

# **On the Development of Number Systems in Oceanic Pronouns<sup>1</sup>**

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## **Abstract**

Issues related to the development of multiple number systems in Oceanic languages are discussed in this paper. Two principles associated with number system change (number decrease and number increase) will be discussed, with data from various Oceanic languages. It is claimed that these are dynamic changes that have been constantly taking place in languages, rather than different languages showing a stage each of a sequence of a single change from Proto-Oceanic. Possible motivations for the changes that took place in Oceanic languages, in contrast to those that took place in Philippine and Malay type languages, are also discussed.

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## 1 Introduction

Andrew Pawley's contributions to the study of Austronesian languages include reconstruction of various linguistic aspects of the ancestral language commonly shared by Oceanic languages, namely, Proto Oceanic, as well as those of its daughter proto-languages, such as Proto (Central-)Eastern Oceanic and Proto Polynesian.

Among the reconstructions proposed by Pawley is a paradigm of personal pronouns for Proto Eastern Oceanic, which is shown in (1).

(1) Proto-(Central-)Eastern Oceanic (based on Pawley 1972)

FOCAL (=INDEPENDENT) PRONOUNS

	1IN	1EX	2	3
SG	-	*i-nau	*i-koe	*ia, *i-nia
DL	*ki(t,d)arua	*kamirua	*kamurua	*(ki)rarua
TL	*ki(t,d)atolu	*kamutolu	*kamutolu	*(ki)ratolu
PL	*ki(t,d)a	*kami, *kamami	*kam[i]u	*(k)ira

This reconstruction reflects a system with multiple number distinctions, one of the common characteristics of languages belonging to the Oceanic language family. It is assumed that dual and trial numbers were a part of the reconstructed system and that the grammatical number of the referent was not optional but needed to be chosen in every context where a pronoun occurred.<sup>2</sup>

Pawley's Proto Eastern Oceanic corresponds to what is now referred to as Proto Central-Eastern Oceanic, one of the immediate daughter proto-languages of Proto Oceanic. However, unlike the reconstructed system shown in (1), a recently presented

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<sup>2</sup> Optional number indications, such as "you two" in English, are not considered to be the equivalent of the "dual" number such as the one shown as a part of the system shown here.

reconstruction of the pronominal system of Proto Oceanic shows only a two number contrast (LRC 2002:67). The reconstructed Proto Oceanic system is shown in (2) and an accompanying statement to it is cited in (3).

(2) Proto-Oceanic (LRC 2002:67)

INDEPENDENT PRONOUNS

	1IN	1EX	2	3
SG	-	[i]au	[i]ko[e]	ia
PL	kita	ka[m]i, kamami	ka[m]u, kamiu	[k]ira

(3) A note accompanying the reconstructed Proto-Oceanic pronominal system (LRC 2002:69)

“There is good evidence that the numerals \*rua ‘2’, \*tolu ‘3’, and perhaps \*vat[i] ‘4’ were cliticised to independent and possessor non-singular forms to mark dual, trial, and paucal number respectively, giving, for example, \*[k]ira=tolu ‘they three’ and \*=dra=tolu ‘of them three’. When they served as clitics, \*rua and \*tolu were optionally reduced to \*ru and \*tou (the latter reflected in Yapese, the Admiralties, the Willaumez languages, Fiji and Polynesia).”

This statement implies that number indication was optional, although there is no statement clearly indicating whether this is what is intended or not.

These reconstructions, then, imply that in Proto-Oceanic, number indication was optional, while it was already grammaticalised in Proto Central–Eastern Oceanic.

However, the distribution of the different number systems in Oceanic languages today, shown in Figure 1, does not support such a hypothesis.

[Figure 1 about here]

Different number systems are often found in a single language family, regardless of whether the group belongs to the Central–Eastern Oceanic group or not. However, at the same time, it is true that some tendencies are found within each lower subgroup. For example, the majority of Micronesian languages show two-number systems, while the majority of Fijian languages show four-number systems. The existence of studies

where local changes in the number systems are discussed (Geraghty 1983, Lynch and Ozanne-Rivierre 2001, etc.) cannot be ignored in this context, because these studies imply that change in number contrast in the pronominal systems may be relatively recent, local events rather than being inherited from an earlier system.

This paper focuses on the development of the diverse number systems in Oceanic pronoun systems and shows that remnants of number increase and decrease can be identified based on currently found pronominal forms. It will be argued that Oceanic number systems are likely to have been undergoing continuous dynamic change, rather than exhibiting results of a single set of changes that took place in their parent language(s) as implied in previous studies. An explanation as to why this has been taking place only in Oceanic languages (and not in non-Oceanic languages) will be also discussed.

In Section 2, an overview of different number systems observed in Oceanic languages is provided. The developments of multiple number systems are discussed in Sections 3 and 4. In Section 3, some cases of number increase in Oceanic pronominal systems are illustrated. I will point out the following two tendencies found in cases where number increase is identified. First, the process typically starts with the spread of independent pronouns to the other sets. Second, when the grammaticalisation of the number system takes place, it typically reflects the word order of quantified noun phrases. Languages can often be identified as undergoing either/both of these processes, supporting the proposal that multiple-number systems are not necessarily inherited but at least in some languages are newly acquired features as a result of recent innovation. In Section 4, cases where number contrast decrease took place are dealt with. Unlike increase in pronominal number contrast, decrease in number contrast has not received

much attention in previous studies. I will first propose a principle that can be used to identify cases of decrease in number contrast. Then, applying the proposed principle, I will propose modifications to, or different explanations for some previous reconstructions of pronoun number systems.

All the cases discussed in Sections 3 and 4 point to the fact that the number systems in pronouns have been undergoing dynamic change rather than exhibiting changes that have been inherited from their commonly shared proto-system. This raises a question as to why this is so in Oceanic languages and not in non-Oceanic languages. In Section 5, the number systems in Oceanic, Philippine languages and some in Indonesia will be compared, and possible preconditions and explanations for the three different types of changes that are observed are discussed.

## **2 Different number systems in Oceanic languages**

Many Oceanic languages exhibit a multiple-number system and the numbers which occur in any given pronoun system varies from language to language. In this Section, examples of different number systems, from two-number distinctions up to five-number distinctions, are shown.

The simplest system is shown in (4), where we find a two-number system in which only SINGULAR and PLURAL are contrasted. Systems of this type are typically observed in Papuan Tip languages and Micronesian languages; they are also found in languages in Vanuatu.

