

4.1.0. GENERAL PICTURE OF AUSTRONESIAN LANGUAGES, NEW GUINEA AREA

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LIST OF ABBREVIATIONS

The following abbreviations are used in this chapter:

AN	Austronesian
BN	Biak-Numfor
BOM	Bomberai (Peninsula)
D	Demonstrative
IN	Indonesian
N	Noun
NAN	Non-Austronesian
NEC	North-Eastern Coast languages of South-Eastern Papua
NG	New Guinea
NGAN	New Guinea Austronesian
PAN	Proto-Austronesian
PCC	Papuan Central Cluster
PEO	Proto-Eastern-Oceanic
PHC	Proto-North Hebridean-Central Pacific languages
PN	Polynesian
POC	Proto-Oceanic
PTC	Papuan Tip Cluster
SEP	South-Eastern Papua
SOV	Subject-Object-Verb
SVO	Subject-Verb-Object
VK	Vogelkop (Peninsula)
VKAN	Vogelkop (Peninsula) Austronesian
WAN	Western Austronesian
WNG	West New Guinea
WPP	West Papuan Phylum

4.1.0. PRELIMINARY ORIENTATION

This chapter takes up and extends one contributed by the same author to *Current Trends in Linguistics*, vol.8; *Linguistics in Oceania* (1971) under the title of 'The Austronesian Languages of Australian New Guinea'. References to it will be to Capell 1971 followed by the page number.

Whatever the original form of the general Austronesian hypothesis may prove to be, the New Guinea Austronesian (NGAN) languages show at least two subgroups clearly among themselves. At least typologically, there is a dichotomy within the island of New Guinea and its dependencies as regards the kinds of Austronesian (AN) languages spoken there.

All the AN languages of New Guinea are coastal, except in the areas of Madang and the Markham Valley in the north, Yule Island and its hinterland, and the Rigo Area east of Port Moresby, in the south, and the mainland section of the Milne Bay Province in the east. In each case there has been considerable penetration inland. Thus the languages have a surface indication of being immigrant rather than indigenous. One group of these languages has the normal AN syntactical order of SVO, and uses prepositions in the relator-axis phrase; the other has the common (but not universal) Non-Austronesian (NAN) order SOV and uses postpositions in the relator-axis phrase. While this is a surface order as regards the arrangement of subject, verb and object, it is of rather deeper nature in the use of postpositions as against prepositions.

For practical purposes it seems desirable to mark these two subgroups AN₁ and AN₂ respectively. These two classes then are:

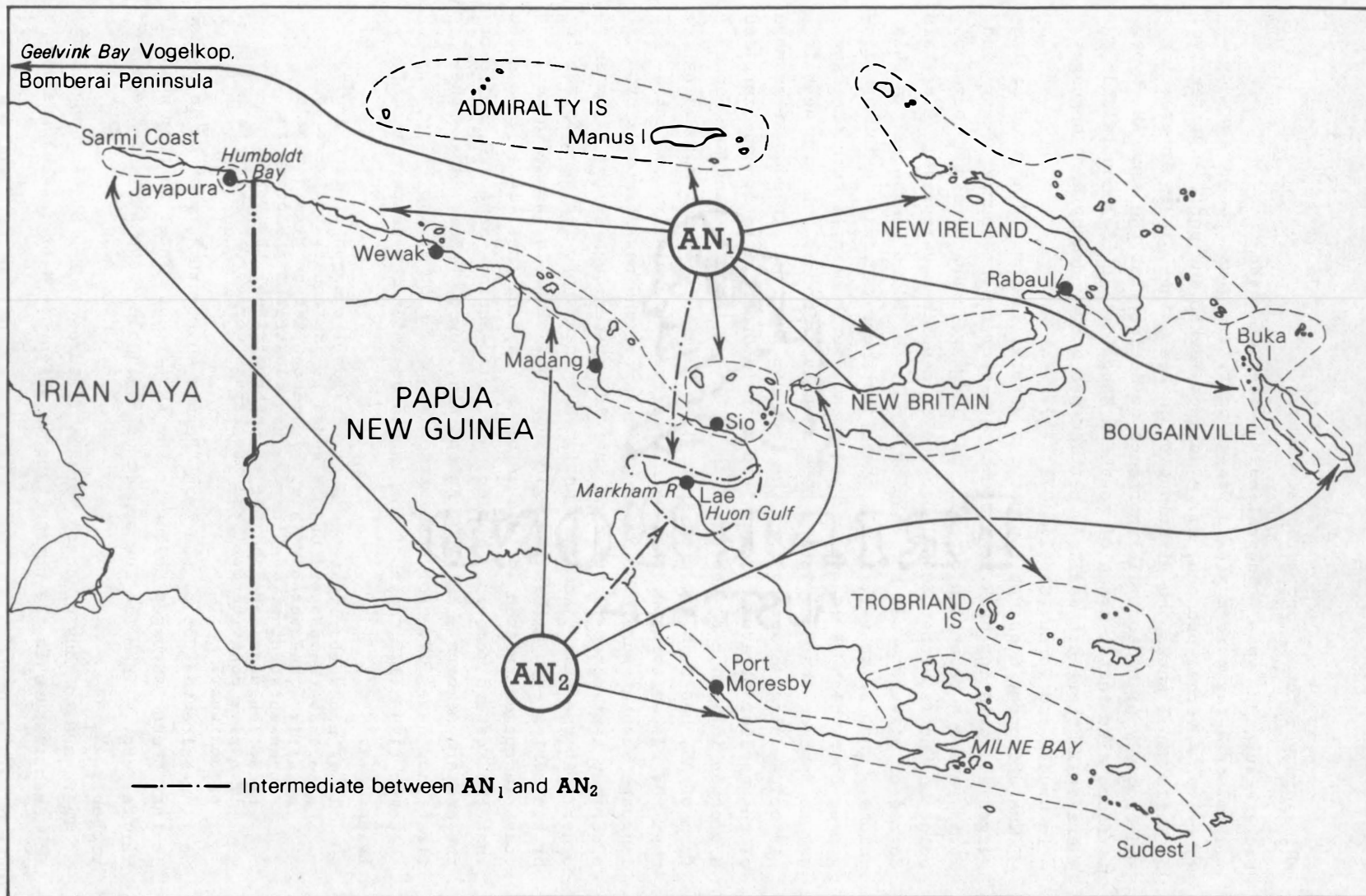
- AN₁ : Languages with SVO and prepositions
 AN₂ : Languages with SOV and postpositions¹

Map I shows the distribution of the two subgroups within Papua New Guinea as a whole. In this map, West New Guinea (Irian Barat, Irian Jaya) is not included; in the earlier work only Papua New Guinea was considered except for occasional references. The West New Guinea map will be given later (4.1.3.2.).

The two subgroups may first be very briefly illustrated. The sentence: *The man planted a tree in the middle of the garden* takes on the following forms:

AN₁ language: Tuna (Rabaul area of New Britain):

a tutana i ga oe ra davai livuan ta ta uma
the man vp. past plant a tree middle at the garden



MAP I: AUSTRONESIAN LANGUAGES, PAPUA NEW GUINEA

AN₂ language: Motu (Port Moresby, Papua):

tau ese au-na imea bogarai-na-i vada e hado
man sm. tree-the garden middle-its-at perf. vp. plant

where vp. = verbal pronoun, sm. = subject marker and perf. = perfective.

While Map I shows the distribution in New Guinea, it is interesting and probably of historical importance to notice that the same AN₂ type is found also in two areas of southern Bougainville, Solomon Islands, where again there are small AN settlements surrounded by NAN languages - in Uruava and Torau (Capell 1971:244).

The dichotomy does not represent a genetic feature of a group of languages all pointing back to a common ancestor or one source of any kind. It is rather a retention of prior NAN language characters and serves to point up the fact that NGAN languages so denominated represent a certain degree of mixture - see the chapter 4.5.1. on "Mixed Languages" in this volume. That is to say, in all these instances there are prior NAN languages over which AN languages have been superimposed in much the same way as Romance characteristics have been superimposed (through certain historical circumstances) over the Teutonic English. In some areas more of the earlier stratum has survived than in others, or, it has exercised a greater influence on the shape in which the incoming language, some form of AN, has been accepted in a given case. It is not surprising that SOV clause structure has been preserved irregularly, or that a language such as Adzera or Yabêm has accepted the new stratum's SVO order but kept other features of the old stratum such as D + N phrase order. At the same time it is noticeable that these features appear in broken series even within a single subgroup. Thus in the north-west coast languages treated in this volume by Laycock (see 4.4.9.), he notes that the western members - Tumleo, Ali, Ulau-Suain - have SVO, while of the eastern members - Kairiru, Kalep, Kis, Wogeo, Manam, Sepa - the first four have SOV. For that matter so do the other two.

Cowan (1953b:177) says of the languages about the eastern end of Irian Jaya:

It is noteworthy that the Austronesian languages of this area also show the pronoun object added to the conjugated verb as a suffix. Undoubtedly this phenomenon must be regarded as a Papuan substratum... Other Papuan substratum phenomena in those languages are the use of postpositions, the Papuan 'genitive construction' and the Papuan word-order which is predominant.

Setting aside the use of the term "Papuan substratum", what he is saying is that these languages belong to the AN₂ group. Those farther west - Tarfia, etc. - from the few sentences available, have SVO and are more probably AN₁.

There are so many of these 'areal' features in New Guinea languages. One such feature is the phrase type in which D + N (*this man*) assumes

the form D + N + d, where d represents a defining suffix of the noun, usually na (singular), sɪ (plural) - basically pronouns of AN origin. The Papuan Tip Cluster languages show this usage, not indeed universally, but in a specially interesting manner in their mainland members. For example, Wedau rava, *a man* > rava-na, *the definite man*, wei ravana, *this man*, wei ravai, *these men*. Other languages such as Mukawa show the same process. This usage has obviously come from a common innovation, though it is impossible to say where it began, and the AN elements have been put in the 'original' sequence of N + D (rava-na), and treated as a single compound, preceded by the NAN demonstrative wei. In Mukawa, niko pipiya, *this man*, does not have the singular marker, but niko(si) pipiyisi *these men*, has the pluraliser -si used with the noun and optionally with the demonstrative before it. The system is not quite so well digested as in Wedau.

It is also possible that this usage may give a key to the forms of the elaborate noun-classing characterising the Kiriwina subgroup of the Papuan Tip Cluster (PTC). In Kiriwina matauna is *the, he*, which can be construed as ma tau-na, *this person, he*, plural ma tau-si-na, *this person plural-definite, they*. The feminine minana, *she* would then stand for m-ina-na, *this female (originally mother) definite*. Again makwaisina vavagi, *those deeds* would stand for ma kwai-si-na where ma is demonstrative, kwai marks the class, and -si-na the plural definite. For examples and lists see Capell 1969:60ff where, however, the present analysis is not suggested. If there is no definition, as in vaigua kwai-ketoki kwai-lima, *valuables small-baskets five* (Malinowski), the class markers appear but the definers do not. In NAN languages such as Monumbo the class markers are found, but the AN definers were never adopted.

AN₂ languages often give the appearance of being imperfectly Austronesian. Such a language as Gedaged (now called Bel) near Madang is one such. Mager's Dictionary (Mager 1952) shows a considerable number of the words to be AN in origin, and even though some of the suggestions made in the Dictionary may be incorrect, there is still a considerable AN content. Moreover the pronouns are clearly AN, including the prefixes of subject and the suffixes of object. The possessive prefixes to 'inalienable' nouns are also clearly AN. But apart from the pronoun marking, the verb has a very NAN character. It has 'sentence medial forms', which characterise many of the Trans-New Guinea Phylum languages (see (I)2.5.2.3.2.) and also some other languages of the New Guinea area. Even here some of the elements used are probably (in a few cases plainly) AN, but they are used in ways that are quite un-AN. The sentence structure is syntactically NAN, using both SOV order and postpositions.

