

# The Position of Gumawana among the Languages of the Papuan Tip Cluster

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## 1. Introduction

Gumawana (formerly known as Gumasi), spoken in the Amphlett Islands, has been something of a genealogical mystery among the languages of the Papuan Tip (PT) cluster. Previous work has treated it either as a member of the Kilivila grouping with Kilivila (*alias* Kiriwina), Muyuw and Budibud (Capell 1943) or as an isolate among the PT languages (Lithgow 1976), largely because there has not been sufficient data for a careful analysis of its prehistory. In my study of the prehistory of the Austronesian languages of western Melanesia (Ross 1988), I classified it as a member of the Kilivila family until immediately before that work went to press. At that time Olson's unpublished work (a study of the grammar, to be published as Olson 1991, and a computer dictionary file) became available. As a result, Ross (1988:212) contains a terse note to the effect that Gumawana is probably a member, not of the Kilivila family, but of the North Mainland/D'Entrecasteaux (NMDX) linkage of the PT cluster. In this paper I will justify this position,<sup>1</sup> and at the same time show that Gumawana *is* something of an isolate, in that it represents a quite early separation from the NMDX linkage.

Now that Gumawana data are available, the task of elucidating its history is a fairly straightforward application of the comparative method. Essentially, the comparative method entails using the data of a group of present-day languages to reconstruct the proto language ancestral to that group, and to identify subgroups within the larger grouping on

<sup>1</sup> It would have been impossible to do the research on which this paper is based without the generous provision by Clif Olson of his Gumawana data and by David Lithgow of unpublished data and papers on other languages of the Milne Bay Province of Papua New Guinea. My thanks go to both of them. Obviously, I am solely responsible for the use I have made of their data. Other data sources are as listed in Ross (1988, Appendices A and B), and additionally Anderson (1991) for Sudest and Senfi (1986) for Kilivila.

the basis of their shared innovations relative to the reconstructed proto language. Example (1) will serve to illustrate the method.<sup>2</sup>

- 1) PPT \**loʝor* 'hear' >
  - a. KIL -*lagi*, MUY -*ligen*, BUD -*lgen*<sup>3</sup>
  - b. GUM -*nowo*, DIO -*noyala*, BWA -*noyal-i*, BWA-I -*noyal-i*, KAL -*noga-l-ia*, YAM -*nogaya*, FAG -*noyeya*, SAL -*noyola*, MOL-A -*novola*, BOS -*noyaða*, GAL-B -*noa*, GAL-S -*noa*, DOB -*nono*

The language ancestral to the Papuan Tip cluster of Oceanic Austronesian languages is known as Proto Papua Tip (PPT) (Ross 1988: chapter 6), and the PPT form \**loʝor* 'hear' is reconstructed on the basis of the sound correspondences reflected in the cognate set in (1) and of cognates in other Oceanic languages of western Melanesia. Each of these correspondences (e.g. KIL, MUY, BUD /, GUM, DIO, BWA etc *n*) occurs in a number of cognate sets like (1).

The initial and medial consonant correspondences illustrated in (1) are:

- |    |                   |            |                              |
|----|-------------------|------------|------------------------------|
| 2) | PPT               | * <i>l</i> | * <i>-ŋ</i>                  |
| a. | KIL, MUY, BUD     | <i>l</i>   | <i>-g-</i>                   |
| b. | GUM, DIO, BWA etc | <i>n</i>   | <i>-ŋ-, -g-, -ɣ-, -v-, Ø</i> |

On the basis of this reconstruction, the languages in (a) share the innovation that PPT \**-ŋ* has become /*-g-*/, and the languages in (b) that \**l* has become /*n-*/. Each of these shared innovations could be illustrated from a number of other cognate sets. They show that the languages in (a) form a 'Kilivila subgroup' and those in (b) a 'D'Entrecasteaux subgroup'. The languages of the Kilivila subgroup share the \**-ŋ* > /*-g-*/ innovation because they are descended from an interstage language we may call Proto Kilivila (PKIL) in which PPT \**-ŋ* had become PKIL \**-g-*. Similarly the languages of the D'Entrecasteaux subgroup are descended from Proto D'Entrecasteaux (PDX) in which PPT \**l* had become PDX \**n-*. The D'Entrecasteaux languages also reflect an innovation whereby PPT \**-ŋ* has become either

<sup>2</sup> Abbreviations of language names used in the examples are as follows:

ARE	Are	GAL-S	Sibutuya Galeya	PKIL	Proto Kilivila
ARI	Arifama	GAP	Gapapaiwa (= Paiwa)	PNMDX	Proto North Mainland/ D'Entrecasteaux
BOS	Bosalewa	GUM	Gumawana	PPT	Proto Papuan Tip
BUD	Budibud	KAL	Kalokalo	PT	Papuan Tip
BUN	Bunama	KIL	Kilivila (= Kiriwina)	SAL	Salakahadi
BWA	Bwaidoka	MIN	Minavega (= Kukuya)	SEW	Sewa Bay
BWA-I	Iduna Bwaidoka	MOL-A	Ailuluwai Molima	SUD	Sudest
DIO	Diodio	MOL-T	Towagesi Molima	TAW	Tawala
DOB	Dobu	MUY	Muyuw	UBI	Ubir
DUA	Duuu	NMDX	North Mainland/ D'Entrecasteaux	WED	Wedau
FAG	Fagalulu	PDX	Proto D'Entrecasteaux	YAM	Yamalele
GAL-B	Basima Galeya				

<sup>3</sup> The hyphen before each verb stem indicates that it is normally preceded by a subject pronominal prefix.

*-ɣ*, *-g*, *-ɣ*, *-v* or  $\emptyset$ . Although the outcomes in the present-day languages vary, we may reconstruct PDX \**-ɣ* as the phonetically most probable precursor of these segments, i.e. PPT \**-ŋ* became PDX \**-ɣ*, and this innovation is reflected in the modern segments, despite their differences from one another.

The relationship among the languages in (b) is obscured by various factors. Firstly, some of the items in (b) have the transitive suffix *-i* (BWA, BWA-I, KAL), the others not. Hence we reconstruct PDX \**noyor-a* 'hear', with a phonotactically added \**-a* after the final consonant, and \**noyor-i* 'hear (trans.)'. Secondly, a number of the languages in (b) reflect a vowel change whereby the second \**-o* has become *-a*. Thirdly, lenition of PPT final \**-r* results in YAM, FAG *-ɣ*, BOS *-ɔ*, GUM, GAL-S, DOB  $\emptyset$ . As a result, although BWA *-noyat-i* and GAL-B *-noa* are superficially rather different, they both reflect the innovations PPT \**-l* > PDX \**-l* and PPT \**-ŋ* > PDX \**-ɣ*. By internal reconstruction from Gumawana synchronic morphophonemics, we can show that GUM *-nowo* is underlyingly and historically */-nova/*,<sup>4</sup> whilst DOB *-nono* is the reduplication of *-no*, a reduction of \**-noa*.

This example shows that the comparative method does not necessarily deal in superficial similarities. Instead it looks beyond similarities and differences in order to identify shared innovations. Indeed, we need to be chary of attributing significance to likenesses among lexical items in different languages: the fact, for example, that both KIL and GUM have the word *vai* for 'stingray' from PPT \**vari* may reflect a shared innovation (loss of PPT \**-r*), a shared retention (if PPT had a variant form \**vai*: similar forms are scattered across western Melanesia), or a borrowing. Only when we have examined all the available lexical and morphosyntactic evidence, reconstructed PPT, and identified the shared innovations of each PT subgroup are we in a position to decide whether GUM *vai* represents a shared innovation, a retention, or a borrowing.

When a group of languages is characterised by several innovations, none of which is shared by languages outside that group, then we have good grounds for establishing a subgroup. But innovations do not always occur in this way. Often we find a situation where two groups of languages are each characterised by their own set of innovations, but the two groups overlap—they have one or more languages in common. This overlap reflects a situation where an earlier dialect linkage has diversified into a set of present-day languages, and the two sets of shared innovations reflect changes which started at different places in the linkage and spread through different parts of the linkage. The overlap results from communalects which were affected by both sets of changes.