(4) Two-Number System (Gapapaiwa, Papuan Tip, McGuckin 2002:299)

INDEPENDENT PRONOUNS

	1IN	1EX	2	3
SG	-	<i>taku</i>	<i>tam</i>	<i>tuna</i>
PL	<i>tota</i>	<i>tokai</i>	<i>tami</i>	<i>ti</i>

In three-number systems, in addition to singular and plural, a set of pronouns whose referents are limited to two individuals is found. Such pronouns are referred to as DUAL. Three-number systems are found in languages such as Ponapean, Polynesian languages, Rotuman, languages in New Caledonia, the Admiralties, Solomon Islands and Vanuatu. Examples of three-number systems are shown in (5) and (6).<sup>3</sup>

(5) Three-Number System (Bali Vitu, Meso-Melanesian, an isolate in the Admiralties Ross 2002a:365, 368)

INDEPENDENT PRONOUNS

	1IN	1EX	2	3	
SG	-	<i>hau</i>	<i>oho</i>	<i>ia</i>	
DL	<i>toro</i>	<i>miro</i>	<i>moro</i>	<i>ziro</i>	(‘two’ <i>rua</i> )
PL	<i>hita</i>	<i>hami</i>	<i>hamu</i>	<i>hizi</i>	(‘three’ <i>tolu</i> )

(6) Three-Number System (Marquesan, Polynesian, LRC 2002:867, 869)

PERSONAL PRONOUNS (there is only one set)

	1IN	1EX	2	3	
SG	-	<i>au, ‘u</i>	<i>‘oe</i>	<i>ia</i>	
DL	<i>taua</i>	<i>maua</i>	<i>‘oua</i>	<i>‘aia</i>	(‘two’ <i>‘ua</i> )
PL	<i>tatou</i>	<i>matou</i>	<i>‘otou</i>	<i>‘atou</i>	(‘three’ <i>to ‘u</i> )

A four-number system includes, in addition, a set of pronouns whose referents are limited to three individuals, known as TRIAL, or a set of pronouns whose referents are limited to a small set of individuals, known as PAUCAL. Languages with this system are found in the Admiralties, Vanuatu and the Solomon Islands. Most of the Eastern Fijian

<sup>3</sup> The forms for “two” and “three”, which are relevant when the development of number systems is examined, are also listed in the examples for each language.

languages, and Mokilese, also exhibit a four-number system. Examples are given in (7) and (8).

(7) Four-Number System (Kokota, Solomon Islands, Palmer 2002:501, 503)

INDEPENDENT PRONOUNS

	1IN	1EX	2	3	
SG	-	<i>ara</i>	<i>ago</i>	<i>manei/nai</i>	
DL	<i>gitapalu</i>	<i>gaipalu</i>	<i>gaupalu</i>	<i>reipalu</i>	(‘two’ <i>palu</i> )
TL	<i>gitatilo</i>	<i>gaitilo</i>	<i>gautilo</i>	<i>reitilo</i>	(‘three’ <i>tilo</i> )
PL	<i>gita</i>	<i>gai</i>	<i>gau</i>	<i>maneri ~ rei+NUM</i> <sup>4</sup>	(‘four’ <i>fnoto</i> )

(8) Four-Number System (Anejom~, Southern Vanuatu, Lynch 2002: 727, 730-731)

SUBJECT PRONOUNS

	1IN	1EX	2	3	
SG	-	<i>añak</i>	<i>æk~aak</i>	<i>aen~aan</i>	
DL	<i>akajau</i>	<i>ajamrau</i>	<i>ajourau</i>	<i>aarau</i>	(‘two’ <i>erou</i> )
TL	<i>akataj</i>	<i>ajamtaj</i>	<i>ajoutaj</i>	<i>aattaji</i>	(‘three’ <i>esej</i> )
PL	<i>akaja</i>	<i>ajama</i>	<i>ajowa</i>	<i>aara</i>	(‘four’ <i>emanohowan</i> , or <i>fō</i> )

The system with the biggest number contrast found in Oceanic languages has five number contrasts. In such a system, in addition to sets of pronouns indicating singular, dual, trial and plural referents, an additional set occurs whose referents are restricted to four individuals, referred to as QUADRAL. This system is observed in some languages in the Admiralties and in Meso-Melanesian, and is illustrated in (9).

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<sup>4</sup> “The 3PL form *rei* may only be used with a numeral. With numbers up to about five or six *rei* tends to be used, with numbers greater than that *maneri* tends to be used.” (Palmer 2002:501) In this language, there is no number distinction in the subject agreement system (Palmer 2002:509).

(9) Five-Number System (Mussau, Admiralties, Ross 2002b:152-153)

FREE PRONOUNS

	1IN	1EX	2	3	
SG	-	<i>aqi</i>	<i>io</i>	<i>ia</i>	
DL	<i>italu</i>	<i>(a)galu</i>	<i>amalu</i>	<i>lalu</i>	(‘two’ <i>qalua</i> )
TL	<i>itatolu</i>	<i>(a)gatolu</i>	<i>amatolu</i>	<i>latolu</i>	(‘three’ <i>kotolu</i> )
QL	<i>itaata</i>	<i>(a)gaata</i>	<i>amaata</i>	<i>laata</i>	(‘four’ <i>qaata</i> )
PL	<i>ita</i>	<i>ami</i>	<i>am</i>	<i>ila, agala</i>	

The typological tendency that is observed is that after the basic two numbers, namely, singular and plural, the first one to be added is dual, then trial, then quadral. In other words, if a language has the quadral number, it also has trial, and if a language has the trial number, it always has dual.

It should be noted that although in this section, only independent pronoun systems were presented, the number system may differ among different pronominal sets even within a single language. For example, there are languages where the independent pronoun set has a multiple-number system while the clitic/affix pronominal forms show only a singular/plural contrast, or no number contrast.

### **3 Number increase in pronominal systems**

As reflected in the statement made by Lynch, Ross and Crowley (2002, cited in (3) in Section 1), there is a general recognition that the process of number contrast increase takes place as a result of grammaticalisation of numerals. It should be noted also that the process of number increase commonly begins with numeral modification on independent pronouns, a syntactic process which then becomes grammaticalised. Once the number system is grammaticalised in the independent pronoun set, then the new system spreads from the independent set to the possessive set, then finally to the pronominal formatives occurring on verbs. In order for numeral modification on



independent pronouns to become grammaticalised, it must begin as an obligatory syntactic feature. When the original system contrasts two numbers (singular and plural), the first new number to develop is dual, then trial, and so on, the reverse order from that which takes place in cases of number-contrast decrease. Some examples of clear number contrast increase are shown in this section.

The first example is Molima, spoken in Papua New Guinea shown in (10).

(10) Molima (Papuan Tip, Ross fieldnotes, Engkvist and Engkvist 1997)

	Independent		Possessive		Subject		Object	
	Ross	E&E	Ross	E&E ( <i>a</i> , <i>e</i> )	Ross	E&E	Ross	E&E
1	<i>ya</i>	<i>ya</i>	<i>-gu</i>	<i>-gu</i>	<i>ya-</i>	<i>y-</i>	<i>-gu</i>	<i>-gu</i>
2	<i>o'a</i>	<i>o'a</i>	<i>-o</i>	<i>-u</i>	<i>u-</i>	<i>u-</i>	<i>-u</i>	<i>-u</i>
3	<i>tauna</i>	<i>tauna</i>	<i>-na</i>	<i>-na</i>	<i>Ø</i> , <i>i-</i>	<i>Ø-</i>	<i>-a</i>	<i>-a</i> , <i>-i</i>
1EXPL	<i>ima'a</i>	<i>ima'a</i>	<i>-ma</i>	<i>-ma</i>	<i>a-</i>	<i>a-</i>	<i>-ma</i>	<i>-ma</i>
1INPL	<i>ita'a</i>	<i>ita'a</i>	<i>-da</i>	<i>-da</i>	<i>ka-</i>	<i>ka-</i>	<i>-da</i>	<i>-da</i>
2PL	<i>omia</i>	<i>omi'a</i>	<i>-mi</i>	<i>-mi</i>	<i>o-</i>	<i>o-</i>	<i>-mi</i>	<i>-mi</i>
3PL	<i>taudi</i>	<i>taudi</i>	<i>-di</i>	<i>-di</i>	<i>i-</i>	<i>i-</i>	<i>-di</i>	<i>-di</i>
1EXDL		<i>lua-ma</i>						
1INDL		<i>lua-da</i>						
2DL		<i>lua-mi</i>						
3DL		<i>lua-di</i>						
1EXTL		<i>toi-ma</i>						
1INTL		<i>toi-da</i>						
2TL		<i>toi-mi</i>						
3TL		<i>toi-di</i>						

	Ross	E&E
two	<i>lua</i>	<i>lua</i> , <i>magilafuna</i>
three	<i>toi</i>	<i>toi</i>

The two different sets show data collected by different researchers (one by Ross, and the other by Engkvist and Engkvist), and possibly reflect differences observed in the language between two different periods. It can be seen that the data collected in the 90's include dual and trial forms, which do not exist in Ross's data collected earlier. The numeral formatives, which show the same form as the corresponding independent numerals, occur prefixed to the pronominal base. It should be also noted that the

structure of dual and trial forms parallels that of pronouns preceded by a quantifier (E&E 97:35), as shown in (11).