Articles are lacking, and many other features that are common to NAN languages are present in Bel. In fact, it would have been quite easy to use Bel rather than Maisin as an example in chapter 4.5.1. on "Mixed Languages".

4.1.1. LANGUAGE GROUPS IN IRIAN JAYA AND PAPUA NEW GUINEA

This section refers, of course, only to the Austronesian languages of the island, along with its dependencies including Papua New Guinea Solomon islands. Details will be found in the present volume concerning the individual groups (4.4.1.-4.4.1.0.). Based largely in lexicostatistical studies, New Guinea and its neighbourhood appears to show a possible division into the following groups:

West New Guinea (Irian Jaya):

Geelvink Bay west: Biak-Numfor

Geelvink Bay Islands: Yapen languages

Geelvink Bay east: Waropen, Môr, etc.

Northern Coast west: languages of the Sarmi coast district

Northern Coast east: languages about Hollandia district; Ormu and Tobati

East New Guinea (Papua New Guinea):

Sepik area: A: Sera-Sisano - Tumleo - Ali - Ulau-Suain.

B: Kairiru - Kaiep - Kis - Wogeo - Manam - Sepa.

Madang area: A (west): Meseman, (centre) Belan, Astrolaban, (east) Vitiazan.

Siassi: Adzera - Buang - Hote - Yamap - Yabêm - Tami, etc.

Papuan Tip Cluster (PTC): north-east mainland (Wedau-Mukawa, etc.) - islands west (Fergusson, Duau, Tubetube) - islands east except Rossel - southern coast (Suau area) east of Orangerie Bay.

Papuan Central Cluster (PCC): from Orangerie Bay to Yule Island, with a subdivision between Hula and languages west of it.

New Ireland: the whole island (except Panaras (NAN)) and eastern end of New Britain; subdivisions: western New Ireland, islands off New Ireland, southern New Ireland and Rabaul area of New Britain.

New Britain: Families suggested by Chowning (1969): Kimbe, Bariai, Arawe, Lamogai, Whiteman, Mengen, Tomoip.

Bougainville: Buka and northern Bougainville - eastern and south-western Bougainville.

There are Polynesian languages spoken on Nukuria, Tau-u and Nukumanu, as well as Luangiua in the Bougainville area.

These subdivisions turn out to be in large part geographical groupings

which incidentally happen to be also linguistic subgroups. This is not really to be wondered at, if the history behind them is to be regarded as the history of a series of settlements made by AN speakers wherever they could get a foothold in regions already populated by NAN speakers - this applied chiefly to the New Guinea mainland. The movements would have been chiefly from west to east, but no doubt there have been return voyages and settlements and there certainly has been much continued intercourse over large areas, especially under conditions of such trading expeditions as took place in the Vitiaz Straits and elsewhere. That this is the story will not be generally denied; the controversies concern the manner of the movements. Did they spring from various parts of an already occupied Western Austronesia, or direct (even if at different times) from a now unknown AN homeland? This matter will be discussed in Part 4.3. 'The Nature of Austronesian Languages of the New Guinea Area'.

The second theory has many difficulties, although it is the one favoured at the time of writing. It presupposes a 'Proto-Oceanic' stage of Proto-Austronesian followed by a Proto-eastern-Austronesian: see writings by A. Pawley in Bibliography. Pawley has demonstrated what seems to be a PEO area, and the substantial forms shown by the languages at this stage. But other areas of the Pacific do not conform to the PEO pattern, and New Guinea is one of these. The many details of the theory are suggested in Part 4.3.; the present chapter sets out what might be regarded as the AN language-type or types that came into the New Guinea area alone.

4.1.2. PROTO-EASTERN OCEANIC (PEO) AND NEW GUINEA AUSTRONESIAN (NGAN) GRAMMAR: COMPARISONS AND CONTRASTS

4.1.2.1. INTRODUCTION

The division into AN₁ and AN₂ has been discussed in the preceding section; it will be used as a basis in this part of the chapter, but little will be said about the syntactic structure of the languages at this point. The basic features of morphology will be discussed first, because in these lie the main differences between them. Phonology will be given a small section later; this, too, is largely influenced in New Guinea by NAN factors which have an effect on the shape of words, but not on their origins or grammatical forms.

4.1.2.2. GRAMMATICAL CATEGORIES IN NEW GUINEA AUSTRONESIAN

4.1.2.2.0. Introductory Remarks

In morphology certain categories are found in most of the area. Independent noun markers sometimes exist, such as those generally referred to as 'articles'. They are not definite articles in the European sense, but serve to mark the word as a noun for grammatical purposes. In some cases, especially PTC languages, there are endings that mark the noun as such, and in some languages there are noun classes. In PTC and Madang areas these often involve congruence with other parts of the sentence - noun and adjective or verb have to agree in class; in some again the agreement is limited to numerals. In Manus and a few other regions there are 'numeral classes' which mark the regions especially; in Kiriwina the adjectives as well as the numeral are involved.

Articles and noun markers of other kinds will be dealt with first; noun class as a whole will for convenience sake be coupled with this discussion.

4.1.2.2.1. Articles and Noun Markers

Of the syntactic markers commonly called articles, PEO *na usually precedes the noun: *na vanua, *the land*. While this is very general in Pawley's PEO area, it is not common in NGAN. Most frequently there is either no article at all (as in Manam) or an article of some other form. In Tuna (Tolai, Kuanua) there is a initially, ra under government. As there is no regular n > r change, this ra does not stand for *na.

In certain of the AN₂ languages there is a suffixed na which functions as an article, but is only singular, being replaced by a plural suffix otherwise. It seems to be phonologically PEO *na but not functionally so. In Motu tau, *man* may be made definite with na as tauna, *the man*. The NEC coast shows a similar use: Wedau rava, Mukawa pipiya, *man*. The former (but not the latter) can be made definite: rava-na, *the man*, and with a demonstrative: wei ravana, *this man*, but Mukawa niko pipiya. In the plural: Wedau ravai, *the men*; wei ravai, *these men*. Mukawa allows nikosi pipiyisi but does not insist on it. This -na is homologous with the possessive -na, 3rd person sg. (of which -i, -si are the plurals, *their*) and may indeed actually be this suffix, rather than an article.

In the comparatively few cases where articles occur - chiefly the New Ireland Group, they are not *na but either a or another vowel; e is not uncommon. In some areas noun classes exist marked by different articles; Petats and Buka in general follow this principal, and in Lihir a number of noun classes are so marked. In Tangga, a is used with specified words only - and this is true in some other areas, that only certain

words take an article. Words with possessive suffixes take no article in Tangga: *teman*, *my father*; *fel*, *house* is similar: *fel ke teman*, *my father's house*. In some cases the addition of a marks not article but plural. This polarity of the a is found also in other areas. This a takes a form aN, i.e. the addition of a homorganic nasal: aN *biŋ* (phonetically *am biŋ*) *day*. Plurality is illustrated in *fel*, *house* > plural aN *fel*; aN *man*, *bird* > plural *man*. There also exist specialised plural markers: *tala fel*, *houses*, *taŋa tualik*, *a number of brothers*.

In Lihir, on the other hand, noun classing appears, indicated by change of article: a is a general singular; e is personal; i is used before names of animals and plants, or in naming an individual of a kind, as in *i limoŋ*, *one of my hands*; !o marks a dual number, *bor* a limited plural as in *lo zik*, *two children*; *bor wayen*, *(some) women*; *buət*, three or a limited plural; *!a* a larger plural, *a e* a general plural, as in *a e makil*, *the people*, *a e tot*, *the stones*.

The vowel morphemes a or e are used as articles in various dialects of South New Britain, and the change of article for class reappears in Buka. On the whole, then, na is uncommon in the NGAN.

Mention should also be made of the ligative ŋa which plays a large part in Western AN (WAN), especially the northern languages, and occurs also in the Tuna group, where it serves in various morphophonemic forms to link noun and adjectives: with the Spanish loanword *santo*, *holy*, the Tagalog Bible is called *Aŋ maŋa santo-ŋ kasulatan*, *the+plural+holy+ŋa+writing*. Although this form is not widespread in NGAN as a living particle, it often occurs petrified in the numeral ten, based on an original **esa-ŋa-puluh*.

In western New Guinea, Windesi shows an article which is postposed - or suffixed - to the noun, by means of which a plural can be shown: the basic suffix is -pa-. Cowan (1955) treats this as -pai but if the -i is treated as the singular marker a regular pattern emerges. Thus *dian-pa-i*, *the fish*, *dian-pa-si*, *the fishes* and a dual *dian-pa-sanu*, *the two fishes*. This language also has an indefinite article, -pesi, as in *dian-pesi*, *a fish*, and this can be made into a dual: *dian-pesi-sanu*, *two fishes* (any two, not *the* two). This is unusual, but the marking of a plural by suffixing -si, *they* to a noun is found also in Numfor: *snu:n-si*, *men*, *the men*. In Numfor itself there is a suffixed -a, *ia* which emphasises and defines the noun: *wos-a*, *the word*, *isna-ia*, *the light*, *murid-si-a*, *his disciples*, but it is doubtful whether this can be linked with the PAN *a(ŋ). As the latter is suffixed in some IN languages (Brandstetter 1916:102) such identification is possible.

4.1.2.2.2. Pronominal Systems

4.1.2.2.2.0. General Remarks

Pronominal systems are important in NGAN as they are in most languages. In Pawley 1972 a Table of PEO pronouns is given. The same set is valid over much of WAN also. In WAN, however, dual and trial pronouns appear only in the eastern part of what is now Indonesia. Along with this limitation goes a certain variation in the morphemes of the 3rd person plural. In PEO these are basically *na > inia, ia, and *da > kida, respectively. In eastern WAN the i and si subgroup is broken by areas in which *ia and *sira appear as free pronouns, but na/da are preposed to the verb as subjects, and in islands close to New Guinea i/si replace these. In NGAN, the i/si forms are general. As compared with PEO therefore, there is a New Guinea subgroup whose pronominal markers of 3rd person plural are i/si and these are diagnostic.

The pronouns of NGAN are assignable to a set of approximately the following forms:

	Singular	Plural
1st incl.		*kita
1st excl.	*aku, *aya	*kami
2nd	*kaw	*kamu
3rd	*iya	*siDa

where D is used to indicate a variation between d and r, not a retroflex D as in PAN spellings.

