

Austronesian Languages in Papua A Description of its Phonological and Grammatical Aspects

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Abstract

The unique place in the globe which owns almost thousands of languages is found in New Guinea Island; one of the languages belongs to Austronesian languages are the primary focus in this article. These languages and other languages in this island are noted to be gigantic assets to linguists who are interested in exploring the distinctive languages in the world in the area of linguistics. The article aims at presenting the historical description of Austronesian languages including its characteristics. Its phonological and grammatical aspects are presented to demonstrate the uniqueness of these languages used by speakers who have typical characteristics of the Austronesian cultural back-grounds. A brief history of Austronesian culture is also provided. The word "Papua" (used to be called Irian Jaya) in the above title is the name of the Eastern Province belongs to the Republic of Indonesia. This province shares border with Papua New Guinea (PNG).Keywords : nan (non austronesian); an (austronesian); an1 (austronesian 1); an2 z (austronesian 2).

Index terms— nan (non austronesian); an (austronesian); an1 (austronesian 1); an2 z (austronesian 2).

1 Introduction

The Austronesian language family constitutes the largest language family and the second most widespread after the Indo-European in the world (Gleason, 1955). The Austronesian family extends from Madagascar in the West to Easter Island in the East. This family is divided into two, i.e., Western Austronesian (Indonesia) and Eastern Austronesian (Oceanic). The Eastern Austronesian is divided into three: Micronesian, Polynesian, and Melanesian (Grace 1979 ?? 62, Gleason, 1955 ?? 410, Capell, 1969 ?? 18, Sirk 1978: 255). Those belonging to Western Austronesian are Malay (extended throughout coastal Sumatera, Malay, Kalimantan, and elsewhere), Javanese, Sundanese, Batak, Balinese, Dayak, Makasar, Tagalog, Bisawan, Ilocano, (the last three in the Philippines), Chamorro (in Guam) and Malagasi and Bushi in Madagascar. The Polynesian languages cover the area from Hawaii to New Zealand including Hawaiian, Tahitian, Samoan, and Maori. The Micronesian covers Mariana Islands, Guam, Gilbert Island, Nauru, and the Islands nearby. The Melanesian covers New Guinea, Fiji, Solomon Islands, Vanuatu, New Caledonia, Tuvalu, and the Bismarck Archipelago (Gleason, 1955 ?? 410, Sirk, 1978: 255).

Author : The University of Cenderawasih Jayapura PapuaIndonesia. E-mail : wardodori@hotmail.com Compared with the Papuan languages, AN in New Guinea (the whole Papua Island) are much lower than the former in number of speakers, number of languages, and the areas where they are spoken. The New Guinea Island or Papua lies to the East of all the great islands of the Malay Archipelago and forms a blockade between them and the Pacific Ocean; its Southern part of the island stretches out towards the continent of Australia separated by the Arafura Sea and Torres Strait, which at its narrowest point is the great group of the Solomon Islands on the South of the Equator, while the Northern is the cape of Arfack Peninsula ??Yembise, 2011). New Guinea has more or less one thousand languages consisting of approximately 750 Papua New Guinean and 250 languages in Papua, so about one-fifth of the world's languages are spoken on the Island of New Guinea (Ajamiseba, et al.,

3 II. THE CHARACTERISTICS OF AUSTRONESIAN LANGUAGES

44 2001). It is also a fact that in this one province of Papua, these languages are spoken over one third of all the
45 languages in Indonesia which are Papuan and Non Papuan languages. Austronesian Languages in Papua.

46 2 A Description of its Phonological and Grammatical Aspects

47 Hesperonesian is another name for Western Austronesian given by ??yen (1978: 237). Dyen divides Western
48 Austronesian into the Philippine and the South Sunda based on the characteristics of verb morphology. The
49 Philippine consists of the Philippines, Taiwan, the Sangir Talaud, and Northern part of Sulawesi and Kalimantan.
50 The South Sunda consists of Sumatera (except Acehnese), Islands West Sumatera, Malay Peninsula, Java,
51 Madura, Bali, Lombok, greater part of Sulawesi, and some languages in Kalimantan such as Kendayan ??Sirk,
52 1978: 258). Besides, ??yen (1978: 235) also divides Austronesian in Indonesia into Western Indonesia and
53 Eastern Indonesia. The Eastern Indonesia covers the areas from Sumbawa in the South, Celebes in the North,
54 and Western Shore of Geelvink Bay in the East. Another division is based on Brandes line. It says that the
55 Western boundary of Eastern Indonesia is from West Roti in the South goes up to East of Sulawesi between
56 Banggai Island and Sula Island, goes up to Sangir Island, and to Talaud Island in the North. This division is
57 based on 'the proposed genitive'. It means that in the Eastern Indonesia languages, the noun phrase with genitive
58 modifier consists of the possessor followed by the modifier with the head.