Much of the work done to classify the languages of the PT cluster has depended on lexicostatistics (for example, Lithgow 1976, Ezard 1977). However, these surveys have usually aimed only at some kind of synchronic classification. Lithgow (1992) has found that

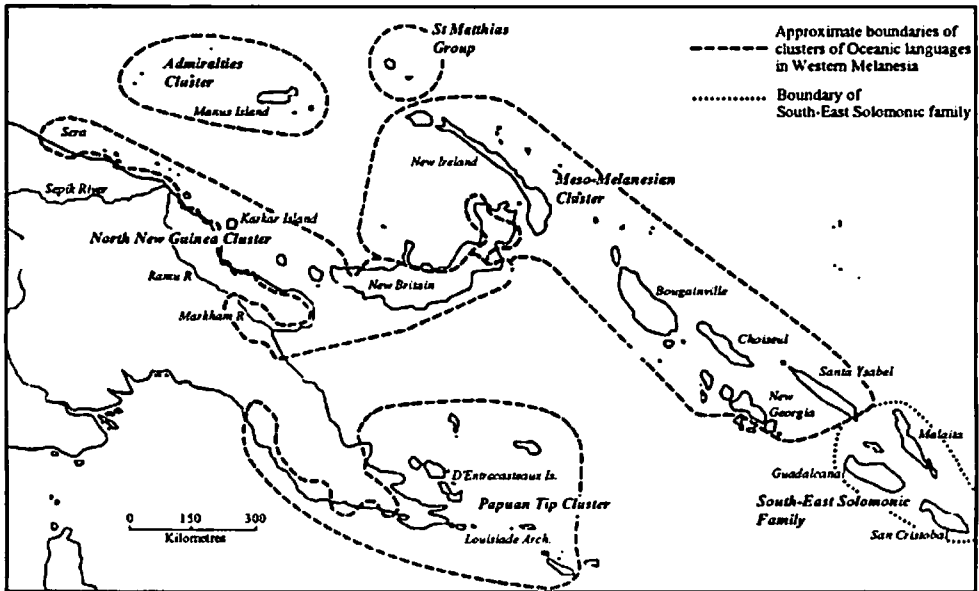
<sup>4</sup> Ailuluwai Molima displays an unusual diachronic change in that the earlier velar fricative \**ɣ* (still present in other members of the Molima and Bwaidoka groups) has become the bilabial fricative *v* (phonetically [w] before /a/).

on Fergusson and Normanby Islands, lexicostatistical classification matches neither a classification based on grammatical features nor speakers' own perceptions of linguistic relationships. The main reasons for this are (i) that lexical items are more easily borrowed than grammatical (especially morphological) features, and (ii) speakers' perceptions are more likely to reflect their history than to reflect cognate counts. In other words, grammatical features and speakers' perceptions are more likely to reflect the genealogy of languages than are the cognate counts of lexicostatistics.

## 2. Papuan Tip Genealogy

The genealogical framework within which we are seeking to position Gumawana is contained in several pieces of previously published work (Pawley 1975; Ross 1988, 1989) and some unpublished papers (Ross 1983; Lithgow 1990, 1992). It is beyond the scope of the present paper to give more than a brief sketch here.

The fact that almost all the Austronesian languages of Melanesia, Micronesia and Polynesia belong to a single subgroup of the Austronesian family was discovered by Dempwolff (1934-38) in the course of the first major application of the comparative method to the family. This is the Oceanic subgroup, represented in Papua New Guinea by four large groups of languages: the Admiralties cluster, the Meso-Melanesian cluster, and the North New Guinea and PT clusters (Ross 1988, 1989; see Map 1). Austronesian speakers probably reached the Bismarck Archipelago sometime around 2100 B.C., where their speech evolved into Proto Oceanic. The language ancestral to the Admiralties cluster was possibly being spoken somewhere in the Admiralties as early as 1850 B.C. By 1250 B.C. speakers of Oceanic communalects were spreading rapidly across island Melanesia and into western Polynesia and Micronesia (Spriggs 1990). After their departure, a chain of communalects probably strung along the north coast of New Britain and perhaps further afield gradually diversified and broke into two linkages divided by the Willaumez Peninsula of New Britain. This chain has been labelled 'Western Oceanic'. Its daughter linkage to the east of the Peninsula became the Meso-Melanesian cluster, and the linkage to the west can be labelled 'New Guinea Oceanic'. The latter gradually diversified until its languages were scattered along the north-west and south coasts of New Britain, the north coast of mainland Papua New Guinea, the coast of the Huon Gulf, and up the Markham Valley and into its mountainous hinterland. During this process of diversification, a part of the New Guinea Oceanic speech community found its way to south-eastern Papua, quite possibly to the D'Entrecasteaux Islands. This part became PPT, and from it evolved the PT cluster, whilst the remainder of New Guinea Oceanic became the North New Guinea cluster. No Austronesian languages are spoken between Numbami, the southernmost language of the



MAP 1: THE FOUR CLUSTERS OF WM OCEANIC LANGUAGES

North New Guinea cluster, and Arifama-Meniafia, the northernmost member of the PT cluster, and we do not know how the 270 kilometre gap between them arose.

PPT was probably spoken in the D'Entrecasteaux Islands and perhaps in the Trobriands, since this is the region of the 'seam' between two major sublinkages of the PT cluster. PPT seems to have diversified into a linkage, which separated into two sublinkages which I have labelled elsewhere 'Proto Peripheral Papuan Tip' and 'Proto Nuclear Papuan Tip'. The Peripheral PT languages today include the Kilivila chain (Kilivila, Muyuw, Budibud), Misima, Nimoa and Sudest, and the languages of the Central Papuan family.<sup>5</sup> The Nuclear PT linkage includes the languages of mainland south-east Papua and the D'Entrecasteaux Islands.

Most of the PT languages reflect a shared set of innovations clearly delineating the cluster (Ross 1988:196-211). However, the Kilivila chain, while it reflects some of these, does not reflect all of them. The innovations which the Kilivila chain does not reflect are:

- 3) a. SOV clause order (where Proto Western Oceanic had SVO);

<sup>5</sup> The link between the Central Papuan languages and the rest of the PT cluster was recognised by Pawley (1975) and elaborated by Ross (1988: ch. 6).

- b. postpositions (where Proto Western Oceanic had prepositions), including the reanalysis of the Proto Oceanic locative proform \**iaj* as the PPT locative postposition \*-*aŕ*;
- c. addition of a pronominal possessive suffix to the adjective, agreeing in person and number with the noun or pronoun modified by the adjective.

Chowning (1989) has suggested that this is evidence that the Kilivila chain does not belong to the PT cluster but represents a separate incursion into the region. There are a number of facts which suggest that this is not so, however, and that the Kilivila chain is a part of the PT cluster. Firstly, the Kilivila chain shares in the phonological innovations of the PT cluster (Ross 1988:196-208) and reflects in its consonant system the PPT labialized consonants which have no extra-PT cognates. Secondly, it shares in the morphological innovation whereby pronominal possessive suffixes are also used as object suffixes, an innovation unique to the PT cluster (Ross 1988:208). Thirdly, it shares in an innovation whereby Proto Oceanic \**ñ* becomes PPT *n* in all items except POC \**ñamuk* 'mosquito'/PPT \**ñamuq* (Ross 1988:207-208). Fourthly, it shares certain innovatory derivational processes with other PT languages: classificatory prefixes on verbs<sup>6</sup> and the prefixes \**tau-*, \**qai-*, and \**qaba-* (see below) which form nouns from verbs. Fifthly, the Kilivila chain shares with Misima in an innovation whereby PPT labial and dorsal final consonants are lost but coronals are retained.<sup>7</sup> Misima is clearly a member of the PT cluster and a part of the Peripheral PT linkage; this fifth shared innovation supports the claim that Kilivila is linked to Misima as part of the Peripheral PT linkage.

<sup>6</sup>Chowning (1989) draws attention to this fact. Ezard (1978) provides a description of classificatory prefixes in PT languages. Classificatory prefixes are not limited to the PT cluster (see Bradshaw 1982), but appear to have arisen in different places, especially in SOV languages, mostly from verb serialisation. The important point here is that PPT seems to have innovated its own set of prefixes, some of them reflected both in the Kilivila group and elsewhere: \**qā(a)-* 'with fingers' (KIL, GUM, BWA-I *ki-*, YAM *ki-*), \**vasa-* 'by stepping on' (KIL, GUM, YAM *va-*, BWA-I *vaya-*, DUA *basa-*, NIM *fe-*), \**qatu-* 'by hitting' (KIL, MUY *katu-*, DOB *ʔatu-*).

<sup>7</sup>Evidence for this shared innovation is as follows. Labial finals are lost in:

PPT \**m<sup>a</sup>awav* 'yawn' > MIS *m<sup>a</sup>aw* (cf YAM *m<sup>a</sup>agova*)

PPT \**niwarov* 'calm' > KIL *niwal* (cf YAM *niwalova*)

Dorsal finals are lost in:

PPT \**ñamuq* 'mosquito' > KIL, MIS *nimu* (cf BWA *nimoya*)

PPT \**manuq* 'bird' > MUY *man*, BUD *manu* (cf BWA *manuʔa*)

PPT \**ruig* 'dugong' > MIS *yui* (cf YAM *luiga*)

Coronal finals are retained in:

PPT \**patar* 'canoe platform' > KIL *pita-patila*, MIS *pata-patal*

PPT \**vutuqun* 'star' > MUY *ulun*, MIS *putum*

PPT \**boriman* 'south-east wind' > KIL *bwalimila*, MIS *baliman*

PPT \**qumur* 'earth oven' > KIL *kumla*, MIS *unun*

PPT \**quron* 'clay pot' > KIL *k<sup>a</sup>ena*, BUD *kiuna*, MIS *ulun*

PPT \**yavarat* 'north-west wind' > KIL *yavata*

PPT \**iqan* 'fish' > KIL *yena*, MUY *yin*

What then of the PT innovations in (3) which are not reflected in the Kilivila chain? Some insight can be gained into what has probably happened in the Kilivila chain if we examine PT innovation (3c), illustrated in (4):<sup>8</sup>