For South-Eastern Papua (SEP), there is a fairly fully documented discussion of pronouns in Capell 1943:203-31. This indicates that in this part of New Guinea there are three sets of pronouns to be found, not all of which have correlates in PEO or WAN. There are (1) those which are clear descendants of WAN types, and these occur in Suau and the south-eastern Islands chiefly (PTC) and also, in different phonemic shapes, in the west of the southern Papua region (PCC). (2) 'Cross type pronouns', in which pronominal suffixes are added to a stem which means *person* or *body*: Bunama tau-gu, Wedau tau-ø, and Dobu 'abo'a-gu, I; (3) pronouns based entirely on a demonstrative basis, tau-, *person*: these are mainland (North-East Coast) and Laughlan Islands. Here many of the details are similar to those of PEO, but in a survey wider than that of Capell 1943, other types appear also, especially 1st sg. forms based on aya. This, as an alternative form for *aku, is found in Eastern Indonesia, e.g. Seran, South Halmahera and the surrounding islands, also in Numfor and other parts of the Vogelkop: Anceaux (1961, word No. 245) displays a variation between jau and aya, and his own note states

rightly: "although these words are obviously related, they cannot, as such be reduced to Dempwolff's Austronesian *aku; one would rather be inclined to assume a basic pattern *ia(ku)". Although true as far as it goes, this statement does not go quite far enough, because it does not account for forms without a final u such as Irarutu ya, dya, Kurudu aya, Waropen ya (also ra - of interest in Choiseul much farther to the east), Numfor aya. The *nau forms so common in PEO regions appear in Tobati nehu, Ormu nau, which seems to be about their farthest west, for Tarfia has duk and Sobel yau. This yau in various forms then appears along most of the north of New Guinea: Admiralty Islands yo, Tuna yau, etc. A variant *aya has therefore been added to the preceding Table of NGAN pronouns.

It is the third person, however, which is diagnostic for NGAN. Anceaux's lists (1961) give singular i < *iya and plural si, isi, ki < *siDa, with three that look like petrified trials: Papuma soru, Pom tioru, Marau hioru, to which should be added Windesi sentoru, *they three* and Numfor sko *si + telu. Waropen ki arises from a local sound change and is not directly relatable to south-eastern Solomon Islands (Malaita) forms such as kira, *they*.

The presence of dual and a few relics of a trial number is of interest. These - at least the dual - are normal in eastern Oceanic, but do not appear very widely in WAN. In fact they seem to have originated in the western area: Watubela kam-lua, *you two* is an example that appears in one of Riedel's texts (Riedel 1886), and it is most unfortunate that information from the Moluccan regions is so scarce even now. One important point that suggests that a regular dual was still in the course of development when the AN languages reached this area is the different forms they assume in different areas. In Manam, dual and trial markers are added to the end of the verb, not to the pronoun (Capell 1971:290). In SEP, duals and trials are composite still in a very obvious way, and are not marked as pronoun subject of the verb. Dobu has si-te-rua, *they two*, and NEC and the islands about Dobu have similar composite forms.

Certain of the northern languages of New Guinea have developed a plural that is historically a quadruple, *we-four*, ending in -t, which Ray rightly identified with the final consonant of *empat, *four*. In Tuna da-t, *we* (incl.) represents *kinda-empat. The islands off New Ireland also show such forms (Capell 1971:261-3), and they reappear, as the statements there show, in the Nggao of southern Ysabel (British Solomon Islands) and Tanna of Southern New Hebrides. The spacing between them is considerable but the sequence is quite clear. Their relationship to the PEO stage of the language still needs explaining. In a few languages the trial number took the value of a limited plural, as

it does, for instance in Fijian *kenda-tou* < **kinda-telu*.

As one moves from western Indonesia eastwards the grammatical structure of the languages changes. Some of the eastern features have been discussed by Stresemann (1927) and by Capell (1944). The development of a dual number - and presumably the trial would have been subsequent to and modelled on this - in the east, that was mentioned earlier, is largely an eastern feature. Where Watubela shows *kamlua*, *you two*, Pawley (1972) established **kamudua* for PEO. The argument concerning the origin of Melanesian from eastern Indonesia is an old one: see Schmidt (1899a and b) and subsequent work by Cowan (1949-50, 1951-52). There seems to be considerable support for it, and study of eastern Indonesia is urgently overdue. While it is true that words of AN origin are found in Oceanic forms, for instance, in Leti and Kissar, such that no Oceanic forms farther east could actually be derived from them, yet it may certainly be said that the Oceanic languages developed from the same form of roots as are today found in the eastern archipelagoes, and the grammatical forms of the eastern Indonesian languages are too much like those of the eastern Oceanic to be chance resemblances.

4.1.2.2.2.1. *Possession and Possessive Classes*

The classification of nouns into different groups according to their nature in order to express possession is a feature of PEO (Pawley 1972: 33-4) which is of importance in New Guinea also. Both differ from the Polynesian (PN) system and to a certain extent from each other also. There are two major classes, which are represented almost everywhere in the AN language area: some nouns take a possessive suffix added directly to the stem, others add it not to the stem but to a particle placed usually before it. The one exception seems to be Buru, in the Molucca region, where direct addition of a possessive ending to a noun stem does not take place. This language will be mentioned again below. Examples of direct suffixation are Motu *tama-gu*, *father-my* and Wedau *ama-u*, which has the same formation. Pawley treats these as having zero linkage (N + \emptyset), but this seems unnecessary, because in WAN it is the usual method and it is only in Celebes and eastwards that the use of independent possessive markers begins. Bare'e can say *pale-ku*, *my house*, but also *anu:ku pale*. This also will be discussed below, but *pale-ku* and Malay *rumah-ku* represent the normal western system, so that it is not really a case of the omission of a marker, giving - \emptyset , but the development of methods not used earlier.

The direct addition nouns will be called here Class I; they are generally, although not quite happily, called 'inalienable' nouns, involving parts of the body, parts of wholes and usually kinship terms

(or some of these), representing possessions that are permanent: one's head is such (Wedau kola-u) but it may be a head taken from somebody else in war, and then it takes the independent forms au kola, or *my leg* as against *my leg (of chicken or pork which I am eating)*. My relatives are 'inalienable': they may disown me, but they cannot cease to be relatives.

The exact coverage of these classes is different from language to language, and there are marginal cases, e.g. *name* may be inalienable or alienable. All the 'alienable' nouns form the second class, (here called Class II), marked by an independent stem to which the personal possessive suffixes are added.

This Class II was in PEO elaborated in many languages on a semantic basis:

- IIA: General possession, of any kind except inalienable and the subdivisions mentioned below. The stem is *na- and will be discussed below.
- IIB: Nouns primarily representing foodstuffs, and some others that concern the 'owner' closely but are not actually 'owned' by him, e.g. Fijian na no-na i talanoa, *his story*, which he tells of himself; but na ke-na i talanoa, *his story*, told by others about him. The scope of the extension of the 'food' class in this way varies in different regions; its marker is *ka-, from PAN *kaen, *eat*. This subdivision is normal but not universal in NGAN. Sometimes phonetic change causes it to disappear, e.g. Wedau ana numa, *his house*, also ana lam, *his food*, because k is often lost in Wedau. Mukawa has ana yove and kana kam.
- IIC: Some, but noticeably fewer languages, distinguish a class that is basically things to drink, marked by *ma-, PAN *inum, *drink*. Pawley (1973:52) regards IIC as POC, but it seems to miss out NGAN entirely, so that it does not seem to be of this type. Moreover, it does not appear in WAN so far as information goes.
- IID: Sporadically other classes are found, especially one of particularly valued possessions, and some languages, especially in Micronesia, are rich in further subdivisions, but none of these are found in NGAN except possibly *hula (*npula?) which in the northern New Hebrides, e.g. Mota puia-, indicates specially valued goods, such as pigs. This is reported from Nada or Budibud (Laughlan Islands) but used as an auxiliary noun without suffixes: to-gu bula mwila, *my banana*. This has long been a neglected language, and the form is not mentioned in Lithgow's treatment of SEP in the present volume (4.4.10.).

In NGAN there is always a distinction between I and II, but not always between IIA and IIB, while IIC and IID (apart from Budibud) do not appear.

The West New Guinea languages need special mention because they have not been included in the earlier contribution (Capell 1971) and because they depart quite noticeably from those farther east. Apart from those of the Vogelkop, information is very patchy and more research is called for among them. The present remarks are therefore only summary, although a fuller account is given than for other areas, by reason of the lack of available material.

Class I possessives (suffixed to N stems) are mostly present. In Numfor they often take on special forms with considerable morphophonemic changes (Anceaux 1961:13-6). Class II does not have the subdivisions among its members that appear in eastern New Guinea, but the markers are made up of two parts, of which the first indicates the person, and the second the number of items possessed: rum yeda, *my house*; rum yena, *my houses*. With nouns the plural is marked by the addition of -si (3rd person plural pronoun): snu:n-si, *men*. The expression of a genitive relation between nouns allows of more complication and will be mentioned later.

For Windesi-Wandammen, reference should be made to Cowan (1955:49-50). The suffixes of Class I are dying out and are rarely used; Class II forms are commonly employed, and these are based on a root ne-, obviously akin to *na-, but capable of appearing as verb, sen-ne, *they possess*.

The other languages of the south-west coast were treated briefly by Cowan (1953a) but information is very scarce. Kaitero, Arguni, Sekar, etc. also have a clear AN content but they prefix possessives instead of suffixing them, and this is a NAN feature. In some regards Arguni invites comparison with Manggarai and Ngad'a on Flores (see 4.5.1.2.2.1.2.) and not only in these areas, but in that *aku becomes in Ngad'a djao and in Arguni Bay dja, *I* - it belongs apparently to the *aja series, not to the *aku series, but the change of j to dj is shared by both groups.

On the east side of Geelvink Bay, Waropen stands apart from the common AN patterning of possessives (Held 1942a) and may be left aside for the present purpose. The few examples Cowan (1953a:6) can quote for Môr show a phrase structure N + pronoun which again is not AN even, though there is a very clear AN content in the language.

In the north coast languages, Tarfia (a SOV language) has a NAN possessive system: duk, *I* > duk ni mama, *my father*; ik ni karfau, *your child*; i ni kayap, *his house*. Yet even here there are traces of an AN suffixing system along Class I lines, for Cowan (1953b:172) quotes also

(ik ni) tama-m, *your father*; i ni tama-ni, *his father*. He recognises the use of postpositions in this language (as AN₂ type) but also hazards the suggestion that ni may actually be the AN *-nja transferred to other uses, and quotes duk Hollandia-i na wa, *I Hollandia-to I go* and i kayap te a wa, *he house-from he came*. Sobel forms possessives by placing be after a pronoun and the phrase then precedes the noun: e be tani, *his body*, yet Cowan notes that as in Tarfia suffixes are also found, e.g. tani-?, *my body*, tani-m, *your body*, tendir, *our bodies*, tendi-m, *your bodies* and tendi, *their bodies*.

In the eastern languages, Ormu and Tobati show kinship. Tobati again has two usages: tema-x, *my father*; (nunu) tema-nune, *your father*, or a single pronoun before the noun neh(u) rum, *my house*; neh temi *my father* (Cowan 1953b:168). Ormu has the same variations: nau, *I*, but nexu tamaxu, *my father*; otherwise a ni form as in o-ni natu, *your child*, but tube-nja nubure, *the chief's counsellor*.

While these languages need much more study, they still seem to have AN possessive constructions grafted on to NAN constructions at an earlier time. Nothing more can be said of them in the present space.

The genitive construction in all these languages tends to be the *head its hair* type that was called by Dutch scholars the 'reversed genitive'. This will be mentioned below as occasion calls for it, especially in areas where it does not apply. Actually the possessive in this situation is suffixed to the second noun: Adriani and Kruyt (1911-12) quote Sula sun fulu-n, *mouth hair-its, moustache*, as a type. This construction is common in NGAN and in non-AN languages of the island also. In Numfor, for instance, bin romgun bieda, *woman child her, the woman's child*. In this language variations for number of owners and number of objects owned can be made:

(1) bin suru romgun bie-su: *women two children their-two*

bin kior romgun bie-si: *women three children their*

for variation of possessor, and for variation of possessed;

(2) malaekat Manseren Ala bie-da: *God's angel*

malaekat Manseren Ala bie-su: *God's two angels*

malaekat Manseren Ala bie-si: *God's angels*

for variation of possessed only. The marking of the noun plural by means of a third person pronoun after it is found also in Malaita in the Solomon Islands: hira, kira and (in Lau) ki are placed after a noun to mark the plural. The point of interest is that this is a PEO group of languages, not the presumably Proto-Oceanic (POC) that occurs in New Guinea and eastern Indonesia.

