* ‘shake’ (Fedden, 2011, p. 348), which are ambitransitive like their English counterparts, and Duna *khi* ‘be lost; lose, abandon’ (San Roque, 2008, p. 112).

Verbs in TNG languages frequently fall into inflection classes, for example, Usan has seven main inflection classes for verbs (Reesink, 1987, p. 43), Mian has four (Fedden, 2011, p. 258), and Iha has three (Donohue, 2015, p. 415). On inflection classes in a range of TNG languages, see also Baerman, Brown, Evans, Corbett and Cahill (2015). Clauses are usually negated by means of a verb prefix or proclitic. According to Pawley and Hammarström (2018, p. 120), the forms *mV* and *na(a)* are particularly widespread as a negator, which suggests a tentative reconstruction of **ma* and **na* for an early stage of TNG.

TNG languages have sizeable classes of adjectives, which occur as noun modifiers and in the predicate. Mian has at least 100 adjectives (Fedden, 2011, p. 114), which cover many of the semantic domains commonly associated with adjectives in the world’s languages, namely age, dimension, value, colour, physical property, human propensity, and quality (Dixon, 2004). For a similar array of adjectives in Duna, see San Roque (2008, p. 81). Adjectives tend to lack comparative forms because comparison is expressed by syntactic means in TNG languages, mostly biclausal constructions (De Vries & Schapper, 2018).

Within the class of adverbs one can usually distinguish between temporal, spatial and manner adverbs. The set of distinct adverbs is often small in TNG languages, adverbial concepts frequently being encoded using nouns, adjectives or verbs (Reesink, 1990).

Free pronouns are usually (sometimes exclusively) used for humans. The typical TNG pronoun paradigm distinguishes three persons and singular and plural numbers. An inclusive-exclusive distinction is not common (though Oksapmin, discussed below, is an exception). I will use Aghu as an example (Table 1). Often there is also a dual, for example in Wantoat (Table 2).

Table 1. Typical TNG pronoun paradigm (data from Aghu; Drabbe, 1957, p. 6, who spells the IPA symbols /y/ as <ü> and /x/ as <gh>; see also van den Heuvel, 2016, p. 177)

	SG	PL
1	nu	nygu
2	gu	gygu
3	eŋe	joxo

Table 2. TNG pronoun paradigm with a dual (data from Wantoat; Claassen & McElhanon, 1970, p. 68, who spell /ə/ as <â>)

	SG	DU	PL
1	nə	nit	nin
2	gə	git	gin
3	an		

Syncretism of the second and third person in non-singular numbers is common in TNG pronoun paradigms, and also worldwide (Baerman, Brown & Corbett, 2005, p. 59-60).

TNG pronoun systems are very diverse. The simplest systems are found in some Chimbu languages (Highlands, Papua New Guinea) that only have a first person and a second person pronoun. This is not characteristic of all Chimbu languages, see for example Dom (Tida, 2006), nor does it seem to be characteristic of Wahgi languages, e.g. Nii (Stucky & Stucky, 1970). Golin (Bunn, 1974, cited in Foley, 1986, p. 70; Evans, Besold, Stoakes & Lee, 2005) has *na* ‘I/we’ and *i* ‘you’, with the forms for third person being *yal-ini* [man-self] ‘he’ and *abal-ini* [woman-self] ‘she’. Another language with only two pronouns ‘I/we’ vs. ‘you’ is Central Marind (Olsson, 2018, p. 36). The most extensive pronoun system can be found in the Ok-Oksapmin language Oksapmin (Highlands fringe, Papua New Guinea), which adds a dual, a clusivity contrast in both non-singular numbers and a masculine-feminine gender distinction in the third person singular (Table 3).

Table 3. Oksapmin pronouns (Loughnane, 2009, p. 90)

		SG	DU	PL
1		nox	nuxut	nuxul
12		–	dit	dil
2		go	gut	gul
3	M	ox	ixit	ixil
	F	ux		

In addition to the basic pronouns there are often also emphatic or focused pronouns, sometimes more than one set.

For proto-TNG, Ross (2005) reconstructs the following pronoun forms (Table 4).⁴

Table 4. Reconstructed proto-TNG pronouns (Ross, 2005, p. 29)

	SG	non-SG (i-grade)	DU	PL
1	*na	*ni	–	–
2	*ŋga	*ŋgi	–	–
3	*[y]a/*ua	*i	–	–
non-SG suffix			*-li/*-t	*-n[V]

In terms of demonstratives, TNG languages either have a two-term system or a three-term system, the former often described as distinguishing between near the speaker and away from the speaker, the latter contrasting near the speaker, near the addressee and away from both (see Foley, 1986, p. 75). An example of a two-term system is Mian, which has *ēle* ‘here, this(M)’ vs. *yē* ‘there, that(M)’ (Fedden, 2011, p. 136); an example of a three-term system is Rumu, which distinguishes between *aré* ‘here, this (near speaker)’, *apó* ‘there, that (near addressee)’ and *akó* ‘there, that (away from both)’ (Pettersson, 1999, p.11). Systems with four distance terms are also attested, e.g. in Fore (Scott, 1978, p. 82), Lembena (Heineman, 1998, pp. 17-18) and Una (Louwerse, 1988, p. 76). Demonstratives are often integrated into a larger system of spatial terms. This larger system is sometimes called demonstratives, sometimes directionals or locationals, and is typically adapted to the local topography, frequently referring to elevation, e.g. in Fore, Lembena and Una, or topographically salient features such as rivers, as in Mian *ut* ‘up’, *daak* ‘down’, *met* ‘upriver’, *tab* ‘downriver’, *wāt* ‘across (river)’, *tām* ‘away (from river)’ (Fedden, 2011, p. 140).

In some languages, directionals can be incorporated into the verb. An example from Duna is given in (1).

Duna (San Roque, 2008, p. 221)

- (1) hini-yaki phukao suwa-roma-pa
 appendage-side big hold-above-IMP
 ‘Lift up the big bulbous side (of the bottle).’

TNG languages typically distinguish interrogative pro-forms corresponding to English ‘who’, ‘what’, ‘where’, ‘when’, ‘how many’, ‘how’ and ‘why’. ‘Who’, ‘what’ and ‘where’ are usually monomorphemic (Pawley & Hammarström, 2018, pp. 94-95), as illustrated by the Duna terms in Table 5.⁵ Interrogative pro-verbs, such as Mian *fatnà* ‘do what/how’ (Fedden, 2011, p. 392), are also widespread in the family.

Table 5. Duna interrogative pro-forms (San Roque, 2008, p. 92)

Gloss	Form
‘who’	ai
‘what’	aki
‘where’	pano
‘how many’	akita
‘which’	pania
‘when’	paneki
‘how/why’	paneme(ta)

While TNG languages show a wide range of numeral and counting systems, the most widespread type is a restricted system with numerals only for ‘one’ and ‘two’ (Lean, 1992; see also Pawley and Hammarström, 2018, p. 128, and references there). In Kalam (Pawley & Bulmer, 2011, p. 424, p. 453) higher numerals are built by concatenating the basic numerals *nokom* ‘one’ and *omɲal* ‘two’ in the following way: *omɲal nokom* ‘three’, *omɲal omɲal* ‘four’, *omɲal omɲal nokom* ‘five’, *omɲal omɲal omɲal* ‘six’. A sizeable minority of TNG languages has body-part tally systems, which are found in Australia as well as New Guinea (Lean, 1992; de Vries, 1998). In such a system one hand is used to indicate points on the opposite side of the body which are associated with numbers. Body tally systems usually have an odd number base and there is one ‘highest’ or turning point in the counting process, which is the nose (number 14) in Mian and the other Mountain Ok languages (Fedden, 2011, pp. 147-148). Counting continues from the highest point with the other hand on the opposite side of the body. Restricted systems and body-tally systems are sometimes integrated to produce a ‘hybrid’ system, in which the first few terms (usually four) are not body part names, but come from the restricted system (Lean, 1991, cited in Dwyer and Minnegal, 2016, p. 26; see also Dwyer and Minnegal, 2016, pp. 26-31 for patterns of integration of the two types of counting system). The status as numerals of body-tally counting terms can differ depending on the language, for example in Mian, terms are only used for counting, while in Telefol they can also be used as numerals, i.e. they can modify nouns to indicate cardinality (Fedden, 2012). Body tally systems are a local phenomenon, which probably originated in proto-Ok and then diffused into languages of neighbouring subgroups, both TNG and non-TNG (Pawley & Hammarström, 2018, p. 130). Many TNG speakers have adopted the decimal system that came with Tok Pisin/English numerals in Papua New Guinea (Saxe & Esmonde, 2004; Fedden, 2012), and Indonesian numerals in Papua.

TNG languages almost exclusively make use of postpositions, e.g. Ekari *make* ‘at, from’ in (2).

Ekari (Doble, 1987, p. 68)

- (2) *ani Enaagotadi make mei*
1SG PN from I.came
'I came from Enarotali.'

Conjunctions are not a prominent word class in TNG languages. While they do exist, e.g. Mian *kesoa* 'because', the adverbial relations usually expressed by conjunctions in other languages (e.g. 'while', 'after', 'because', 'if') are typically indicated by means of medial verb morphology or hypothetical verb paradigms in TNG languages (see sections 6.5 and 7).

4. Word formation

Word formation centres around nouns and verbs. TNG languages typically allow N-N compounding and V-V compounding, the latter of which sometimes cannot be straightforwardly distinguished from verb serialization. Category-changing derivational processes typically involve overt morphological means. TNG languages echo a worldwide asymmetry of being rich in nominalization processes (i.e. V>N derivation), with verbalization processes (i.e. N>V derivation) being less common (see Foley, 2018, p. 895). Valency-changing derivational processes (causatives, applicatives) are widespread.

4.1 Compounding

Co-compounds are common in TNG languages. In a co-compound the parts express semantically closely associated concepts, with the meaning of the whole compound being more general than the meaning of the parts (Wälchli, 2005, p. 1). The following examples (3) and (4) are from Fore.⁶

Fore (Scott, 1978, p. 73)

- (3) *na-no'-na-pa:´=e*
1SG-mother-1SG-father=IND
'(they are) my parents'

- (4) *úmu'-kaba:´=e*
rat-bug=IND
'(they are) wild animals'

Further examples of co-compounds are *bab-mam* [father-mother] 'parents' (Fuyug; Bradshaw, 2007, p. 34), *nogó-naakí* [girl-boy] 'children' (Kewa; a Kewa-Huli language, Highlands Papua New Guinea, Franklin, 1971, p. 51), *kalu-keisale* [man-woman] 'people' (Kaluli; Grosh & Grosh, 2004, p. 13), *ingini-wane* [son-daughter] 'offspring' (Duna; San Roque, 2008, p. 134), *alél-melel* [wife-offspring] '(core) family' (Mian; Fedden, 2011, p. 91) and *ebe-peka* [mouth-eye] 'face' (Ekari; Doble, 1987, p. 62). Co-compounds mostly consist of two parts, but longer

ones are attested, e.g. *kaj-kayn-kobti* [pig-dog-cassowary] ‘large animals’ (Kalam; Pawley & Bulmer, 2011, p. 44).

There is a second rather widespread type of noun-noun compound structure in TNG languages, in which a dependent non-referential generic term is juxtaposed with a referential head noun. “[T]he dependent nominal indicates the type of entity that is being referred to by the head noun” (Chappell & McGregor, 1989, p. 28). A fully glossed Mian example is (5). Selected further Mian examples follow in (6) (from Fedden, 2011, pp. 221-222). For a recent detailed analysis of taxonomic patterns in the Croisilles language Pamosu (Madang family, north-east Papua New Guinea), see Tupper (2012, pp. 218-228).

Mian (Fedden, 2011, p. 221)

- (5) wan tolim
bird/bat New.Guinea.eagle
‘New Guinea eagle’ (sc. *Harpyopsis novaeguineae*)

(6) Animals (in Mian)

- a. *wan*. All flying birds and mammals. As is common in Papuan languages the taxonomic distinction is not whether an animal is a bird but whether it has wings and is capable of flight. Thus, all bats and flying foxes are *wan*, whereas the cassowary, a large flightless bird, is not (cf. Bulmer, 1967), e.g. *wan namâ* ‘sulphur-crested cockatoo’ (sc. *Cacatua galerita*).
- b. *no*. All marsupials and rodents (e.g. wallabies, rats) and the long-beaked echidna (monotreme), e.g. *no snuk* ‘rat’ (sc. *Rattus ruber*).
- c. *tíl*. Meaning ‘dog’, also used as a generic term for small or svelte non-native animals, where the specific noun is a Tok Pisin loan, e.g. *tíl busi* ‘cat’, *tíl gout* ‘goat’, and *tíl hos* ‘horse’.
- d. *éil*. Meaning ‘pig’, also used as a generic term for stocky non-native animals, where the specific noun is a Tok Pisin loan, e.g. *éil bulmakau* ‘cow’, and *éil sibsib* ‘sheep’.

(7) Plants (in Mian)

- a. *as*. Trees and palms, e.g. *as boliam* ‘Tulip tree’ (sc. *Gnetum Gnemon*)
- b. *éim*. Pandanus, e.g. *éim ayàab* ‘pandanus species’
- c. *som*. Bananas, e.g. *som táal* ‘plantain’
- d. *imen*. Taro, e.g. *imen kweimá* ‘light yellow taro species’

Typically the two nouns remain separate phonological words, each with their own stress pattern, as in Menya (Whitehead, 2006, p. 48), or their own tonal melody, as in Mian.

TNG languages also have noun-noun compounds which are not co-compounds or classification constructions. Examples are given in (8).⁷

- (8) a. *yəquwqə* ‘tree leaf’ < *yə* ‘tree’ + *quwqə* ‘leaf’ (Menya; Whitehead, 2006, p. 43)
 b. *pórérumu* ‘ridge’ < *póré* ‘mountain’ + *rumu* ‘knee’ (Kewa; Franklin, 1971, p. 51)
 c. *alukâm* ‘toilet’ < *al* ‘faeces’ + *úk* ‘pit’ + *am* ‘house’ (Mian; Fedden, 2011, p. 91)
 d. *owaayokaa* ‘forest hut’ < *owaa* ‘house’ + *yoka* ‘child’ (Ekari, Doble, 1987, p. 62)

These compounds are single words. They behave like a single non-compounded noun, i.e. they show the same inflectional possibilities, choice of clitics and are subject to the same stress or tone rules as non-compounded nouns. For instance, compounds in Menya have a single word stress (Whitehead, 2006, p. 42), while compounds in Mian select a single tonal melody from the set of tonal melodies available for non-compounded nouns (Fedden, 2011, pp. 68-70).