- (11) Molima (Engkvist and Engkvist 1997:35)  
*qabu-di*  
 many-3PL  
 ‘many of them’

A similar process is observed in Gela, shown in (12). As in Molima, the numeral formatives, which occur only on independent nouns, are prefixed to the pronominal base. For example, the formative indicating dual is *ro-*, while the formative indicating trial is *tolu-*.

- (12) Gela (Nggela) (Solomon Islands, based on Crowley 2002:527-528, 532-533)

	Independent	Possessor	Subject			Object						
			Past	Present	Future							
1	<i>(i)nau</i>	<i>-gu</i>	<i>u</i>	<i>tu</i>	<i>ku</i>	<i>-u</i>						
2	<i>(i)yoe</i>	<i>-mu</i>	<i>o</i>	<i>to</i>	<i>ko</i>	<i>-yo</i>						
3	<i>gaya</i>	<i>-na</i>	<i>e</i>	<i>te</i>	<i>ke</i>	<i>-a</i>						
1EXPL	<i>(i)yami</i>	<i>-mami</i>	<i>tai</i>		<i>kai</i>	<i>-yami</i>						
1INPL	<i>(i)yita</i>	<i>-da</i>	<i>ta</i>		<i>ka</i>	<i>-yita</i>						
2PL	<i>(i)yamu</i>	<i>-miu</i>	<i>tau</i>		<i>kau</i>	<i>-yamu</i>						
3PL	<i>gaira</i>	<i>-dira</i>	<i>(ta)ra</i>		<i>kara</i>	<i>-ra</i>						
1EXD L	<i>royami</i>	<table><tr><td>‘two’</td><td><i>rua</i></td></tr><tr><td>‘three’</td><td><i>tolu</i></td></tr><tr><td>‘four’</td><td><i>vati</i></td></tr></table>					‘two’	<i>rua</i>	‘three’	<i>tolu</i>	‘four’	<i>vati</i>
‘two’	<i>rua</i>											
‘three’	<i>tolu</i>											
‘four’	<i>vati</i>											
1INDL	<i>royita</i>											
2DL	<i>royamu</i>											
3DL	<i>rogaira</i>											
1EXTL	<i>toluyami</i>											
1INTL	<i>toluyita</i>											
2TL	<i>toluyamu</i>											
3TL	<i>tolugaira</i>											

Although in both Molima and Gela shown above, number formatives occur prefixed to pronominal bases, Oceanic languages typically suffix number formatives to their pronominal bases. In Bali-Vitu shown in (13), the ending *-ro* occurs on the dual forms of independent and possessor pronouns.

(13) Bali-Vitu (Ross 2002a:365, 368, 374)

	Independent	Possessor	Subject/mood					Object
			real	real. perf	real: habit	cf	irr	
1	<i>hau</i>	<i>-gu</i>	<i>ta</i>	<i>te</i>	<i>na</i>	<i>na</i>	<i>ma</i>	<i>-a</i>
2	<i>oho</i>	<i>-mV</i>	<i>to</i>	<i>tu</i>		<i>nu</i>		<i>-ho</i>
3	<i>ia</i>	<i>-na</i>	<i>te</i>	<i>ti</i>		<i>ni</i>	<i>mi</i>	<i>-Ø</i>
1EXPL	<i>hami</i>	<i>-mi</i>						<i>-</i>
1INPL	<i>hita</i>	<i>-da</i>						<i>-</i>
2PL	<i>hamu</i>	<i>-mu</i>						<i>-miu</i>
3PL	<i>hizi</i>	<i>-di</i>						<i>-nazi</i>
1EXDL	<i>miro</i>	<i>-miro</i>						
1INDL	<i>toro</i>	<i>-oro</i>						
2DL	<i>moro</i>	<i>-moro</i>						
3DL	<i>ziro</i>	<i>-diro</i>						

‘two’ *rua*  
 (‘three’ *tolu*)

Innovated dual and trial pronouns showing a phrase structure parallel to that of other noun phrases, such as has been described for Molima and Gela, are also found in languages where the numeral formatives are suffixed. Manam is such a language in which the structure of numerically modified pronouns parallels the structure of other modified noun phrases. According to Lichtenberk (1983), a “buffer” sound (glossed as BUF in examples below) occurs, both in numerically modified pronouns as well as in other modified noun phrases. First, the pronominal forms of Manam are presented in (14). Examples where numerals modify a demonstrative pronoun are shown in (15)a-d.

(14) Manam (based on Lichtenberk 1983:111, 270)

	Independent	Possessor	Subject/mood		Object
			reali s	irreali s	
1	<i>ŋau~ŋa</i>	<i>-gu</i>	<i>u-</i>	<i>m-</i>	<i>-a</i> (+stress)
2	<i>ʔaiʔo~ʔai</i>	<i>-ŋ</i>	<i>ʔu-</i>	<i>go-</i>	<i>-iʔo(-ʔo)</i>
3	<i>ŋai</i>	<i>-Ø</i> (+stress)	<i>i-</i>	<i>ŋa</i>	<i>-i, -Ø</i> (+stress)
1EXPL	<i>ʔeʔa</i>	<i>-ma</i> (+stress)	<i>ʔi-</i>	<i>ga-</i>	<i>-ʔama</i>
1INPL	<i>ʔita</i>	<i>-da</i>	<i>ta-</i>		<i>-ʔita</i>
2PL	<i>ʔaŋ~ʔaʔamiŋ</i>	<i>-miŋ</i>	<i>ʔa-</i>	<i>ʔama-</i>	<i>-ʔamiŋ</i>
3PL	<i>di</i>	<i>-di</i>	<i>di-</i>	<i>da-</i>	<i>-i (-Ø), -Ø, -di</i> (+stress)
1EXDL	<i>ʔe-ru</i>	<i>-ma-i-ru</i>	<div style="border: 1px solid black; padding: 10px;"> <p>‘two’ <i>rua</i>  ‘three’ <i>toli</i>  ‘four’ <i>wati, usi, ʔiboatutu, paitaʔi</i>  (1983:337)</p> </div>		
1INDL	<i>ʔita-ru</i>	<i>-da-ru</i>			
2DL	<i>ʔan-ru</i>	<i>-min-ru</i>			
3DL	<i>di-a-ru</i>	<i>-di-a-ru</i>			
1EXTL	<i>ʔe-to</i>	<i>-ma-i-to</i>			
1INTL	<i>ʔita-to</i>	<i>-da-to</i>			
2TL	<i>ʔan-to</i>	<i>-min-to</i>			
3TL	<i>di-a-to</i>	<i>-di-a-to</i>			

(15) Manam (Lichtenberk 1983:267)

- a. *áine*      *ŋára-Ø*  
woman      that-3SG      ‘that woman’
- b. *áine*      *ŋára-di*  
woman      that-3PL      ‘those women’
- c. *áine*      *ŋara-dí-a-ru*  
woman      that-3PL-BUF-DL      ‘those (two) women’
- d. *áine*      *ŋara-dí-a-to*  
woman      that-3PL-BUF-PL      ‘those (few) women’

In Manam, it appears that the dual and trial numbers are grammaticalised in the independent and possessor pronoun sets, while with the subject- and object-marking forms, they are not. Some independent pronouns in Manam no longer have a clear

sequence of a buffer *-a* followed by the numeral formative, while the buffer *-a* still occurs on the paucal forms. However, optional subject and/or object number marking can occur on the verb, in which case a “buffer” may occur between the verb ending and the number marking form. An example illustrating such a case is given in (16).