The marker of Class IIA in NGAN seems to be generally an AN feature, na-, but it is geographically rather scattered. It is commonest in the

AN₁ languages in the north; in the south a- or e- are common in PTC and PCC groups. In the far west, Windesi has ne-, a variant of na-, and no-, another variant, reaches out to Fiji as a component of PEO. In Windesi, no-mu anio, *your house* shows it. The point of interest is that it is found also in WAN as far west as Celebes. It was already suggested by S.H. Ray that the origin of this possession marker is to be found in Central Celebes (and ultimately PAN) *anu something, what's its name*. In Bare'e one may say pale-ku, *my hand* and this is the normal usage in WAN farther west: all nouns may take suffixes, not only those of 'inalienable possession'. But one may also say in Bare'e anu:ku pale, *my hand* rather more emphatically. It would seem to be at this point that the Class II type originated, although its functions as applicable to certain nouns developed only later. In eastern IN, Buli of South Halmahera has ja boboko-k, *my head*, inalienable, but it also has ja ni-k ebai, *my house*, and further it has developed the food possessive (IIB) as in ja na-k piŋe, *my rice*. From this point on the distinction between Class IIA and Class IIB is developed, although Class IIC does not appear as yet.

Buli has no suffixed forms: all are mediated as in jau na-u numa, *my house*. The syntactic feature of placing the full pronoun before the compound in the phrase is also eastern IN, and is found in NAN languages of New Guinea itself, even in the eastern half of the island. See Capell 1943:225-6 for numerous examples of suffixed possessives in NAN languages of New Guinea: Amele, Ono, Kuman and others are deduced as examples. In these there is no subdivision - all nouns take the same set of markers. The combination of cardinal pronoun and possessive before the noun does not seem to be Papuan, but, as shown here, it extends from eastern IN to SEP among the AN languages. It is not a PEO feature, nor can it properly be regarded as a POC feature, but is apparently an NGAN local development.

4.1.2.2.3. The Verb

4.1.2.2.3.0. General Remarks

The treatment of the verb here will be based on that given in Capell 1969. What Pawley (1972) calls morphological transformations will be treated first, then aspect, mood, tense and person will be dealt with.

In general, the term root is applicable to the simplest form in which the verb can occur: e.g. Motu gini, 'stand'. The term base is applicable to a form in which an element is added, which then in turn functions as root to which other elements are added. Thus Motu, gini, 'stand' > ha-gini, 'cause to stand'; each may take the imperfective marker -mu, as ginimu, haginimu. As one says baina gini, 'I shall stand', so one says baina ha-gini-a

'I shall make him stand'; *ha-gini-* now functions as a base, i.e. a root to which further morphemes may be added. (Capell 1969:48).

A further quotation from the following paragraph of the same work may be added:

In general, the AN verb is used in a root form, subject to few changes. The changes are (a) production of a transitive from an intransitive form: Tuna reverses the process and often produces an intransitive from a transitive by partial reduplication: *kul*, 'buy (it)', > *kukul*, 'buy, go shopping'....

The common derivative forms usable in the above manner as bases in AN languages [of New Guinea] are: (1) causative (2) reciprocal (3) reflexive.

The following paragraphs will deal with two of these derived forms (causative and reciprocal) in which some sort of transformation of the root itself (producing a base) is involved.

4.1.2.2.3.1. Morphological Transformations

(1) Causatives are marked in AN by prefix of either *pa- or *paka-. Pawley finds the former to be the normal PEO prefix, and it is more common in NGAN than the longer form. The latter, however occurs in Manam as *aka:aka-kauri*, to fill, *akarere*, *urge* < *rere*, *wish*, *like*. Derivatives of *pa- are normal in NGAN, but some languages have neither, and tend to use free morphemes to express a causative. Thus Yabêm has *en keken ae kasa tau*, he makes me lie down, he makes me lie down, which contrasts strongly with Wedau *e vivi-matave-ni-u*, he makes lie down me, in which *vivi-* reduplication of *vi-*, causative, marks continued action, *-ni-* marks transitivity, and *-u* is the pronoun object. When derivatives of the AN prefixes occur, there is generally no distinction between AN₁ and AN₂ languages, except perhaps that they are more often missing from AN₂ type than from AN₁. In Dohu, the transitive form of a verb can be used to make a causative function: *i ʔeʔeno*, he lies down, *i ʔeʔeno-igu*, he makes me lie down, rather like English *lie down* and *lay down*.

Exceptional situations are found in the far western languages, so far as these are documented. In Windesi, a prefix *on-*, marks the causative: Cowan treats this as an abbreviation of one, *make*. That this is so appears from the fact that the object follows the prefix and the subject precedes it: it might almost be better to treat it as a separate verb: *dontatuan*, it makes us kneel is really *d-on-ta tuan*, it-makes-us kneel. Moreover Cowan remarks that these forms are often intensive, rather than causative, and quotes *malaikat sen-som Sjen na rora*, *ma siniontu tata tant-on-som i kota*, the angels praise the Lord in heaven, and we men praise Him too.

In Numfor, however, there are instances of *ak-* as a causative prefix, e.g. *marisen*, *bə happy*, *akmarisen*, *make rejoice*, but more frequently, *be-* is prefixed to the verb, abbreviation of *befa*, *make*, or a synonym, *fru:r*, is used in the same way as verbs *to make* elsewhere.

For the languages of the north coast there is no evidence in the available material, unless *Tobati kabuni*, *extinguish* can be equated with a PAN root *buni*, *hide* and *ka-* regarded as the prefix, as it is by Kern (1900).

(ii) Reciprocity is expressed in PAN by a prefix **bayi-* which appears very widely in Oceania as *bar-*, *vei-*, *hai-*. In Tuna it appears in two forms, *vara-*, prefixed to verb stems, as *varagire*, *see each other* < *gire*, *see him*, and *bar-* prefixed to nouns indicating relationship. The former usage is found again in the western Solomon Islands, e.g. *Roviana*, as *vari-*, in *variavosa*, *talk to each other*, and is indeed a productive form used with verbs whose roots are not AN, as in *varizame*, *talk to each other*. In the former example, although *avosa* seems to represent Numfor *wos*, Fijian *vosa*, and in so many other places that it must be at least a POC root which is not yet recognised in the word-lists. The usage of *bar-* with relationship terms appears in Tuna *bar-tamana*, *father and son*, and this is recognised as a PEO usage also. Apart from the Tuna area, however, it does not seem to occur in New Guinea. More frequently the prefix in these languages is limited to use with verbs, occurring as *vei-*, *fe-*, or *he-*; in Motu *he-*, but in combination with a simultaneous suffix *-heheni*: *he-duru-heheni*, *to help each other*. This *-heheni* looks like a partial reduplication of *-heni-a*, *give*, a form of *-pani*, for which see Pawley (1972:38). If *he-* is used without the *-heheni*, its meanings vary considerably and do not fit the definition 'reciprocal' very well.

There is much variation in the occurrence of **bayi-* in NGAN. In some cases it does not occur at all; e.g. *Bel* places *nug* after the verb; *Yabêm* makes a special use of *tauŋ*. In *Dobu* *e-* is prefixed to some verbs, and this seems to represent a form of the PAN prefix, but even in *Dobu* there are other ways of showing reciprocity. In *SEP*, *Wedau* makes some use of *vi-* in a reciprocal sense as well as in the causative. This means that two AN roots, **pa-* and **bayi*, have coincided phonemically; but *Wedau* can also place *viviri*, after the verb, but it can also mean *around* and represents a different PAN root. *Mukawa boneya*, after the verb, is certainly a different root. In *Suau*, however, the PAN reciprocal prefix occurs only spasmodically in NGAN - chiefly in the island regions, though not universally there, and perhaps most clearly on southern coast and neighbouring islands. In both *Motu* and *Wedau*, the causative and reciprocal prefixes seem to have become homonyms, as well as receiving a number of special usages that did not originally belong to either.

The far west is again insufficiently documented; Cowan does not seem to have any prefix in Windesi, and the translations have circumlocutions, such as *se kabio babera so siat*, *they said to each other*, in which *babera* is *each other*. Numfor shows *s'awos-jae si*, *they say to each other*, which again is not in the AN sequence.

It is interesting to note that the reciprocal prefix seems practically to have missed out South Halmahera also, for Maan (1951:72) can find only one example of *fai-* with *teta*, *like, same as* so that *faiteta* means *to be like each other*; *buk si'lu tasine faitetai*, *these two books are like each other*. In Buli also the reciprocal has fallen together with the causative, and both have become *fa-*, in the reciprocal sense often with reduplication of the verb: *fadupdupin*, *to meet each other*.

4.1.2.2.3.2. Tense, Mood and Aspect

Within the morphology of the verb, tense, mood and aspect are important to the present study, but it is not easy to keep them separate. What will be indicated by one of them in one language may be indicated by another in another language.

With regard to the verb, Pawley (1972:42) says that tense-aspect markers in PEO include *e*, non-past, indefinite; *i* future; \emptyset , plus imperative intonation on a verb base, may show hortatives; and on page 48 he gives a table of preverbal particles. There is another which he does not mention on the earlier page, **ma* for Proto-North Hebridean-Central Pacific languages (PHC), which is a non-future, generally northern New Hebrides but with occurrences in two Fiji dialects, and in Baki and Tasiko of Epi.

The NGAN picture is very different. There is more detailed indication of tense, especially in the PTC area mainland languages (north-east coast), the Motu section of PCC, and the Madang languages. In some cases inflectional forms such as partial reduplication are found. Some languages, such as Dobu, and Motu, give more expression to aspect than to tense. In fact this is an area where NGAN has more or less gone its own way, to the degree that one suspects considerable substratum effects. For an overall survey see Capell 1969:47-53; 1971:330-333, where these features are treated in some detail for languages apart from the western NG group.

A rough division may be made between several subgroups:

1. Languages that rely on an adverbial marker to indicate details of tense and aspect, using one set of preverbal person markers throughout. The western NG languages tend to do this, although some are imperfectly known structurally - but as far as information goes these seem to have similar systems.

2. Languages which mark tense, etc. rather vaguely; the particle *e* may occur in these as part of the verbal phrase, and there is little detailed expression of tense, aspect or mood. The Admiralty Islands languages tend this way, although *e* does not figure largely among these.

3. Languages which mark detail frequently not marked in PEO, and use either a variety of particles or internal inflection as the means. Motu and Dobu illustrate this type, as well as the Bel group about Madang. Some of these have almost a Papuan system of suffixes marking tense, mood or aspect, although person of actor is marked by prefixes - in this they differ from NAN languages in general. See Capell 1969: 51-3.

Limitations of space make it impossible to illustrate all these types in detail, and in any case sufficient detail is given in the statements referred to above. Only certain points can be picked out here. In passing, it may be remarked that the fairly wide use of *na* as a future marker (which farther east includes Fijian) might almost have justified a place in Pawley's list as much as *i* in PEO.