Furthermore, compounds often have a non-compositional meaning, as is the case in examples (8b, and d).

Verbal compounds can also be found, in which two verbs are put together to form a single complex verb. Selected examples are provided in (9).

- (9) a. *wadi* ‘teach’ < *wa* ‘say’ + *di* ‘declare’ (Daga; Murane, 1974, p. 11)
 b. *pata-* ‘coat’ < *p-* ‘strike’ + *t-* ‘shine’ (Lembena; Heineman, 1998, p. 19)
 c. *habù* ‘hide’ < *hà* ‘break’ + *bù* ‘bury’ (Mian; Fedden, 2011, p. 106)

The distinction between verb compounding and verb serialization is not always straightforward and may also depend on phonological criteria which are often not specified in grammatical descriptions. For a detailed look at the formal differences between tight serialization and verb compounds in Mian using tonal domain, degree of fusion of verb stems and locus of inflection, see Fedden (2011, pp. 414-416).

Rhyming compounds occur in a number of TNG languages (Pawley, 2010, p. 291). They consist of two parts, a base and a rhyming word, and can also be found in English, e.g. *hurly-burly*, *itsy-bitsy*, *zigzag*. In TNG languages they typically appear in constructions with a light verb (see 4.4.2 below). Pawley (2010) distinguishes three main phonological types: in rhyming compounds of Type A the onset changes between the base and the rhyming word: either the consonant is replaced with a different consonant (or consonant cluster), e.g. English *hurly-burly*, or a consonant (or consonant cluster) is added to a vowel-initial base, e.g. English *itsy-bitsy*. In Type B the vowel of the first syllable changes between the base and the rhyming word, e.g. English *zigzag*. Type C involves a consonant and a vowel change, e.g. English *topsy-turvy*. (For minor types, see Pawley, 2010, pp. 279-280). In Kalam (Pawley, 2010, pp. 284-287) all of these types are attested, e.g. *coley boley* ‘stammer, stutter, speak with a defect’, *adk madk* ‘turn s.th. over, reverse s.th.’, *gtij gtonj* ‘make a din or racket’, *gogeb mageb* ‘be twisted, crooked’. In Mian, on the other hand, most sound words are straight reduplications, e.g. *dungdung* ‘drum’, *haityekhaityek* ‘sneeze’, but the language also has rhyming compounds of Type B, e.g. *dingdung* ‘hollow, reverberating sound’ (Fedden, 2011, pp. 153-155). Semantically, rhyming compounds have a range of meanings: (i) representation of sound, (ii) disorderliness, (iii) uneven or

modulated movement, (iv) weakness of character or behaviour, (v) deceit or trickery (Pawley, 2010, p. 281).

4.2 Category-changing derivation

In many TNG languages it is not possible to derive verbs from another word class at all (Pawley & Hammarström, 2018, p. 90). In the languages which allow this possible bases are nouns and adjectives. Mian has a derivational suffix *-an*, which productively derives verbs from either nouns (10) or adjectives (11).

Mian (Fedden, 2011, p. 108)

(10) Pita Paka gwán-an-Ø-e=be

PN PN spider-VBLZ-REAL-3SG.M.SBJ=DECL

‘Peter Parker became a spider.’ [from an oral summary of the film “Spiderman”]

Mian (Fedden, 2011, p. 541)

(11) háang-an-s-e=a

dry(ADJ)-VBLZ-DS.SEQ-3SG.N1.SBJ=MED

‘it dried, so I...’

The same form with an identical function can be found in the Lowland Ok language Yonggom, where the process is not productive and instead restricted to around a dozen bases (Christensen, 2013, p. 7). Other TNG languages which have denominal and deadjectival verbs are Daga (Murane, 1974), Usan (Reesink, 1987) and Ekari (Doble, 1987). Zero-derivation of verbs from nouns and adjectives is rare, but attested rather productively in the Croisilles language Mauwake (Madang family, north-east Papua New Guinea) (Berghäll, 2010, p. 120).

Action nominalizations can usually be found in TNG languages, object nominalizations are less common but do exist, and agent nominalizations are virtually lacking (see Reesink, Singer & Dunn, 2009). The Goilalan language Kunimaipa (south-east Papua New Guinea) has a nominalizing suffix *-vo*, which derives action nouns from verbs, e.g. *ta* ‘do’ > *ta-vo* [do-NMLZ] ‘doing’; *ma-na* [3SG.OBJ-give] ‘give him’ > *ma-na-vo* [3SG.OBJ-give-NMLZ] ‘giving him’ (Geary, 1977, p. 32). Object nominalizations can be found for example in Samo, e.g. *du* ‘hear’ > *du-li* ‘ear’, *fofa* ‘raise’ > *fofa-ma* ‘platform, bridge’ (Shaw, 1973, p. 213).

4.3 Valency-changing derivation

As opposed to category-changing derivation, valency-changing processes are common, particularly causatives and applicatives. TNG languages from geographically widespread subgroups allow causative derivation by affixation, e.g. Lembena *kum* ‘die’ > *kum-as* ‘kill’ (Heineman, 1997, p. 22), Samo *bebelo* ‘line up (INTR)’ > *bebelo-di* ‘make line up’ (Shaw, 1973, p. 207), and Asmat *sakáj* ‘be broken’ > *saká-m* ‘break’ (Voorhoeve, 1965, p. 52).

TNG languages frequently rely on serial verb constructions for causatives. A serial verb construction is a juxtaposition of two (or more) verbs without any overt linking element, which function as a single predicate. While the verbs in serialization are distinct phonological words, they form a single intonational unit and they typically share arguments (often the subject has to be identical) or morphosemantic features, such as tense. Serial verb constructions are highly frequent in TNG languages and will be discussed further at various points below.

Example (12) illustrates causative serialization in the South Adalbert language Gants (Madang family, north-east Papua New Guinea), which uses the verb *mɨŋa* ‘get’ with causative semantics in a serial verb construction.

Gants (Daniels, 2015, p. 150)

- (12) *mɨga* *ɕi-k-e* *mɨŋa* *yako-da* [...]
 come.down stay-DS.SEQ-3SG.SBJ get go.up-SS
 ‘It fell down and she picked it up and ...’

Serialization is also commonly employed in applicative-like constructions. In many TNG languages benefactives cannot be marked directly on the verb, but require a serial verb construction with an auxiliary-like verb, following the main verb and introducing the additional argument. For benefactives this verb is often ‘give’, but other verbs are also used (Reesink, 2013, pp. 248-251). A Fore example with ‘give’ is provided in (13); a Dani example with ‘put’ is given in (14).

Fore (Scott, 1978, p. 55)

- (13) *pu-ta-mu-y=e*
 do-1PL.OBJ-give-3SG.SBJ=IND
 ‘He makes (it) for us.’

Dani (Bromley, 1981, p. 121)

- (14) *japu* *wo'-n-akeik-h-e*
 garden take-1SG.OBJ-put-REAL-3SG.SBJ
 ‘He dug (lit. took) the garden for me.’

4.4 The verb lexicon

It is a striking characteristic of many TNG languages to have a reduced stock of verb roots, in extreme cases comprising only as few as 60 recorded verb roots (Pawley & Hammarström, 2018, p. 123, and references there). There are formal means of increasing the number of items which express actions, processes and states. The main means employed to this end are serial verb constructions and light-verb constructions.

4.4.1 Serial verb constructions

Serial verb constructions play an important role in the extension of the verb lexicon. For instance, TNG languages often lack verb roots for ‘bring’ and ‘take’, and instead use serializations of the type [get come] and [get go] to express these events. Example (15) is from Daga. Duna uses the serial verb construction *pake suwa* [steal hold] to express the concept ‘have (illicit/adulterous) sexual relations’, as in (16).

Daga (Murane, 1974, p. 121)

- (15) ai on-en
get come-3SG.SBJ.PST
‘He brought (them).’

Duna (San Roque, 2008, p. 234)

- (16) anoa-ka ima ndu pake suwa-ta koti-ya kei
man-CS woman one steal hold-SEQ court-DEP stand.STATIVE
‘The man had adulterous sex with a woman and is on trial.’

In some languages verb roots can combine rather productively to create a range of different senses. This is illustrated in (17) with the Kalam verb roots *ag* ‘say’ and *ny* ‘perceive’.

Kalam (Pawley, 2008, p. 173)

- (17) ag ñ- [say transfer] ‘tell’
ag ask- [say avoid] ‘refuse’
ag slok- [say slip.off] ‘renege’
ag g- [say do] ‘insist, command’
ag ay- [say stabilize] ‘make an appointment’
ag nŋ- [say perceive] ‘ask’
d nŋ- [touch perceive] ‘feel’
ñb nŋ- [consume perceive] ‘taste’

Serial verb constructions contribute to a richer verb lexicon. Since they are extremely common in TNG languages (and Papuan languages more generally), it is not surprising that they are employed to the end of expanding the verb lexicon as well. This means that the lexicon needs to be analysed as including phrasal serialized units.

4.4.2 Light-verb constructions

In this type of construction a semantically rather general verb, often called a ‘light’ verb for this reason, combines with an uninflected, semantically more specific element, the verb adjunct. Some languages allow intervening material between the verb adjunct and the light verb, in others verb adjunct and light verb invariably occur next to each other. The syntax and semantics of such

constructions in TNG languages still need to be systematically explored and typologically compared.

There are languages which make use of only a single light verb; for instance, in Fuyug this is *t-* ‘say’. An example is given in (18).

Fuyug (Bradshaw, 2007, p. 35)

- (18) *es akan em=dam=ti god te-de*
 child DIM house=out=ILL urine say-IPFV
 ‘The small child urinates outside.’

A language for which only ‘do’ has been identified as a light verb is Yonggom, e.g. *dabo kam-* ‘bark’, *wareki kam-* ‘groan’ (Christensen, 2013, p. 30). The next step up from this simple situation is languages that have two light verbs. Mian uses *ge* ‘say’ for noises, e.g. *bokbok ge* ‘boil’, *fot ge* ‘fart’, *songoksongok ge* ‘make a gurgling sound (of liquid in a container)’, and *ke* ‘do’ with a range of meanings more difficult to define exactly, e.g. *dong ke* ‘sit quietly’, *tekein ke* ‘know’ (Fedden, 2011, pp. 324-325). In larger systems of light verbs the most frequent ones are ‘do’, ‘say’, ‘hit’, ‘eat’, ‘take’, and ‘put’. For example, Asmat (Voorhoeve, 1965) and Melpa (Berthold, 2008, p. 58) have ‘say’, ‘hit’ and ‘eat’, Lembena (Heineman, 1998, p. 35) uses ‘do’, ‘say’, ‘hit’, ‘shine’, ‘put’, and ‘eat’, and Daga (Murane, 1974, p. 117) uses ‘do’, ‘say’, ‘hit’, ‘put’, ‘eat’, ‘spear’, ‘live’ and ‘imprint’. Ma Manda has no fewer than nine light verbs (Pennington, 2016), and Enga has no fewer than 12 (Lang, 1975).

Light verbs always form a small set of items. Apart from their low semantic impact they behave morphologically and syntactically like verbs. In some languages each verb adjunct combines with only one of the light verbs. This is the case in Mian and Lembena, but in other languages, for instance in Menya, some verb adjuncts can combine with more than one light verb to express different meanings, e.g. *əkasuwə i* with *i* ‘do’ means ‘be angry’, whereas *əkasuwə t* with *t* ‘say’ means ‘scold’ (Whitehead, 2006, p. 146).

Verb adjuncts form a distributionally defined word class. A common subtype that appears in these constructions are rhyming compounds (see section 4.1 above), e.g. Yonggom *kurungkarang kam-* ‘make scuffling noises’, *daanupdaanap kam-* ‘criticize’ (Christensen, 2013, p. 30). Verb adjuncts usually show high levels of heterosemy with other word classes, often with nouns. In Daga (Murane, 1974, pp. 117-119), *ven* ‘call’ is a verb adjunct, heterosemous with the regular noun *ven* ‘call’, which combines with the light verb *wa* ‘say’ to form the complex verb *ven wa* with the fairly compositional meaning ‘call’. In other cases the construction can take on a non-compositional meaning, e.g. Daga *gaun ta* [relative do] ‘greet’. Heterosemy with other word classes is possible, for example, adjectives and adverbs (Reesink, 1990, p. 218). Some are just verb adjuncts, e.g. Daga *apen wa* ‘mourn’ (Murane, 1974, p. 118), where *apen* obviously contributes the meaning of mourning but cannot be shown to be related to any other word class.

Even in languages in which the number of verb roots is not particularly low, verbs are often essentially a closed class, in the sense that borrowed items cannot be inflected directly using the

language's inflectional morphology. Rather they have to be used in a light-verb construction, with the light verb bearing the appropriate inflectional morphology. For instance, the English verb *win* has been borrowed via Tok Pisin into Mian. Since verbs in this language form a closed class, *win* can only function in the language by occurring with the light verb *ke* 'do' (19).

Mian (Fedden, n.d.)

- (19) *win ke-n-ebo=be*
win do-REAL-2SG.SBJ=DECL
'You won.'

This is a typologically well-known strategy to integrate borrowed verbs into the language system (Wichmann & Wohlgemuth, 2008). For a non-TNG language that follows this pattern, see Döhler (2018) on Komnzo (Yam family, Tonda subgroup, south Papua New Guinea).

4.5 Absence of copula

TNG languages usually have no copulas. Rather, they have existential verbs which assert the existence of a referent in space or time, e.g. Melpa (20) or Mian (21).

Melpa (Berthold, 2008, p. 35)

- (20) *ndip mol-r-m*
fire exist-PFV-3SG.SBJ
'There is a fire.'

Mian (Fedden, n.d.)

- (21) *yē bl-∅-i=be*
there exist-IPFV-1SG.SBJ=DECL
'I am there.'

Some languages have several existential verbs which allow the encoding of different positions that a referent takes in space, i.e. 'lie', 'sit', 'stand', giving rise to covert noun classification systems; see Voorhoeve (1965, p. 48) for Asmat, Lang (1975) for Enga, Berthold (2008, pp. 59-62) for Melpa, San Roque (2008, pp. 77-78) for Duna, and the Papuan typological overview in Rumsey (2002).

