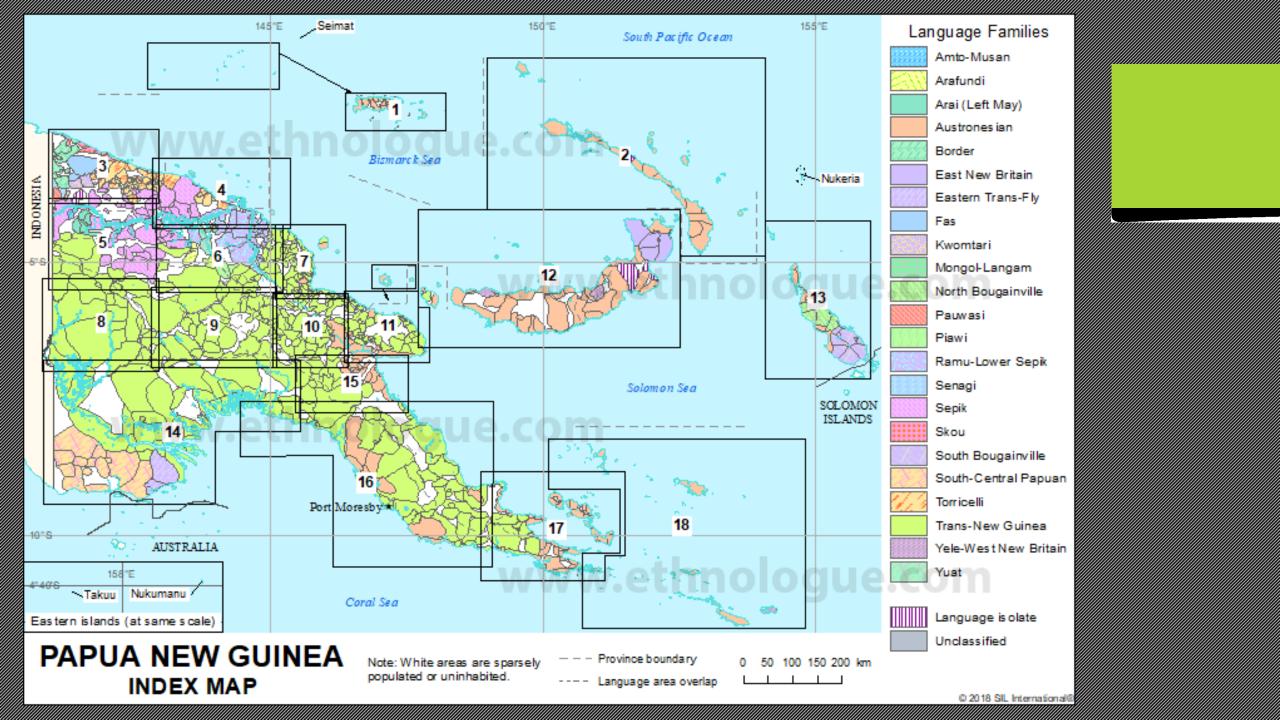
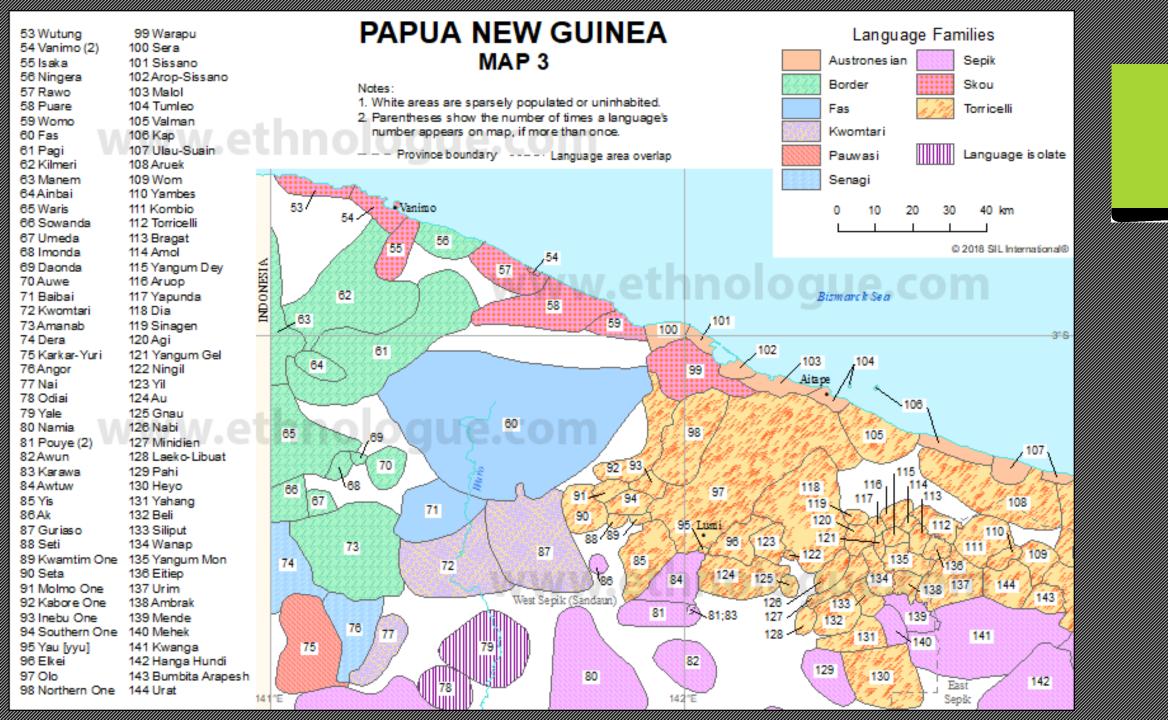
Papua New Guinean languages through the years