(16) Manam (Lichtenberk 1983:179)

<i>ā-</i>	<i>te-</i>	<i>dī-</i>	<i>a-</i>	<i>ru</i>	‘We (two) saw them’
1EXPL.SUBJ-	see-	3PL.OBJ-	BUF-	DUAL	‘We saw them (two)’
					‘We (two) saw them (two)’

As has been seen in this section, in languages where multiple-number contrasts are found only in the independent set, a numeric formative corresponding to the form of the corresponding numeral occurs either prefixed or suffixed,<sup>5</sup> suggesting that these sequences were not yet grammaticalised in their shared proto-language. Second, when grammaticalisation of the number system takes place, it typically reflects the word order of quantified noun phrases. If this word order is different from the inherited one, then the relative chronological order should be able to be determined (i.e., Ross 1998).

#### 4 Identifying number decrease

Unlike increase in number contrast discussed in Section 3, the decrease of number

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<sup>5</sup> In addition to the cases where languages are clearly undergoing the process of grammaticalisation described in this section, there are many languages which show optional number indication on pronouns, such as Lamen (one of the North and Central Vanuatu languages, LRC 2002:673), Kove (Sato, Hiroko, pers. comm.), and Marshallese (Bender 1969).

contrast that takes place in pronominal systems has not attracted the attention of researchers. A part of the reason for this is probably because linguistic reconstruction is typically based on evidence that *exists* in currently spoken languages, and not on evidence that has been lost. However, remnants of earlier systems are often systematically traceable when comparing paradigmatic data allowing reconstruction of features that have elsewhere been lost. The pronoun number systems in Oceanic languages make one such case. In this section, the principle of identifying number contrast decrease (4.1), and cases where such a principle can be applied (4.2) are presented.

#### **4.1 A principle observed in number reduction**

The principle proposed here for establishing a methodology for identifying decrease in the number contrasts of pronominal systems is based on Geraghty's observation of the developments of Fijian languages. Within the Fijian languages, three different number systems are observed, namely, two-, three- and four-number systems. Based on an examination of the forms of pronouns, Geraghty (1983:195-198) shows that when the contrast in the number of the pronouns becomes fewer, it is the form for the smaller number that is generalised to cover the earlier two numbers.<sup>6</sup> He states that:

“Whenever a number distinction is neutralised, the form that is retained is the one

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<sup>6</sup> Note that another view of this observation is that, when number reduction takes place, it is the result of a sequence of mergers of two adjacent numbers. Thus, for a system with a two-number contrast to develop from one with a four-number contrast, the language goes through a stage in which there was a three-number contrast.

marking the lesser of the two numbers” (Geraghty 1983:198)<sup>7</sup>

One of the specific examples given by Geraghty is schematically shown in (17). In Fijian languages such as Magodro, Noikoro, Batiwai and Bāravi, the number system reduced, with the original plural forms being lost, and the paucal forms being reanalysed as plurals. In the third person, a further reduction took place with the new plural (originally the paucal form) being lost, and the dual form being reanalysed as plural.

(17) Fijian (Magodro, Noikoro, Batiwai, and Bāravi)

	SG	DL	PL
1IN	-		(< PC)
1EX			(< PC)
2			(< PC)
3		(< DL)	

The point that is relevant here is that the kind of change described by Geraghty is not a phenomenon that is limited to Fijian languages. Parallel cases have been identified in a number of other languages. For example, Ross (1988:101) notes that, in some languages in the Admiralties and Meso-Melanesian families, the earlier “quadral forms have replaced the original plurals”. Also, in the description of Iaai, a New Caledonian language (LRC 2002:778), Lynch notes that “...in the first exclusive and second persons, the paucal/plural distinction has been lost—the historically paucal forms mark plural.” And finally, in Yapese, “[d]ual and plural are marked respectively

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<sup>7</sup> Geraghty also notes that “Each Fijian language maintains a constant number of person and number distinctions throughout the various pronoun types used in different syntactic contexts.” (1983:195)

by the suffixes *-w* and *-ð*. POc certainly distinguished four, if not five, numbers ...

Yapese *-w* ‘dual’ evidently reflects POc *\*-ru[a]* with unexpected loss of POc *\*-r-*.

Yapese *-ð* ‘plural’ almost certainly reflects POc *\*-tolu* ‘trial’ with loss of POc *\*-l-*”

(Ross 1996:136).

Given the phenomena associated with the decrease in number contrast, we ought to be able to apply the same principle in the reverse manner when conducting reconstruction. That is, if the formative currently marking (general) plural etymologically comes from the number four, for example, it can be assumed that the language previously had a five number system. Thus, I propose here the hypothesis given in (18), which will be applied in 4.2 to identify number contrast decrease in Oceanic languages.

(18) Number Reduction Principle (NRP)

“If a language has a number in its pronominal system containing a formative which reflects an earlier form having a meaning smaller than that of the currently marked number, then the reconstructed form was part of a system which had a larger number than the current one.”

## **4.2 Application of the number reduction principle**

### **4.2.1 Proto-Southern Vanuatu and Proto New Caledonia**

The proposed hypothesis casts a new light on the Southern Melanesian languages, spoken in South Vanuatu and New Caledonia.

Lynch and Ozanne-Rivierre (2001, hereafter L&OR 2001), in their careful reconstruction of the pronominal forms in Proto-Southern Vanuatu and Proto-New Caledonia, claim that “the Southern Vanuatu languages appear to have adopted a



phonologically modified form of the numeral as a number suffix to pronouns, and have developed a plural suffix from a phonologically modified form of the numeral ‘four’.” Their reconstruction is cited in (19).

(19) Proto Southern Vanuatu (L&OR 2001:41)

PSV NUMERALS		PSV NUMBER SUFFIXES	
*ga-rua	‘two’	*-rau (> *ra-, *u)	‘dual’
*ga-sili	‘three’	*-(t,s)ali (> *(t,s)ai-, *li-)	‘trial’
*gə-vat	‘four’	*-at	‘plural’
*gə-vac	‘four’	*-ac	‘plural’

As has been discussed in 4.1., the plural form carrying a formative that has developed from the number “four” implies that a number contrast reduction from an earlier system has taken place. Southern Vanuatu languages probably once had a pronominal system with a five number contrast (singular, dual, trial, quadral and plural), to eventually neutralise the quadral and plural distinctions in the development of the currently observed number systems. This revised reconstruction, indicated in (20), is also advantageous in that it explains why these languages “developed” a plural suffix from the number four.