Equative clauses, i.e. clauses that typically contain copulas in many European languages, are verbless topic-comment constructions in TNG languages, consisting of exactly one argument (the topic) and a non-verbal predicate (the comment). This type of construction is illustrated from a range of geographically distant TNG languages, Fuyug (22), Foe (23), Telefol (24), and Suki (25).

Fuyug (Bradshaw, 2007, p. 54)

- (22) Tomba hu=ni es uwand akan
PN 3SG=EMPH child small very
'Tomba is a very small child.'

Foe (Rule, 1993, p. 36)

- (23) kui sa kui ma-ge?
sago across.over.there sago which-INT
'That sago there, what kind of sago is it?'

Telefol (Healey, 1966, p. 33)

- (24) imák íyó tímitím kútá kalél ú-tá duûmaát koo
husband 3SG.M tall but wife 3SG.F-FOC short DECL
'The husband is tall but his wife is short.'

Suki (Evans et al., 2018, p. 730)

- (25) ubte yāka mek=ti=ka?
3SG.POSS name Q=NMLZ=NON.PROXIMAL
'What is his name?' (Asking someone else.)

After discussing word formation processes in TNG languages and highlighting some characteristic properties of the lexicon of these languages I will now turn to the inflectional morphology of nouns.

5. Noun inflection

Nominal inflectional morphology is always simple. Inflection for person and number of the possessor is common, number marking on nouns less so, and nouns typically do not inflect for gender (in the few TNG languages with a gender system). On gender systems, see section 5.2. below. In some languages, e.g. Kewa (Franklin, 1971), nouns have been analyzed as inflecting for case, but in other languages similar case markers are analyzed as noun phrase clitics, e.g. Migabac (McEvoy, 2008, p. 47).

5.1 Possession

Most TNG languages distinguish formally between inalienable and alienable possession.

Depending on the language, the class of inalienably possessed nouns comprises either both kin nouns and body parts, e.g. Daga (Murane, 1974) and Fore (Scott, 1978), examples (26) to (28) below, just kin nouns, e.g. Menya (Whitehead, 2006) and Kaluli (Grosh & Grosh, 2004) or just body parts, e.g. Tauya (MacDonald, 1990, p. 129). The typical pattern involves the obligatory inflection of the inalienably possessed noun for the person and number (and in some languages also gender) value of the possessor. The formatives used are usually very similar to the bound

pronominal prefixes which are also employed in the indexation of objects on the verb (see section 6.2.2 on object indexing). This a common pattern in Papuan languages; see for example Reesink (2010, p. 89); Fedden, Brown, Kratochvíl, Robinson and Schapper (2014); Fedden and Brown (2017).

Fore (Scott, 1978, p. 72)

(26) na-o=e
 1SG.POSS-eye=IND
 ‘(it is) my eye’

(27) na-oN=e
 1SG.POSS-kinsman=IND
 ‘(it is) my kinsman’

This type of possessor inflection can also be found in Marind, which is structurally very different from the standard average TNG language (see Evans et al., 2018, pp. 655-663; Olsson, 2018), e.g. *na-hyum* ‘my wife’, *ya-hyum* ‘your wife’, *u-hyum* ‘his wife’ (Olsson, 2018, p. 129).

Alienable possession, on the other hand, is expressed using free pronouns. Often these are enclitic forms:

Fore (Scott, 1978, p. 77)

(28) na:máN=ká: N=e
 house=2SG.POSS=IND
 ‘(it is) your house’

On the difference between bound vs. non-bound possession in the closely related language Hua, see Haiman (1983).

There are many TNG languages which have preposed free possessive pronouns for alienable possession. An example is Menya (29).

Menya (Whitehead, 2006, p. 16)

(29) n=qə aŋə=i m=ŋi=ŋji
 1SG=POSS house=DEFINITE down=LOC=IND
 ‘My house is down there.’

In Daga all possessive markers follow the possessed noun. Inalienably possessed nouns (kin nouns or body parts) are obligatorily inflected for their possessor with a pronominal suffix (30), while alienable possession is expressed by means of a postposed possessive pronoun, formed by suffixing *-ga* to the regular personal pronoun (31).

Daga (Murane, 1974, p. 32)

- (30) a. mama-na
 father-1SG.POSS
 ‘my father’
 b. pusi-nu
 foot-1PL.POSS
 ‘our feet’

Daga (Murane, 1974, p. 85)

- (31) pumpuni-wa dugup mu-ga
 black-NMLZ house 3PL-POSS
 ‘the house of the black (ones)’

Baerman (2014) is a typology of suppletive kin nouns in Papuan languages, including TNG languages of the Angan, Binanderean, Bosavi, Chimbu-Wahgi, Kainantu-Gorokan, Madang, and Ok-Oksapmin subgroups. Suppletion is according to the person of the possessor. One suppletive pattern is illustrated in (32) for the Kaluli kin noun *-o:l* ‘son’, which has a suppletive form in the third person.

(32) Kaluli (Grosh & Grosh, 2004, p. 15)

	‘son’
1	n-o:l
2	g-o:l
3	inso

There are languages which do not formally distinguish between inalienable and alienable possession. In Fuyug, for example, any possessor is expressed by a preposed possessive pronoun, e.g. *na=l bab* [1SG=POSS father] ‘my father’ vs. *na=l em* [1SG=POSS house] ‘my house’ (Bradshaw 2007, p. 39). A similar situation is found in Kewa (Franklin, 1971) and Melpa (Berthold, 2008). A constructional distinction between inalienable and alienable possession is also generally lacking in Ok; see Fedden (2011) and Healey (1965) for the Mountain Ok languages Mian and Telefol, respectively, and Christensen (2013) for the Lowland Ok language Yonggom.

5.2 Gender

Gender is a lexical feature of nouns which may or may not be expressed on the noun itself (overt gender) but which has to be expressed on at least one word class other than the noun itself (agreement targets, usually adjectives, verbs, or pronouns). Gender is not typical of TNG languages. While there are some highly elaborate gender systems in non-TNG languages, for example Arapesh (Torricelli family, northwest Papua New Guinea; Dobrin, 2012) and Yimas

(Lower Sepik family, northwest Papua New Guinea; Foley, 1991), TNG languages usually lack gender altogether. In some languages gender is restricted to a masculine-feminine distinction in the pronouns of the third person singular, e.g. Oksapmin *ox* ‘he’ vs. *ux* ‘she’ (Loughnane, 2009, p. 90; cf. Table 3 above) or Menya demonstratives *iqu* ‘that(M)’ vs. *ii* ‘that(F)’ (Whitehead, 2006, p. 37). Only in a small minority of TNG languages around the centre of the island can gender systems with a more extensive range of agreement targets be found. Such systems generally exist in Mountain Ok languages, i.e. Mian (Fedden, 2011, ch. 4; Corbett, Fedden & Finkel, 2017), Telefol, Tifal, Faiwol, and Bimin, but also in Lowland Ok languages, for example Yonggom, and in the Anim languages, for example Marind (Olsson, 2018). Anim gender likely has the same historical origin as Ok gender (Usher & Suter, 2015). An incipient gender system can be found in the Mek language Nalca (Highlands, Papua) (Svärd, 2013, 2015; Wälchli, 2018).

5.3 Case

It is an extremely widespread property of TNG languages, and Papuan languages more generally, to mark core arguments (subject and object) with person indices on the verb (section 6.2), while using a range of case markers for peripheral arguments, such as locations or instruments.

Typically case is marked using postpositions (for most languages analyzed as enclitics). Common peripheral case values include locative, ablative, allative, instrumental, purpose/cause, and comitative. Illustrative examples are provided in (33).

- (33) a. locative: *pusi-ga=p* [foot-2SG.POSS=LOC] ‘on your foot’ (Daga; Murane, 1974, p. 16)
 b. ablative: *Esiset ouma=nen* [PN his.village=ABL] ‘from Esiset’s village’ (Dani; Bromley, 1981, p. 84)
 c. instrumental: *bà-ree* [machete-INSTR] ‘with a machete’ (Momuna; Reimer, 1986, p. 193)
 d. comitative: *owa=ken* [dog=COM] ‘with a dog’ (Melpa; Berthold, 2008, p. 17)

A number of TNG languages case-mark core arguments as well. Case markers on A arguments⁸ (with extension to some S arguments in a number of languages) do not mark structural case, but rather are sensitive to semantic factors (animacy and agentivity) or pragmatic factors (discourse prominence, most notably focus) (Riesberg, 2018, p. 20). These structures are usually treated under ‘optional ergativity’ in the literature.⁹

Optional ergativity has mainly been studied for Australian languages (e.g. McGregor, 2010; McGregor & Verstraete, 2010), Tibeto-Burman languages (DeLancey, 2011; Chelliah & Hyslop, 2011) and TNG languages, e.g. Bromley (1981) on Dani, Scott (1986) and Donohue & Donohue (1997) on Fore, MacDonald (1990) on Tauya, Farr (1999) on Korafe, Suter (2010) on Kâte, Pennington (2013) on Ma Manda, Christensen (2013) on Yonggom and Riesberg (2018) on Yali (see also Foley, 2000, pp. 374-375, and references there).

Various factors can be relevant in optional ergativity. Animacy is the most important factor in Fore. Ergative marking is associated with the right end of the animacy hierarchy (pronoun/name

> human > animal > inanimate), whereas it is absent from the left end. Thus, inanimate transitive subjects are obligatorily marked as ergative, as in (34), whereas ergative marking must not occur on pronouns and proper names (Scott, 1986, p. 170). A similar situation can be found in Kaluli and Duna (Rumsey, San Roque & Schieffelin, 2013, p. 138, p. 166).

Fore (Scott, 1986, p. 170)

- (34) *kasó-nkama na-egú-y=e*
club-ERG 1SG.OBJ-hit-3SG.SBJ=IND
'The club hit me.'

In transitive AOV clauses in Fore the first argument is interpreted as the agent, as in (35), unless there is a difference in animacy in which case the argument higher on the animacy hierarchy is interpreted as the agent (irrespective of word order), as in (36).

Fore (Scott, 1986, p. 169)

- (35) *wáya: 'wá a-egú-y=e*
woman man 3SG.OBJ-hit-3SG.SBJ=IND
'The woman hit the man.'
NOT: 'The man hit the woman.'

- (36) *yaga: 'wá a-egú-y=e*
pig man 3SG.OBJ-hit-3SG.SBJ=IND
'The man killed the pig.'
NOT: 'The pig attacked the man.'

In transitive OAV clauses, i.e. clauses with a topicalized object, ergative marking is obligatory, if both arguments are human, as in (37).

Fore (Scott, 1986, p. 169)

- (37) *wáya: 'wá-má a-egú-y=e*
woman man-ERG 3SG.OBJ-hit-3SG.SBJ=IND
'As for the woman, the man hit her.'

The fact that ergative marking in Fore is sensitive to word order suggests that information structure plays a role besides animacy in the distribution of the ergative (Suter 2010, p. 436).

In some languages ergative marking is extended to agentive intransitive subjects that exert control over the event. This is the case for example in Yonggom and Fore, but not in Kaluli. Compare examples (38) and (39) from Yonggom.

Yonggom (Christensen, 2013, p. 44)

(38) diap kuu dalewoop kel-een
cassowary TOP big do-3SG.F.SBJ.PST
'The cassowary became big.'

(39) yoknat-bed wapak kel-oon
dwarf-ERG rebellious do-3SG.M.SBJ.PST
'The dwarf became rebellious.'

The fact that optional ergative marking is attested with intransitive subjects has prompted some researchers to call these optional nominatives; see, for example, Donohue and Donohue (1997) for Fore and Pennington (2013, 2016, pp. 226-227) for Ma Manda.

Optional ergative marking can also interact with information structure and is often used to indicate discourse prominence, particularly focus. Suter (2010) shows in a study of Kâte discourse that more frequent ergative marking correlates with increased rhematicity of the subject, i.e. that new, non-topical subjects are more likely to be marked. It is very common in TNG languages that ergative marking of a transitive subject in focus is obligatory. Two examples are provided, one from Melpa (40) and one from the Dani language Yali (Highlands, Papua) (41).

Melpa (Berthold, 2008, p. 16)

(40) kai korla mam e owa e-nt nom
bird hen mother DET dog DET-ERG eat:IPFV.3SG.SBJ
'As for the mother hen, the dog ate her.'

Yali (Riesberg, 2018, p. 19)

(41) wam itno hiyap tu=en ambol=ma wat-tuk
pig DET woman DEM=ERG back=LOC hit-PROG
'The woman is hitting the pig on the back.'

Polysemy of the ergative and a peripheral case relation, such as the instrumental, can be found for example in Aneme Wake (Weimer, 1978), Migabac (McEvoy, 2007), Melpa (Berthold, 2008), Rumu (Pettersen, 1999), Kaluli (Grosh & Grosh, 2004), Duna (Rumsey, San Roque & Schieffelin, 2013), Yonggom (Christensen, 2010, 2013), Momuna (Reimer, 1986) and Dani (Bromley, 1981). For an acquisition study of ergative marking in Kaluli, Ku Waru and Duna, see Rumsey, San Roque and Schieffelin (2013).

but a Menya verb root can serve as the derivational base for forming a benefactive or causative stem, e.g. *mət* ‘build’ > *məsi* ‘build for’; *tqəu* ‘stand up’ > *tqəte* ‘erect’ (Whitehead, 2006, p. 95). The extended stem includes object agreement and marking of polarity. As in Mian, Menya extended stems can appear as non-finite forms (44) or as the base for further inflection (45).

Menya (Whitehead, 2006, p. 90)

- (44) *nyi ə-k-uyəma* w-m=ŋqə=i
 1SG ASS-2SG.OBJ-leave go-1SG.SBJ.IRR=GOAL=IND
 ‘I’m going to leave you.’

Menya (Whitehead, 2006, p. 143)

- (45) *apəkə i=u=aqu [...]* *ə-k-uyəma-k-iyə=i*
 woman that=F=DU ASS-leave-PP-2/3DU.SBJ=IND
 ‘The two women left him ...’

In Asmat, unlike Menya and Mian, object affixes do not form part of the extended stem, but again there are constructions in the language that require reference to another morphologically intermediate level. For example, imperatives are formed by collocating a non-finite extended stem with the verb ‘do’, as in (46).