59 There is a linkage between Papuan languages and Non-Papuan (Wurm, 1982 cited in Purba, 1994). Greenberg,
60 for example, states that there is a sign of interrelated symbols between Papuan languages with Tasmanian
61 languages; however it is lacking evidence. On the contrary, Wurm argues that the link is closely related to
62 Andaman rather than to Tasmanian languages. It is due to the similar lexical and structural aspects and
63 typological grounds between Andaman and Papuan phylum languages. Laycock (Purba, 1994), on the other
64 hand, points out the interrelationships between Burnic language (South-East Asia) and Sko Stock language
65 (Jayapura) since they both have tonal features, complex verb morphology, heterorganic consonants. From the
66 illustrations, it is assumed that Papuan languages might have originated from Andaman and Burma.

67 Moreover, Purba (1994), in his article on the description of Papuan languages, claims that there has been a lack
68 of adequate knowledge on the status of New Guinea's languages. Humbolt quoted by Purba (1994) discovered
69 in 1839, that the Polynesian language is in some forms related to Indonesian language. Sydney (in Purba, 1994)
70 discovered the existence of Non-Austronesian which was the original of New Guinea languages. Sydney maintains
71 further that Austronesians first travelled from the West, continued their adventure over the North of New Guinea
72 to Salomon. The AN speakers occupy only coastal areas except in few areas. This condition can be interpreted
73 that the AN speakers are immigrant rather than indigenous ??Capell, 1978: 6). Foley believes that the speakers
74 of AN came to New Guinea five thousand years ago. Purba (1994) clarifies the movement of the people in terms
75 of migration.

76 The Papuan languages are divided into two major classifications: Non Austronesian and Austronesian ??Purba,
77 1994: 21). It is estimated that those who speak Non Austronesian exceed those of Austronesian in number
78 ??Purba, 1994). Non Austronesian falls into Trans New Guinea phylum, Sko phylum, Kwontari phylum, East
79 Bird's Head phylum, Geevi nk Bay phylum. Austronesian comprises Geelvink Bay West (Biak Numfor), Geelvink
80 Bay Island (Yapen Waropen, Geelvink Bay East (languages of Sarmi coast district), and Northern coast East
81 (Ormu and Tobati).

82 3 II. The Characteristics of Austronesian Languages

83 Purba (1994) states the Capel's Survey of New Guinea Languages indicates the characteristics of Austronesian
84 (AN) languages as : (1) Compared with those of NAN languages, phonemic patterns of AN languages are not
85 complicated; (2) Most have a fivevowel system, except some languages in Papua New Guinea, which have even
86 vowels; (3) Generally, they have few or no clusters, except in Numfor-Biak and neighbouring areas in Geelvink
87 Bay; (4) Voiceless fricative consonant is usually labiodentals /f/, but the voiced fricative is bilabial /v/; (5)
88 Prenasalisation in some areas is normal; (6) Stress is usually predictable; (7) They have a simple consonantal
89 system; (8) Glottal stops and velar nasals are rare, and velar fricative /g/ is common in a large number of Islands
90 Melanesians languages; (9) Noun phrases with an adjective modifier are constructed by placing the modifier after
91 the head. Noun phrases with a numeral are also constructed likewise. Numeration is usually quinary, based on
92 five; (10) Verbal phrase is fairly simple. Verbal is usually preceded by a subject marker (person and number),
93 even if the sentence has noun subject. It can also have an object and/or a tense marker; (11) Passive form is rare;
94 (12) Some have tenses, but they are not emphasised; (13) Word order is SVO and they have prepositions instead
95 of postpositions; (14) All are event dominated, the interest is on what happened, when and how it happened,
96 rather than in people or object involved or the place of the occurrence; (15) Degree of complexity of morphological
97 structure of the verbs ranges from west to east. The farther east along the north coast, the more complex they
98 are. This apply not only to the north coast but also to the Island groups and the mainland; (16) Some of those
99 characteristics only appear in the Austronesian type which has SVO and preposition, but do not exist in the
100 Austronesian type which has SOV and preposition.