The bulk of the stress in NG languages is laid on the person and number of actors; time is generally subordinated (except in the groups mentioned earlier), manner and aspect are of second importance, especially in the north-coast languages of West New Guinea and the Sepik coast of eastern New Guinea. In the Vogelkop languages and Waropen, 2nd and 3rd singular markers *u*, *i* may be infixes in the verb; otherwise the person markers precede the stem, and non-present tense is marked by a particle, e.g. Numfor, past is shown by *kwa:r* after the verb, future by *inari* before it. It is interesting to note that in the AN languages of Timor exactly the same thing happens: past tense is marked by a particle after the verb and future by one before it (Capell 1944:40). Psychologically this may point to a need to announce an intention in advance but state an act completed after it is done. In Windesi, 'apart from certain verbal prefixes that may be said to indicate certain aspects, the verb does not change for tense, aspect or mood' (Cowan 1955:52). Cowan's earlier work (1953b) also shows indication of tense by adverbs in Sobel and Tarfia: Tarfia note *duk na-wa, yesterday I I-went; tomt duk na-wa, tomorrow I I-go*. In Ormu, however, some tense suffixes appear, but the language needs further study: *ra mai, they come; ra mal-re, they-come-will; mai-nje, come!* Tobati uses *-ntl* for a sort of future (1953b: 166), *-(a)t*, hortative and either future or imperfective: *nehu wi, I go; nehu wiat (wunt), imperfective; nehu wiati, future*. These languages do not conform to PEO patterning, nor, for that matter, to any other Oceanic type very clearly.

The small islands off New Ireland use quite a multitude of particles

to define the verb in various ways. So, *na* as a future appears in Lihir and carries on (with interruptions) through Tuna to Fiji. Lihir marks past by *sa* and *ko*, Tangga does it partly by *sam* or *sau* (though this is more truly perfective aspect than a tense); *se* in Lihir is a "particle of real happenings", *te* is stative (*sa pe:te, it is good*); *de* future and imperative (Tabar *te, ta*) and a number of others. Tangga presents a rather complicated interplay of action, state and time forms, which also have little in common with AN, although the person markers are quite clearly AN (Capell 1971:259-63).

The Admiralty Islands do show some variations among themselves but tend to be simpler than the New Ireland area. A marker *ga, past* is found in Musau and in Tuna, and Tangga *gi* is probably to be linked with it. Buka again presents a different type of conjugation altogether and unique in the AN field: it is illustrated in Capell 1971:276-7 and is also mentioned elsewhere in this volume in Part 4.3. The AN languages of Bougainville (Banoni, Torau, Uruava, etc.) again do not fit the PEO type. In Teop *na* is not a future but a present marker, and the past is marked by *pa* (1971:281-2).

In summary it may be said that although individual PEO forms occur in NGAN, the NG verbs do not fall into the patterns of aspect, mood and tense suggested for PEO. Capell's outline (1969:50-53) makes this fully clear. His final note in that section may be repeated here as part of the general summary:

The general feature of the AN languages seems to be that farther west along the north coast of New Guinea, the simpler the morphological structure of the verb - and this applies to the island groups as well as the mainland. In the far west, Biak (Numfor) and Windesi present practically no complications, and sentences in these languages represent propositions reduced to the lowest terms of simplicity... This is true for practically all between Manam and Biak, except for Waropen.

4.1.2.2.3.3. Person Marking

It is in the indication of person of subject and pronoun object that the NGAN languages come nearest to the general Oceanic model. Most use a shortened form (or root form) of pronoun to indicate person, and special importance rests, for reasons already mentioned, in the 3rd person singular and plural, *i* and *si*. The only departure from POC systems is provided by languages which do not distinguish cardinal and verb pronoun, and these are mostly those of the Admiralty Islands. In the Sabon dialect, for instance, one finds pronouns in the singular *yo, wo, and i* and the verb *put* appears as *yo dowi, wo dowi, i dowi*. Here, however, there is not absolute uniformity, for Meier (1907) gives as the verb *go, yo u*

tokai, oi a tokai, i tokai where only the 3rd person lacks a verbal pronoun - although the entire plural still lacks them.

(a) Subject Markers

In NGAN the entire Table of pronouns given by Pawley (1972:39) for PEO can be paralleled for NGAN in general, but there is often less difference between subject and object forms than in PEO.

In NGAN it can sometimes happen that a subject marker of this kind is not required if the subject of the sentence is a noun. Thus in Sio, *yâ kana, fire burns*. This happens, however, only if the subject is a generic term such as *fire*. More commonly, both in Sio and many other languages, the A = B type sentence is thus treated if the predicate is a noun. In Wedau *wei orotona amau, this man (is) my father* - a pronoun subject in this clause type is often acceptable under the same conditions: *tauna amau, he (is) my father*. But such languages may distinguish between equational sentences and descriptive sentences, in that the latter require a subject marker. Wedau shows *am kovoŷa i rata, your pay is large*, as against *wei am kovoŷa, this (is) your pay*, and the adjectival phrase *am kovoŷa ratana, your great pay*. Only in this instance *yæyæna* would be used as *rata* cannot be made adjectival. In a PEO language this clause distinction also may be made, e.g. Nggela, *iŷoe na dalengu, you (are) my son*; *te sule na tamba-mu, is great your pay*.

Capell (1943:218-222) has discussed the forms of the SEP pronouns in some detail, though chiefly concerned with what is here being called the PTC languages. More recently attention has been drawn to the distinction between languages which have the 3rd singular in *na* and the third plural in *la* (western Indonesia for the most part) and those which have *i* and *si* in these places as subjects (mostly eastern Indonesia). New Guinea on the whole has the *i/si* forms, which are found from Seran eastwards into the Vogelkop languages and then throughout most of New Guinea, thus distinguishing them in an important regard from the PEO group, which have derivatives of the *na/la* series. The occurrence of dual and trial numbers is also important but will be disregarded at the moment. In NGAN the following series are found:

3rd singular: Numfor *i*; Windesi *i, di*; Waropen *i*; Sobel *e*; Tarfia *i, Ormu e, Tobati i*.

3rd plural: Numfor *si*; Windesi *se(n)* (human), *si* (non-human); Waropen *ki, Sobel ri; Tarfia di, Ormu ri/ra; Tobati ri*.

Similar series continue eastwards, e.g. Sisano *i/si*. A notable exception is Wogeo 3rd plural *da* which fits the PEO set, but its singular is *e*,

not na. The Madang (Belan, etc.) groups present a strange mixture of forms: see Z'graggen in this volume (4.4.1.2.) which are rather hard to fit into any pattern at all, but on the whole suit best the i/si group.

In the west, the entire system of short pronouns as subject markers really ends in Celebes, like a number of other features which appear in Oceanic, though in this case the system reappears in the islands west of Sumatra and in some detail, including the dual number. This i/si area belongs to the islands east of Celebes almost exclusively (Haaksma 1933, *passim*). In the south-east, Tanimbar and Kei show mixed forms: na singular and ra plural for the prefixes but forms of *iya and *sira appear as free pronouns. It is unfortunate that no verbal forms are available from the Bomberai Peninsula AN languages (Cowan 1953a:32) regrets this but gives u in 2nd singular in Sekar.

A certain amount of subgrouping seems possible. In the PTC area Capell (1943:221) showed that there are small differences between these and PTC, and the following Table may be of use:

Languages	sg:1	sg:2	sg:3	pl:1.incl.	pl:1.excl.	pl:2	pl:3
PCC west of Hood Point	a	o	e	ta	ma	o	(s)e
PTC east of Hood Point	ya, na	(k)u	i	ta	(k)a	(k)wa	ai
Siassi	na	u	i	ta	ni	a	ti
Barim	a	gu	i	ta	a	ka	ti
Sio	a	ku	i	ta	ka	ka	si
Manam	u	ku	i	ga	i	ka	di
Wogeo	o	u	e	ta		ka	da
WAN: Bare'e	ku	nu	na	ta	ka	ni	ra, na

In Makassar and Bugis suffixed pronouns also occur as both subject of intransitive and sometimes transitive verbs; in this case the object pronoun may precede the verb.

The first person singular shows several types, as does also 1st plural excl., but the linkages mentioned above stand out well when WAN languages are compared.

It is clear that if i/si languages are not part of the PEO complex, then neither are the New Guinea languages, but the occasional occurrences of PEO characteristics, as in Wogeo, must not be overlooked.

(b) Object Markers

Object pronouns tend to resemble possessive affixes quite closely. A comparative Table for south-eastern Papua is given in Capell 1943:236-7. The set given by Pawley (1972:37) as representing PEO is:

sg. 1st	-(n)au
2nd	-ko(e)
3rd	-a
pl. 1st incl.	-ki(n)ta
1st excl.	-kami
2nd	kam(i)u
3rd	-da

In SEP the common suffixes are some form of the following:

sg. 1st	-au, -yau, -nau
2nd	-o, -mu, -wa
3rd	-na, -i-, -a
pl. 1st incl.	-ka, -(r)a
1st excl.	-ma(i)
2nd	-mi(u)
3rd	-a, -si, -ri

In Sio a very similar set is found, but differences appear in Madang, where Bel has

sg. 1st	-ag
2nd	-o
3rd	-(i)
pl. 1st incl.	-ad
1st excl.	-ama
2nd	-aŋ
3rd	-din

and there are subclasses of verbs in this connection.

In western New Guinea, however, the practice is normally to use a subject pronoun also as object, but in some cases suffixes are found which otherwise belong to the possessive series. Defective information on the north coast languages probably adds to the uncertainty. Cowan (1953b) shows in Tobati *intia jando-k*, *he gave me*, and *intiritja honj nso sey j-and-it-ati*, *that dog that whom they-gave-them-will, to whom will they give that dog?*. Tobati also as a SOV language has postpositions: *ente-t*, *to you*; *intia-t*, *to him*, etc. Capell's field notes show some variation on this in detail but a general agreement: *neh ndɛn rɔmxɔ*, *I you see-you*; *nɔ'xu mə tɛrɛ rɔ'mi*, *I snake see-it*; *mata ndɔ nɔ'xu-t rɔmbrɔ-k*, *the snake sees him*; *mata nɔ'xut jə'xes rɔ*, *the snake bit me*. In Ormu the situation is not clear and the suffixes seem to differ, e.g. *anjonoune*, *let me hear you* (*nononje, hear*). For Tarfia, Cowan shows a

separate pronoun object the same in form as the subject: *kemsim duk, call me* (1953b:173). In Sobei, however, *-u, you* and *-i, him* are documented in *esim-u, calls you* and *asim-i, calls him*; also *asim-imto, calls you* (pl.). The last looks like possibly a trial number (*-to*) but is not stated to be so. When Geelvink Bay is reached, Waropen shows the independent pronoun used as object: *a-wu-ra, you hold me*; *ra-wu-auo, I hold you*; *sambaba iko, enlightens us* (incl.), and Numfor behaves similarly.

Apart from these western New Guinea languages there is a fairly clear sequence of AN object forms used as suffixes, representing the basic, meaningful parts of the full cardinal pronouns. The habit of using an anticipatory pronoun object suffix before a noun object is widespread, and it does not depend on whether the syntactic order is SVO or SOV. Again, the western languages appear to lack the anticipatory forms. Motu has *Ahuia lau e ita-gu, Ahuia me he-see-me* (SOV); Sio has *ku lili-nzi tamata, you baptize them the people* (SVO), similar to *si-kea, they buried him*.

In some IN languages there is much more syntactic liberty than in Oceanic languages, in that a pronoun object may precede the verb and a suffixed pronoun indicates the subject. This is possible in Makassar, as mentioned above, and a resulting sentence type would be *ku cini ko, me see you, you see me*; *na suro ko, him order you, you order him*; *nu na kamasean, he has pity on you*, however, shows both pronouns before the verb, and when this happens the first is the object. In a NAN language such as those of Northern Halmahera or New Guinea, the example would mean precisely the opposite, *you have pity on him*.