Asmat (Voorhoeve, 1965, p. 126)

- (46) *tám masərim wunám o-tuwsé-a* iním moméc
 morning then again AGAIN-set.out.in.canoe-LNK this.way do.it
 ‘and when it is morning, you must start out again’

6.2 Core argument indexing

The typical TNG language has subject suffixes and object prefixes (a pattern also found in the Yam languages, cf. Evans et al. (2018)). Examples are as geographically widespread as Menya, Usan, Mian, Telefol, Dani, Ekari, and Iha, but there are TNG languages with object suffixes, many that do not index objects, and some that do not index arguments at all. For a summary of the distribution of subject and object indices in TNG and other languages of the region, see Ross (2017, p. 789).

6.2.1 Subject

There are few exceptions to the generalization that TNG languages have subject suffixes, for example, Marind (Olsson, 2018) has subject prefixes and Foe (Rule, 1993) and Duna (San Roque, 2008) lack subject affixes altogether. The encoded features are overwhelmingly person and number, but there are also exceptions. Kaluli (Grosh & Grosh, 2004) encodes only person

and Mountain Koiali (Garland, 1980) only number. A gender distinction in the third person singular can be found in some languages but is not common (see Section 4.2).

Similar to the independent pronouns, the typical paradigm distinguishes three persons and singular and plural numbers (plus a dual in some languages). Syncretism between the second and third persons in non-singular numbers – well-attested worldwide (Baerman, Brown & Corbett, 2005, p. 59-60) – is common in the central highlands and the north-east of Papua New Guinea (Pawley & Hammarström, 2018, p. 92), but occurs also in Ok languages (Fedden, in press) and Greater Awyu languages (Wester, 2014). However, there can be considerable divergence between the number and kinds of person/number distinctions found in independent pronouns and those found in subject suffixes (see Foley, 1986, pp. 68-69).

Many TNG languages express tense and/or mood together with subject person and number in a portmanteau fashion. An example of a language with subject-tense portmanteaux is Usan (Table 6).

Table 6. Usan subject-tense portmanteaux (Reesink, 1987, pp. 94-98)

	Far past	Near past	Present	Future	Uncertain future
1SG	-emei	-umei	-oum	-ib Δ m	-n
2SG	-enei	-anei	- Δ n	-ib Δ n	-nen
3SG	-erei	-ai	- Δ	-ib Δ	-ner
1PL	-eminei	-unei	-oun	-uboun	-n
2PL	-emanei	-umanei	-oumon	-uboumon	-non
3PL	-emirei	-urei	-our	-ubour	-nor

While possible in some cases, especially the future, the formatives given in Table 6 often cannot be straightforwardly segmented into a person portion and a tense portion. Foley (1986, p. 137) identifies this trait mainly in TNG languages of the east of Papua New Guinea and he cites languages from the Angan, Binanderean, Engan, Huon, Kainantu, and Yareban subgroups. The phenomenon is perhaps not as common towards the west, but does also occur there, for example in Yonggom (Christensen, 2013, pp. 11-13).

Subject suffixes have been reconstructed for proto North-East New Guinea, a putative interstage ancestral to the Madang, Finisterre-Huon and Kainantu-Goroka groups (Suter, 1997). Pawley and Hammarström (2018, p. 148) offer the tentative reconstruction of a partial paradigm for proto-TNG based on further data from Angan, Binanderean, Chimbu-Wahgi and Dani (Table 7).

Table 7. Proto-TNG verbal subject suffixes (partial paradigm)

	SG	DU
1	*-Vn	*-u(l,t)
2	*-Vn	*-i(l,t)
3	*-a, *-i	*-i(l,t)

6.2.2 Object

Object affixes are typically strongly associated with human (or at least animate) objects; see for example Dani (Bromley, 1981, p. 98), Menya (Whitehead, 2006, p. 82) and Daga (Murane, 1974, p. 44). The Mian object prefixes are given in Table 8.

Table 8. Mian object prefixes (Fedden, 2011, p. 266)

	SG	PL
1	na-	ya-
2	ka-	
3M	a-	
3F	wa-	

Example with the perfective verb stem *-têm* 'see' illustrating all five contrasts are given in (47).

Mian (Fedden, 2011, p. 266)

- (47) na-têm'-Ø-e=be 'He saw me.'
 [1SG.OBJ-see.PFV-REAL-3SG.M.SBJ=DECL]
 ka-têm'-Ø-e=be 'He saw you (SG).'
 a-têm'-Ø-e=be 'He saw him.'
 wa-têm'-Ø-e=be 'He saw her.'
 ya-têm'-Ø-e=be 'He saw us/you (PL)/them.'

The Mian forms in Table 8 above are reflexes of ancient TNG object prefixes/clitics, which can still be found in a range of TNG languages. Suter (2012) reconstructs proto-TNG object proclitics based on the three geographically distant families Finisterre-Huon, Ok, and Dani (from east to west) (Table 9).

Table 9. Proto-TNG *na=tu ‘hit’ (Suter, 2012, p. 52; non-cognate forms appear in brackets)

Language	Family	Meaning	1SG	2SG	3SG	3PL
proto-TNG		hit	*na=tu	*ga=tu	*wa=tu	*ya=tu
Ono	Huon Peninsula	shoot	nato	gato	(yato)	(egotat)
Nomu	Huon Peninsula	shoot	nito	gito	(yoto)	yeito
Yau	Finisterre-Saruwaged	hit	not	got	wot	(top)
Gwihatike	Finisterre-Saruwaged	shoot	nur	gur	ur	yur
Mian	Ok	hit	nalò	kalò	walò ‘her’ (alò ‘him’)	yalò
Grand Valley Dani	Dani	hit	nat	hat	wat	(inat)
Western Dani	Dani	hit	noot	koot	wat	(inoot)

Not all TNG languages have reflexes of the old TNG object markers. For example, the Chimbu-Wahgi languages lack object prefixes entirely, e.g. Melpa (Berthold, 2008), and the Madang languages replaced them, e.g. Usan and Tauya (Suter, 2012, pp. 47-48).

Reflexes of these prefixal forms – in the languages that have them – are always restricted to a subset of transitive verbs, usually called ‘object verbs’ in the literature.¹⁰ Object verbs are frequent verbs that often have a human or animate object, like ‘give’ (where the recipient is indexed on the verb, ‘see’, ‘hit’, ‘bite’, and ‘shoot’. Only seven transitive Mian verbs take object prefixes. In Dani there are five. In the Finisterre-Huon languages object verbs on average number between half a dozen and two dozen verbs (Suter, 2012, p. 54). In Marind these prefixes can be found on at least 26 verbs, e.g. *n-agum* ‘scold me’, *g-agum* ‘scold you’, *w-agum* ‘scold him/her’, *y-agum* ‘scold you(PL)/them’ (Olsson, 2018, pp. 253-255). For a recent and very thorough account of the typologically rare phenomenon of object verbs, which can also be found in the Papuan languages of Alor and Pantar in Indonesia, see Windschuttel (2019). For a comparative reconstruction of Huon Peninsula object verbs, see Suter (2018, pp. 9-88).

Since human referents, or – depending on the language – animate referents more generally, require pronominal reference, languages have two options to resolve this issue for those transitive verbs which do not take a prefixal object index: (i) a free pronoun is used to refer to the human/animate object, or (ii) a suffixal object index is used whose diachronic source is an object verb (Suter, 2018; Windschuttel, 2019). The first option can be found in Mian, the second in the Dani and Finisterre-Huon languages. The latter strategy is illustrated for the Huon language Kâte.

Kâte (Suter, 2018, p. 9)

(48) soŋaŋ-gu-ka?

watch.over-2GS.OBJ-PRS.3SG.SBJ

‘He watches over you.’

(49) gu-ka?

2SG.OBJ.hit-PRS.3SG.SBJ

‘He beats you.’

In (48) the transitive verb appears with an object suffix *-gu* ‘2SG.OBJ’; (49) shows the same form as a lexical verb ‘hit you’, where the lexical root and the object prefix are fused. While Kâte has several object verbs, ‘hit’ is the only one having grammaticalized into an object suffix. The forms of the object verb ‘hit’ and the object index are almost completely identical and the irregularity of the forms corroborates the impression that this is not accidental homophony. For the full paradigms, see Suter (2018, p. 10).

Languages differ as to how many object verbs grammaticalized into suffixal object indexes. Where there is more than one, this typically leads to the formation of inflection classes. For example, in the Huon language Selepet transitive verbs fall into three (lexically specified) inflection classes depending on the set of object suffixes they take, grammaticalized from the object verbs ‘see’, ‘hit’ and marginally ‘give’. (McElhanon, 1972; McElhanon & McElhanon, 1970, cited in Suter, 2018, pp. 15-16). While ‘give’ is commonly used in applicative-like constructions to add a benefactive argument (see Section 4.3 above), the verb is rare as the source of object suffixes.

The situation seems to be more complex in the Dani languages where semantic traces of the erstwhile object verbs remain. Zöllner & Zöllner (2017, p. 32) write about the Dani language Yali: “Many verbs can occur with more than one of the three object verbs. [...] While some generalisations can be made as to the semantic role marked by the respective object stem, in many cases the precise semantics remains idiosyncratic and has to be determined verb specifically.” For a similar situation in Lower Grand Valley Dani, see Bromley (1981, p. 121).

While the ancient pattern of argument marking in TNG was o-V-s with object prefixes and subject suffixes the grammaticalization of object verbs into object suffixes as described above, led to a V-o-s pattern in some TNG languages (Foley, 2000, pp. 377-378).

6.3 Morphosyntactic alignment

Most TNG languages index the subject with a suffix on the verb. The object is also often indexed with an affix. In Reesink’s (2013) sample of 33 TNG languages from different subgroups, 10 index the object with a prefix, eight use a suffix, five allow either (prefix or suffix, depending on verb class), and 10 do not index the object at all on monotransitive verbs (Reesink, 2013, p. 222). Regardless of how and whether the object is indexed, we have nominative-accusative alignment (S=A≠O) within the clause. I will discuss this further below.

Fore illustrates the pattern with subject suffix and object prefix, with an intransitive clause in (50), and a transitive clause in (51).

Fore (Scott, 1978, p. 105)

- (50) mási´ kana-y=e
boy come-3SG.SBJ=IND
'The boy comes.'

Fore (Scott, 1978, p. 107)

- (51) náe' na-ka-y=e
1SG.nonNOM 1SG.OBJ-see-3SG.SBJ=IND
'He sees me.' (repeated from 56 above)

The accusative pattern is obvious. S and A arguments are indexed with a suffix, while the O argument is indexed with a prefix.

Daga illustrates the pattern with subject and object suffixes. Examples of an intransitive (52) and a transitive clause (53) are provided.

Daga (Murane, 1974, p. 41)

- (52) oma yagir-en
wood burn-3SG.SBJ.PST
'The wood burned.'

- (53) oma yagi-g-en
wood burn-2SG.OBJ-3SG.SBJ.PST
'The wood burned you.'

In Daga the morphological marking is different from Fore, but the alignment in the clause is likewise accusative. S and A are indexed with a suffix whereas Os are indexed by a different suffix closer to the verb stem. Other languages with object suffixes are Asmat (Voorhoeve, 1965) and Siroi (Rai Coast, Madang, north-east Papua New Guinea, Claassen & McElhanon, 1970, p. 69)

Finally, Lembena does not index Os at all. Compare examples (54) and (55).

Lembena (Heineman, 1998, p. 30)

- (54) kali ona i-ala-me
man that come-IMPST-3SG.SBJ.DECL
'That man came.'

Lembena (Heineman, 1998, p. 87)

- (55) kali yawale meena p-a-me
 man pig a strike-FPST-3SG.SBJ.DECL
 ‘(A/the) man killed a pig.’

Alignment is accusative. S and A are indexed with a suffix, and O – not indexed – is treated differently from S and A.¹¹

In a typological study of ‘give’ events, Reesink (2013) finds that in the overwhelming majority of TNG languages the recipient rather than the gift is the (primary) object. In 28 out of 33 TNG languages in his sample, the recipient is marked like the patient of a monotransitive verb (Reesink, 2013, p. 222). This is illustrated by Fore, with a ditransitive clause (56) and a monotransitive clause (57).

Fore (Scott, 1978, p. 107)

- (56) naninta: náe' na-mi-y=e
 food 1SG.nonNOM 1SG.OBJ-give-3SG.SBJ=IND
 ‘He gives me food.’

- (57) náe' na-ka-y=e
 1SG.nonNOM 1SG.OBJ-see-3SG.SBJ=IND
 ‘He sees me.’

There are no TNG languages (or Papuan languages in general, for that matter) with full ergative alignment with respect to indexing (Foley, 1986, p. 107; Foley, 2000, p. 379). While nominative-accusative alignment for verbs is the majority pattern in TNG languages one needs to keep in mind Nichols, Peterson and Barnes’ (2004) caveat about verb classes and alignment, i.e. that alignment types are generalizations about the behaviour of individual verbs not global statements about whole languages. In the West Bomberai language Iha person suffixes on the verb index Ss and As, while person prefixes index (patientive) Ss or Os; compare *ki-kné-mb-ob* [2-see-HPST-1PL] ‘we saw you’ with *ki-hoqbów-mb-e* [2-fall-HPST-2SG] ‘you fell’, where both affixes index the S argument. The prefixes do not instantiate an accusative but an absolutive alignment pattern (depending on semantics) (Donohue, 2015, p. 409, p. 410). And this is only part of the full story: Iha has four different alignment patterns in its verbs alone (see Donohue, 2015). For absolutive alignment in one set of prefixes in the Mountain Ok languages Mian and Telefol, see Corbett, Fedden and Finkel (2017) and Fedden (in press), respectively.

6.4 Experiential clauses

Most TNG languages employ two different constructions for bodily and mental processes, depending on whether they are controlled by an animate agent or whether they are manifestations of a stimulus beyond the control of the experiencer. Typical processes or conditions that are treated as involuntary are “bleeding, sweating, sneezing, being hungry, cold, sick, feeling like

laughing or vomiting, feeling afraid, angry, sad or irritated, having boils, warts or pimples” (Pawley & Hammarström, 2018, p. 114).

For voluntary bodily and mental processes the agent is encoded as the subject, while for involuntary ones a different construction is chosen: the animate (typically human) experiencer is encoded as the object, the process or condition is represented by a nominal, and the verb is indexed for a subject in the third person singular (Pawley & Hammarström, 2018, p. 114). The syntactic specifics of these constructions can vary between languages and even within a language; see for example San Roque (2008, pp. 258-262) for Duna. Consider the following two examples from Kalam (58) and Lembena (59).