- 4) DOB a. *anua auau-na*  
house new-P:3S 'the new house'  
b. *anua auau-di*  
house new-P:3P 'the new houses'

Here *-na* and *-di* are the pronominal possessive suffixes which otherwise occur on the nominal head of a noun phrase to indicate the person and number of a possessor, e.g. DOB *m<sup>w</sup>asolei tama-na* 'Mwasolei's father'. This use of the possessive suffixes as adjectival agreement markers is not only found everywhere in the PT cluster except the Kilivila chain: it is also found, as Pawley (1978) noted, in languages of the North New Guinea cluster, as an alternant structure in Roviana and Mono-Alu (Meso-Melanesian cluster), and in fossilized form in the Admiralties cluster. This suggests that it was an alternant form in Proto Oceanic (marking number and perhaps specificity or definiteness), and that the PPT innovation lies specifically in its generalisation to almost all adjectives. The equivalent structure in the Kilivila chain uses a noun classifier and is quite different:

- 5) KIL a. *k<sup>w</sup>e-vau b<sup>w</sup>ala*  
CL-new house 'the new house'  
b. *k<sup>w</sup>e-wo-vau b<sup>w</sup>ala*  
CL-RED-new house 'the new houses'

This structure is part of a radical morphosyntactic restructuring whereby noun phrase structure is dominated by a set of noun-classifier morphemes which occur with demonstrative determiners, with adjectives, and with numerals, described by Senft (1986) for Kilivila. Diachronically, the significant feature of (5) is that it is innovatory not only in relation to PPT but also to Proto Oceanic and all its Western Oceanic daughters, i.e. the structure of (5) is not evidence against the inclusion of the Kilivila chain in the PT cluster, because the innovation which replaced the structure in (4) by that in (5) is at least as likely to have occurred within the PT cluster as outside it. I write, "at least", because there is fragmentary evidence that the structure in (5), or something like it, occurred in at least limited contexts

<sup>8</sup> Abbreviations used in glosses are:

CL	classifier	P	plural
D	dual	P:	possessive pronominal suffix
D:	disjunctive pronoun	PCL	possessive classifier
DEM	demonstrative	RED	reduplication
E	exclusive	REF	reference marker
I	inclusive	S	singular
NOM	nominaliser	1, 2, 3	first, second, third person

at an earlier stage of other PT languages. For example, the Duau equivalent of (4a) is *hada kchau-na*, where *kchau* contains the unexpected element *ke-*, apparently cognate with the classifier *k<sup>w</sup>e-* in KIL *k<sup>w</sup>e-vau* in (5a). Thus such evidence as we have about Kilivila restructuring suggests that it occurred within the early PT linkage, not somewhere else.

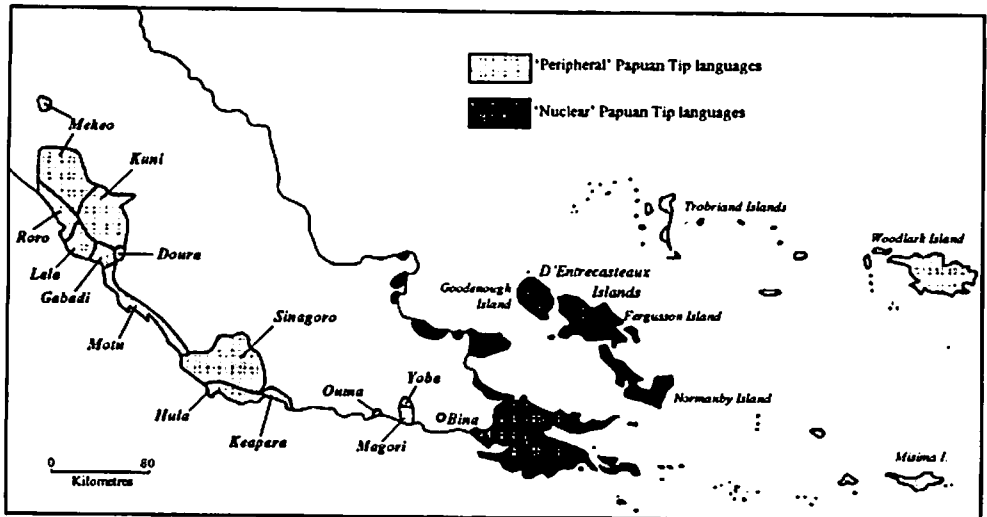
Kilivila classifiers also occur attached to numerals. This, too, is not completely innovatory in relation to the PT cluster, since a similar structure also occurs in Nimoa, Sudest and Keapara (Hula). Further, YAM *ʔai-tonuor* DOB *ʔe-toi* 'three', for example, with their fossilised prefix are cognate with KIL *kai-tolu*, where *kai-* is the unmarked classifier for use with inanimates. These prefixed forms all reflect PPT \**qai-*, itself derived from \**qaiu* 'tree'.

These facts suggest that PKIL was part of the ancestral PT linkage and that the restructuring which characterises PKIL began before the linkage had diversified very far. However, after the Peripheral PT linkage had spread sufficiently for PKIL to be fairly isolated from the rest of the linkage, the changes which resulted in the present-day classifier systems occurred. At the same time, changes occurred which obliterated from PKIL the reflexes of (3a) and (3b). The SOV order of PPT, which was probably always 'leaky',<sup>9</sup> increased in flexibility resulting in the SVO/VOS structure of modern Kilivila. Since the structure of adpositional phrases is generally associated with that of the clause, the SOV→SVO/VOS shift was accompanied by a shift in adpositional structure from postpositional to prepositional. The PPT postposition \**-ai* was replaced in PKIL by the preposition \**wa* (KIL, MUY *wa*, *o*), derived by reanalysis from the Western Oceanic verb \**ua* 'go to' (Ross 1988:423).

We return to our account of the genealogy of PT languages at the point where the ancestral PT linkage had divided into the Peripheral and Nuclear PT (sub)linkages (see Map 2). The Peripheral linkage probably began its separate existence in the Trobriands, spreading from there as far as Woodlark Island, and then south via the small islands of the Solomon Sea to the Louisiade Archipelago. From here, the south coast of the Papuan mainland was probably settled, followed by the establishment of a series of settlements westward along that coast. The most significant of these was in the area where Sinagoro and Keapara are now spoken, and its communalect evolved into Proto Central Papuan, ancestor of the Central Papuan family identified by Pawley (1975). This sequence of settlement is supported by the chaining of innovations within the languages of the Peripheral PT linkage (Ross 1988:212) and by geography. There is insufficient evidence to date this settlement history, but Central Papuan speakers had evidently reached the most westerly coastal point of present-day settlement, i.e. where Roro is now spoken, by about 100 B.C. (Vanderwal 1973; Ross 1988:195). Various events since that time have affected the distribution of PT

<sup>9</sup> Although the basic order of most PT languages is SOV, it is common for adpositional phrases to follow the verb phrase.





MAP 2: LOCATION OF THE PAPUAN TIP CLUSTER OF OCEANIC LANGUES AND ITS MAJOR SUBGROUPS

speakers on the south coast of Papua. Speakers of non-Austronesian languages have moved down towards the coast, and earlier Central Papuan languages have become nearly or completely extinct (Dutton 1976, 1982). Any Peripheral PT languages spoken near the south-eastern tip of the mainland have been replaced by Suaucic communalects of the Nuclear PT linkage (see below).

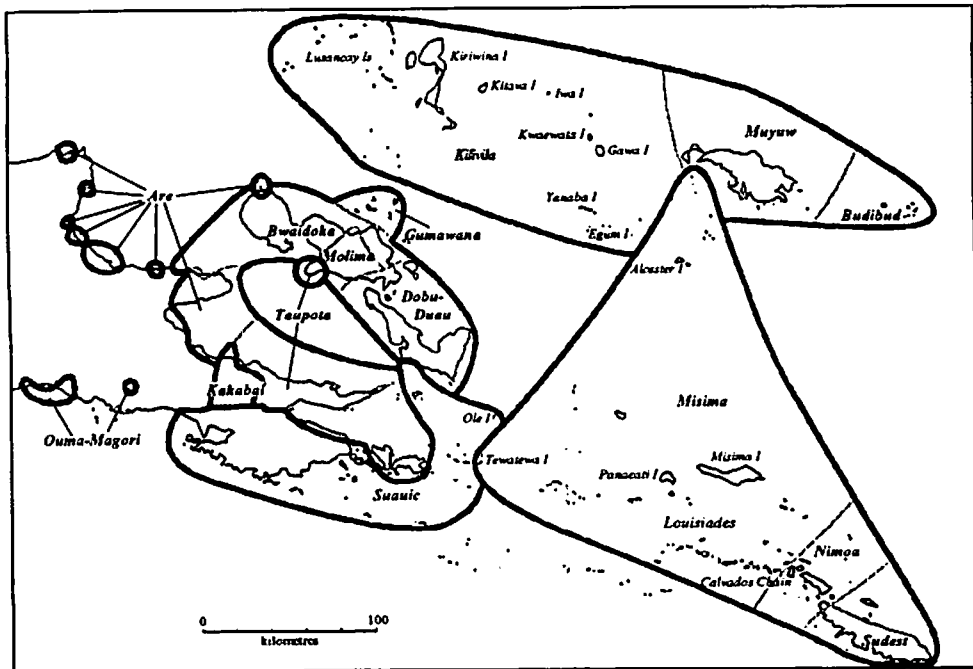
The Nuclear PT linkage in its turn is today represented by the languages of two earlier sublinkages. The first of these, the NMDX linkage, embraces the D'Entrecasteaux Islands of Goodenough, Fergusson and Normanby (except for the south-east corner of Normanby) and all the languages of the north coast of mainland south-east Papua from Arifama in the north-west to Tawala in the south-east (also spoken on Sidea and Basilaki). The other sublinkage, Suaucic, occupies the peninsula bounded by Milne Bay and Mullins Harbour and a portion of its hinterland, as well as a number of offshore islands including Wari and Tubetube, and the south-east corner of Normanby and Nuakata Island to its south. It is quite difficult to establish clear subgroup boundaries within either of these sublinkages, suggesting that each once constituted (and in many places still constitutes) a dialect network. This difficulty is compounded by inter-dialect borrowings and by movements of speakers to unexpected places: Wataluma on Goodenough Island and Minavega on Fergusson have come from the mainland (Lithgow 1976), whilst Anuki on the mainland seems to have come from Goodenough or Fergusson.