Haaksma (1933:74-5) who points out the above fact, also pointed out the transitional character of the Vogelkop Austronesian (VKAN) languages, saying:

The AN languages of this region often exhibit marks of direct influence from the neighbouring Papuan languages, while among the members of the first group in the west no clear distinction between Indonesian and Melanesian can be observed and still more than the languages of the islands in the eastern part of the IN archipelago they show a transitional character (Haaksma 1933:172).

In these remarks Haaksma was right, and the picture is complicated not only for the reasons that he gives, but even more because the available information in the west and in New Guinea is so poor. For the languages of the islands of Waigeo, Salawati and Misool, off the west coast of New Guinea (the last in Indonesia proper before the establishment of Irian Jaya), nothing more than the official wordlist used by Cowan (1953a) exists.

4.1.3. PHONOLOGICAL QUESTIONS

4.1.3.0. SETTING OF THE SECTION

The purpose of this section is not to establish as it were a non-PEO phonological system (which would be a task beyond this paper) but to show how the phonological bases of an earlier language can affect an incoming language. This statement, it is true, does operate on the theory that the New Guinea Austronesian (NGAN) languages actually have come into being in this way, and that they represent *in toto* a 'mixed type' if the whole truth should be told. The special part on this subject in the present volume (see part 4.5.) has discussed features of grammar and vocabulary that have already produced opposing views among linguists as to the history of the 'mixed languages' of South-Eastern Papua, as exhibited in Maisin. This language serves as a catalyst by which the much wider range of New Guinea languages might be assessed, so that if the nature of Maisin in New Guinea (and Flores in Indonesia) is accepted as 'mixed', there would be a reassessment of New Guinea Austronesian as a whole in the light of the arguments offered.

In the chapter referred to, nothing was said about the phonologies of the languages. Maisin offers no difficulties, whether it is regarded as an AN language highly modified by NAN languages, or as a NAN language equally affected by AN languages. Maisin phonology - and the phonologies of all the surrounding languages - is simple in itself and has few special features, except that, for instance, a word cannot end in /m/. A word that would end in a bilabial, nasal or oral, must end in a velar nasal, at least in coastal Maisin, Ubir and a few other languages of the Ubir subgroup. In these a bilabial stop final becomes the corresponding nasal: PAN *tebu, *sugarcane*, becomes tom in Wedau, Mukawa, Ubir, etc.

In the present section a more complex situation is studied. An AN language with a very complex consonantal system is surveyed briefly in regard to its effects on AN words taken into it. The language is Sio (Siá), spoken on Sio Island and on the neighbouring mainland of the Huon Peninsula. It is quite clearly an AN language of the AN₁ type, yet it has a very un-AN phonology, whose influence on the AN content may prove to be important.

4.1.3.1. PHONOLOGY OF SIO

This study is based chiefly on a Sio-German Dictionary by Rev. H. Wagner, itself based on prior study by Rev. M. Stolz, Mr Wagner's predecessor. This contains at the end a short sketch of grammar by Mr Stolz, rearranged and interpreted by O. Dempwolff. The work exists as a mimeographed manuscript, a copy of which came to the present writer by courtesy

of W. Milke. For comparison with the Huon Peninsula NAN languages McElhanon 1973 has been used.

The importance of this part of the chapter is to suggest the type of background - an extreme case but none the less valuable - on to which an AN language might be introduced. To it a second subsection is added, looking in the opposite direction. This concerns the Vogelkop languages of AN origin, and will be explained below in 4.1.3.2. At the back of the present section lies the thought of a few uncertain reconstructions such as POC */ŋm/. It may be possible to solve these questions, though in this instance it cannot be done on New Guinea material alone. Seeing that PAN /*rumah*/ *house* and /*imun*/ *drink*, contain /m/, why should one become in Mota /*imwa*/ and the other /*ima*/? It is this problem that has led to presupposing */ŋm/, but it is not really satisfactory. There is here the added problem that *imun* has given *ima*, instead of **imu*, and the Mota intensive is *imarag* instead of a thematic **imunag*.

4.1.3.1.1. The Phonemes of Sio

As given by Stolz the phonemes are as follows (his single, modified letters being transcribed into such as used generally in Oceanic studies):

Vowels are i, e, ε, a, ɔ, o, u.

Consonants:	p	t	k	ʔ
	b	d	g	
	m	n	ŋ	
	mb, kp		ŋg	
	s, z	nz	mkp	
	r, l		ɣ	

Nothing is said about phonemic length of vowels, to Dempwolff's regret. The symbol x is here transcribed to /ɣ/ and it could be a uvular r; the Dictionary spells it rr as in *rrarrati*, *tear apart*, which looks like PAN **kaRa*t. Dempwolff remarks, "among the consonants x is shown as weaker than r, so it is here taken that x is a uvular r and r a lingual r".

McElhanon (1973:5) admits a general six-vowel pattern in Huon Peninsula languages, in which case /ε/ in Sio would represent a seventh, but in a footnote he mentions /æ/ in Wantoat. His consonant list is: p, t, k, kp, b, d, g, gb, m, n, ŋ, w, f, y, s, z, h, l, r, which is considerably simpler than Sio. In a footnote to page 67 he states that "in languages other than Kube and Kâte the phonetic quality of the h or g phonemes in morphological alternation is that of [ɣ]".

Dempwolff finds four types of reference in comparison with Sio - and most of the following paragraphs are translations from his additions to the Dictionary:

A. A NON-AUSTRONESIAN SUBSTRATUM

The substratum belongs to the labiovelars, verbal combinations, distinction between generic and individual being, use of objective suffixes, preposing of genitive. As no comparative work has been done on Papuan vocabulary, no attempt is made here to compare Sio with Kâte, Ono, etc.

The use of object suffixes is an AN feature in point of fact.

Comparison here with McElhanon's conclusions (McElhanon 1973:59) is interesting, for he considers the grammatical complications of the Huon Peninsula NAN languages have developed within the family itself. Seeing these are absent from Sio, the conclusion is more reasonable than to suppose that Sio has lost them in the process of becoming AN.

B. AUSTRONESIAN VOCABULARY

There are two subsections to be considered here: a general one, and a special reference to cognation with Graged (Bel). It is convenient to take the latter first. Dempwolff's list of comparisons with Bel is given in full. They number 27, of which perhaps a dozen can be safely termed AN. In phonemic form they differ very little from Bel, but the backed vowel /â/ occurs where Bel has /a/ in jâ/ja, *fire*; lâ/la, *go, ta* or tâ/ta, *perhaps*, nâ/nal, *appointed time*; tâŋa/taŋ, *man's basket*. Wâe/vae, *separate out*; in wâŋga/vonŋu, *drum* there is a different correspondence, which may or may not be right.

Three examples of labialised /mʷ/ appear: mʷâta/mot, *snake*, mʷou/mou, *famine*. The first of these is one in which */ŋm/ has been posited for POC, PEO. Bel voiceless /ʃ/, written z, appears as plain l (Lincoln 1973) in nola/noz, *yesterday*; pale/paze, *tread* (according to Mager 1952), PAN *peRah, *press out*); taule/tauz, *triton horn*; but one /ʃ/ is answered in Sio by x (= γ): wuxata/uxat, *work* (n.). These are mostly, according to Mager, found in the Rai Coast languages and are clearly part of the chain which links Madang and the Siassi areas.

AN vocabulary of a more general kind is listed by Dempwolff, but comparison within the Dictionary suggests that his examination is not complete. He lists 81 words. Some of them are considerably changed: *danum, *water* has fallen together with *lakaw, *go*, as lâ. This 81 represents a picking from about 2200 words in the Dictionary, but proper mathematical treatment and re-examination of the whole list is needed to produce a reliable percentage. In any case, percentage correspondence does not seem too high. It is noticeable that of the terms *(t)ama, *father* and *(t)ina, *mother*, Sio lacks the t- in each case, although it does not normally lose initial *t.

In all cases x (= γ) corresponds to PAN */R/, as in kaxi, *day* < *waRi. Palatal n goes to /n/; *z to nz: *zalan, *way* > nzala, but also to /s/:

*zahat, bad > saka; zuRuh, fluidity > sulu, be damp.

The point of interest is that no words involving other compound consonants than /mʷ/ seem to be AN at all: mgbale, tomorrow; mgbamgbea, to cook, mwota, small, mgbankpe, dog are specimens of words which often have AN cognation in other languages. It is just possible that mwonamwona, be good, fine of taste, as of yams may be that PEO *mona-(k), which Pawley is also inclined to take as *ḡmona(k), fat, but the medial consonant raises difficulty here. No words under q (= kp) or beginning with gb seem to have AN cognates - at least Dempwolff does not include any, and only the one previously mentioned contains initial γ.

C. COMPARISON WITH YABÊM (JABÊM).

Dempwolff here writes:

Sio has only a few words in common with Jabêm, but there are many parallels in the grammar such as proposing of genitive, along with SVO order, treatment of place markers are simple objects with use of verbal stems, similar treatment of some markers of circumstance; encapsulation of appositional sentences by demonstratives. Use of originally verbal particles for arrangement of sentence series with the same scheme for temporal sentences and a similar scheme for logical arrangement of the sentence.

These features, however, are not distinctive, and most of them are not limited to Sio and Yabêm.

All these facts mean that Sio has not taken over anything that upsets its basic phonemic system; its AN content is still more or less 'skin deep', like so many of the New Guinea Austronesian languages.

Yet some points of interest remain, and are not covered by Dempwolff's still imperfect analysis. The Dictionary is not by any means complete; a number of words in the Scripture Reader Miti Kanaŋo are missing from it. In the very first sentence of that Reader, the opening sentence nia ndojo Anutu ipulia samba wa tâno wa, in the beginning God made heaven and earth shows i-pull-a, he made it. But puli- is not in the Dictionary, it recalls Fijian bull-a, make or form a solid body, Futuna-Aniwa (New Hebrides) puli-a, pile up, as in the creation of the islands, while samba is clearly related to Kâte sambân, if not borrowed from it. There is obviously much more to be done within this area yet.

4.1.3.2. PHONOLOGIES OF THE VOGELKOP AND NORTH COAST AUSTRONESIAN LANGUAGES

Very little work seems to have been done on the AN languages of the Vogelkop and north coast since the end of the last century, when Hendrik Kern (1885, 1900) reviewed materials available and tried to establish Oceanic connections. The absence of any concept of PAN at that time

hindered this, and the time is now ripe for further study. More information has come to hand on the Vogelkop (VK) area, especially in the vocabularies published by Anceaux (1961), and dictionaries of Numfor (van Hasselt 1947) and Waropen (Held 1942a; 1942b). There is still no dictionary of Windesi dialects, but a grammatical study by Cowan (1955) and van Balen's (1915) materials help this out. The official Dutch vocabularies used by Cowan (1953a; 1953b) provide some help for these and for the Bomberai Peninsula languages. The north coast languages have been newly studied by Grace (1971), limiting himself, however, to vocabulary material of his own gathering.

In his analysis Grace deals with the Sarmi coast languages only; Kern gave an analysis of Numfor and Yotafa (now called Tobati). Cowan has provided a certain amount of new material in Ormu and Tobati in the east, and the present writer has done some work on these languages also. Cowan has also given attention to the Bomberai languages.