Kalam (Pawley, Gi, Kias & Majnep, 2002, p. 155)

(58) yp ss yow-p
1SG.OBJ urine fall-PFV.3SG.SBJ
‘I feel like urinating/I need to urinate.’

Lembena (Heineman, 1998, p. 86)

(59) nabala odege n-ele-me
1SG head consume-PRS-3SG.SBJ.DECL
‘My head hurts.’

The experiencer is the object. This is obvious in Kalam, where a distinct object pronoun is used, less obvious in Lambena, where a personal pronoun, unmarked for case, is employed. The form *nabala* ‘1SG’ can be subject or object, but it is not a possessive pronoun (Heineman, 1998, pp. 14-15). Given the 3SG subject index on the verb, *nabala* cannot be the subject, an analysis as the object however is consistent with the data.

The identification of the subject in these constructions is usually more difficult. For Kalam, Pawley et al. (2002) identify the condition or process as the subject because it controls switch-reference in clause chains, but in many TNG languages there is a possible analysis in which the process or condition term is a verb adjunct, rather than its subject argument, and the third person singular is an impersonal (non-referential) subject, represented only on the verb. This is the analysis for Melpa (Berthold, 2008, pp. 58-59).

In languages which index the object on the verb, the experiencer is likewise indexed as the object. Example (60) is from Usan.¹²

Usan (Reesink, 1987, p. 140)

(60) ye tari uter yene-r-Λ
1SG head pain 1SG.OBJ-shoot-3SG.SBJ.PRS
‘I have a headache.’

Pawley and Hammarström (2018, p. 114) remark that “whereas in prototypical transitive constructions the order of constituents is SOV, in experiential constructions it is OSV, with the experiencer noun phrase placed in clause-initial, topic position”. TNG languages tend to topicalize the animate (typically human) participant in these constructions, which results in the unusual O-first word order. In some cases, the experiencer is overtly marked as the topic, e.g. in Yonggom (61).

Yonggom (Christensen, 2013, p. 27)

(61) ne kuu anigat kel-oon
1SG TOP fever do-3SG.SBJ.M.PST
'I have a fever.'

Verbs in experiential clauses are semantically rather general. Usually they do not specify the stimulus but rather express how the stimulus or condition manifests itself on the experiencer, e.g. 'do', 'eat', or 'hit'. However, there is a different type of construction in which the stimulus is rolled into the semantics of the verb and the subject is impersonal, in the sense of having no overt noun phrase that can instantiate it, as in Migabac (62).

Migabac (McEvoy, 2008, p. 34)

(62) alic-ke-gac
cause.anger-3SG.OBJ-3SG.SBJ.PRS
'He is angry.' (lit. it angers him)

6.5 Tense, aspect, mood and illocutionary force

Tense, aspect and mood are widespread morphosemantic features in TNG languages. TAM systems in individual languages are very diverse so that I will have to be brief here.

In TNG languages formatives expressing TAM features follow the lexical verb, either in the form of a suffix or – particularly for aspect, much less commonly for tense or modality (Reesink, Singer & Dunn, 2009) – in the form of a serial verb construction. Tense systems are often elaborate. Particularly for past tenses one often finds multiple distinctions, for example there are five past tenses in Mian (Fedden, 2011, p. 283, p. 296): a general past, a near past, a hesternal (yesterday's) past, a non-hodiernal (not today's) past and a remote past. Aspectual distinctions are also found, with the habitual being common. The basic distinction for mood is between realis and irrealis.¹³ Not all of these features are consistently employed in all TNG languages and different features can be dominant (see Foley, 1986, pp. 158-163). For example, Fore is tense-dominant, with aspect and mood playing a minor role. In the Mountain Ok languages, on the other hand, aspect is the most important feature (Fedden, 2011, 2015, in press), whereas mood is the most important feature in the Awyu and Dumut languages (Wester, 2014) and the Dani languages (Bromley, 1981; Barclay, 2008; Burung, 2017).

While tense and mood are mostly encoded by means of suffixal inflectional morphology, aspect marking can be inflectional, but often uses a serial verb construction, in which an erstwhile lexical verb is grammaticalized to express an aspectual meaning. For example, Mian uses the verb *deibô* ‘leave it’ to indicate completive aspect, as in (63), a typologically common grammaticalization pathway (Heine & Kuteva, 2002, pp. 189-190).

Mian (Fedden, n.d.)

- (63) *ē* *fúte* *fu* *deibô-n-e=be*
 3SG.M the.tobacco smoke COMPLETIVE-REAL-3SG.M.SBJ=DECL
 ‘He finished smoking.’

Another example is the use of the verb *be* ‘move’, which is employed in a serialization with another verb, yielding the persistive meaning ‘keep V-ing’ (64).

Mian (Fedden, 2011, p. 543)

- (64) *yē* *genam* *be-b-i=be*
 there roll.IPFV PERSISTIVE-IPFV-1SG.SBJ=DECL
 ‘I keep rolling (a cigarette).’

Many TNG languages (and Papuan languages more widely) express aspect distinctions by means of serial verb constructions with verbs like ‘hold’, ‘take’ or ‘hit’ for perfective aspect and ‘stay’, ‘stand’, ‘lie’, or ‘do’ for imperfective aspect (Foley, 1986, p. 145). Consider example (65) from Kalam, where the verb *md-* ‘stay’ expresses a persisting state of affairs. Duna uses the verb *yoko* ‘stretch’ to indicate incessitative aspect, i.e. the performance of an action without interruption (66).

Kalam (Pawley, 1993, and pers. comm.)

- (65) *b* *yob* *ag* *md-p-ay*
 man big sound PERSISTIVE-PRS-3PL.SBJ
 ‘The big men are still talking/continue to talk.’

Duna (San Roque, 2008, p. 235)

- (66) *na* *mbuku* *yaka* *yoko-nda*
 1SG book read INCESSITATIVE-INTENTIVE
 ‘I read the book all the way through (without a break).’

The high incidence of serial verb constructions in the expression of aspect is related to the high frequency of this construction type in Papuan languages in general (Foley, 1986, p. 143). For a recent in-depth treatment of the expression of aspect by means of verb serialization in the Rai Coast language Koromu (Madang family, north-east Papua New Guinea), see Priestley (2019).

Imperative (or hortative) mood paradigms are universal in TNG languages and contrafactual (or hypothetical) and desiderative mood distinctions are very widespread (Pawley & Hammarström, 2018, p. 101). The Manat (South Adalbert, Madang family, north-east Papua New Guinea) imperative forms, which fuse mood and subject person/number, are given in Table 10. Non-second person forms are hortatives. A textual example is given in (67).

Table 10. Manat imperative suffixes (Daniels, 2015, p. 595)

	SG	PL
1	-itɨŋ	-raŋ(d)
2	-m(d)	-mar
3	-s	-ura-s

Manat (Daniels, 2015, p. 596)

- (67) Gu-md. Ruku-s
 give-2SG.IMP see-3SG.IMP
 ‘Give (it to him). He should see (it).’

An example of a language with a conditional paradigm is Wambon. This modal value is expressed using the future stem (plus an element *-t*), followed by the subject suffix, followed by the conditional suffix *-kekhet* (Table 11). A textual example is (68).

Table 11. Wambon conditional paradigm of *en* ‘eat’ (future stem *ande*; ‘if I eat’) (De Vries & de Vries-Wiersma, 1992, pp. 30-31)

	SG	PL
1	andet-ep-kekhet	andet-eva-kekhet
2/3	andet-Ø-kekhet	andet-e-kekhet

Wambon (De Vries & de Vries-Wiersma, 1992, p. 31)

- (68) kikhuv-e nde-t-kekhet-eve nokhov-e Manggelum
 Digul-CONN come-3SG.SBJ.COND-TOP we-CONN PN
 ko-nok-siva
 go-NEG-1PL.SBJ.INTENTIONAL.NEG
 ‘If the Digul River rises, we do not want to go to Manggelum.’

In addition to the well-known features of tense, aspect and mood, geographically widespread TNG languages require the expression of the illocutionary force of an utterance, for example declarative or interrogative (with further categories in individual languages). These distinctions are realized by means of suffixes on the verb or verbal enclitics. The simplest systems involve an opposition between declarative (often termed ‘indicative’) and interrogative, for example in Rumu (Pettersen, 1999, p. 11). In Fore, all finite verbs are marked as either declarative,

interrogative or imperative. Foley (1986, p. 164) points out that sizable sets of illocutionary force markers are a property of the central highlands of Papua New Guinea, but this phenomenon actually seems more widespread and also occurs in Mountain Ok much further to the west (Fedden, 2011, p. 157). Some languages, such as Menya, even draw a distinction between polar and content questions. Compare examples (69) and (70).

Menya (Whitehead, 2006, p. 16)

(69) si apəkə təŋə=ŋu=k=ta=nə
 2SG wife near=M=2SG.SBJ=PQ=QUOT
 ‘ “Do you have a wife?” ’

Menya (Whitehead, 2006, p. 18)

(70) i=qu=a qua əŋgi pt-e-p=ŋqə=wə
 that=M=PL ground where dig-put-2/3PL.SBJ=GOAL=CQ
 ‘Where are they going to bury (him)?’

For polar questions (yes/no questions) Menya employs an illocutionary particle =*ta* (69), while for content questions, in which a constituent is queried, a different illocutionary particle =*wə* (70) is used.

7. Clause chains and reference tracking

It is extremely common for TNG languages to organize their discourse by stringing together clauses to form a clause chain. In terms of the inflectional morphology of the verbs in the individual clauses of this chain, there is usually a systematic distinction between a morphologically impoverished medial verb, which is the head of the first clause (and all clauses but the final clause) in the chain, and a fully inflected final verb, which is the head of the final clause. Clause chains are minimally two clauses long, but frequently continue for a large number of clauses before the final clause – the end of the sentence – is reached. Any two adjacent clauses in a chain form a pair consisting of a ‘marked’ clause and a ‘reference’ clause (Munro, 1980). Each marked clause contains a medial verb which is marked for ‘same subject’ (SS) or ‘different subject’ (DS) in relation to the subject of the reference clause. This reference clause in turn is a marked clause with respect to the next clause in the chain.

While final verbs provide information about morphosemantic features such as absolute tense, and mood, polarity and illocutionary force, which can apply to the whole clause chain (but see below), medial verbs contain formatives indicating whether the subject of the reference clause is the same or different from the subject of the marked clause. Such a system is commonly called a switch-reference system in the literature (Haiman & Munro, 1983; Roberts, 1997; Stirling, 1993; Van Gijn & Hammond, 2016). It is so common in TNG languages that it can probably be reconstructed for the proto language (Foley, 2018, p. 922; Pawley & Hammarström, 2018, p.

150; Wurm, 1982, p. 83), and Suter (1997) in fact reconstructs a suffix *-pa ‘1SG.DS’ (i.e. *-mba in Pawley’s phonological system) for a subset of TNG languages. Such systems are however notably absent from TNG language groups of the south, i.e. Anim, Kiwai (if at all TNG), Suki and Kolopom languages (see Roberts, 1997, pp. 105-106).

A simple example of a clause chain, where the medial verb only indicates conjoint reference (71) or disjoint reference (72) comes from Mand.

Mand (Daniels, 2015, p. 484)

(71) sag a-i dar kudikw-in
again come-SS 2SG.ACC see:HODPST-1SG.SBJ
‘I came back and saw you.’

(72) pipia na-n vra-c wadwi
debris DEM-ACC sweep-DS go:HODPST
‘She swept the debris away.’ (lit. swept and it went)

Languages differ as to which values they require to be indicated in a medial verb. SS medial verbs are commonly as simple as in Mand above (71), but DS medial verbs tend to carry more information. Compare examples (73) and (74) from Usan.

Usan (Reesink, 1983, p. 218, and pers. comm.)

(73) ye nam su- λ b is-omei
1SG tree cut-SS go.down-1SG.SBJ.FPST
‘I cut the tree and (I) went down.’

Usan (Reesink, 1983, p. 217, and pers. comm.).

(74) ye nam su-ine is-orei
1SG tree cut-1SG.SBJ.DS go.down-3SG.SBJ.FPST
‘I cut the tree (and it went) down.’

In Usan, SS medial verbs are only marked for co-reference of subject by λ b, but the DS suffix *-ine* in (74) cumulates the meaning ‘different subject’ with subject person and number. Frequently, there is additional temporal meaning, e.g. sequential or simultaneous, indicating whether the events occur one after the other or whether they overlap, taking over some of the functions of conjunctions in other languages. Sequential events are illustrated in (75) for Kalam, and simultaneous events are illustrated in (76) for Samo.

Kalam (Pawley, 1993, p. 101)

- (75) kwt d-y nwp pk-p-an
 stick hold-SS.PRIOR him hit-PFV-2SG.SBJ
 ‘You hit him with a stick.’ (lit. ‘You took a stick and hit him.’)

Samo (Shaw, 1973, p. 208)

- (76) Faliki gę-dobo ą yq-liyo
 PN play-DS.SIM 1SG.SBJ laugh-PRS
 ‘While Ricky is playing, I am laughing.’

Clause chains of this type are syntactically a curious phenomenon. The medial clause is not subordinate to the final clause (in the sense of embedding), yet it depends on it for grammatical information (Olson, 1981, pp. 209ff; Foley & Van Valin, 1984). In the Usan example (74) above, the medial verb *su-ine* [cut-1SG.DS] contains only information about subject person and number, as well as disjoint subject reference with respect to the reference clause, but it carries no information about tense. This information is provided by the final verb, in this case ‘far past’; the tense value specified on the final verb has scope over the whole clause chain. There is considerable variation in TNG languages regarding scope rules in clause chains (Foley, 2010b). For an in-depth analysis of the scope of negation in Usan clause chains, see Reesink (1986).

As an example, I will consider the scope rules for polarity in Mian and Tauya. In Mian, polarity is obligatorily interpreted as having scope over the whole clause chain. Consider example (77).

Mian (Fedden, 2011, p. 475)

- (77) a. ē ayam bi-Ø-e=a
 3SG.M good stay.IPFV-SIM-3SG.M.SBJ=MED
 b. bib ōlo hâa'-biaan-e=t=a
 place DEM.PROX roam.IPFV-CONT.SS.SIM-3SG.M.SBJ=FOC=MED
 c. ya-têm'-aam-e=ba kesoa
 PL.AN.OBJ-see.PFV-DEONTIC-3SG.M.SBJ=NEG because
 ‘because he wasn’t well and couldn’t roam this place and see them, ...’