101 Capell (1969: 126) divides the Austronesian languages in New Guinea based on syntactical word order into
102 Austronesian-1 (AN1 and Austronesian -2 (AN2), respectively: a) those with SOV word order and with the use
103 of postposition; and b) those with SVO word order and with the use of preposition. Then he subdivided the AN1

104 (including those in PNG) into nine groups and the AN2 into ten groups. Out of the nine groups of the AN1, only
105 one group belongs to Papua, namely, Tobati-Ormu at Humbold Bay, and out of the ten of the AN2, only three
106 belong to Papua, namely, Bomberai Peninsula, Geelvink Bay, and North Eastern Irian Jaya. So according to
107 this division in Papua, there are only 4 areas: 1) Humbold; 2) North Eastern; 3) Geelvink Bay; and 4) Bomberai
108 Peninsula. The first belongs to AN1 (with SOV and postpositions) and the rest (three groups/areas) belong to
109 AN2 (with SVO and First migration was the moving from vicinity of Rooke Umboi Island near the west tip of
110 New Britain. Second migration was from the Philippines via north coast of New Ireland to eastern Melanesia.
111 According to Pawley and Green quoted by Foley (1986) the Austronesian people arrived in New Guinea five
112 thousand years ago and now there are around 200 Austronesian languages spoken in this area ??Purba, 1994:19)
113 Global Journal of Human Social Science Year 20132 20 2 16 () G Volume XIII Issue X Version I prepositions).

114 Unfortunately, the Austronesian languages on the Islands of West of Papua (Raja Ampat Islands) such as
115 Kawe, Legenyem, Ambe, Maya, Matbat, etc. which still belong to Irian Jaya, are not included in the division. To
116 complete the division given by Capell, the group of Raja Ampat must be added. It means that the Austronesian
117 languages in Papua cover: 1) Raja Ampat; 2) Bomberai; 3) Geelvink Bay; 4) North Eastern; and 5) Humbold
118 Bay. But later in 1971, ??apell (1978: 65) changed the names the other way around, AN1 became those with
119 SOV and prepositions and AN2 became those with SOV and postpositions because the fact that those with SOV
120 and postposition consist of only few languages around the minority groups ??Capell, 1978).

121 In addition, Capell further divides the AN1 (those with SVO and prepositions) in Papua into: a) Geelvink
122 Bay and Vogelkep; and b) Bomberai Peninsula ??Capell, 1978: 269). And the AN2 (those with SOV and
123 postpositions) are divided into: a) Humbold Bay; and b) Sarmi coast. Besides the change of the name from AN1
124 to AN2 to AN1, he also changed the Sarmi coast languages into: AN2 (with SOV and postpositions). Due to
125 his inconsistence of grouping the Sarmi coast languages, the writer tried to collect data of one of the languages
126 there and analyze them to find out the structure of the languages. Based on the analysis on Sobei, one of the
127 languages in Sarmi has SVO and prepositions. It means it belongs to AN1 (see the map below).

128 In Papua, there are two hundred and fifty living languages covering Austronesian (AN) and Non-Austronesian
129 or Papuan. The number of the Austronesian languages is only 54, about 20 per cent, while the rest are Papuan.
130 The only language which has a lot of speakers is Biak, it has around 40000 speakers. The speakers of this language
131 occupy Biak Island, Numfor Island, and Northern part of Bird's Head. There are nine languages which have
132 speakers between 1000 and 10000 (Ambai/9000, Waropen/6000, Wandamen-/5000, Ansus/4600, Irarutu/4000,
133 Sobey/1850, Salawat-/1600, Serui Laut/1200, and Ron/1100). All of these languages, except Salawati, are in the
134 Geelvink Bay (Teluk Cenderawasih). And the rest, 44 languages, have only between 50 and 200 speakers (Silzer
135 et al, 1991). Those belonging to the last group are in danger of extinction.