Both sublinkages are characterized by the addition of a vowel after PPT final consonants. In NMDX communalects this is *\*-a*, in Suaucic *\*-i*. For example:

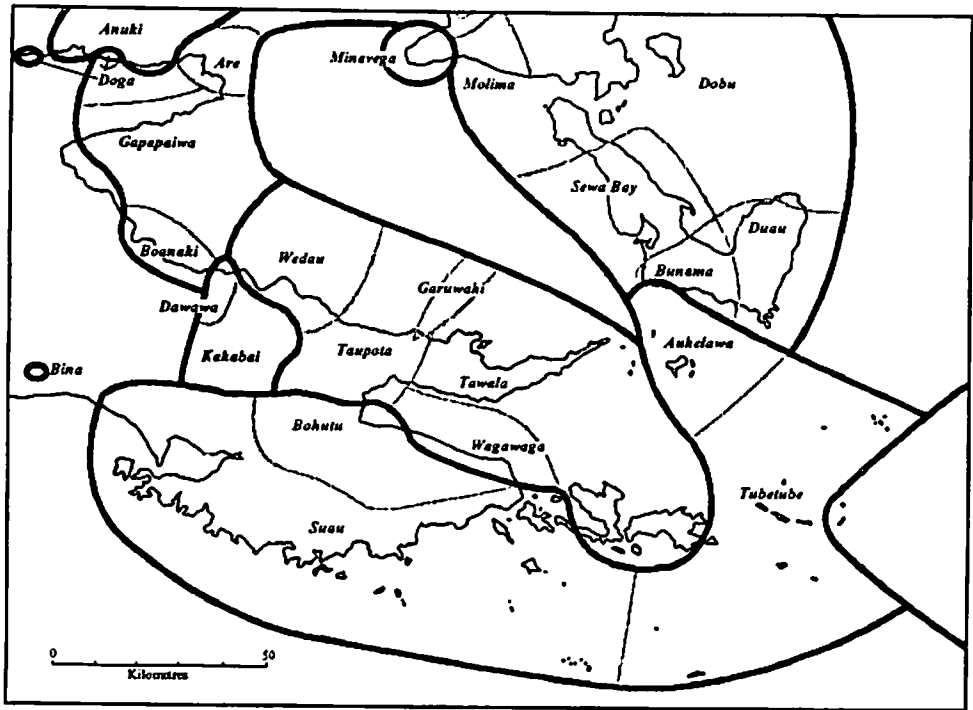
- 6) PPT *\*qatov* 'sago thatch' >  
 PNMDX *\*qatova* > ARE *katoba* 'mat of plaited coconut leaf', GAP *katova* 'ditto', TAW *gatoa*, DOB *atoa*, DUA *katoha*, BUN *atoha*  
 Proto Suaucic *\*qatofi* > 'Auhelawa *atovi*, Suau *hatofi*

In addition, the NMDX communalects share an innovation noted in association with (1), namely that PPT *\*l* is reflected as /n/. The Suaucic communalects have merged PPT *\*ŋ* and *\*nas* Proto Suaucic *\*n* and have lost the PPT verbal affixes *\*-na-* 'future' and *\*-da-* 'irrealis'.

It is difficult to be sure of the exact historical relationship between the two (sub)linkages, as there is no point where adjacent members of the two linkages show particular similarity. However, the Suaucic linkage has two features which are shared with the Normanby members of the NMDX linkage, namely the negative morpheme *nige* and the loss of PPT *\*-na-* 'future'. The second of these is certainly a shared innovation. It is therefore possible that the link between the two sublinkages was originally on Normanby Island or the islands to its south. As noted above, communalects of the Suaucic linkage seem to have reached the



MAP 3: AUSTRONESIAN LANGUAGE GROUPS IN EASTERN PAPUA

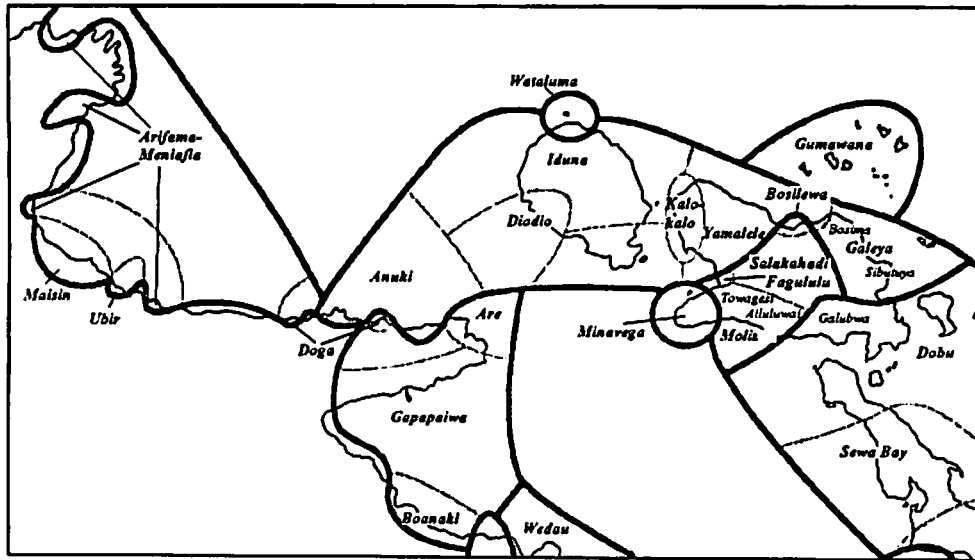


MAP 4: AUSTRONESIAN LANGUAGES OF SOUTH-EAST MAINLAND PAPUA

south-eastern mainland after its occupation by Peripheral PT communalects. The distribution of present-day languages (Maps 3, 4) suggests that the Suauic communalects once occupied an arc stretching from Nuakata (and perhaps south Normanby) to Mullins Harbour, and that the occupation of Sidea and Basilaki by Tawala speakers represents a relatively recent incursion. Tawala is phonologically the least conservative of the NMDX languages and appears to represent the end-point of a diachronic push from Cape Vogel south-eastwards. The place of Kakabai and Dawawa in this history is not clear, as insufficient data are available to determine their position.<sup>10</sup>

The NMDX languages also form an arc, but one whose ends almost join to make a circle (Maps 3, 4, 5). This arc begins in the south of Normanby, stretching north-westwards through Normanby, Fergusson and Goodenough Islands, and crossing to the mainland at Collingwood Bay, whence it continues south-east along the coast, including Cape Vogel, Goodenough Bay, East Cape and Milne Bay, ending up on the islands of Sidea and Basilaki.

<sup>10</sup> In Ross (1988:191) I classified Kakabai and Dawawa in the NMDX linkage. This classification may yet prove to be correct: the two languages reflect the NMDX \*-a added after PPT final consonants.



MAP 5: AUSTRONESIAN LANGUAGES OF THE COLLINGWOOD BAY AND D'ENTRECASTEAUX ISLANDS AREA

There are also small outliers to the north of Cape Nelson. The languages of this arc form a continuum, such that it is rather difficult to draw clear boundaries between adjacent languages or subgroups, although languages from different parts of the arc may show quite clear differences. This is particularly true of the languages at opposite ends of the arc, namely Bunama and Tawala, even though they are today in quite close geographic proximity.

Five sections of the arc are recognisable, although the edges are in some cases fuzzy. These are:

- a) **Dobu-Duau:** Bunama, Duau, Sewa Bay, Dobu;
- b) **Molima:** Molima, Fagalulu, Salakahadi,<sup>11</sup> Bosalewa (?);
- c) **Bwaidoka:** Galeya (?), Yamalele, Kalokalo, Bwaidoka, Iduna, Diodio, Anuki (?);
- d) **Are:** Arifama-Meniafia, Ubir, Doga, Are, Gapapaiwa (=Paiwa), Boanaki, Wataluma;
- e) **Taupota:** Minavega (=Kukuya), Wedau, Taupota, Garuwahi, Tawala, Wagawaga.