In this example, clause (a) means ‘he was well’ and clause (b) means ‘he was roaming this place’. It is only due to the presence of the negation in the final clause (c) that the intended negative polarity is expressed. In Tauya, on the other hand, negation optionally has full scope over a medial clause marked ‘same subject’, as in (78), but never has full scope over a medial clause marked ‘different subject’, as in (79).

Tauya (MacDonald, 1990, p. 233)

(78) ne fofe-pa wate pofei-a-'a
3SG come-SS NEG talk-3SG.SBJ-IND
'He came and he didn't talk.' OR 'He didn't come and talk.'

(79) ne fofe-a-te ya-ni wate tu-e-'a
3SG come-3SG.SBJ-DS 1SG-ERG NEG give-1/2SG.SBJ-IND
'He came, but I didn't give it to him.'

While only final clauses can stand alone as grammatically complete sentences, formally medial clauses routinely appear as separate utterances in discourse. This phenomenon is very similar to insubordination, i.e. the widespread use of subordinate constructions as main clauses in the world's languages with particular semantic or discourse effects (Evans, 2007). Consider example (80) from Mian.

Mian (Fedden, 2011, p. 467)

(80) nē síto fubâ-n-i=t=a
1SG teeth wash-SS.SEQ-1SG.SBJ=FOC=MED
'I'll brush my teeth first ...'

Reesink (1987, p. 87), writing on the same phenomenon in Usan, points out that such utterances are usually not taken to be grammatically complete sentences. They are not interpreted with respect to the moment of speaking (as final verbs are), but rather with respect to some subsequent event which is implied or understood, since it is obvious to the addressee from the context established by the situation in which the utterance was made (Reesink, 1983, p. 225). In (80) above, the implied event could be for example '... and then I'll go to bed'. On the use of medial verbs in utterance-final position in the Finisterre language Nungon (north-east Papua New Guinea), see Sarvasy (2017, pp. 301-312).

In systems of this type reference tracking is commonly combined with other functions, such as indicating a thematic continuity or discontinuity between clauses (see also Reesink, 1983; Foley, 1986, pp. 188-192; Stirling, 1993, p. 137). Hence, they provide information about relations between whole clauses, not just about subject reference. A clause (or even clauses) with a less topical subject can be skipped and marking for subject co-reference is then calculated with respect to the clause in which the topic re-occurs. The following example (81) is from Korafe.

Korafe (Farr, 1999, p. 229)

- (81) a. afe=mane abua=mane feku fuse-do
father=PL grandfather=PL flute blow-SEQ.SS
- b. ghamo er-ari
lungs arise-SEQ.IRR.3SG.SBJ.DS
- c. y-a-ma
go.DUR-SEQ.IRR.SS-TOP
- d. kombo-yaru-e-do-ghu-seri
sex.partner-play-do-SEQ.SS-continue-RPST.3PL.SBJ.IND
'(Our) fathers and grandfathers would play the flute and would become excited and they would go and fornicate with a casual partner.'

The impersonal experiential clause (b) is skipped and subject co-reference on the verb *fusedo* 'blow.SEQ.SS' in clause (a) is calculated with respect to the recurring topic (the fathers and grandfathers) in clause (c), i.e. the subject of the motion event.

8. Concluding remarks

The aim of this article was to present the morphology and morphosyntax of TNG languages to a wide audience of linguists. To this end I focussed on the unity of TNG and on typical structures which are characteristic of a wide range of TNG languages. These include the sharp distinction between nouns and verbs, the use of person and number affixes for possessor inflection (which are typically also used for object agreement in the languages that have it), optional ergative marking conditioned by semantic and pragmatic factors, the use of person affixes on the verb for core arguments, the presence of an experiential construction for involuntary bodily and mental processes, and the high incidence of chaining constructions, i.e. (i) serial verb constructions for the purpose of valency changing, verb lexicon extension, and aspect marking, and (ii) clause chaining constructions with medial verb morphology for monitoring continuity in discourse. These properties are common enough in the sample languages and the probability that "new" TNG languages, for which first or more complete descriptions will become available in the future, will display them is high.

However, there is also considerable variation in parts. I will highlight just a few of these areas here. First, there is an extreme discrepancy to the degree that morphology is employed in TNG languages, from head-marking Mian and Menya to the virtually isolating Kolopom languages. Further, while accusative alignment in the clause is the majority pattern there are TNG languages with absolutive minority patterns. Next, there is large variation with respect to the syntactic and semantic particulars of light-verb constructions. Finally, the tense, aspect and mood systems of TNG languages are highly diverse, with different patterns of formal marking, semantic distinctions, and relations of dominance. This diversity calls for further systematic research into TNG languages and typological studies of specific areas of their grammar.

Acknowledgements

I am very grateful to the following colleagues for reading and commenting on an earlier draft: Andy Pawley, Bruno Olsson, Christian Döhler, Don Daniels, Edgar Suter, Ger Reesink, Grev Corbett, Lila San Roque, Lourens de Vries, Malcolm Ross, Marian Klamer, Matt Carroll, Matthew Baerman, Nick Evans and Tim Feist. The paper has profited greatly from their suggestions and improvements. All remaining shortcomings and errors are mine. Special thanks go to Edgar Suter for discussion of several aspects of the paper, notably the phenomenon of ‘object verbs’ in the Huon languages.

Abbreviations

1 - first person, 2 - second person, 3 - third person, ABL - ablative, ACC - accusative, ASS - assertive, COM - comitative, COND - conditional, CONN - connective, CONT - continuous, CQ - content question, CS - contrastive subject, DECL - declarative, DEM - demonstrative, DEP - dependent (verb), DET - determiner, DIM - diminutive, DS - different subject, DU - dual, DUR - durative, EMPH - emphatic, ERG - ergative, F - feminine, FOC - focus, FPST - far past, GPST - general past, HODPST - hodiernal past, HORT - hortative, ILL - illative, IMP - imperative, IMPST - immediate past, IND - indicative, INSTR - instrumental, INT - interrogative, INTR - intransitive, IPFV - imperfective, IRR - irrealis, LNK - linker, LOC - locative, M - masculine, MED - medial verb, N1 - neuter 1, NEG - negation, NMLZ - nominalizer, nonNOM - non-Nominative, OBJ - object, PFV - perfective, PL - plural, PN - proper name, POSS - possessive, PP - past perfective, PQ - polar question, PROG - progressive, PROX - proximal, PRS - present, PST - past, QUOT - quotative, REAL - realis, RPST - remote past, SBJ - subject, SEQ - sequential, SG - singular, SIM - simultaneous, SS - same subject, TOP - topic, VBLZ - verbalizer.

Appendix

Here I give information on the key languages in this article, the subgroups they belong to, the area in which they are spoken, and my primary sources.

Subgroup	Language	Area	Primary sources
Angan	Menya	SE PNG	Whitehead (2006)
Anim	Marind	SE Papua	Olsson (2018)
Asmat-Kamoro	Asmat	S Papua	Voorhoeve (1965)
Bosavi	Kaluli	Highlands, PNG	Grosh & Grosh (2004)
Chimbu-Wahgi, Chimbu	Melpa	Highlands, PNG	Berthold (2008)
Dagan	Daga	SE PNG	Murane (1974)
Dani	Lower Grand Valley Dani	Highlands, Papua	Bromley (1981)
Duna-Bogaya	Duna	Highlands, PNG	San Roque (2008)
East Strickland	Samo	SW PNG	Shaw (1973)

Enga-Kewa-Huli	Lembena	Highlands, PNG	Heineman (1998)
Finisterre-Huon, Finisterre-Saruwaged	Ma Manda	E PNG	Pennington (2016)
Finisterre-Huon, Huon	Migabac	E PNG	McEvoy (2008)
Gogodala-Suki	Suki	SW PNG	Evans et al. (2018)
Goilalan	Fuyug	SE PNG	Bradshaw (2007)
Greater Awyu, Awyu	Aghu	Central Papua	Drabbe (1957); van den Heuvel (2016)
Greater Awyu, Dumut	Wambon	Central Papua	De Vries & de Vries-Wiersma (1992)
Greater Binanderean	Korafe	SE PNG	Farr (1999)
Kainantu-Gorokan, Gorokan	Fore	Highlands, PNG	Scott (1978)
Koiarian	Mountain Koiali	SE PNG	Garland (1980)
Kutubu	Foe	SE PNG	Rule (1993)
Madang, Rai Coast	Tauya	NE PNG	MacDonald (1990)
Madang, Croisilles	Usan	NE PNG	Reesink (1987)
Madang, Kalam-Kobon	Kalam	NE PNG	Pawley (1993); Pawley & Bulmer (2011)
Madang, South Adalbert	Mand	NE PNG	Daniels (2015)
Mek	Una	Highlands, Papua	Louwerse (1988)
Ok-Oksapmin, Mountain Ok	Mian	Highlands fringe, PNG	Fedden (2011); Fedden (n.d.)
Ok-Oksapmin, Lowland Ok	Yonggom	Highlands fringe, Papua	Christensen (2013)
Paniai Lakes	Ekari	Paniai Lakes, Papua	Doble (1987)
Somahai	Momuna	Central Papua	Reimer (1986)
Turama-Kikori	Rumu	S PNG	Petterson (1999)
West Bomberai	Iha	Bomberai peninsula, West Papua	Donohue (2015)
Yareban	Aneme Wake	SE PNG	Weimer (1978)

Further reading

- Aikhenvald, A. Y., & Stebbins, T. (2007). Languages of New Guinea. In O. Miyaoka, O. Sakiyama, & M. E. Krauss (Eds.), *The vanishing voices of the Pacific Rim* (pp. 239-266). Oxford: Oxford University Press.
- Carrington, L. (1996). *A linguistic bibliography of the New Guinea area*. PL D-90. Canberra: Pacific Linguistics.
- Foley, W. A. (1986). *The Papuan languages of New Guinea*. Cambridge: Cambridge University Press.
- Foley, W. A. (2000). The languages of New Guinea. *Annual Review of Anthropology*, 29, 357-404.
- Hammarström, H. (2010). The status of the least documented language families in the world. *Language Documentation and Conservation*, 4, 177-212.
- Palmer, B. (Ed.). (2018b). *The languages and linguistics of the New Guinea area: a comprehensive guide*. Berlin: De Gruyter Mouton.

- Pawley, A. K., Attenborough, R., Golson, J., & Hide, R. (Eds.). (2005). *Papuan pasts: Cultural, linguistic and biological histories of Papuan-speaking peoples*. Canberra: Pacific Linguistics.
- Ross, M. (2017). Languages of the New Guinea region. In R. Hickey (Ed.), *The Cambridge Handbook of Areal Linguistics* (pp. 758-820). Cambridge: Cambridge University Press.

Digital resources

- Baerman, M., Brown, D., Evans, R., Corbett, G. G., & Cahill, L. (2015). Surrey Morphological Complexity Database. University of Surrey. <http://dx.doi.org/10.15126/SMG.23/1>
- Reesink, G., Singer, R., & Dunn, M. (2009). Explaining the linguistic diversity of Sahul using population models. *PloS Biology*, 7(11), 1-9. [Materials available at <http://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1000241>]

References

- Baerman, M. (2014). Suppletive kin term paradigms in the languages of New Guinea. *Linguistic Typology*, 18(3), 413-448.
- Baerman, M., Brown, D., & Corbett, G. G. (2005). *The Syntax-Morphology Interface: A study of syncretism*. Cambridge: Cambridge University Press.
- Baerman, M., Brown, D., Evans, R., Corbett, G. G., & Cahill, L. (2015). Surrey Morphological Complexity Database. University of Surrey. <http://dx.doi.org/10.15126/SMG.23/1>
- Barclay, P. (2008). *A grammar of Western Dani*. München: Lincom.
- Berghäll, L. (2010). *Mauwake reference grammar* (Doctoral dissertation). University of Helsinki, Finland.
- Berthold, F. (2008). *A sketch grammar of Melpa* (Master's thesis). University of Leipzig, Germany.
- Bradshaw, R. L. (2007). *Fuyug grammar sketch*. Ukarumpa: SIL-PNG Academic Publications.
- Bromley, M. H. (1981). *A grammar of Lower Grand Valley Dani*. PL C-63. Canberra: Pacific Linguistics.
- Bulmer, R. N. H. (1967). Why is the cassowary not a bird? A problem of zoological taxonomy among the Karam of the New Guinea highlands. *Man*, 2(1), 5-25.
- Bunn, G. (1974). Golin grammar. In *Workpapers in Papua New Guinea Languages 5*. Ukarumpa, PNG: Summer Institute of Linguistics.
- Burung, W. (2017). *A grammar of Wano* (Doctoral dissertation). University of Oxford, UK. Retrieved from https://ora.ox.ac.uk/objects/uuid:86a8eef7-4a10-420d-b445-400a0b2b974f/download_file?file_format=pdf&safe_filename=BURUNG%2B2017_A%2BGRAMMAR%2BOF%2BWANO-ORA.pdf&type_of_work=Thesis
- Chappell, H., & McGregor, W. B. (1989). Alienability, inalienability, and nominal classification. *Berkeley Linguistic Society*, 15, 24-36.
- Chelliah, S. L., & Hyslop, G. (2011). Introduction to special issue on optional case marking in Tibeto-Burman. *Linguistics of the Tibeto-Burman Area*, 34(2), 1-7.
- Christensen, S. (2010). Yongkom discourse: ergativity and topic. In J. Hooley (Ed.), *Papers on six languages of Papua New Guinea* (pp. 1-39). Canberra: Pacific Linguistics.
- Christensen, S. (2013). Yongkom grammar essentials. Ms. Ukarumpa: SIL-PNG.
- Claassen, O. R., & McElhanon, K. A. (1970). Languages of the Finisterre Range. *Papers in New Guinea Linguistics*, 11, 45-78. Canberra: Pacific Linguistics.
- Corbett, G. G., Fedden, S., & Finkel, R. A. (2017). Single versus concurrent feature systems: Nominal classification in Mian. *Linguistic Typology*, 21, 209-260.