136 This description of Austronesian languages in Papua was based on the analysis of the sample. The sample covers
137 Kowiai (Walker, 1991), Irarutu (Matsumura, 1991), and Wandamen (Saggers, 1991) in the West, Biak ??Fautngil
138 et.al, 1991) and Waropen ??Hening et.al., 1991) in the middle, and Sobei (Purba, 2005), Ormu ??Purba et.al.,
139 1996), Kayupulau (Purba et.al, 1990), and Tobati (Purba, 1999) in the East. Only eight languages can be used
140 as the sample because all the rest have not been written. The primary sources of data are the research reports of
141 those languages, and the secondary are books about Austronesian such as A Survey of New Guinea Languages
142 (Capell, 1969), and some articles about Austronesian languages in Pasific Linguistic.

143 Geographically all AN can be classified into four groups: a) Island West of Mainland of Papua (Raja Ampat); b)
144 Bomberai Peninsula; c) Island in Geelvink Bay (Teluk Cenderawasih or Sarera Bay); and 5) Northeastern Papua
145 (Sarmi and Humbold). Papuan and Austronesian interfere each other mostly on structure level. Austronesian
146 languages are characterized by the SVO word order and the use of prepositions, but many AN have undergone
147 a fundamental shift in their typological characterization so that they come to resemble the typical Papuan
148 languages, with SOV and postpositions, such as Motu in PNG, and Ormu, Tobati, and Kayupulau in Papua.
149 And some Papuan languages also have undergone some changes in structure by having SVO word order and
150 prepositions, such as Papuan languages in Bird's Head. Mantion, a Papuan language, has changed its word
151 order from SOV to SVO by the influence of Wandamen. And some Papuan languages in North Halmahera suh
152 as Maisin also have been Austronized. Below is the description of the phonological and grammatical aspects of
153 Austronesians which have already been analyzed, followed by a brief description of the cultural background of
154 the native speakers of AN.

155 4 III.

156 5 Phonology

157 In terms of vowel systems, ??apell (1969:26) says that AN languages in New Guinea fall into two groups –those
158 having a five vowel system (i, u, e, o, a) and those having a seven-vowel system (i, u, e, o, E, O, a) and each of
159 these covers non-overlapping geographical areas. Further he says the velar nasal (?) rarely occurs. About the
160 consonants he says that the AN have p, t, k, ?, b, d, g, m, n, ?, f, s, l, r, and y, and these languages in general
161 admit few on clusters. Based on the research reports of the languages, the two groups of vowel system are 5
162 vowels (i, u, e, o, a) and 6 vowels (i, u, e, ?, o, a), but none of them has 7 vowels as mentioned by Capell above.
163 The AN1 have a five-vowel system (missing of ?) and the AN2 have a six-vowel system. Most of the AN1 have
164 only 12 to 14 consonants (p, k, b, d, j, f, b, s, m, n, r, w, y) and AN2 have at least 20 consonants (p, t, k, b,

12 CANOE FIVE TREE FIVE B) NOUN PHRASE WITH A POSSESSIVE MODIFIER

165 d, g, c, j, p, s, ?, x, b, m, n, ñ, ?, r, w, y). Some of AN1 and AN2 have bilabial fricatives (b and p) instead of
166 labiodental fricatives (f and v) besides bilabial stops (b and p). In Kayupulau the velar fricative (g) also appears.
167 The velar nasal (ñ) according to Capell rarely occurs, but based on the reports all AN2 have the phoneme and
168 Kowiai (AN1) also has the phoneme. Although Waropen and Kowiai have simple syllabic patterns, respectively
169 three (V, CV, CVC) and four (V, CV, VC, CVC), Biak, Tobati, Kayupulau, and Ormu have complex syllabic
170 patterns. The syllabic patterns of Biak are V, VK, KV, KVK, KKV, KKKV, KVKK, KKKVK, and
171 KKVKK. The patterns show that some of them have a complex consonants cluster which refutes the Capell's
172 statement above. Information above shows also that AN2 have richer phonemes than the AN1. One of Sobey
173 words characteristics is that the words have a lot of glottalized vowels (?) such as in/ma?a/ 'wide', /es?er/
174 'rotten', /et?a/ 'full', /monisar?e 'dream', /ema?e?ot/ 'to count'.