<sup>11</sup> Salakahadi was treated as part of Molima by Lithgow (1976) and Ross (1988).

These sections of the arc are recognisable on the basis of a number of innovations, the most important of which (for present purposes) are summarised schematically in (7).

7)	PPT	(a)	(b)	(c)	(d)	(e)	
		Future	Possessive classifiers	<i>*b</i>	<i>*g</i>	<i>*s</i>	
			General	Edible			
	Dobu-Duau	reduplication	<i>*ʔi-</i>	<i>*ka-</i>	<i>*b</i>	<i>*g</i>	<i>*s</i>
	Molima	<i>*-na-</i>	<i>*ʔc-</i>	<i>*ka-</i>	<i>*b</i>	<i>*g</i>	<i>*h</i>
	Bwaidoka	<i>*-na-</i>	<i>*ʔa-</i>	<i>*ka-</i>	<i>*b</i>	<i>*g</i>	<i>*h</i>
	Are	<i>*-na-</i>	<i>*a-</i>	<i>*ka-</i>	<i>*p</i>	<i>*k</i>	<i>*h</i>
	Taupota	<i>*-na-</i>	<i>*a-</i>	<i>*-a</i>	<i>*p</i>	<i>*∅</i>	<i>*h</i>

The innovations in (7) are as follows:

- a) The PPT future marker *\*-na-*, occurring between the subject pronominal prefix and the verb stem, is replaced in the Dobu-Duau group by reduplication of the verb stem.
- b) PPT had two alienable possessive classifiers, *\*qa-* 'general' and *\*ka-* 'edible', to which the pronominal possessive suffixes were added. PPT *\*qa-* became NMDX *\*ʔa-*, which idiosyncratically has become (via [ya-]) Dobu Duau /ʔi-/ and Molima /ʔc-/. In the Taupota group the two classifiers have fallen together. The data are set out in (9) below.
- c) PPT *\*b* is devoiced to *\*p* in the Are and Taupota groups. Similarly, PPT *\*d* is devoiced to *\*t*, and merges with *\*s* when it occurs before *\*i*.
- d) PPT *\*g* is devoiced to *\*k* in the Are group, and lenited to *\*∅* (presumably after devoicing) in the Taupota group.
- e) In all NMDX groups except Dobu-Duau, PPT *\*s* has undergone a series of leniting sound changes here symbolised as *\*h*. The changes are complex, but subsume two processes: a primary lenition *\*s*→*h* affecting many medial and some initial instances of *\*s*, and a secondary lenition *\*s*→*\*ʔ* affecting remaining cases of *\*s* and giving phonetic outcomes which include [h], [ʔ], [g], [y], [r] and *∅* (see Ross 1988:84-93).

A complicating factor in the islands is the prevalence of Dobu as a *lingua franca* both before and after the coming of the mission. Lithgow (1990) has examined its influence on its neighbours and finds it to be substantial. In the case of the other members of the Dobu-Duau group, detailed research is needed if the past history of these languages is to be

reconstructed; indeed, it may already be too late to find out how much of their present-day similarity is due to borrowing rather than to shared inheritance.

The Dobu-Duau group is characterised by the use of reduplication (7a) to express the future. This same feature is found in the Ailuluwai dialect of Molima (but not in other members of the Molima group) and this, together with extensive lexical borrowing, caused Lithgow (1976) to subgroup Molima with Dobu (see also Chowning 1989). However, as Lithgow (1988, 1992) shows, Ailuluwai Molima is otherwise morphologically much closer to the other members of the Molima group than it is to Dobu, and the use of reduplication for the future is probably attributable to borrowing from Dobu, not to shared inheritance.

Another feature which makes Ailuluwai Molima look like Dobu is its treatment of PPT \*s. PPT \*s has undergone a series of lenitions in most NMDX languages except the Dobu-Duau group, so that PPT \**qusan* 'rain' has become Salakahadi *ʔuhana*, Towagesi Molima *ʔuana*, but Dobu *ʔusana*. Ailuluwai Molima also has *ʔusana*, which appears to be a Dobu borrowing. However, there is evidence that this is not the case, and that PPT \*s has been retained in Ailuluwai Molima. The latter shows -s- in words which are clearly not Dobu borrowings, e.g.

- 8) PPT \**visiqo*- 'flesh, meat' > PNMDX \**visiqo*- >  
 Bwaidoka: BWA-I *vio*-, YAM *vigo*-, GAL-S *chio*-  
 Molima: MOL-A *vesiʔo*-, MOL-T, FAG, SAL *veiʔo*-  
 Dobu-Duau: DOB *esio*-, DUA *hesio*-

Here Ailuluwai Molima *vesiʔo*- with its initial *v*- is an inherited Molima form, not a Dobu borrowing.

The Ailuluwai Molima general possessive classifier (see 7b) follows the Molima pattern, not the Dobu-Duau pattern, supporting Lithgow's attribution of Ailuluwai to the Molima group. The data on which (7b) is based are set out in (9).

9)	General	Edible
BUN, DOB	<i>ʔi</i> -	<i>ʔa</i> -
DUA	<i>ʔi</i> -	<i>ka</i> -
SEW	∅	<i>ʔa</i> -
MOL-A/T, SAL	<i>ʔe</i> -	<i>ʔa</i> -
FAG	<i>ʔe</i> -	<i>ha</i> -
BOS	<i>ʔi</i> -	<i>ʔa</i> -
GAL-S, YAM-M	∅	<i>ʔa</i> -
GAL-B	<i>ʔa</i> -	<i>ka</i> -
YAM	<i>ga</i> -	<i>ʔa</i> -
KAL, Anuki	<i>ya</i> -	<i>ka</i> -
BWA, BWA-I	<i>ya</i> -	<i>a</i> -

ARI, UBI	<i>a-</i>	<i>a-</i>
ARE	<i>a-</i>	<i>ka-</i>
GAP	<i>i-</i>	<i>ka-</i>
Boanaki	<i>a-</i>	<i>ka-</i>
WAT	<i>ya-</i>	<i>ka-</i>
MIN	<i>ya-</i>	<i>a-</i>
WED, TAW	<i>a-</i>	<i>a-</i>

The fact that Ailuluwai Molima shares some features with Dobu (and that the non-lenition of PPT \**s* is a retention) suggests that it has long formed the interface between the Molima and Dobu-Duau sectors of the NMDX linkage.

Lithgow (1988, 1992) also shifts Bosalewa from subgrouping with Dobu to subgrouping with Molima, and supports this association with oral history as well as morphological evidence. However, Bosalewa (on the available data) does not reflect (7e), lenition of PPT \**s*, and does reflect the general possessive classifier as /*ʔi-*/. This illustrates something of the difficulty of sorting out the histories of NMDX languages. Bosalewa's failure to reflect \**s* lenition may be the result of conservatism, i.e. the lenition of \**s* simply did not reach it (as it also did not reach Dobu-Duau or Ailuluwai Molima), or it may be the result of borrowing from Dobu. And the presence of the classifier /*ʔi-*/ (rather than /*ʔe-*/) may be an independent development or may be a Dobu borrowing. The latter alternative is on balance unlikely, as Bosalewa is not otherwise heavily influenced by Dobu (Lithgow 1990).

Like Ailuluwai Molima, the two dialects of Galeya, Sibutuya and Basima, use reduplication to express the future, and because of this and their lexical similarity to Dobu, Lithgow (1976) subgroupes them with Dobu. He maintains this subgrouping on grammatical grounds in his 1988 paper. It is worth noting, however, that there are also grounds for grouping Galeya elsewhere. Firstly, PPT \**s* is lenited: GAL-S *ʔuhana*, GAL-B *ʔuana* 'rain'. Secondly, Basima Galeya has the general possessive classifier /*ʔa-*/. Together these features suggest that Galeya may be a member of the Bwaidoka group which has undergone considerable Dobu influence (Lithgow 1990 in any case identifies Dobu influence in Galeya).

The subgrouping of NMDX languages here owes much to Lithgow's recent work (1988, 1990, 1992), and differs from my 1988 subgrouping as follows. Bosalewa (=Bosilewa) is reclassified as described above. The Bwaidoga network (Ross 1988:191) is divided here into the Molima and Bwaidoka groups, with the tentative additions to the Bwaidoka group of Galeya (see above) and Anuki (since the limited data place it here on the criteria in (7)). The division is made on the basis of Lithgow's work, and especially of the Molima innovation in (7b); there is no other criterion for their separation.<sup>12</sup>

<sup>12</sup> The Molima and Bwaidoka groups share, for example, the negative morphemes *ge* and *gebu*, as opposed to Dobu-Duau *geya* and Are and Taupota forms reflecting an earlier \**kega*.