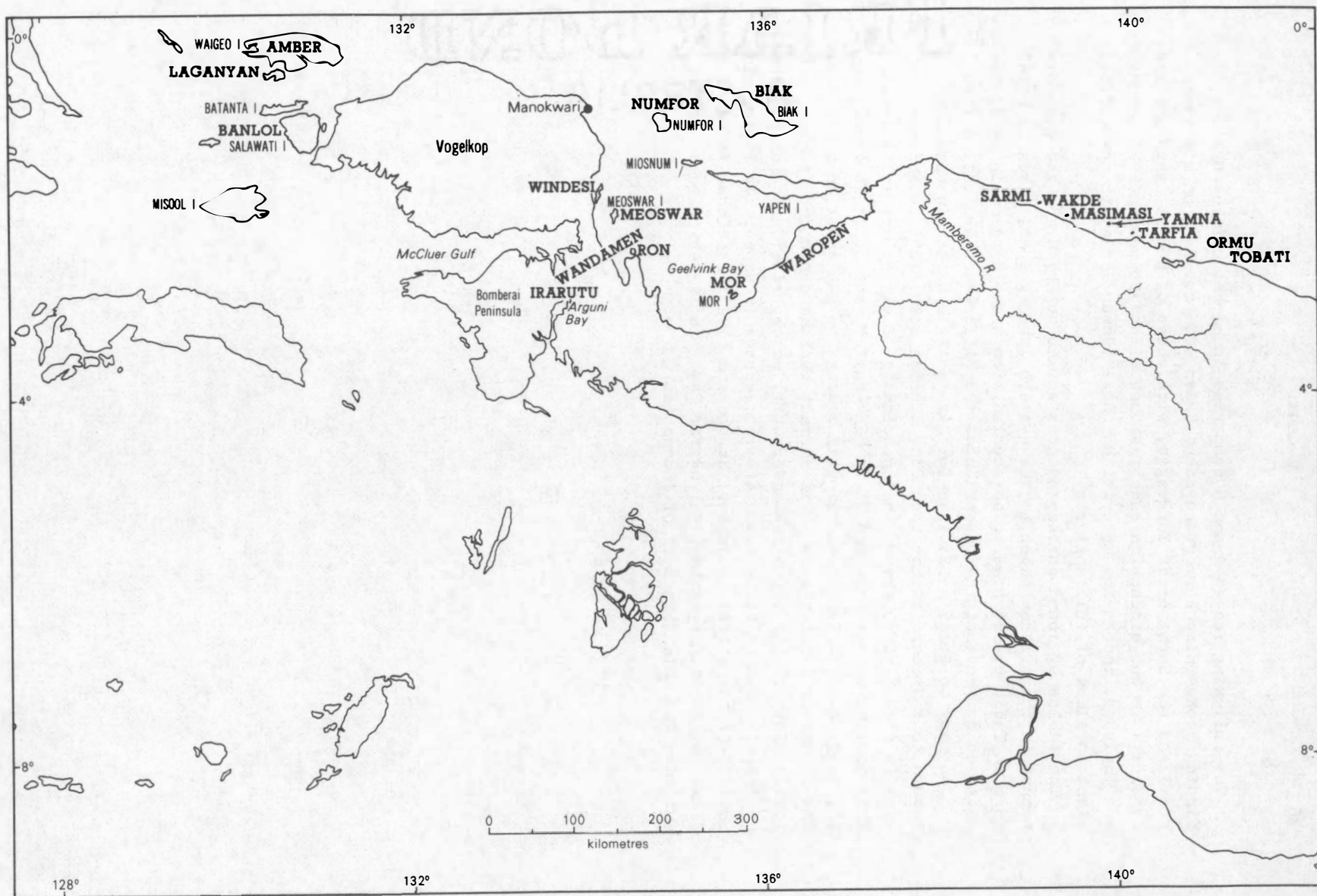
These languages present no such problem regarding unusual sound systems as appears in Sio. Their phonologies are as simple as those of the NAN West Papuan Phylum (WPP) in general (see chapter (I) 2.10.1.). The problem here is to explain sound changes that take place in the process of assimilating AN lexemes, and this is particularly the case in Biak-Numfor.

Grace's findings concern Sobel, Wakde, Masimasi, Anus, Bonggu and Tarpia (or Tarfia) on the north coast. Cowan had called the last named Tarfia, and Grace (1971:15) says, "Tarpia p is in fact frequently articulated as a bilabial continuant". His conclusions about these languages are as follows:

The evidence shows no reason to doubt that these languages belong to the Oceanic subgroup of Austronesian. Although there were, not surprisingly, a number of instances where it was impossible to account for the particular reflex of a particular Proto-Oceanic phoneme in a particular form, I am not aware of any cases where the explanation would benefit from recourse to Proto-Austronesian reconstruction rather than Proto-Oceanic. On the other hand, all of the array of phonological developments that characterize Proto-Oceanic as distinct from Proto-Austronesian appear to be reflected. (Grace 1971:31)

When the Vogelkop languages are considered, however, the reflexes are often different, and it does seem better to look to PAN than to POC in some cases, e.g. final consonants, all of which are bracketed in Grace's lists, are frequently found in the VK languages, especially Biak-Numfor (BN), and this would betoken a different and probably earlier origin for these languages, as is quite intelligible from their geographical position.

The 81 words used for comparison in Grace's list are appended to this section as Table A with their correspondences in Biak-Numfor, Wandammen (Windesi) and Waropen.



MAP II: AUSTRONESIAN LANGUAGES IN IRIAN JAYA

The following Tables A and B summarise in barest outline Grace's findings concerning correspondence between POC (not PAN, on his statement) and the Sarmi coast languages, with those of the VK languages side by side. In the discussion some features of the Bomberai (BOM) languages are included, though the material on these (Cowan 1953a) is not sufficient to allow of full analysis.

The tables of sound correspondences worked out by Grace and then extended in the present paper to the western languages are given in brief form in Table B, but need to be studied with Grace's paper in hand. Some detailed comments of the resemblances and differences are called for.

Contrary to Grace's findings for Sarmi, it is better in some cases to return to PAN roots rather than POC, because some final consonants are kept in Biak-Numfor, where final consonants of all groups are allowed. This applies to words 26 and 51 in Biak-Numfor, and 68 in Waropen. In 26, *vein*, Biak-Numfor *urek* obviously belongs to PAN *uRat, not POC *waRo. The change of final *-t to -k is normal; but the consonant is kept, not lost. Similarly in 51, Biak-Numfor *wa:r*, *water*, *river*, retains PAN *-R of *wayeR. Number 68, Waropen *niwari*, *coconut* is especially interesting because of the medial consonant: Stresemann (1927) laid down *niweR for Seran and Ambon, as against *niyuR for PAN. It is very rare to find evidence for this form east of Indonesia.

TABLE A

Correspondences between PAN, POC, Biak-Numfor, Wandammen (Windesi) and Waropen

English	PAN	POC	Biak-Numfor	Wandammen (Windesi)	Waropen
1. <i>fruit/seed</i>	buah	pua(q)	bon	buo	-bo, -wo
2. <i>bird</i>	manuk	manuk	man	aya	mani
3. <i>come</i>	maRi	mai	ma	rama	ede
4. <i>cry</i>	taŋit'	taŋi(s)	kaněs	sai(s)	anisa
5. <i>ear</i>	taliŋa	taliŋa	kna(ram), knamin	taradir	na(ro)rei
6. <i>leaf</i>	d/ḍawen	(n)dau(n)	ram	rau	rana
7. <i>mountain</i>	gunuŋ	solo	bon	wi(s)	boira
8. <i>nose</i>	ig'uŋ	isu(ŋ)	sno-	suo	niha, niabo
9. <i>sand</i>	(h)enay	qone	yen, ka(r)yen	rubna(n)	nafa
10. <i>sharp, tooth</i>	tad'em	(ŋ)mata	amsok		
11. <i>skin</i>	kulit	kuli(t)	kef, kir	sor	uda
12. <i>stone</i>	batu	patu	karu, keru	rovuki	rewano, wai
13. <i>water</i>	ndanum, wayeR	(n)danum	dur, rur	maria	masino, rauno
14. <i>ye</i>	kamiw	kamu	mko	miat	mu

English	PAN	POC	Biak-Numfor	Wandammen (Windesi)	Waropen
15. <i>two</i>	ḍuwa	dua	suru	monu, muandu	woru (inan) nandu (an)
16. <i>three</i>	telu	telu	kior	toru	oro(inam) nanagoro
17. <i>eye</i>	mata	mata	mga(mor)	re*	(k)ambeisi
18. <i>feather</i>	bulu	pulu	bur	baburu	wuro
19. <i>fire</i>	apuy	api	for	adia	sa
20. <i>hit, kill</i>	bunuh	punu(q)	mun	mun	muna
21. <i>husband</i>	t'awa	soa	swa-	sawa(ni)	
22. <i>louse</i>	kutu	kutu	uk	koir, (r)utu	wui
23. <i>man, person</i>	tawu+matah	ta(η)mata	snun	mua(n)	mano
24. <i>name</i>	ag'an	a(n)sa(n)	sno-	sano	nasano
25. <i>new</i>	behaRu	paqoRu	babo	boa, woa	baboru
26. <i>rope, vein</i>	uRat	waRo	urek, kapurik	wair	arino

* Root PAN *dahay, *forehead*; POC *(n)da(η)ma, in Waropen as re = *forehead*.

English	PAN	POC	Biak-Numfor	Wandammen (Windesi)	Waropen
27. <i>sew</i>	d'ahit	saqi(t)	sip, sasip		
28. <i>stab, shoot</i>	t'ut'uk	(n)soka	kfo	diana	
29. <i>woman</i>	(ba)binay	mapine	bin	babi(n); vinie = <i>wife</i>	binō
30. <i>four</i>	empat	pa(t)	fiak	at(e)	ako
31. <i>tree</i>	kaya	kai	ai	ai	a; ai
32. <i>body</i>		tini-	kraf	tarai (<i>flesh</i>)	dai, ado
33. <i>breast</i>	t'ut'u	susu-	sus	susu	susi
34. <i>who?</i>	t'ayi	(n)sai	isei	tei	eno
35. <i>eat, meat</i>	kaen	kani	a:n, par	a:n	ano
36. <i>shoot</i>	panah	pana(q)	kfo	diana	ana
37. <i>tail</i>	ikuR	iku	pur(a)	kapupui	fera
38. <i>five</i>	lima	lima	rim	rim	rimo

English	PAN	POC	Biak-Numfor	Wandammen (Windsesi)	Waropen
39. <i>thick</i>	beta!	matolu	kpor	bitoyar	
40. <i>snake</i>	ulaR	(ŋ)mata	ikak	korow, tawai	(w)oro
41. <i>liver</i>	hatay	qate	ken		niha do rana-
42. <i>root</i>	waka!	waka	rares	war	wai
43. <i>adze</i>		paRaRa	mgan	tama	mano
44. <i>mosquito</i>	ńamuk	namu(k)	raprap, mumes	kamumui(d)	nini
45. <i>octopus</i>	kuRita	kuRita	sirobede	yamberawati	
46. <i>pig</i>	babuy	(m)poRo	roman	pimuna	(aro)fo
47. <i>thunder</i>		kuru	karadu(r)	kuruya	dora-ruru <i>sky-noise</i>
48. <i>fat</i>	mińak	(ŋ)mona(k)	mafen, bob	m(i)ai(n)	mana
49. <i>father</i>	(t)ama	tama	kma-	tama	daidai
50. <i>to fly</i>	lembaw	Ropo	rob	sapop	era
51. <i>river</i>	wayeR	wai(r)	wa:r	maria	