175 6 IV.

176 7 Syntax

177 This section describes only about: 1) sentence word order; 2) position of wh-question words; and 3) negation
178 in AN in Papua. a) Sentence Word Order Austronesian-1 (AN1) which are the majority of the Austronesian
179 have the SVO word order, while the Austronesian-2 (AN2) which consist of three languages have the SOV one.
180 Examples 7 and 8 show the SVO word order and examples 9 and 10 show the SOV one. In examples 8 and
181 pronominal subject does not appear, but the prefix i? -on the verb makes the person of subject is clear. Example
182 11 (Tobati) shows that adverb (adjunct) of time and place are always placed before the verb for AN2, not at the
183 end (see the map).

184 8 Examples:

185 In ??owiai (Walker, 1991) In Wandamen ??Hening et Wh-questions such as 'who', 'what', 'when', and 'where' in
186 Indonesian and English are placed at the beginning of the sentence, but in AN2 they are placed before the verb
187 or after the subject. Examples in Ormu, Tobati, Wandamen, Irarutu, and Biak are presented below (Example
188 12 and 13). Example 14 the word khacarena 'where' is placed before the verb 'hold'. It happens also to example
189 15 (usahre 'what').

190 In Ormu ??Purba, et, al, 1996) In Tobati ??Purba, et, al., 1999) 12) Nsa maroro khacarena jai Examples:
191 In Wandamen (Saggers, 1991)
192 In Biak (Fautngil et, al., 1991) 14) N-unu vitoi ? 15) W-un mkan ine roso.
193 2ps-cook what 2sp-take axe this where 'What are you cooking?' 'Where did you get this axe?' c) Negation
194 The negator 'not' in both AN1 and AN2 is placed at the end of the sentence. Examples in Irarutu and Tobati,
195 are presentend below. In example 16 the word ti 'not', in example 17 'fani' not', are placed at the end of the
196 sentences to make them negative. In Irarutu ??Matsumura, 1991) In Irarutu ??Matsumura, 1991) In Tobati
197 ??Purba, et, al., 1990) 16) Yahiaro dungin ti. 17) Anyi nhut kh-jai-rok fani.

198 9 Global Journal of Human Social Science

199 Year 20132 20 2 18 () G Volume XIII Issue X Version I Yahia-ro du-n-gin ti
200 Mother me 3ps-call-1 ps not John-foc prog-3ps-sleep not 'Mother did not call me.' 'John is not sleeping.' V.

201 10 Phrases

202 This section describes the structure of: 1) a noun phrases with a numeral modifier; 2) a noun phrase with a
203 possessive modifier; and 3) prepositional phrase and postpositional phrase.

204 11 a) Noun Phrase with a Numeral Modifier

205 The numeral modifier in a noun phrase both in AN1 and AN2 comes after the head. The modifier meniam 'five'
206 comes after the head wah 'canoe' (18), the modifier ririm 'five' comes after the head 'ai 'tree' AN In Tobati
207 ??Purba, 1999) AN In Biak (Fautngil, 1991) 18) wah meniam 'five canoes' 19) ai ririm 'five trees'

208 12 Canoe five tree five b) Noun Phrase with a Possessive 209 Modifier

210 A possessive modifier in a noun phrase comes before the head; it is the same as that in English.
211 Examples 20 show that possessive modifier neh 'my' comes before the head wah 'canoe'. The same thing
212 happens in example 21.
213 In Tobati ??Purba, 1999) In Sobey (Purba, 2005) 20) neh wah 'my canoe' 21) ebe dimo 'their house'

214 13 My canoe their house c) Prepositional and Postpositional 215 Phrase

216 It has been mentioned before that the main differences between AN1 and AN2 are the sentence word order (SVO
217 and SOV) and the use of preposition for AN1 and postposition for AN2. Example 22 and 23 show prepositional
218 phrases (the relater is place before the axis) and example 24 and 25 show the postpositional phrases (the relater
219 is placed after the axis). Example 26: the preposition na becomes nana because the subject is the first person
220 singular (na) and in example 27: the prepositional na becomes una because the subject is the first person singular
221 (u). Thus, the above description of the phonological and grammatical aspects of the AN is one of the uniqueness
222 languages of the people in New Guinea island who belong to Austronesian culture which is described briefly
223 below.