- Daniels, D. R. (2015). *A reconstruction of proto-Sogeram: Phonology, lexicon, and morphosyntax* (Doctoral dissertation). University of Santa Barbara, USA. Retrieved from <https://www.alexandria.ucsb.edu/downloads/2r36tx861>
- DeLancey, S. (2011). "Optional" "ergativity" in Tibeto-Burman languages. *Linguistics of the Tibeto-Burman Area*, 34(2), 9-20.
- De Vries, L. (1998). Body part tally counting and Bible translation in Papua New Guinea and Irian Jaya. *The Bible translator (practical papers)* 49, 409-415.
- De Vries, L., & Schapper, A. (2018). Comparatives in Melanesia: Concentric circles of convergence. *Linguistic Typology*, 22(3), 437-494. <https://doi.org/10.1515/lingty-2018-0015>
- De Vries, L., & De Vries-Wiersma, R. (1992). *The morphology of Wambon of the Irian Jaya Upper-Digul area*. Leiden: The KITLV Press.
- Dixon, R. M. W. (1979). Ergativity. *Language*, 55, 59-138.
- Dixon, R. M. W. (1994). *Ergativity*. Oxford: Oxford University Press.
- Dixon, R. M. W. (2004). Adjective classes in typological perspective. In R. M. W. Dixon, & A. Y. Aikhenvald (Eds.), *Adjective classes* (pp. 1-49). Oxford: Oxford University Press.
- Doble, M. L. (1987). A description of some features of Kapauku language structure. *Oceanic Linguistics*, 26, 55-113.
- Dobrin, L. (2012). *Concreteness in grammar: The noun class systems of Papua New Guinea Arapeshan*. Stanford: CSLI Publications.
- Döhler, C. (2018). The autonomy of the verb lexicon in Komnzo. Paper presented at the 10th Austronesian and Papuan Languages and Linguistics conference (APLL 10), May 2018, University of Surrey, Guildford, UK.
- Donohue, M. (2015). Verbal inflection in Iha: A multiplicity of alignments. In M. Baerman (Ed.), *The Oxford Handbook of Inflection* (pp. 405-418). Oxford: Oxford University Press.
- Donohue, C., & Donohue, M. (1997). Fore case marking. *Language and Linguistics in Melanesia*, 28, 69-98.
- Drabbe, P. (1949). Bijzonderheden uit de Talen van Frederik-Hendrik-Eiland: Kimaghama, Ndom en Riantana [Particularities from the languages of Frederik-Hendrik Island: Kimaghama, Ndom and Riantana]. *Bijdragen tot Taal-, Land- en Volkenkunde*, 105, 1-24.
- Dwyer, P. D., & Minnegal, M. (2016). Counting systems of the Strickland-Bosavi languages, Papua New Guinea. *Language and Linguistics in Melanesia*, 34(1), 1-36. Retrieved from <https://minerva-access.unimelb.edu.au/bitstream/handle/11343/59568/Counting%20systems%20of%20the%20Strickland-Bosavi%20languages,%20PNG.pdf?sequence=1>
- Evans, N. 2007. Insubordination and its uses. In I. Nikolaeva (Ed.), *Finiteness: Theoretical and empirical foundations* (pp. 366-431). Oxford: Oxford University Press.
- Evans, N., Besold, J., Stoakes, H., & Lee, A. (Eds.). (2005). *Materials on Golin: Grammar, texts and dictionary*. Department of Linguistics and Applied Linguistics, University of Melbourne, Australia.
- Evans, N., Arka, W., Carroll, M., Choi, Y., Döhler, C., Gast, V., Kashima, E., Mittag, E., Olsson, B., Quinn, K., Schokkin, D., Tama, P., Van Tongeren, C., & Siegel, J. (2018). The languages of southern New Guinea. In B. Palmer (Ed.), *The languages and linguistics of the New Guinea area: A comprehensive guide* (pp. 641-774). Berlin: De Gruyter Mouton.
- Farr, C. (1999). *The interface between syntax and discourse in Korafe, a Papuan language of Papua New Guinea*. PL C-148. Canberra: Pacific Linguistics.
- Fedden, S. (2011). *A grammar of Mian*. Mouton Grammar Library 55. Berlin: De Gruyter Mouton.

- Fedden, S. (2012). Change in traditional numeral systems in Mian and other Trans New Guinea languages. In H. Hammarström, & W. van den Heuvel (Eds.), *History, contact and classification of Papuan languages (Language and Linguistics in Melanesia Special Issue 2012 (part 1))* (pp. 1-22). Port Moresby: Linguistic Society of Papua New Guinea. Retrieved from <https://www.langlxmelanesia.com/Special%202%20fedden1-22.pdf>
- Fedden, S. (2015). Verb stem aspect in Mian. In S. Augendre, G. Couasnon-Torlois, D. Lebon, C. Michard, G. Boyé, & F. Montermini (Eds.), Proceedings of the Décembrettes 8th International conference on morphology, Bordeaux, 6-7 December 2012, *Carnets de Grammaire, rapports internes de CLLE-ERSS, report 22*, 99-135. University of Toulouse, Toulouse, France. Retrieved from: <http://w3.erss.univ-tlse2.fr/textes/publications/CarnetsGrammaire/carnGram22.pdf>
- Fedden, S. (In press). Grammaticalization in Mountain Ok. In W. Bisang, & A. Malchukov (Eds.), *Comparative handbook of grammaticalization scenarios*. Berlin: Mouton.
- Fedden, S. (n.d.). Mian corpus and field notes. Toolbox files, PDF scans of field notes.
- Fedden, S., Brown, D., Kratochvíl, F., Robinson, L. C., & Schapper, A. (2014). Variation in pronominal indexing: Lexical stipulation vs. referential properties in the Alor-Pantar languages. *Studies in Language*, 38(1), 44-79.
- Fedden, S., & Brown, D. (2017). Participant marking: Corpus study and video elicitation. In M. Klamer (Ed.), *The Alor-Pantar languages: History and typology* (2nd ed, pp. 413-456). Berlin: Language Science Press. Retrieved from <http://langsci-press.org/catalog/book/157>
- Foley, W. A. (1986). *The Papuan languages of New Guinea*. Cambridge: Cambridge University Press.
- Foley, W. A. (1991). *The Yimas language of New Guinea*. Stanford, CA: Stanford University Press.
- Foley, W. A. (2000). The languages of New Guinea. *Annual Review of Anthropology*, 29, 357-404.
- Foley, W. A. (2010a). Language contact in the New Guinea region. In R. Hickey (Ed.), *The Handbook of Language Contact* (pp. 795-813). Oxford: Wiley-Blackwell.
- Foley, W. A. (2010b). Clause linkage and nexus in Papuan languages. In I. Brill (Ed.), *Clause linkage and clause hierarchy: Syntax and pragmatics* (pp. 27-50). Amsterdam: John Benjamins.
- Foley, W. A. (2018). The morphosyntactic typology of Papuan languages. In B. Palmer (Ed.), *The languages and linguistics of the New Guinea area: A comprehensive guide* (pp. 895-937). Berlin: De Gruyter Mouton.
- Foley, W. A., & Van Valin, R. (1984). *Functional syntax and universal grammar*. Cambridge: Cambridge University Press.
- Franklin, K. J. (1971). *A grammar of Kewa, New Guinea*. PL C-16. Canberra: Pacific Linguistics.
- Garland, S. (1980). Mountain Koiali grammar: Sentences, paragraphs, and discourses. In D. Hutchisson (Ed.), *Grammatical Studies in Fasu and Mt. Koiali* (pp. 107-222). Ukarumpa: SIL-PNG.
- Geary, E. (1977). *Kunimaipa grammar: Morphophonemics to discourse*. Ukarumpa: SIL-PNG. Retrieved from https://www.sil.org/system/files/reapdata/13/00/59/130059048921693755778947510221660583011/Kunimaipa_gram.pdf
- Grosh, A., & Grosh, S. (2004). Grammar essentials for the Kaluli language. Ms. Summer Institute of Linguistics. Retrieved from https://www.sil.org/system/files/reapdata/12/70/02/127002884532938340246778896002777836609/Kaluli_Grammar_Essentials_%28approved_draft%29.pdf
- Haiman, J. (1983). Iconic and economic motivation. *Language*, 59, 781-819.
- Haiman, J., & Munro, P. (1983). *Switch reference and universal grammar*. Amsterdam: John Benjamins.

- Healey, P. (1965). *Telefol noun phrases*. PL B-4. Canberra: Pacific Linguistics.
- Healey, P. (1966). *Levels and chaining in Telefol sentences*. PL B-5. Canberra: Pacific Linguistics.
- Heine, B., & Kuteva, T. (2002). *World lexicon of grammaticalization*. Cambridge: Cambridge University Press.
- Heineman, P. (1998). A grammar of Lembena. Ms. SIL Papua New Guinea. Retrieved from https://www.sil.org/system/files/reapdata/51/03/11/51031111802860237116525565303003925224/Lembena_Grammar.pdf
- Lang, A. J. (1975). *The semantics of classificatory verbs in Enga (and other Papua New Guinea languages)*. PL B-39. Canberra: Pacific Linguistics.
- Lean, G. A. (1991). *Counting systems of Papua New Guinea*. Vol. 12. Western Province. Department of Mathematics and Statistics, Papua New Guinea University of Technology, Lae, Papua New Guinea.
- Lean, G. A. (1992). *Counting systems of Papua New Guinea and Oceania* (Doctoral dissertation). Papua New Guinea University of Technology, Lae, Papua New Guinea.
- Loughnane, R. (2009). *A grammar of Oksapmin* (Doctoral dissertation). University of Melbourne, Australia. Retrieved from https://minerva-access.unimelb.edu.au/bitstream/handle/11343/35153/115303_loughnane.pdf
- Louwerse, J. (1988). *The morphosyntax of Una in relation to discourse structure*. PL B-100. Canberra: Pacific Linguistics.
- MacDonald, L. (1990). *A grammar of Tauya*. Berlin: Mouton de Gruyter.
- McElhanon, K. A. (1972). *Selepet grammar. Part I: From root to phrase*. PL B-21. Canberra: Pacific Linguistics.
- McElhanon, K. A., & McElhanon, N. A. (1970). *Selepet-English dictionary*. PL C-15. Canberra: Pacific Linguistics.
- McElhanon, K. A., & Voorhoeve, C. L. (1970). *The Trans-New Guinea phylum: Explorations in deep-level genetic relationships*. PL B-16. Canberra: Pacific Linguistics.
- McEvoy, R. S. (2008). *Grammar of narrative discourse in Migabac, a Papuan (non-Austronesian) language* (Master's thesis). The Graduate Institute of Applied Linguistics, Dallas International University, USA. Retrieved from https://www.sil.org/system/files/reapdata/63/22/03/63220311980271392254837362810396349571/Migabac_Narative_Discourse.pdf
- McGregor, W. B. (2010). Optional ergative case marking systems in a typological-semiotic perspective. *Lingua*, 120, 1610-1636.
- McGregor, W. B., & Verstraete, J.-C. (2010). Optional ergative marking and its implications for linguistic theory. *Lingua*, 120, 1607-1609.
- Munro, P. (Ed.) (1980). *Studies of Switch-Reference*. UCLA Papers in Syntax 8. Los Angeles: UCLA.
- Murane, E. (1974). *Daga grammar: From morpheme to discourse*. Oklahoma: SIL.
- Nichols, J. (1992). *Linguistic diversity in space and time*. Chicago: University of Chicago Press.
- Nichols, J., Peterson, D., & Barnes, J. (2004). Transitivity and detransitivizing languages. *Linguistic Typology*, 8, 149-211.
- Olson, M. L. (1981). *Barai clause junctures: Towards a functional theory of interclausal relations* (Doctoral dissertation). Australian National University, Canberra, Australia.
- Olsson, B. (2018). *The coastal Marind language* (Doctoral dissertation). Nanyang Technological University, Singapore. Retrieved from

https://repository.ntu.edu.sg/bitstream/handle/10356/73235/Olsson2017_Coastal_Marind.pdf?sequence=1&isAllowed=y

- Palmer, B. (2018a). Language families of the New Guinea area. In B. Palmer (Ed.), *The languages and linguistics of the New Guinea area: A comprehensive guide* (pp. 1-19). Berlin: De Gruyter Mouton.
- Palmer, B. (Ed.). (2018b). *The languages and linguistics of the New Guinea area: A comprehensive guide*. Berlin: De Gruyter Mouton.
- Pawley, A. K. (1993). A language which defies description by ordinary means. In W. A. Foley (Ed.), *The role of theory in language description* (pp. 87-129). Berlin: Mouton de Gruyter.
- Pawley, A. K. (1995). Clemens L. Voorhoeve and the Trans New Guinea Phylum hypothesis. In C. Baak, M. Bakker, & D. van der Meij (Eds.), *Tales from a concave world. Liber Amicorum Bert Voorhoeve* (pp. 83-122). Department of Languages and Cultures of South-East Asia and Oceania, Leiden University.
- Pawley, A. K. (1998). The Trans New Guinea Phylum hypothesis: a reassessment. In J. Miedema, C. Odé, & R. A. C. Dam (Eds.), *Perspectives on the Bird's Head of Irian Jaya, Indonesia* (pp. 655-689). Amsterdam: Editions Rodopi.
- Pawley, A. K. (2001). The Proto Trans New Guinea obstruents: Arguments from top-down reconstruction. In A. K. Pawley, M. Ross, & D. Tryon (Eds.), *The boy from Bundaberg: studies in Melanesian linguistics in honour of Tom Dutton* (pp. 261-300). PL-514. Canberra: Pacific Linguistics.
- Pawley, A. K. (2005). The chequered career of the Trans New Guinea hypothesis: Recent research and its implications. In A. K. Pawley, R. Attenborough, J. Golson, & R. Hide (Eds.), *Papuan pasts: Cultural, linguistic and biological histories of Papuan-speaking peoples* (pp. 67-108). PL-572. Canberra: Pacific Linguistics.
- Pawley, A. K. (2008). Compact versus narrative serial verb constructions in Kalam. In G. Senft (Ed.), *Serial verb constructions in Austronesian and Papuan languages* (pp. 171-202). PL- 594. Canberra: Pacific Linguistics.
- Pawley, A. K. (2010). *Helter skelter* and *ñugl ñagl*: English and Kalam rhyming jingles and the psychic unity of mankind. In G. Reesink, & K. McElhanon (Eds.), *A mosaic of language and culture: Studies celebrating the career of Karl Franklin* (pp. 273-293). Dallas: SIL International.
- Pawley, A. K. (2011). Some Trans New Guinea etymologies. Computer file. Department of Linguistics, School of Culture, History and Language, College of Asia and the Pacific, Australian National University, Canberra, Australia.
- Pawley, A. K., & Bulmer, R. (2011). *A dictionary of Kalam with ethnographic notes*. (With the assistance of J. Kias, S. P. Gi and I. S. Majnep.) PL-630. Canberra: Pacific Linguistics.
- Pawley, A. K., & Hammarström, H. (2018). The Trans New Guinea family. In B. Palmer (Ed.), *The languages and linguistics of the New Guinea area: A comprehensive guide* (pp. 21-195). Berlin: De Gruyter Mouton.
- Pawley, A. K., Gi, S. P., Kias, J., & Majnep, I. S. (2002). Hunger acts on me: The grammar and semantics of bodily and mental processes in Kalam. In V. de Guzman, & B. Bender (Eds.), *Grammatical analysis in morphology, syntax, and semantics: Studies in honor of Stanley Starosta* (pp. 153-185). Honolulu: University of Hawaii Press.
- Pennington, R. (2013). Topic as evidence for nominative case in Ma Manda. *Language and Linguistics in Melanesia*, 31(2), 1-26.