### 3. The Position of Gumawana

Gumawana is situated in the Amphlett Islands between Kilivila to the north and the NMDX languages of Fergusson Island to its south. Gumawana speakers have had extensive contacts in both directions. They are a major link in the Kula trading ring and often have some knowledge of Kilivila, Dobu, Basima Galeya, Bosalewa, Yamalele, Kalokalo or Bwaidoka (Olson 1991). They also intermarry with Kilivila speakers and trade with various groups in Kilivila and on Fergusson Island. The Gumawana are potters, obtaining their clay from Yayawana village on Fergusson Island (Lauer 1974). Olson writes:

The language that has had the greatest influence on Gumawana has been Dobu, which is the language used by the United Church. Both Dobu and Gumawana are used in church services, but most people tend to mix many Dobu words into their Gumawana, sometimes citing both the Dobu and the Gumawana. In everyday speech, the Dobu component greatly decreases; however, Dobu syntax continues to affect it. The Gumawana language is in the midst of change possibly due to this influence from Dobu.

In the light of this situation, it is hardly surprising that Gumawana has been difficult to classify, especially when the data consisted only of word lists. Given its geographical situation, three obvious hypotheses about the place of Gumawana in the PT genealogy suggest themselves:

- 1) Gumawana represents a link between the Peripheral and Nuclear PT linkages, a 'left-over' from the earliest division of the PT linkage;
- 2) Gumawana is a member of the Kilivila group;
- 3) Gumawana is a member of the NMDX group, perhaps with special links to one of the five subgroups listed above.

Clearly, other hypotheses are possible. However, there is no reasonable doubt that Gumawana belongs to the PT cluster, as it shares in all five of the innovations which characterise the cluster (Ross 1988:208): it has (i) verb-final clause order, (ii) a reflex of the POC locative proform \**jai* as a locative postposition (GUM *goi*), (iii) the addition of pronominal possessive suffixes to adjectives as agreement markers (see (11) below), (iv) pronominal possessive suffixes also serving as object suffixes, and (v) no common article or other reflex of Proto Oceanic \**a/na*.

Indeed, the very fact that Gumawana reflects each of these innovations makes it very unlikely that it enjoys a close genetic relationship with the languages of the Kilivila group, since, as was observed above, the Kilivila languages do not reflect (i), (ii), or (iii), probably as the result of subsequent shared innovations which have obliterated them. Hence hypothesis 2 is improbable.



I will argue here that the evidence supports a variant of hypothesis 3. Since lexical evidence is more likely to be affected by borrowing, and in Gumawana undoubtedly is thus affected, morphosyntactic evidence is examined first. Two of the five features shown in (7) as characterising the five sections of the NMDX linkage are morphological, and it should be instructive to see how these are reflected in Gumawana. Gumawana has lost all PPT tense-marking morphology, including the future marker \**-na-*, and the Gumawana possessive classifiers are *i-* 'general' and *a-* 'edible'. In the framework of (7), this places Gumawana closest to the Dobu-Duau group of languages. However, we should note that the Dobu-Duau languages retain PPT \**-da-* 'irrealis', whereas Gumawana has lost it, and that there are languages other than those of the Dobu-Duau group in which NMDX \**ya-* 'general possessive classifier' has metamorphosed to /*i-*/ or /*i-*/, namely Bosalewa and Gapapaiwa.

Other morphosyntactic features associate Gumawana with the NMDX linkage (and preclude its membership of the Kilivila group), but do not establish Gumawana's membership of any of the five sections of the linkage. We examine some other noun phrase features first.

- 10) *go anamimi-ya-na tupwana aba-matoita*  
 but dream-REP-P:3S little NOM-fear  
 'But the dream was a fearful thing.'
- 11) *iyana gagai-di ame*  
 fish big-P:3P this  
 'this big fish'

Example (10) illustrates the use of the reference marker, which marks a noun as referential and specific, so that in (10) *anamimi-ya-na* refers to a specific dream, the identity of which the speaker assumes is known to the hearer. This marker is suffixed directly to the noun, and is always followed by a possessive suffix marking the number of the noun (here *-na*). The sequence *-ia-na* is evidently cognate with functionally similar forms in the Dobu-Duau and Molima groups, for example:

- 12) DUA *yowe hada-i-na*  
 that house-REF-P:3S  
 'that house'

However, the cognate forms Misima *-ina* and Nimoa *-ine* imply that the sequence represented by Gumawana *-ia-na* also occurred in PPT, and that this is a retention which tells us nothing about subgrouping.

Example (11) illustrates the use of pronominal possessive suffixes as adjectival agreement markers and the basic order of the Gumawana NP (head noun + adjective + determiner). It shows that Gumawana has the PT structure of (4), not the Kilivila structure

of (5). It also shows that the determiner is phrase-final, whether it is the reference marker *-ia-*, as in (10), or a demonstrative, as in (11). The structure in (11), however, is not the demonstrative structure usually found in NMDX languages, which is almost always as in (12), i.e. demonstrative + head noun + reference marker. And it is certainly not the classifier structure found in Kilivila:

- 13) KIL *ma-k<sup>w</sup>e-na b<sup>w</sup>ala*  
 DEM-CL-this house  
 'this house'

The use of numerals in Gumawana noun phrases is illustrated in (14)–

- 14) *gulewa ai-yuwo*  
 stone CL-two  
 'two stones'

–and is probably a direct reflex of the PT structure, as it is widely reflected, as in (15):

- 15) Misima *bagiewa eton*  
 coconut three  
 'three coconuts'

However, as discussed above, the classifier in most PT languages, including those of the NMDX linkage, has become fossilised. Thus Misima *eton* is a fused form reflecting the bimorphemic PPT \**qai-tolu*, where \**qai-* is the unmarked classifier for use with inanimates. The Gumawana classifier *ai-*, however, although employed with most numerals, is not a fossil, as it alternates with the human classifier *ta-* in:

- 16) *koloto a-di-tai-yuwo*  
 man PCL-P:3P-CL-two  
 'two men'

Possessive noun phrases differ very little in structure throughout the PT cluster and are therefore of limited interest for subgrouping. One feature worth noting, however, is that Gumawana can form plurals of inalienably possessed kinship nouns:

- 17) a. /sina-da-iao/ [sinadao]  
 mother-P:1IP-P  
 'our mothers'  
 b. /tama-ma-iao/ [tamamao]  
 father-P:1EP-P  
 'our fathers'

The Gumawana plural marker /-iao/ reflects PPT \*-[y]avo, also reflected in languages of the Dobu-Duau, Molima,<sup>13</sup> Bwaidoka and Suauic groups and in Misima (but not in the Kilivila group). However, Gumawana appears to differ from other PT languages in allowing /-iao/ to occur on nouns other than inalienably possessed animates. Thus Olson cites *weniya-yao* 'dogs'; and *magi-yao* 'areca nuts'.

The upshot of this brief survey of noun phrase features is that the Gumawana noun phrase shows none of the innovations of the Kilivila noun phrase, but has features which suggest that it is a fairly conservative reflex of the PT noun phrase. There are hints of association with the Dobu-Duau, Molima and Bwaidoka sectors of the NMDX linkage, but no shared innovations which compel the conclusion that Gumawana is a part of that linkage.

There are, however, four sets of Gumawana morphological features which do suggest a closer association with the NMDX linkage. The first of these concerns the disjunctive pronoun set.

18)	PPT	Gumawana	Kilivila
	1S	* <i>yau</i>	<i>yau</i> <i>ycgu</i>
	2S	* <i>qoa</i>	<i>komu</i> <i>yok<sup>w</sup>a</i>
	3S	* <i>ia</i>	<i>ia, kina</i> <i>m-to-na</i> ('he'), <i>mi-na-na</i> ('she')
	1EP	* <i>qai</i>	<i>kai</i> <i>yakama</i> (D), <i>yakamesi</i> (P)
	1IP	* <i>qita</i>	<i>kita</i> <i>yakida</i> (D), <i>yakidasi</i> (P)
	2P	* <i>qom[ɨ]</i>	<i>komi</i> <i>yok<sup>w</sup>ami</i>
	3P	* <i>id[ɨ]</i>	<i>kidi</i> <i>m-to-si-na, mi-na-si-na</i>

It is clear even from superficial inspection that (i) the Gumawana forms for 1S, 3S (*ia*), 1EP, 1IP, and 2P are straightforward reflexes of PPT and (ii) that the Kilivila forms are the outcomes of innovations which are not reflected in Gumawana (the third person forms are demonstratives, cf. (13) above). Of the forms in (i), PPT \**ia* 'D:3S' is otherwise reflected in the NMDX linkage only in Are and Meniafia *i*, PPT \**qai* 'D:1EP' only in SEW *yai* and DUA *kai*, PPT \**qita* 'D:1IP' only in SEW *ita*, DUA *kita*, ARI *ita*, and Meniafia *it*, i.e. a good deal of innovation has affected disjunctive pronouns in other NMDX languages without touching Gumawana.

In many cases, the PPT disjunctive has been replaced by the PPT emphatic pronoun composed of \**tau*- 'body, human classifier' and a pronominal possessive suffix (e.g. DOB *tau-na* 'D:2S', *tau-di* 'D:3P'), or by some other (classifier?) stem with such a suffix. The Gumawana 2S, 3S (*kina*) and 3P forms fall into this category. GUM *ko-mu* 'D:2S' finds cognates in YAM *ʔo-mu*, ARE *ko-m* and UBI, ARI *om*.<sup>14</sup> GUM *ki-na* 'D:3S' and *ki-di* 'D:3P' find no direct cognates, but pronoun forms reflecting a stem \**qi* are found in the

<sup>13</sup>I am grateful to Ann Chowning for confirmation that this structure occurs in Ailuluwai Molima.