(20) Revised Reconstruction of the PSV Number Suffixes

PSV NUMBER SUFFIXES	
*-rau (> *ra-, *u)	‘dual’
*-(t,s)ali (> *(t,s)ai-, *li-)	‘trial’
*-at	‘ <u>quadral</u> ’
*-ac	‘ <u>quadral</u> ’
(form not reconstructable)	‘ <u>plural</u> ’

There are some other facts noted in L&OR 2001 that might be explained by the NRP. For example, in Sye and Ura, two of the languages belonging to the Southern Vanuatu Group, “plural is marked by original trial” (L&OR 2001:40, Table 1). This can

also be interpreted as resulting from the merger of the trial and (new) plural numbers. This claim is further supported by the distribution of different number contrasts found within Sye, however, space does not allow me to go into details. As for Sye, Lynch and Ozanne-Rivierre also note that “We assume that *u-* [marking dual in first persons] was an original dual and that *li-* [marking plural in second and third persons where there is no dual/plural distinction] was an original trial, but that their functions have changed somewhat over time.” Detailed examination of the related forms in this language group combined with the reconstruction method proposed in this paper may help clarify the details of the change in function of these forms.

#### 4.2.2 Micronesian languages

The proposed principle also helps to clarify part of the number development that took place in Micronesian languages.

Mokilese and Ponapean are the only Micronesian languages where more than two numbers are contrasted in their pronominal systems.<sup>8</sup> Mokilese shows a four-number system as shown in (21), while Ponapean shows a mixture of three- and two-number systems as in (22).

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<sup>8</sup> As for Marshallese, although a system where number distinction is described, it is not an obligatory part of the grammar. “The plural absolute [=independent] (and object) pronouns can optionally be further specified as to numbers between two and five by a set of suffixes... when the pronouns thus specified as to number are used as the subject of a sentence, they are treated syntactically as if they were singular and followed immediately by the 3rd person singular subject form.” (Bender 1969:5, underline is by Kikusawa.)

(21) Mokilese Independent Pronouns (based on Harrison 1976:89)<sup>9</sup>

	1IN	1EX	2	3		
SG	-	<i>ngoaa, ngoaai</i>	<i>koaa, koawoa</i>	<i>ii</i>		
DL	<i>kisa</i>	<i>kama</i>	<i>kamwa</i>	<i>ara, ira</i>	two	<i>ria-, roaa- raa-, riaa-, rie-</i>
PC	<i>kisai</i>	<i>kamai</i>	<i>kmwai</i>	<i>arai, irai</i>	three	<i>jilu-, jil-</i>
PL	<i>kiis</i>	<i>kimi</i>	<i>kimwi</i>	<i>iir</i>	four	<i>paa-</i>

(22) Ponapean Independent Pronouns (based on Rehg 1981:157, 125-126)<sup>10</sup>

	1IN	1EX	2	3		
SG		<i>gheei</i>	<i>kowe/ko o</i>	<i>ii</i>		
DL	<i>kita</i>	<i>kiit</i>	<i>kumwa</i>	<i>ira</i>	two	<i>riV-</i>
PL	<i>kitail</i>		<i>kumwail</i>	<i>irail</i>	three	<i>silV-</i>

In thees two languages, it is clear from a comparison of the pronominal forms that the earlier trial (or paucal) forms indicate paucal in Mokilese, while they indicate plural in Ponapean, as shown in (23) with relevant sound correspondences and lexical reconstructions in (24).

<sup>9</sup> Orthographic *h* in Mokilese indicates that the preceding vowel is long. In this paper, long vowels are indicated by a sequence of two identical letters, e.g., *ii* instead of *ih*.

<sup>10</sup> Orthographic *h* in Ponapean indicates that the preceding vowel is long. In this paper, the long vowels are indicated by a sequence of two identical letters, e.g., *ii* instead of *ih*.

(23) Pronoun Correspondences between Mokilese and Ponapean

earlier function		Molikese	Ponapean
1INPL (a)	*kita >	dual	dual
trial/paucal (< 1INPL + 3 <i>ai(l)</i> )	*kitai(l) >	paucal	plural
1INPL (b)	*kiit	plural	1EXDL.PL

(24) Reconstruction of the 1INPL form and relevant sound correspondences  
(Proto-Micronesian, Bender *et al.* 2003; Proto-Eastern Oceanic, Geraughty 1983)

	1INPL	SOUND CORRESPONDENCES		
Proto-Oceanic	*kita	*k	*nt,nd	*t
Proto-Eastern Oceanic	*ki(t,d)a			
Proto-Micronesian	*kica	*k	*c	*t
Proto PC	[*kica]	*k	c	*t
Proto-Ponapean	[*kica]	*k	c	*j,Ø
Mokilese	<i>kiis</i>	<i>k</i>	<i>s</i>	j,Ø [i,u,e]
Ponapean	<i>kiit</i>	<i>k</i>	<i>t</i>	s,Ø [i,u,e]
Proto-Chuukic	*kica	*k	*c	*t

It is likely that the ending *(a)il*, can be associated with the number marking ‘three’, and thus, it is reasonable to conclude that it is Ponapean that is in the process of decreasing its number system, while Mokilese retains a more conservative system.<sup>11</sup>

In the reconstruction of Proto-Micronesian, as of Proto-Oceanic, the number contrasts that were present in the pronoun systems of the proto-language have not been clearly demonstrated. Jackson (1983:118) notes:

“All pronouns [in Trukic/Chuukic languages] are either singular or plural; there is

<sup>11</sup> This conclusion is consistent with the following observation by Harrison (1976:89)

“The remote plural [=plural] pronouns appear to be used very little in Mokilese. In most cases, they may be replaced by the corresponding plural pronouns. The remote plural [=plural] pronouns refer to groups of people, usually large, and most of which are probably not directly present when being discussed.”

no evidence of ‘dual’ or ‘trial’ morphemes as reconstructed by Pawley (1972) for P[roto] E[astern] O[ceanic].” (Jackson 1983:33)

“Evidence for dual and trial forms is found in Ponapeic and Marshallese, however, and apparently in Kosraean. Assuming a Micronesian group, it is an interesting question whether this situation has resulted from independent but parallel development in those three languages, or from loss of an earlier proto-system in Trukic and Kiribati. This particular problem is by no means limited to Micronesia, however.” (Jackson 1983:118)

Mokilese and Ponapean consist of a single lower subgroup within the Micronesian family, and unfortunately, the principle discussed here does not help to determine whether the four number distinction has been lost in other Micronesian languages or whether it was innovated in the group. The simplest conclusion to draw, however, based on the distribution of the three- and four-number contrasts found in this language group, is to assume that they were independent innovations in the Ponapean group.

#### **4.3 Application of the number reduction principle in reconstruction**

In the previous sections, it has been shown that the NRP helps to identify some cases of number contrast decrease. However, actual reconstruction becomes more complicated because of the following facts.

First, because of the basic nature of the change, if this were the only principle operating in change in number system contrasts, one would be able to reconstruct only to the stage immediately preceding the present system. For example, for a system in which a quadral form was used to mark plural it would be possible to reconstruct an

earlier five-number system. However, as the number contrast decrease continues, it would be the trial form that subsequently indicates plural, then, the dual form and so on. Therefore, even though it is possible to determine that the process of number decrease has probably taken place in a language, unless it is the quadral set which is retained for plural, and unless other factors are examined, the exact number reconstructible for its parent language cannot be identified.