- Pennington, R. (2016). *A grammar of Ma Manda: A Papuan language of Morobe Province, Papua New Guinea* (Doctoral dissertation). James Cook University, Townsville, Australia. Retrieved from <https://researchonline.jcu.edu.au/48926/1/48926-pennington-2016-thesis.pdf>
- Petterson, R. (1999). *Rumu – English – Hiri-Motu dictionary*. Palmerston North, New Zealand: International Pacific College.
- Pilhofer, G. (1933). Grammatik der Kâte-Sprache in Neuguinea. (Beiheft zur Zeitschrift für Eingeborenen-Sprachen 14). Berlin: Reimer.
- Priestley, C. (2019). *Koromu (Kesawai): Grammar and information structure of a Papuan language*. Berlin: De Gruyter Mouton.
- Reesink, G. P. (1983). Switch reference and topicality hierarchies. *Studies in Language*, 7, 215-246.
- Reesink, G. P. (1986). Being negative can be positive. In G. Huttar, & K. Gregerson (Eds.), *Pragmatics in non-western perspective* (pp. 115-143). SIL and University of Texas at Arlington.
- Reesink, G. P. (1987). *Structures and their functions in Usan: A Papuan language of Papua New Guinea*. Amsterdam: John Benjamins.
- Reesink, G. P. (1990). Adverbs in Papuan languages. Or: “Where have all the adverbs gone?”. In H. Pinkster, & I. Genee (Eds.), *Unity in diversity, papers presented to Simon C. Dik on his 50th birthday* (pp. 211-228). Dordrecht: Foris Publications.
- Reesink, G. P. (2003). The North Papuan Linkage: A hypothesis. Paper for the Workshop Pioneers of Island Melanesia, April 2003, Cambridge.
- Reesink, G. P. (2010). Prefixation of arguments in West Papuan languages. In M. C. Ewing, & M. Klamer (Eds.), *East Nusantara, typological and areal analyses* (pp. 71-95). PL-618. Canberra: Pacific Linguistics.
- Reesink, G. P. (2013). Expressing the GIVE event in Papuan languages, a preliminary survey. *Linguistic Typology*, 17(2), 217-266.
- Reesink, G. P., Singer, R., & Dunn, M. (2009). Explaining the linguistic diversity of Sahul using population models. *PLoS Biology*, 7(11), 1-9.
- Reimer, M. (1986). *The notion of topic in Momuna narrative discourse*. PL A-74 (pp. 181-204). Canberra: Pacific Linguistics.
- Riesberg, S. (2018). Optional ergative, agentivity and discourse prominence – Evidence from Yali (Trans-New Guinea). *Linguistic Typology*, 22(1), 17-50.
- Roberts, J. R. (1997). Switch-reference in Papua New Guinea: A preliminary survey. In A. K. Pawley (Ed.), *Papers in Papuan linguistics 3* (pp. 101-241). PL A-87. Canberra: Pacific Linguistics.
- Ross, M. (2005). Pronouns as a preliminary diagnostic for grouping Papuan languages. In A. K. Pawley, R. Attenborough, J. Golson, & R. Hide (Eds.), *Papuan pasts: Cultural, linguistic and biological histories of Papuan-speaking peoples* (pp. 15-65). PL-572. Canberra: Pacific Linguistics.
- Ross, M. (2017). Languages of the New Guinea region. In R. Hickey (Ed.), *The Cambridge Handbook of Areal Linguistics* (pp. 758-820). Cambridge: Cambridge University Press.
- Rule, M. (1993). *The Culture and Language of the Foe: The People of Lake Kutubu, Southern Highlands Province, Papua New Guinea*. Merewether, New South Wales: Chevron Niugini.
- Rumsey, A. (2002). Men stand, women sit: On the grammaticalisation of posture verbs in Papuan languages, its bodily basis and cultural correlates. In J. Newman (Ed.), *The linguistics of sitting, standing and lying* (pp. 179-211). Amsterdam: John Benjamins.

- Rumsey, A., San Roque, L., & Schieffelin, B. B. (2013). The acquisition of ergative marking in Kaluli, Ku Waru and Duna (Trans New Guinea). In E. L. Bavin, & S. Stoll (Eds.), *The acquisition of ergativity* (pp. 133-182). Amsterdam: Benjamins.
- San Roque, L. (2008). *An introduction to Duna grammar* (Doctoral dissertation). Australian National University, Canberra, Australia.
- San Roque, L., & Loughnane, R. (2012). Inheritance, contact and change in the New Guinea Highlands evidentiality area. In H. Hammarström, & W. van den Heuvel (Eds.), *History, contact and classification of Papuan languages (Language and Linguistics in Melanesia Special Issue 2012)* (pp. 397-427). Port Moresby: Linguistic Society of Papua New Guinea. Retrieved from https://pure.mpg.de/pubman/faces/ViewItemFullPage.jsp?itemId=item_1690284
- Sarvasy, H. (2017). *A grammar of Nungon: A Papuan language of northeast New Guinea*. Leiden: Brill.
- Saxe, G. B., & Esmonde, I. (2004). Making change in Oksapmin tradestores: A study of shifting practices of quantification under conditions of rapid shifts towards a cash economy. *South Pacific Journal of Psychology*, 15, 2-19.
- Scott, G. (1978). *The Fore language of Papua New Guinea*. PL B-47. Canberra: Pacific Linguistics.
- Scott, G. (1986). On ergativity in Fore and other Papuan languages. *Papers in New Guinea Linguistics* 24. (pp. 167-175). Canberra: Pacific Linguistics.
- Shaw, D. R. (1973). A tentative classification of the languages of the Mt. Bosavi region. (Appendix B by K. Shaw, Grammatical notes on Samo, pp. 204-213). In K. Franklin (Ed.), *The linguistic situation in the Gulf district and adjacent areas, Papua New Guinea* (pp. 189-215). PL C-26. Canberra: Pacific Linguistics.
- Stirling, L. (1993). *Switch-reference and discourse representation*. Cambridge: Cambridge University Press.
- Stucky, A., & Stucky, D. (1970). Nii grammar essentials for translation. Ms. Ukarumpa: SIL Papua New Guinea. Retrieved from https://www.sil.org/system/files/reapdata/14/62/03/146203069979303577126421211238153383858/Nii_gram_ess_trans.pdf
- Suter, E. (1997). A comparative look at the dual and plural forms of inflections and pronouns in Northeast New Guinea. *Languages and Linguistics in Melanesia*, 28, 17-68. Retrieved from <https://www.langxmelanesia.com/LMM%20vol%2028%20no%201-2%20a%20comparative%20look%20at%20the%20dual%20and%20plural%20forms%20of%20verb%20inflections%20and%20pronouns%20in%20northeast%20new%20guinea%20papuan%20languages.pdf>
- Suter, E. (2010). The optional ergative in Kâte. In J. Bowden, N. P. Himmelmann, & M. Ross (Eds.), *A journey through Austronesian and Papuan linguistic and cultural space: Papers in honour of Andrew Pawley* (pp. 423-437). Canberra: Pacific Linguistics.
- Suter, E. (2012). Verbs with pronominal object prefixes in Finisterre-Huon languages. In H. Hammarström, & W. van den Heuvel (Eds.), *History, contact and classification of Papuan languages (Language and Linguistics in Melanesia Special Issue 2012)* (pp. 23-58). Port Moresby: Linguistic Society of Papua New Guinea. Retrieved from <https://www.langxmelanesia.com/Special%203%20suter23-58.pdf>
- Suter, E. (2018). *Comparative morphology of the Huon Peninsula languages (Papua New Guinea)* (Doctoral dissertation). University of Cologne, Germany.

- Svärd, E. (2013). *Selected topics in the grammar of Nalca* (Bachelor's thesis). Stockholm University, Sweden. Retrieved from <http://www.diva-portal.org/smash/record.jsf?searchId=1&pid=diva2:631006>.
- Svärd, E. (2015). *Grammatical gender in New Guinea* (Master's thesis). Stockholm University, Sweden.
- Tida, S. (2006). *A grammar of the Dom language: A Papuan language of Papua New Guinea* (Doctoral dissertation). University of Kyoto, Japan. Retrieved from <http://glmai.cocolog-nifty.com/ronbun/tida-dom-grammar-phd-2006.pdf>
- Tupper, I. D. (2012). *A grammar of Pamosu* (Doctoral dissertation). La Trobe University, Melbourne, Australia.
- Usher, T., & Suter, E. (2015). The Anim languages of Southern New Guinea. *Oceanic Linguistics*, 54(1), 110-142.
- Van den Heuvel, W. (2016). *Aghu: annotated texts with grammatical introduction and vocabulary lists*. A-PL-33.) Canberra: Asia-Pacific Linguistics.
- Van Gijn, R., & Hammond, J. (2016). *Switch reference 2.0*. Amsterdam: John Benjamins.
- Voorhoeve, C. L. (1965). The Flamingo Bay dialect of the Asmat language. *Verhandelingen van Koninklijke Instituut voor Taal-, Land- en Volkenkunde*, 46.
- Wälchli, B. (2005). *Co-compounds and natural coordination*. Oxford: Oxford University Press.
- Weimer, H. (1978). Comparative grammar of five Yareban family languages. Ms. Retrieved from <https://www.sil.org/system/files/reapdata/15/90/28/159028138822725892273773571328530893641/CompGram5YarebanLang.pdf>
- Wester, R. (2014). *A linguistic history of Awyu-Dumut: Morphological study and reconstruction of a Papuan language family* (Doctoral dissertation). Vrije Universiteit Amsterdam, The Netherlands. Retrieved from <https://research.vu.nl/ws/portalfiles/portal/42142099/complete+dissertation.pdf>
- Whitehead, C. R. (2006). *A reference grammar of Menya* (Doctoral dissertation). University of Manitoba, Winnipeg, Canada. (Revised version of 2004 thesis). Retrieved from https://www.sil.org/system/files/reapdata/11/53/61/115361988498807083905025598198530536152/Menya_grammar_2006.pdf
- Wichmann, S., & Wohlgenuth, J. (2008). Loan verbs in a typological perspective. In T. Stolz, D. Bakker, & R. Salas Palomo (Eds.), *Aspects of language contact: New theoretical, methodological and empirical findings with special focus on romancisation processes* (pp. 89-121). Berlin: de Gruyter.
- Windschuttel, G. A. (2019). *Object verbs in Kui, Timor-Alor-Pantar and Trans-New-Guinea: An exploration of their typological and historical implications* (Doctoral dissertation). University of Newcastle, Australia.
- Wurm, S. A. (1982). *Papuan languages of Oceania*. Tübingen: Narr.
- Zöllner, S., & Zöllner, I. (2017). *A Yali (Angguruk) - German dictionary* [Wörterbuch Yali (Angguruk - Deutsch] (edited by S. Riesberg, in collaboration with C. Dawuda, L. Haiduck, N. P. Himmelmann, & K. Malcher). A-PL-37. Canberra: Asia-Pacific Linguistics. Retrieved from <https://openresearch-repository.anu.edu.au/bitstream/1885/127381/5/A-PL37-Riesberg-YaliDictionary.pdf>

¹ I use the term 'indexing' in the sense of Nichols (1992: 48-49), where a grammatical morpheme on one word carries features of another. In this case the verb carries features (person, number, and gender) of the direct object.

² The northern arc resembles Reesink's (2003; cited in Ross, 2017: 776) 'North Papuan linkage'.

³ The Leipzig Glossing Rules can be found at <https://www.eva.mpg.de/lingua/resources/glossing-rules.php>

⁴ The first person non-singular *u*-grade form *nu and the second person non-singular form *nja (*ɲɔʒa in Pawley and Hammarström, 2018, p. 146) have been omitted. The third person singular form *ua is given as *wa by Pawley and Hammarström on the assumption that proto-TNG had no vowel clusters.

⁵ *Pano* has an existential-locative meaning: ‘where is?’ (San Roque, 2008, p. 98).

⁶ All Fore examples use phonemic representations. Floating tones are phonetically realized on the following syllable.

⁷ Whitehead (2006) spells /ə/ as <â>.

⁸ I use the following terms for core participants: S for the single argument of an intransitive verb, A for the more agent-like argument of a transitive verb, and O for the more patient-like argument of a transitive verb (as first introduced in Dixon, 1979).

⁹ Although excluded from strict definitions of ergativity as obligatory, paradigmatic and restricted to transitive subjects (e.g. Dixon, 1994), optional ergativity has become a unifying term for the phenomena treated in this section.

¹⁰ The term ‘object verb’ goes back to Pilhofer’s (1933) grammar of the Huon language Kâte, cf. Suter (2018, p. 11).

¹¹ Ideally an example with a human object would be given here, since object affixes with animals as objects could be optional. There are however no examples of human objects with final verbs, which also inflect for subject, in Heineman (1998). There are examples of human objects with medial verbs that do not index the subject but instead mark coreference or disjoint reference of the subject with respect to the subject of the succeeding clause, e.g. *wida o=lapu d-alo* [...] [woman DEM=DU see-SS] ‘he saw the two women and then he ...’ (Heineman, 1998, p. 42), where the verb *d-* ‘see’ does not index its human object. I consider this sufficient evidence that objects are not indexed in Lambena.

¹² Reesink (1983, 1987) spells /ʌ/ as <â>.

¹³ The realis-irrealis distinction is also called ‘status’ in the literature because it expresses whether an event has been realized (Foley, 1986, p. 158).