English	PAN	POC	Biak-Numfor	Wandammen (Windsesi)	Waropen
52. <i>tooth</i>	ipen	nipo(n)	na(kor)	dire	(k)e(n)asa
53. <i>to tie</i>	Raput'	paqu	fes	kaisesi	
54. <i>heavy</i>	belat	mapa	rao		
55. <i>hot, warm</i>	panat'	mapana(s)	same, dares	mas	siko
56. <i>star</i>	bituhen	pituqo	mak, atarua	isberere	siwerere
57. <i>vagina</i>	puki	puki	fi-		
58. <i>ten</i>	esa-ŋa- puluh	saŋapuluh	samfur	sura	saguro
59. <i>behind</i>	huḍi	mudi	warpur		furi
60. <i>island</i>	nut'a	nusa	mios, meos	nu	nusa
61. <i>twist</i>	biliŋ	pi(dr)i	amar, bayer		
62. <i>how much?</i>	pig'a	pi(n)sa	beso		
63. <i>hungry</i>	lapaR	pitolu	biser	babis	
64. <i>younger brother</i>	(t)ag'i	ta(n)si	beknik	madjawi	

English	PAN	POC	Biak-Numfor	Wandammen (Windesi)	Waropen
65. <i>stick</i>	teken	toko(n)	akion		
66. <i>child</i>		natu	romgun		kuo
67. <i>sugarcane</i>	tebu	topu	kop	tobu	kowu
68. <i>coconut</i>	niyeR	niu(r)	srai, aimani	a(η)kadi	niwari
69. <i>outrigger</i>	(saRaman)	(n)sama	adi, mandjaw	soma(n)	somano
70. <i>paddle</i>	beRsay	po(n)se	daun	bo, vo	wo (vb.)
71. <i>food</i>	paŋan	ŋaŋa	fa:n		
72. <i>house</i>	Rumah	Ru(η)ma(q)	rum	anio	rum
73. <i>night</i>	beŋi	(η)poŋi	rob	diru	rana, yana
74. <i>roof</i>	atep	qato(p)	os	babus, nandau	sira
75. <i>pandanus</i>	paŋdan	pada(n)	jar, rek	utin	sapa
76. <i>betel(nut)</i>	(buah)	(m)pua	vine, nam	reman	nana
77. <i>bark cloth</i>		malo	if (= bark)	rawa (= bark)	

English	PAN	POC	Biak-Numfor	Wandammen (Windsesi)	Waropen
78. <i>we</i> (incl.)	kita	ki(n)ta	ko	tata	iko
79. <i>we</i> (excl.)	kami	kami	(i)ŋgo	amat	ami, amo
80. <i>dry</i>	mag'a	mamasa	miais, syor	sinaya, miasa	daka
81. <i>bamboo</i>	hau!	qau(r)	amen		anasa
82. <i>hear</i>	deŋeR	(n)doŋo	mnaŋ, rower	-diawa	ria(wara)
83. <i>inside</i>	dalem	lalo	ro	na	raro, na
84. <i>choose</i>	wilit'	pili(q)	sra	doria	
85. <i>canoe</i>	wanŋaŋ	wa(ŋ)ka(ŋ)	wa(i)	wa	wa, Ya
86. <i>braid rope</i> : see 61					
87. <i>bury</i>	tanem	yanu(m)	erak	sarai	
88. <i>banana</i>	punti	pu(n)ti	mnef, byef	(h)ui	(n)ando; ui

TABLE B

Consonant Changes from POC to Sarmi Coast and to Biak-Numfor

POC	Sarmi Group	Biak-Numfor
p	f in all but Tarpia	f
p	b in Sobei, Wakde	b,w
t	b Tarpia non-high vowels	k,g
t	s Tarpia before high vowels	s
-t	? Tarpia before consonant of final	-
s	s generally	s
s	t Tarpia	-
s	h Wakde	-
R,l,d,r	r (see comment)	r,n (naga < *lanit, sky, by assimilation)
k	k	k,ϕ
m	m	m
n	n	n
n	n	n
q	ϕ	ϕ
w	w	w

A separate study of these western languages is called for; it is impossible to say all that should be said here. There are many features which differentiate Biak-Numfor from the Sarmi languages. One is the actual number of cognates of Grace's eighty-one roots which are found there, and the fact that there is no full overlap of AN material in the languages in any case. The present lists and the summary on Table B are unsatisfactory in that they need full explanation which cannot be given here.

Brief comments may be made on essential points in which these languages are differentiated from the more easterly. Windesi-Wandammen both have a final -t on the plural pronouns, and this would appear to be the final consonant of *empat, *four*, so that these languages are to be affiliated with the group, scattered as far as the New Hebrides, in which the plural formations were originally quadruples (Capell 1971:261). Biak-Numfor is not included in this feature, but Windesi definitely has it.

The change of *t to k or g is a feature of Biak-Numfor. *t becomes k if the m follows it, g if the m precedes it: *t-ama, *father* > kam-;

*mata, *eye* > mga-; in compounds of the latter: mga+ru, *tears* < *mata, *eye* + *danum, *water*; mga-wur, *eyelash* < *mata + *bulu, *hair*. The same structure appears in such seemingly NAN words as the pair mgarem, *voice* and mgaren, *sound, noise*. The word mga:n, *axe* answers to Windesi tama:n, as it should but it does not seem to be AN. The pronoun of the 2nd plural mgo looks like representing *kamu but if so it is an extraordinary reversal. Clear is mka:k, *fear* < *ma + *takut.

In quite a number of cases, even in this short vocabulary, an initial m appears where it would not be expected, and will present an amalgam of the AN verbalising prefix *ŋ with a bilabial or other plosive beginning the original stem. Examples are seen in muk < *putus, *break off*; this, however, is typically Polynesian formation, as seen, e.g., in Maori and Samoan nutu, *broken off*; others are seen in mun, *hit*, *bunuh through *mbunuh from *ŋbunuh. The word menu, *village*, represents *banuwa, *mainland*: a study of the variations of meaning in this word over the Pacific could be of interest and value; m initials are found in this area of New Guinea including part of the north coast. The word mumes, *mosquito* may possibly represent PAN *njamuk by -k > -s, and assimilation of the two nasals of the preceding syllables. Sobel shows namu regularly, and Windesi ka-mumu with a prefix.

Waropen loses AN finals as a rule (Held 1942a:18) but some are supported especially loanwords: Malay kapal, *ship* > Waropen kapari, or Dutch fiets, *bicycle* > Waropen fisi. But n and r appear as finals in nouns and verbs, and m also in verbs. In many instances a putative final is supported by -o, which is dropped when a suffix such as the article -ya is added, e.g., urano, *pot* < PAN *kuḍen, with suffix, uran-ya. At any rate, PAN roots came into Waropen with final consonants. On page 21 Held points out that many verbs hesitate between a spirant and k, as in anisa/anika, *cry*; sera/seka, *tie up*; ufa/uka, *blow*, but the group is a closed one. Even ku, *child* represents PAN *natu.

As the present chapter is only incidentally concerned with the type of phonetic detail discussed above, no attempt will be made to study vowel changes, which seem to be complicated, as Grace remarked for the Sarmi languages also. Thus Waropen ora, *sun*, is clearly PAN *ag'aw; Blak has or and Windesi wor. The vowel change here in fact occurs earlier, for it is in Buli wo:l in southern Halmahera. In fact, there is a close relationship all around the west end of New Guinea with these islands beyond New Guinea, but this cannot be discussed at this point. Thus, for instance, Buli fun, *dog* is linked with Waropen una and Windesi wona, but not with Blak-Numfor (BN) naf. Again some apparent correspondences raise difficulties, e.g., Windesi ru, *head*, BN rwu, which seem to have a connection with *ulu, but it is not clear, as BN rwa-, *hand*, links

with Windesi wara, Waropen waha, but is not PAN. There are local substrata to be found. The pronoun of the list sg., BN aya, links with Buli and East Indonesian aya, which appears in eastern New Guinea, but seems to be found only east of Celebes: what is its relation to *aku, with which Windesi yau is more clearly connected? The latter is POC and present also in PEO, but is not PAN. BN bin, *woman*, does not link clearly with Grace's POC *mapine, but with PAN *binay, with which Waropen bino agrees, but Windesi babi(n) goes back to the reduplicated *babinay. In Salawati, Batanta has mepine, which occurs eastward in Manam mapine.

Similarly there has not been space to relate the Bomberai Peninsula AN forms to those of the north coast. Cowan (1953a) gives a fair amount of vocabulary, a good deal of which looks towards BN rather than east Geelvink areas; the change of s to k, characteristic of Waropen, is found in Sekar, but seeing the tendency in Sarmi to change t to s and s to t, there is probably a linkage here to be found. The short list of twenty words given in Table C, based on materials in Cowan 1953a show variations of words - so far as they are documented - from Salawati and Waigeo, through Numfor and Windesi into the Bomberai Peninsula area.

TABLE C

Words from Salawati, Waigeo, and the Vogelkop, compared with Bomberai Peninsula words (not necessarily AN)

English	Laganyan	Numfor	Windesi	Sekar	Arguni	Banlol	Batanta	Maya
<i>arrow</i>		mga:n	taman		sus			
<i>bake</i>	ɓlap	kun	nunu	tuni	simharha			
<i>bird</i>	tapiopio	man	afa	manik	mani	rim	min	mini
<i>breast</i>	su	sus	susu	susu	sus			
<i>coconut</i>	nu	sra	akadi	rur	naur	niyu	nyu	nu
<i>cut off</i>	kop	spa:f	kutu	mitaraya	worari			
<i>eye</i>	tabum	mga-	re*			tam	tan	tan
<i>father</i>	mam	kma-	tama-					
<i>fire</i>	lap	for	adia	yafe	iyaf	lap	lap	lap
<i>fish</i>	inen	iyen	dia:n	sair	sair			
<i>house</i>	um	rum	anio	ruma	ruma	nuwan	nuu	um
<i>island</i>	yef	mios	nu			ex	ef	yef
<i>louse</i>	ut	uk	rutu					
<i>man</i>		snu:n	mwa(n)	marara, mesia	maran, mesia	matju	matju	matu
<i>pig</i>		roman	pimuna			bo	bo	bo
<i>stone</i>		keru	requki			(a)pat	(a)patja	(a)patja
<i>sugarcane</i>	top	kop	tobu			top	top	top
<i>tree</i>	gawo	ai	ai	kai	ai	ai	ai	ga
<i>water</i>	waya	wa:r	durmaria	kirawar	wi:r	wei	blek	luwo
<i>woman</i>	pin	bin	bab in	bate	popin	bin	mebin	pin

* PAN *ɗahay, forehead

N O T E

1. In an earlier treatment, the author used the reverse ordering: languages with SOV and postpositions were classed as AN₁ and those with SVO and prepositions were classed as AN₂ (Capell 1969). In the second study (Capell 1971:241 ff.) he changed to the present arrangement, but apparently failed to make clear the fact of this change and caused some confusion to readers. The first ordering was made when only New Guinea languages were under consideration, and the differences of the two subgroups within New Guinea were the only matter of consideration. When the whole of the AN areas were included, the SOV + postposition languages are obviously in the minority and the reverse numbering seemed preferable. Here the second arrangement will be maintained because the matter of discussion is the subgroup of New Guinea languages within the whole AN family.

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P A R T 4.2.

HISTORY OF AUSTRONESIAN LINGUISTIC RESEARCH IN THE
NEW GUINEA AREA