The second point to be noted here is that the reverse of the principle apparently is not necessarily true. That is, although it is possible to reconstruct a higher-number system when we find an extra formative occurring on the plural pronouns, not finding such a formative does not necessarily mean that the earlier system did not have a bigger number contrast. One such case is found in Raga, a language spoken in Vanuatu, with the pronominal systems shown in (25). In Raga, independent and possessor pronouns have a three-number contrast (singular, dual, and plural), with no number formative on the plural forms, while Subject (person and number agreement) + TAM (tense/aspect marking) forms occurring on the verb have a four-number contrast (singular, dual, trial, and plural). If one assumes that such forms are more conservative than the equivalent independent and possessor pronouns,<sup>12</sup> then one must conclude that the independent forms have lost an earlier four-number contrast, but have retained the plural forms (instead of the trial forms) to cover both trial and plural in the new system. One may further assume that it is the continued presence of a four-number system on the verb that supports the use of the old plural forms on the independent and possessor pronouns.

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<sup>12</sup> Note that this pattern contrasts with that shown in Section 3, in the context of number increase, where it is the independent pronoun set that shows bigger number contrast.

(25) Raga (Vanuatu, based on LRC 2002:628, 633)

		Indepen- dent	Posses- sor	Subject + TAM <sup>13</sup>				
				Per- fective	Conti- nuous	Future	Condi- tional	Deside- rative
1	SG	<i>inau</i>	<i>-ku~- gu</i>	<i>na-n</i>	<i>na-m</i>	<i>na-v</i>	<i>na-s</i>	<i>na-men</i>
2		<i>g#igo</i>	<i>-mwa</i>	<i>g#o-n</i>	<i>g#o-m</i>	<i>g#o-v</i>	<i>g#o-s</i>	<i>g#o-men</i>
3		<i>kea</i>	<i>-na</i>	<i>nu</i>	<i>mwa</i>	<i>vi</i>	<i>si</i>	<i>men</i>
1EX	DL	<i>kamar u</i>	<i>-maru</i>	<i>g#a-ru</i>	<i>g#a- muru</i>	<i>g#a-ru- vi</i>	<i>g#a-ru- s</i>	<i>g#a-ru- men</i>
1IN		<i>g#idaru</i>	<i>-daru</i>	<i>ta-ru</i>	<i>ta- muru</i>	<i>ta-ru-vi</i>	<i>ta-ru-s</i>	<i>ta-ru-men</i>
2		<i>kimiru</i>	<i>-miru</i>	<i>g#i-ru</i>	<i>g#i- muru</i>	<i>g#i-ru- vi</i>	<i>g#i-ru-s</i>	<i>g#i-ru- men</i>
3		-	<i>-raru</i>	<i>ra-ru</i>	<i>ra- muru</i>	<i>ra-ru-vi</i>	<i>ra-ru-s</i>	<i>ra-ru-men</i>
1EX	TL	-	-	<i>g#a-tol</i>	<i>g#a- mdol</i>	<i>g#a-tol- vi</i>	<i>g#a-tol- si</i>	<i>g#a-tol- men</i>
1IN		-	-	<i>ta-tol</i>	<i>ta-mdol</i>	<i>ta-tol- vi</i>	<i>ta-tol-si</i>	<i>ta-tol-men</i>
2		-	-	<i>g#i-tol</i>	<i>g#i- mdol</i>	<i>g#i-tol- vi</i>	<i>g#i-tol- si</i>	<i>g#i-tol- men</i>
3		-	-	<i>ra-tol</i>	<i>ra- mdol</i>	<i>ra-tol- vi</i>	<i>ra-tol- si</i>	<i>ra-tol- men</i>
1EX	PL	<i>kamai</i>	<i>-mai</i>	<i>g#a-n</i>	<i>g#a-m</i>	<i>g#a-v</i>	<i>g#a-s</i>	<i>g#a-men</i>
1IN		<i>g#ida</i>	<i>-da</i>	<i>ta-n</i>	<i>ta-m</i>	<i>ta-v</i>	<i>ta-s</i>	<i>ta-men</i>
2		<i>kimi</i>	<i>-miu</i>	<i>g#i-n</i>	<i>g#i-m</i>	<i>g#i-v</i>	<i>g#i-s</i>	<i>g#i-men</i>
3		<i>kera</i>	<i>-ra</i>	<i>ra-n</i>	<i>ra-m</i>	<i>ra-v</i>	<i>ra-s</i>	<i>ra-men</i>

Recognizing that either the form earlier expressing the smaller number or the one that earlier expressed the bigger number can be retained to carry more general meaning in the process of a number contrast reduction provides new explanation to some previously reported phenomena. For example, in commenting on the pronominal system of Meso-Melanesian languages spoken in South New Ireland, Ross (1988:257-

<sup>13</sup> Morpheme boundaries are by the author.

259) states that “[Minigir preserves] plural forms of the pronouns which have been replaced in Tolai and most other south New Ireland languages by paucal forms containing ... reflexes of POc \*pati ‘four’.” These facts can be explained as a result of the development of a number system which contained singular, dual, paucal, quadral and plural number sets, in the following ways:

- 1) Neutralisation of the quadral and plural sets resulted in a number system with singular, dual, paucal, and plural forms (the plural expressed by the earlier quadral forms).
- 2) Neutralisation of the paucal and plural sets resulted in a number system with singular, dual, and plural forms. This time, however, it was the plural form (which goes back to the original quadral form) that took over to express both paucal and plural.

## **5 Number systems in the Oceanic languages in a broader perspective**

### **5.1 A summary of number contrast change in Oceanic languages**

In Sections 3 and 4, examples of number contrast increase and decrease in some Oceanic languages have been presented. The results are summarised in Figure 2, where the identifiable number contrast increase and decrease are indicated on the Oceanic family tree. The numbers under each subgroup indicate the number systems which are found (but not exclusively) in each group and are discussed in this paper. The numbers in parentheses indicate those that are reconstructible but are not found in currently observed systems. When the biggest number is in parentheses, this means that the indicated number contrast cannot be seen in languages spoken today, but is reconstructible. Thus, in the Micronesian languages (see Section 4.2.2), for example,



there is a language which appears to have had an earlier four-number contrast, from which a three-number system developed, and also there is a two-number system as well, which can be identified as the continuation.

[Figure 2]

A personal pronoun system with multiple number distinctions is considered to be one of the common characteristics of languages belonging to the Oceanic languages today. However, as has been seen in the previous sections, the details of these number systems differ depending on the language and different systems are sometimes observed even among different pronominal sets within a single language. There are languages where the independent pronoun set has a multiple number system, while the clitic/affix pronominal forms show only a singular/plural contrast or no number contrast. In other languages, however, it is the clitic/affix set that shows a bigger number contrast. As for the formatives involving the differentiation of different numbers, their forms sometimes exactly match those of the numeral forms, while in other cases they are not clearly recognisable as such.

These facts, along with the distribution of different number systems found in the family, imply that the multiple number systems found in Oceanic languages today is not simply a result of a change from a two number contrast (Proto Oceanic) to a four number contrast (Proto Central–Eastern Oceanic) in their commonly shared ancestral languages. Change in number systems appears to be the result of local, independent innovations which then probably spread as areal features, rather than reflecting inherited features. It is likely that within some languages, both increase and subsequent decrease of the number system or vice versa has taken place. Thus, it is only after we identify the layers of number changes that took place after the split of Oceanic languages that we

can determine what the situation was like in Proto Oceanic and/or Proto Central–Eastern Oceanic.

## 5.2 Possible motivations for the dynamic changes

If we accept the claim that the Oceanic number systems have been undergoing continuous dynamic change as has been claimed in this paper, a question arises as to why the number contrast in personal pronoun systems are so unstable in Oceanic languages, while in the non-Oceanic Austronesian languages, they are relatively stable. In this Section, I will argue that both of these facts can be explained as the result of different directions that took place in these languages as they re-aligned their pronominal systems to remedy a distinctive gap that existed in the Proto-Extra Formosan system.