<sup>14</sup>Are has several other pronouns formed in this way: *ko-na* D:3S, *ko-ta* D:1IP, *ko-mi* D:2P and *ko-si* D:3P. Note, however, that *komi* may equally well be derived from PPT \**kom[ɨ]*.

Molima and Bwaidoka sectors of the NMDX linkage, for example BWA-I *i-me* 'D:1EP', *i-de* 'D:1IP', MOL-T *?ima?a* 'D:1EP', *?i-da?a* 'D:1IP'. They are also found further afield, in Sudest, however, which weakens the value of this feature as a genealogical indicator, since the Gumawana forms may be retentions rather than shared innovations: SUD *yi-no* 'D:1S', *ye-n* 'D:2S', *yi-ma* 'D:1EP', *yi-nda* 'D:1IP', *ye-mi* 'D:2P'.

The second morphological feature has to do with the formation of nouns from verbs. PPT had at least four morphemes which were prefixed to verb stems to form nominals. PPT *\*tau-* formed agentives (e.g. DOB, GUM *to-paisewa* 'worker', KIL *to-kaliga* 'dead man', SUD *ra-ka-kaiwo* 'worker'<sup>15</sup>), *\*qaba-* formed locations (e.g. DOB *?ebe-paisewa*, GUM *aba-paisewa* 'workplace', MUY *kabe-ilun* 'place of reconciliation'), and *\*i-*, inherited from Proto Oceanic, and *\*qai-* formed instruments. However, *\*i-* is reflected only in UBI (e.g. *i-tum* 'ash' < *-tum-ai* 'die out') and in Central Papuan languages, and *\*qai-* is reflected in the Suaucic linkage (e.g. Tubetube *ke-wilili* 'cudgel' < *-wilili* 'beat') and the Peripheral PT linkage (e.g. KIL *kai-g<sup>w</sup>ela* 'stone for cutting skin decorations' - *g<sup>w</sup>eli* 'cut with a stone', Misima *e-hala* 'broom' < *-hala* 'sweep', SUD *ye-vana-vana* 'ladder, climbing stick' < *-vana* 'move upward'). The NMDX languages lost both *\*i-* and *\*qai-* as instrumental formatives, and adopted other strategies. Throughout most of the NMDX linkage, instruments are formed by reduplication (e.g. DUA *koli-koli* 'scraper'), but in the Are and Bwaidoka sectors and in Gumawana,<sup>16</sup> the location formative *\*qaba-* is also used to form instruments (e.g. ARE *aba-boduda* 'battering ram' < *-bodudu* 'push with the hand', YAM *?eba-mia* 'chair', GUM *aba-tulagalaga* 'chair' < *-tulaga* 'sit above', *aba-kup<sup>w</sup>ana* 'knife' < *-kup<sup>w</sup>ana* 'cut', *aba-takuku* 'eraser' < *-takuku* 'erase'). Here we appear to have an innovation shared exclusively by Gumawana and the NMDX linkage.

Gumawana's four causative prefixes *va-*, *ve-*, *vai-* and *lu-*, used to form causative transitive verbs, make up the third morphological feature. The first of these, *va-* (as in *va-ta<sup>w</sup>e* 'cause to stand'), is a straightforward reflex of the Proto Oceanic causative prefix *\*pa-*. The second, *ve-* (e.g. *-ve-natune* 'give birth to' < *natuna* 'her child'), is possibly an alternant of the third, *vai-* (*-vai-polu* 'boil something'). However, *vai-* is not found with a causative meaning elsewhere in the PT cluster, whilst *ve-* is found with this meaning only in the Bwaidoka and Dobu-Duau groups (BWA-I *be-be?u* 'drop something' < *-be?u* 'fall', DOB *e-be?u* 'drop something') and appears to be a local innovation. The fourth prefix *lu-* (e.g. *-lu-kavave* 'finish something') occurs as a causative prefix in the sense 'cause by hitting' only in the NMDX languages Dobu, Iduna, and Tawala.

The fourth morphological feature consists of the two Gumawana negative morphemes *geya*, the general negator, and *gebu* 'no'. Of these, *geya* apparently occurs otherwise only in the Dobu-Duau group and *gebu* only in the Molima and Bwaidoka groups.

<sup>15</sup> *ra-* is the Sudest reflex of PPT *\*tau-*; *-ka-kaiwo* is a reduplicated verb form.

<sup>16</sup> No relevant data are available for the Molima sector.

Of these four pieces of comparative morphological evidence, the first (the forms of the disjunctive pronouns) is by far the strongest, as it is unlikely to be the result of borrowing. It again suggests that Gumawana is quite archaic, but these forms do imply that a part of the history of Gumawana was shared with the NMDX linkage. The evidence of the other three features is much weaker, simply because borrowing is a possibility.

The one thing which emerges clearly from the morphosyntactic evidence is that Gumawana is not a member of the Kilivila family, but quite possibly part of the NMDX linkage, and we may use the phonological evidence to test this. Although Kilivila borrowings are clearly present in Gumawana, the majority of basic vocabulary appears to be of 'native' origin.

The NMDX linkage shares two phonological innovations, discussed above, and Gumawana reflects both of these, indicating that it indeed belongs to the NMDX linkage. The first is the addition of *\*-a* after PPT final consonants, exemplified by the NMDX reflexes of PPT *\*qatov* 'sago thatch' in (8): the Gumawana reflex *atava* displays the final *\*-a*. Other examples are:

- 19) PPT *\*qusan* 'rain' >  
 PNMDX *\*qusana* > GUM *kuana*, BWA-I *kusana*, GAL-S *ʔuhana*, SAL *uhana*, DOB *ʔusana*  
 PKIL *\*kulan* > KIL *kuna*,<sup>17</sup> MUY *kuna-kun*
- 20) PPT *\*manuq* 'bird' >  
 PNMDX *\*manuya* > GUM *manuo*,<sup>18</sup> BWA *manuya*, BWA-I *manuya*, YAM *manuga*, SAL *manu*, FAG, BOS *manuya*, DOB *manua*  
 PKIL *\*manu* > KIL *mauna*,<sup>19</sup> MUY *man*, BUD *manu*
- 21) PPT *\*saman* 'outrigger float' >  
 PNMDX *\*samana* > GUM *yamana*, BWA *ʔamana*, BWA-I *yamana*, MOL-A *samana*, DOB *gama*<sup>20</sup>  
 PKIL *\*laman* > KIL *lamina*, MUY *lam*
- 22) PPT *\*tanis* 'weep' >  
 PNMDX *\*tanisa* > GUM *taia*, BWA *taʔi*, BWA-I *tahia*, YAM *taiga*<sup>21</sup>  
 PKIL (no reflex)

As was noted earlier, coronal final consonants are retained in PKIL: when this occurs, the consonant is lost in Muyuw and Budibud but retained in Kilivila with an added *-a*. Note,

<sup>17</sup> For expected *\*\*kunana*.

<sup>18</sup> The underlying form is /manua/.

<sup>19</sup> For expected *\*\*manu*, apparently from a metathesised PPT *\*\*maqun*.

<sup>20</sup> DOB *gama* is apparently a borrowing from a communalect of the Molima or Bwaidoka groups. The expected DOB form is *\*\*samana*.

<sup>21</sup> The reconstructible PBWA form is *\*taʔiʔa*, but each reflex eliminates one case of *-j-*.

however, that this addition is not an inheritance shared with PNMDX (although it may be a case of rule borrowing), since the added vowel is not reconstructable in PKIL.

The second NMDX innovation is that PPT \*/ became PNMDX \**n*. This is illustrated in (1) and in:

- 23) PPT \**leja* 'nit, louse's egg' >  
 PNMDX \**nceda* > GUM *ncda*, DOB *ncda*, TAW *ncda*  
 PKIL \**leja* > KIL *lesa*
- 24) PPT \**lajon* 'roller (for canoe)' >  
 PNMDX \**najona* > GUM *nawala*, DOB *nanoma*<sup>22</sup>  
 PKIL (no reflex)
- 25) PPT \**laja* 'sail (of canoe)' >  
 PNMDX \**naya* > GUM *naya*, BWA-I, YAM, DOB *naya*  
 PKIL \**laja* > KIL *laja*, MUY *nai*, BUD *lala*

It should be noted here that, as Pawley (1975) and Chowning (1989) observe, PPT \**u* sometimes becomes \**i* after the sequences \*-*o*- and \*-*u*-, and in both this and other contexts PPT \**i* is sometimes deleted before \**i*. Extensive cognate sets are available for only three items in which this applies, namely \**tolu* 'three', \**taliŋa* 'ear', \**lima*- 'hand', and they imply that these changes are sporadic and unpredictable. In any case, the changes are reflected in both the Nuclear and Peripheral PT networks, and therefore cast no light on the question under discussion, namely the genealogy of Gumawana. They do, however, raise interesting questions about sound changes in the early PT linkage, and these deserve further research.