224 14 Examples of preposition

225 15 VI.

226 16 The Cultural Aspects of Austronesians

227 The speakers of Austronesian have their own typical history and cultures which are still in connection with
228 the history of the linguistic designation and division discussed earlier. Briefly, Austronesian, a following group
229 after the first inhabitant in New Guinea Island called 'Papuans', is said to be originated from China, continued
230 migrating to Taiwan about 5000 to 6000 years ago, and then, extended their journeys to the South ??Muller,
231 2008). Muller thanked the proof of the out rigger canoe and the sail. The groups made their journey in small
232 numbers. A small group travelled and arrived in the Northern part of Philippines, then, formed two directions
233 to the South; a group travelled to the southwest (Borneo), Malaysia, Sumatra and Java (ancestors of Malay and
234 Western Indonesia today). The other group went through the South-East, through Halmahera to the Northern
235 coast of New Guinea (the island of Bismarck Archipelago), the Salomon Island, Vanuatu, New Caledonia, and
236 Fiji, finally they made further trip to the East, arrived and posted there as the people of Polynesia. The evidence
237 can be seen through their advanced water craft, navigation, and sailing techniques ??Muller, 2008).

238 From the above description, the Austronesian, by its name, is not related to Australia especially to the Aborigines
239 of this continent. As Muller states, "the term 'Austronesian', a language designation' can create a confusion as
240 it is close to 'Australia' but has nothing to do with the Aborigines of Australia" (Muller, 2008:48). Thus, the
241 story of the journey of the Austronesian more likely to be the proof of the Austronesian in Papua today, who
242 are dwelling along the coastal areas and some tiny islands on the Northern parts of the Island (see the map).
243 The Austronesians in Papua used to live in sort of high leg-houses made of wood. These people share similar
244 life styles, traditions, for example; daily job, wedding, government, religion, music and arts which are illustrated
245 below.

246 Firstly, majority of Austronesian in Papua are fisherman, gardener or farmer. They usually operate canoe
247 which is decorated by Melanesian based traditional sign or symbol like other ethnic Austronesian for fishing,
248 travelling or going for battle. They way they catch fish is by using fishing nets and diving. For traditional
249 wedding, bride price is very important to the man if he wants to marry a woman. A man should pay for a
250 woman's parents using a traditional transaction through bride price such as antique Chinese plate, money and
251 housing facilities. In relation to traditional government, the users of Austronesian are strictly bound to the
252 traditional kingdom system in which the king is posted around the head of the bird of this island "islands of
253 Raja Ampat". The traditional system of the head of tribes are popular in the Eastern parts, such as Biak, Serui,
254 Sarmi, and Yotefa (Jayapura), the people here are using the traditional terms of "Ondoafi" (head of tribe) or
255 "Mambri" (head of war). With regard to the music and art, Austronesian has traditional dances and dancers,
256 they usually paint their bodies often with a decoration of colorful fresh flowers. Their popular traditional craft
257 in relation to ritual ceremony, for example, in Biak called "Karwar" (statue). Nowadays, the people of Biak are
258 not worshiping that anymore, just like other Austronesians in other places, they are Christian followers. Finally,
259 the traditional music and song are very much Melanesian based culture using traditional drums "tifa" and guitar
260 "ukulele.

261 17 VII.

262 18 Conclusion

263 Languages in Papua consist of Non-Austronesian group and Austronesian group, the Austronesian languages are
264 divided into AN1 and AN2 with the main characteristic respectively SVO word order and preposition (AN1) and
265 SOV word order and postposition (AN2). The AN2 phonemes are richer than AN1 ones and consonant clusters
266 of both AN are rather complex. All AN in Papua have complex affixes on verb to show the person of subject and
267 object. Tobati is a unique Austronesian because it has complex cases. AN pronouns are also complex since they
268 have dual and trial besides exclusive and inclusive. Most of AN numeral systems have base 5. The wh-question
269 words in AN1 are placed after the subject or before the verb and those for AN2 are placed at the end of the
270 sentences. The numeral modifier and the possessive modifier in a noun phrase in both AN comes after the head.