The reconstructed Proto-Extra Formosan pronominal system is shown in (30) (Blust 1977, Reid 2000). The numbers 1, 2, and 3 in the table indicate first, second, and third person respectively, while 1+2 indicates the first person inclusive (“you (singular and plural)” and “I”). The number system showed a singular-plural two-way contrast for first, second, and third person, while for the inclusive (1+2) person, no such contrast occurred. In other words, there was an irregularity in the paradigm with the 1+2 person, as can be seen in (26).

(26) Proto-Extra Formosan

	SG	PL
1	○	○
1+2	○	
2	○	○
3	○	○

There are three reasons for considering that the 1+2 number did not have a singular-plural contrast in Proto-Extra Formosan. First, among the Philippine languages, possible cognate forms are not consistent enough to reconstruct a form for their shared proto-language.<sup>14</sup> Second, there is only one inclusive pronominal form that is reconstructible for Proto-Oceanic (LRC 2002). Third, the reflexes of the earlier reconstructed inclusive form are used to indicate the sense “we general” in some Polynesian languages, such as Rotuman, Tongan and so on, with the relevant form usually described as “first person inclusive singular”. This appears to reflect the fact that there was no singular-plural distinction at the stage of Pre-Proto-Oceanic.<sup>15</sup> In the Rotuman pronominal system shown in (27), for example, the directly inherited form is used to express the first person inclusive singular, while the form for first person inclusive plural *‘isa* is apparently a borrowing, the source of which is not clear.<sup>16</sup>

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<sup>14</sup> Liao (2006) confirms this by examining the 1+2 forms in the Philippine languages from different subgroups.

<sup>15</sup> From Proto-Oceanic to Proto-Polynesian may appear to be a big jump. However, recent studies show that Austronesian people are likely to have migrated into Oceania and spread there more rapidly than had previously been considered (see Bellwood, n.d. for a summary). Linguistically, it has been pointed out that a high percentage of lexical retentions in Proto-Oceanic from Proto-Extra Formosan is found (Blust 1993), and also that Proto Polynesian is reconstructible as having retained some morphosyntactic characteristics from Proto-Extra Formosan, including casemarking patterns, etc. (Kikusawa 2002 and others).

<sup>16</sup> The phoneme /s/ is never a reflex of POc *\*t/\*nt* either in directly or in indirectly inherited forms in Rotuman (Biggs 1965).

(27) Rotuman

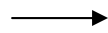
1INSG	<i>'ita</i>	<i>-ta</i>
1INDL	<i>'itara</i>	<i>-tara</i>
1INPL	<i>'isa</i>	<i>-sa</i>

From the pronominal system shown in (26) for Proto Extra-Formosan, three different developments took place in the daughter languages that appear to have been motivated by attempts to form a pronominal system in which no gap occurred in the 1+2 person category.

First, languages in the Philippines developed a minimum (+Min) versus non-Minimum (-Min) number contrast from the earlier singular/plural contrast to balance the paradigm, as shown in (28).<sup>17</sup> With these notions, the first, second and third numbers have a singular (minimum) number and a plural (non-minimum) number, while with the inclusive (1+2) person, the reflex of the original 1+2 person was restricted to mark only singular 1 and singular 2 persons, that is a minimal 'dual' form, while a reflex of the original 1+2 form was suffixed by a pluralizing form to indicate numbers bigger than two (non-minimum of a group of people including 'you' and 'I'). An example of an actual pronominal system is shown in (29).

(28) Proto-Extra Formosan

	SG	PL
1	○	○
1+2	○	
2	○	○
3	○	○



Philippine languages

	+MIN	-MIN
1	○	○
1+2	○	○
2	○	○
3	○	○

<sup>17</sup> This kind of analysis appears, for example, in Thomas 1955, where the terms minimum versus augmented are used.

(29) Ilokano pronoun system (Based on the analysis by Thomas 1955, cited from Krifka 2006)<sup>18</sup>

	+MIN	-MIN
1	<i>ko</i>	<i>mi</i>
1+2	<i>ta</i>	<i>tayo</i>
2	<i>mo</i>	<i>yo</i>
3	<i>na</i>	<i>da</i>

The proposed change seems to have yielded a reasonably stable system, since most Philippine languages, despite their geographical coverage and the number of languages spoken there, have developed such a system as parallel developments so that the gap in the paradigm contained a distinctive form and have retained it.<sup>19</sup>

On the other hand, the systems found in Oceanic languages are apparently a result of the reinterpretation of the inclusive person (1+2) as indicating “two persons.” This introduced the notion “dual” into the system, and once this happened, the system was now open to the addition of as many numbers as the speakers liked, as can be seen in (30). The immediate reason for this particular reinterpretation is not clear, although it is possible that the force to distinguish singular and plural form for inclusive person (1+2) involved the number of participants more or less distinctively “marked” within the paradigm, and this may have initiated the development of a dual and plural distinction,

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<sup>18</sup> Thomas uses the following terms instead of the ones presented in this table; Speaker (1), Hearer (2), Speaker-Hearer (1+2), neither (3), simple (minimal) (+Min) and plus (augmented) (-Min).

<sup>19</sup> Other processes resulting in a stable system, such as the neutralisation of all the number contrasts, took place in some non-Philippine, western Austronesian languages. However, many languages in Indonesia have also undergone additional changes, the details of which are outside of the scope of this paper.

and subsequently other numbers. Related to this is that, in some languages, the reflex of the earlier form \*kita indicates the dual number, while in some other, it indicates the plural number.

(30) Proto-Extra Formosan

	SG	PL
1	○	○
1+2	○	
2	○	○
3	○	○

→

Proto-Oceanic

	SG	DL	PL
1 (= 1EX)	○		○
1+2 (= 1IN)	-	○	
2	○		○
3	○		○

Unlike the process that took place in the Philippine languages and some languages in Indonesia, the development that took place in Oceanic languages did not make the system a balanced one, but rather, one that was susceptible to more dynamic changes. Geraghty’s statement on the situation in Fijian languages, “a potential multidimensional space was created within which forms continually realign themselves” (1983) appears now to apply to most of the Oceanic languages, if not all.

## Abbreviations

BUF	buffer
DL	dual (number)
IN	inclusive
EX	exclusive
E&E 1997	Engkvist and Engkvist 1997
L&OR 2001	Lynch and Ozanne-Rivierre 2001
LRC 2002	Lynch, Ross and Crowley 2002
+MIN	minimum number
-MIN	non-minimum number
NUM	formative indicating a number
PC	paucal (number)
PEO	Proto-Eastern Oceanic (=Proto Central-Eastern Oceanic)
PL	plural (number)
PMc	Proto-Micronesian
POc	Proto-Oceanic
PSV	Proto-Southern Vanuatu
QL	quadral (number)
SG	singular (number)
TAM	Tens-aspect marker
TL	trial (number)
1	first person
2	second person
3	third person