Ray Stegeman, SIL-PNG





Some PNG Language Statistics

- 839 indigenous languages, 11.7% of the world's total! ethnologue.com
- -ilon(kii/25/4/380%) are histedas either in troublei origingi
- SIL's work in PNG has served 337 language communities
- SIL is currently active in 187 language communities
- www.pnglanguages.sil.org/resources/
- This presentation represents 221 of the languages in which SIL-PNG has worked in the past 63 years.

3 time periods

- -1960 1990 older, baper archives
- 1990 2010 electronic archives
- 2010 today currently active projects
- I was able to get feedback from a questionnaire from the last group.

	older data	(newer data	
PNG Province names	languages from folder (pre-1990)	languages from OPDs (pre-2010)	languages in the question- naire (current projects)	total languages from each province
Morobe	5	9	9	23
East Sepik	9	7	3	19
Madang	2	15	2	19
Milne Bay	5	9	4	18
Gulf	7	5	2	15
Western	5	5	4	14

	older data		newer data	
PNG language families represented	languages from folder (pre-1990)	from OPDs	languages in the question- naire (current projects)	total in each language family
Trans New Guinea	53	37	11	101
Austronesian	35	15	21	71
Sepik	6	4		10
Torricelli	1	4	3	8
South-Central Papuan		3	3	6

Rotokas (N Bougainville) - 11 phonemes

$$/\alpha, \epsilon, g, i, k, o, p, \epsilon, t, u, b/$$

Tawala (Austronesian) - 19 phonemes

/α, b, d, e, g, g^w, h, i, k, k^w, l, m, n, o, p, t, u, w, y/

Melpa (TNG) - 26 phonemes

```
/ɑ,mb,nd,nd,e,ng, ɪ,i,j, k,ld,l, ł,
m, n, դ, ո, օ, թ, r, t, ԷԾ, u, સ, w/
```