271 Interestingly, Austronesians in Papua, based on the history of their trip to New Guinea 5000 years ago, share
272 Melanesian cultures similar to others countries in Pacific such as Fiji, Vanuatu, New Caledonia. Based on local
273 linguists, a special recommendation with funds from central and local government must be given to language
274 researchers since ninety per cent of the Austronesian languages and cultures have not been analyzed and written
275 yet especially those in Raja Ampat and those around Sarmi. In fact, eighty per cent of the languages have only
276 50 to 100 speakers and simply old people still exercise the languages; therefore they are threatened to be extinct.
277 Further urgent investigations or analyses are in need of expansion; otherwise, the speakers from whom the data
are collected will not be available anymore since the old people will disappear within less than ten-year times.¹



Figure 1: T © 2013

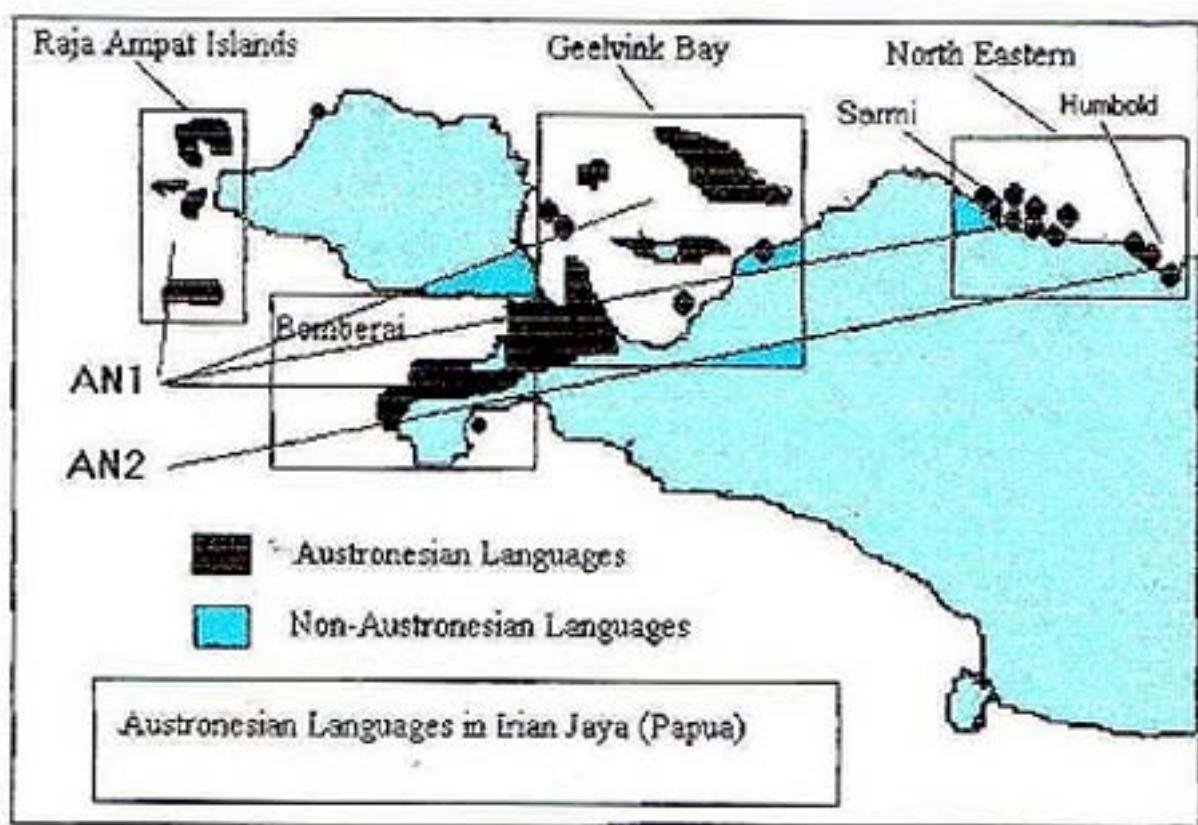
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³20 2

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Figure 2: ? 13)

280 [Handbook and Freeport Indonesia] , Papuan P T Handbook , Freeport Indonesia . Department of Social
281 Outreach & Local Development Risk management Group

282 [Hening ()] , Ted Hening . *Waropen. Unpublished Research Notes on Selected Language and Culture of Irian*
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