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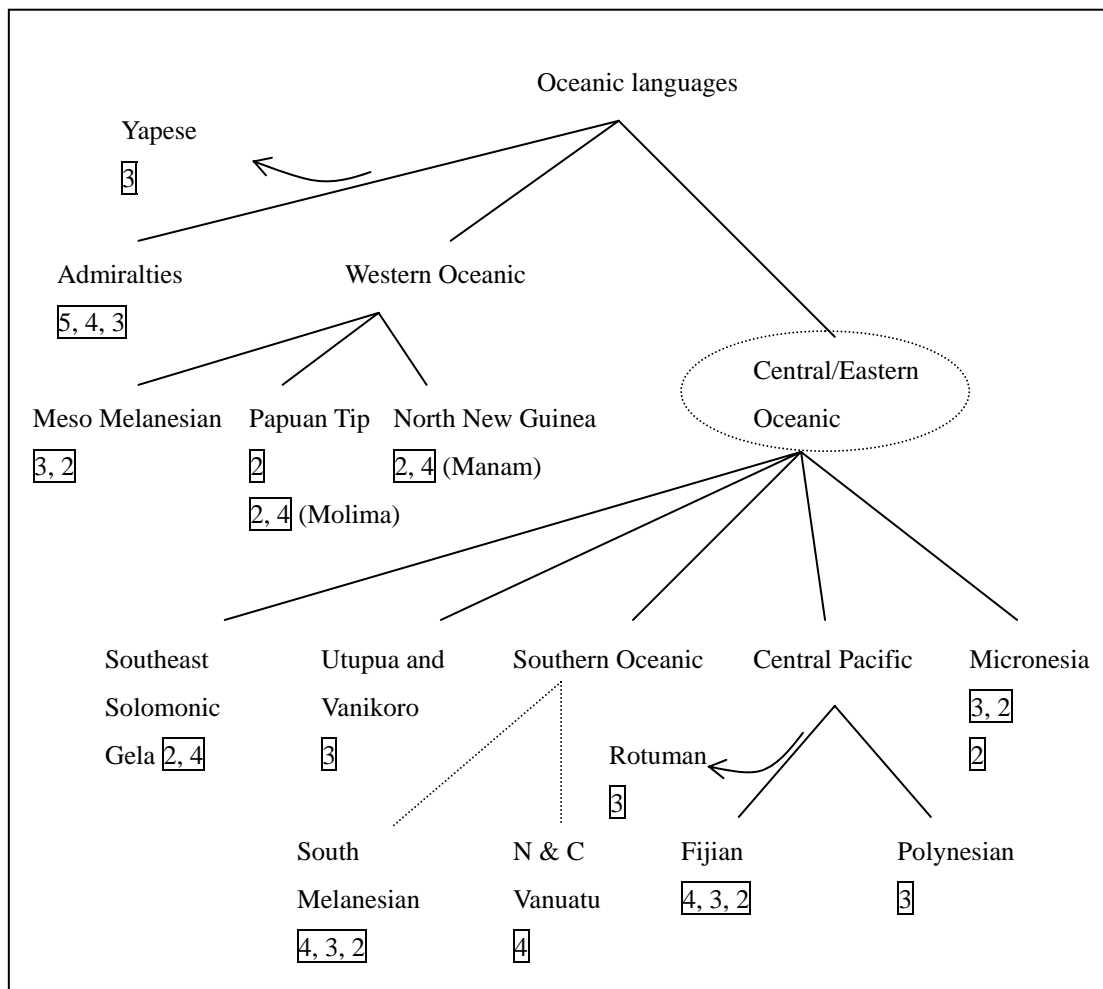
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[Special symbols]

m~ = tilde over the letter “m”

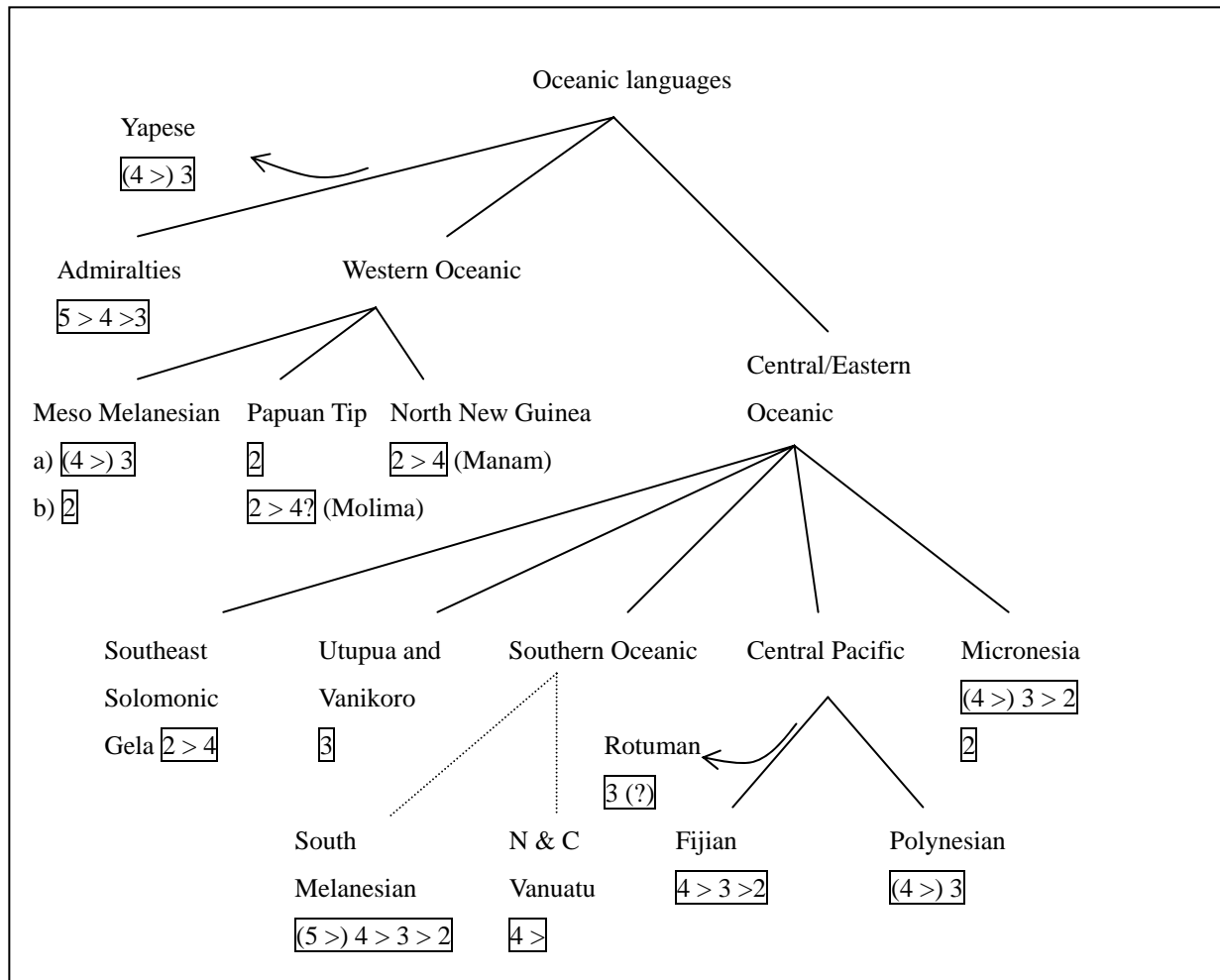
g# = macron over the letter “g”



**Figure 1. Number Contrast Systems in the Oceanic Languages** (based on Kikusawa 2002; Lynch and Ozanne-Rivierre 2001, Lynch, Ross and Crowley, 2002)

Notes:

- 1) The numbers in the boxes indicate the system of number contrasts in a pronominal set, for example, “2” indicates a two-number system, i.e., where only singular and plural are contrasted.



**Figure 2. Number Increase and Decrease in Pronominal Systems based on Currently Spoken Oceanic Languages** (subgrouping based on Kikusawa 2002; Lynch and Ozanne-Rivierre 2001, Lynch, Ross and Crowley, 2002)