Alekano (Trans New Guinea) - 16 phonemes

/α, e, ɣ, h, i, k, l, m, n, ɣ, p, s, z, t, τττ, β/

Sudest (Austronesian) 40 phonemes

```
(\alpha,b,b^{w},d,e,g,\chi,\chi^{w},g^{w},h,h^{w},\hat{1},dz,k,l,m,m,b^{m},m^{w},m^{w},n,n^{d},n^{d}z,n,n^{g},n^{g},n^{w},n^{w},n,n,e,p,p,m^{w},r,s,t,\delta,u,\beta,\beta^{w},w,j/
```

Raw data and weighted mean

	older data			
PNG language families represented	languages	Vanguages	languages	totalin
	from folder	from OPDs	in the	each
			question-	language
			nawe	family
Trans New Guinea	53	37	1/1	101
Austronesian	35	15	21	71
Sepilk	6	2		10
etc.	+	-	-	-
total number of languages	103	73	40	221
divide raw data (RD) by this number	430	330	.1.8/1	1.000
to get a weighted mean (WM)				

			older data 🔸			
	strategy used	examples	folder RD/WM	OPDs RD/WM	Survey RD/WM	
1	diacritic	é,ã,ú	78/160	65/197	54/298	increase in use
3.		th, mp, ndi <e> for both /e/ and /e/</e>	264/540 40/81.8	263/797 35/106		significant increase in use
4.	overdifferentiation	 tor /b/	114/233	89/270	32/177	eventual decrease in use
5.	English letter not used elsewhere	c, q, x	125/256	72/218	33/182	decrease in use
6.	non-English letter	7.10	36/73.6	31/93.9	8 /44.2	eventual decrease in use (but increase in
			(6 ŋ, 17%)	(13 n, 42%)	(5 n, 62%)	use of ny

		older data ← →	newer data
strategy used	examples	folder OPDs	survey
		RD/WM RD/WN	A RD/WM
1. diacritic	ë, ã, ú	78/160 65/19	7 54/298 increase
			in use

Use of diacritics

What the trend might show

A. Use of diacritics in orthographies employed by SIL-PNG language projects were mostly used in the vowel systems, to show a similar place of articulation to another vowel on the vowel chart. Gizrra (tof) does this with two of its seven vowels: <0> for /0/; <0> for /0/

<u>> for /u/; <u>> for /i/

What the trend might show

B. Many languages use diacritics to show nasalization and/or vowel length, so depending on the number of vowels in the inventory, one language can have many diacritics for differentiating just one or two sound concepts; eg.

```
<a href="#"><a, e, i, o, u></a>
<a href="#"><a, e, i, o, u></a>
<a href="#"><a href="#">; e, i, o, u></a>
<a href="#"><a href="#">; e, i, o, u></a>
```

Use of multigraphs

		older data	← → nev	wer data	
strategy used	examples	folder	OPDs	survey	
		RD/WM	RD/WM	RD/WM	
2. multigraph	th, mp,	264/540	263/797	153/845	increase
	ndr				in use

What the trend might show

A. This is the most common strategy for consonants (sometimes both) and for length in vowels and consonants. Since these features often cover a range of consonants or vowels (and not just one at a time), this strategy can be used a lot in any one language.

What the trend might show

B. Multigraphs are often used in overdifferentiation, when something like prenasalization does not need to be shown in a more purely phonemic orthography. To know that English spellsijs nasals beiole nomasal employing this type of overdifferentiation: combine conclusion, autox

Sudest (Austronesian) 40 phonemes

<a, b, bw, d, e, g, gh, ghw, gw, h, hw, i, ł, j, k, l, m, mb, mbw, mw, n, nd, nj, ng, ngg, nggw, ngw, nv, o, p, pw, r, s, t, th, u, v, vw, w, v>

			older data 🧸		ewer data	
	strategy used	examples	folder RD/WM	OPDs RD/WM	survey RD/WM	
3.	underdifferen tiation (including phonemes not written)	<e> for both /e/ and /ə/</e>	40/81.8	35/106	33/182	significant increase in use

Use of underdifferentiation

What the trend might show

- - increase in use of technology
 - the felt need for communicating in one's mother tongue using different electronic devices
 - Cell phone use has skyrocketed in PNG in the recent past
 - If the phonology of a language is complex enough to need many orthographs for a more phonemic representation in the alphabet, it may be even more desirable by the community to reduce the number of "untextable" letters in the alphabet, to make it easier to communicate with each other by using today's technology.