In (7) above I listed the most important innovations of the various sections of the NMDX linkage. It was noted that the PPT voiced stops \**b*, \**d* and \**g* are devoiced in the Are and Taupota groups, with loss of \**g* in the latter. PPT \**s* has undergone a series of lenitions in all sections except Dobu-Duau. The following examples show that Gumawana retains the PPT voiced stops:

- 26) PPT \**busaq* 'faeces' > PNMDX \**busaya*  
 Are, Taupota: ARE, GAP *pua*, TAW *pugo*  
 Other NMDX: GUM *busa*, BWA *buŋaŋa*, YAM *buaga*, MOL-T *buava*,  
 DOB *busa*  
 Kilivila: (no reflexes)
- 27) PPT \**sabam* 'sky' > PNMDX \**sabama*  
 Are, Taupota: UBI *safam*, ARE, GAP *sapama*  
 Other NMDX: GUM *yabana*, BWA *yabama*, YAM *abama*  
 PKIL \**labam* > KIL *labuma*

<sup>22</sup> For expected \*\**nanona*: -*m*- is a dissimilation.

- 28) PPT *\*-di* 'P:3P' > PNMDX *\*-di*  
 Are, Taupota: UBI *-s*, ARE, GAP *-si*, Taupota, TAW *-hi*  
 Other NMDX: GUM *-di*, BWA, BWA-I, YAM, MOL-T, DOB *-di*  
 PKIL *\*-si* > KIL *-si*, MUY *-s*
- 29) PPT *\*-gu* 'P:1S' > PNMDX *\*-gu*  
 Are, Taupota: UBI *-u*, ARE, GAP *-ku*, Taupota *-?u*, TAW *-u*  
 Other NMDX: GUM *-gu*, BWA, BWA-I, MOL-T, DOB *-gu*  
 PKIL *\*-gu* > KIL *-gu*, MUY *-g<sup>w</sup>*
- 30) PPT *\*gabu* 'bake, burn' > PNMDX *\*-gabu*  
 Are, Taupota: ARE, GAP *-kapu-ni*, WED *-apu-apu-i*, TAW *-apu-ya*  
 Other NMDX: GUM *-gabu*, BWA, BWA-I, MOL-T, DOB *-gabu*  
 PKIL *\*gabu* > KIL *-gabu*, MUY *-gab*

The lenition of PPT *\*s* which results in the segments [h], [ɣ], [g], [y], [r] and  $\emptyset$  requires more detailed study than available data allow. There are a number of cases where a given language seems to have multiple reflexes: in some cases these are probably due to poor data collection, e.g. confusion of [g] and [ɣ], in others to inadequate understanding of synchronic phonologies, and in others to borrowing. There are also cases where lenition has unexpectedly not occurred: this may reflect borrowing. In spite of these difficulties, however, there is ample evidence that lenition of *\*s* is reflected in Gumawana. It is seen in examples (8), (19), (21), (22), (27), and in:

- 31) PPT *\*qabusu-* 'nose' > PNMDX *\*?abusu-*  
 Dobu-Duau: DOB *?abusu-*  
 Other NMDX: GUM *kubu-*, SAL *?ubuhu-*  
 PKIL *\*kabulu-* > KIL *kubulu-*, MUY *abunu-*
- 32) PPT *\*sinar* 'sun' > PNMDX *\*sinara*  
 Dobu-Duau: DOB *sinala*  
 Other NMDX: GUM *niala*,<sup>23</sup> YAM, GAL-S, GAL-B *inala*  
 PKIL *\*sina(r)* > BUD *silā-silā*
- 33) PPT *\*sivo* 'go down' > PNMDX *\*sivo*  
 Dobu-Duau: SEW *-sio*  
 Other NMDX: GUM *iwo* 'move seawards', YAM *ivo* 'move seawards'  
 Kilivila: (no reflexes)

For the record we will also note that lenition of *\*s* is not reflected in Gumawana in (26) nor in the following, and that these may be borrowings from Dobu:

<sup>23</sup>Metathesis of expected *\*\*inula*.

- 34) PPT \**sobu* 'go down' > PNMDX \**obu*  
 Dobu-Duau: DOB -*sobu* 'jump down'  
 Other NMDX: GUM *sobu* 'downwards', BWA, BWA-I *obu* 'descend'  
 Kilivila: (no reflexes)
- 35) PPT \**sapi* 'hit' > PNMDX \**sapi*  
 Dobu-Duau: DOB -*sapi*  
 Other NMDX: GUM -*sapi*, BWA - *yavi-a*, YAM *lu-gavi-a*  
 Kilivila: (no reflexes)

One might wish to argue that examples (26), (34) and (39), without lenition, are inherited, and that the examples with lenition are borrowed, e.g. from Bwaidoka. However, this is most improbable, as GUM *kubu* 'nose', from PPT \**qabusu*-, contains a feature 'native' to Gumawana and not reflected in the Bwaidoka and Molima groups, namely that PPT \**q*- is reflected as /k-/, not as /ʔ-/, and GUM *niala* 'sun' reflects a metathesis not found in possible sources of borrowing, i.e. both items appear to be 'native', implying that \**s*-lenition is also native to Gumawana.

The fact that Gumawana has not undergone devoicing of stops means, not surprisingly, that it does not belong to either of the mainland NMDX groups, Are or Taupota. The fact that it reflects lenition of \**s* indicates that it does not belong to the Dobu-Duau sector of NMDX. This leaves us with the conclusion that Gumawana is most closely associated with the Fergusson Island sectors of the NMDX linkage, i.e. Molima and Bwaidoka. However, the conservatism of Gumawana leaves it considerably more different from the Molima and Bwaidoka groups than these are from each other, and we must conclude that Gumawana has had quite a long history separate from other NMDX languages.

By way of a coda to this discussion, two sound changes may be mentioned which are shared innovations of Kilivila, Muyuw and Budibud and which, when they are reflected in Gumawana, are symptomatic of borrowing from Kilivila or from a member of the Kilivila group.

The first of these changes concerns lenition of PPT \**s*, which resulted in PKIL \*/. The outcomes of PKIL \*/ are /l/ and /n/ in the modern languages, with some synchronic alternation between them in Kilivila (Senft 1986:16-17). These outcomes are seen in examples (19), (21), (27), and (31), and in (36) and (37), where the presence of -*l* in GUM *kalc-kalc*- and -*n*- in GUM *ai-vina* mark them as Kilivila borrowings (even though the form *kalc*- is not recorded in modern descriptions of Kilivila).

- 36) PPT \**qasc*- 'chin, jaw' >  
 PNMDX \**qasc*- > YAM ʔac-ʔac- 'jawbone', DOB ʔasc-ʔasc  
 PKIL \**kalc*- > MUY *gil-alc*-  
 GUM *kalc-kalc*-



- 37) PPT \**visa* 'how much? how many?' >  
 PNMDX \**visa*- > YAM *ai-via*, MOL-T *e-visa*, DOB *c-isa*  
 PKIL \**vila* > KIL -*vila*  
 GUM *ai-vina*

The second change is that PPT \**r* became PKIL \**y*, but remained a liquid in NMDX languages. This is illustrated in (38) and (39).

- 38) PPT \**ravi* 'evening' >  
 PNMDX \**lavi* > GUM *lavilavi*, BWA, YAM, FAG, MOL-T *lavilavi*,  
 DOB *lai-tu* 'day before yesterday'  
 PKIL \**yavi* > KIL *k\*a-yai*, MUY *kaw-yav*
- 39) PPT \**taraq* 'adze; chop, cut' >  
 PNMDX \**tala*[*q-i*] > GUM -*tala* 'cut', BWA, BWA-I *tala* 'chop', KAL  
*talag-i* 'cut meat', DOB -*tala* 'chop'  
 PKIL \**-tay(a)* > KIL -*tai* 'cut', MUY -*tay* 'cut'

Gumawana items which reflect PPT \**r* with /y/ or /i/ are borrowings from a Kilivila source. Thus Gumawana *vai* 'stingray', referred to above, is probably a Kilivila borrowing, since the reconstructible PPT form is \**vari* (YAM *vali*, DOB *ali*, KIL *vai* < PKIL \**vay*). Similarly Gumawana *yova* 'fly' is marked as a Kilivila borrowing, despite the fact that the modern Kilivila form is somewhat different:

- 40) PPT \**rovoq* '(bird) fly' >  
 PNMDX \**rovo*[*qa*] > Anuki *rowo-rowoga*, ARE -*robo*, GAP -*rovo-rovo*,  
 WED -*rovo*  
 PKIL \**-yovo* > KIL -*yo*, MUY -*yow*  
 GUM -*yova*
- 41) PPT \**rua* 'two' >  
 PNMDX \**rua* > BWA *luye-i*, BWA-I *lue-i*, YAM *ai-luga*, FAG, MOL-T  
*lua*, DOB *?e-lua*  
 PKIL \**-yua* > KIL -*yua*, MUY, BUD -*y*  
 GUM *ai-yuwo*<sup>24</sup>

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<sup>24</sup>Underlying form /-yua/.

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