Use of overdifferentiation

		older data ←	→ n	ewer data	
strategy used	examples	folder	OPDs	survey	
		RD/WM	RD/WM	RD/WM	
4. overdifferenti	 and	114/233	89/270	32/117	eventual
ation	<mb> for</mb>				decrease in
	/b/				use

Use of overdifferentiation

What the trend might show

- Arrossingereasons for the decrease in use of overdifferentiation.
- cell phone and computer use
- A felt need for shorter words. A lot of PNG languages can have complex morphology, especially on the verb, and this can make words unwieldy in their length. Together with multigraphs, written words become more difficult to decypher. One way to counteract this problem is to use fewer multigraphs, which might be preferred for other reasons (like bridging) but would help with certain reading challenges.

What the trend might show

B. In the Urim language, for example, it was mentioned that although they have long vowel phonemes:

/a:, e , i , u:/

they decided NOT to write them as:

<aa, ee, ii, uu>

because they are phonemic only in one-syllable words: It's desirable not to use these digraphs at all.

Use of a LWC Letter not used elsewhere

		older data 🗧	> 7	newer data	
strategy used	examples	folder	OPDs	survey	
		RD/WM	RD/WM	RD/WM	
5. English letter not used elsewhere	c, q, x	125/256	72/218	33/182	decrease in use

What the trend might show

The decrease in use of English letters not used elsewhere could be due to bridging concerns, where the Verters used in one smoother tongue are expected to reflect the alphabet and sound patterns of the official language. So, for example, using a <c> for the glottal stop doesn't "feel" matural, when one has a strong association that the <c>letter should/must represent the TKT sound, as in <cat>.

Use of letters not available in the IWC

	older data	(vewer data
strategy used exampl	es folder RD/WM	OPDs RD/WM	survey RD/WM
6. non-English ',?,ŋ letter	36/73.6	31/93.9	8 /44.2 eventual decrease in use
	(6 n, 17%)	(13 n, 42%)	(5 n, 62%) (but increase in use of n)

Use of letters not available in the LWC

What the trend might show

A. This is perhaps to be expected, again considering the spread of technology and the texting phenomenon. These characters for use in an alphabet are not STEANNE GONDON DIE BOUNT SENDER DE CONTRACTOR DE LA CONTR smartphones by pressing and holding buttons, which reveals a choice of alternate characters, but this feature is only available on higher-end phones and often only the diacritics used in European languages.

Use of mas a letter representing the vetar nasal

What the trend might show

B. The use of n as a grapheme has increased over time, which contrasts with the overall decrease in using other non-English letters.

This strategy helps to make words shorter, especially when a language has a lot of velar nasals. It's also easy to write (not text!) and recognize.

Other questionnaire responses - newer data

- -General challenges
 - developing an alphabet for multiple dialects - unilectal vs. multilectal, etc.
 - breaking habits of previous orthography choices; e.g. German <ch> for /x/, Fijian/Samoan <g> for /n/; <q> for /y/ influences on orthography

- Stakeholders in the orthography enterouse communities
 - teachers (many trained to be literacy teachers as well)
 - local language speakers (informal meetings)
 - Church leaders, especially related to the translation
 - community/cade/s
 - language/translation committees formed, responsible for making orthography decisions
- Challenges
 - disagreements between groups of stakeholders (age, education, dialect, etc.)

Orthographic strategies that needed changing

- differentiation either more underdifferentiation or more overdifferentiation
- this is mostly an issue for items like nasality, length, etc.

Continuing challenge

 What to do with more than 5 vowels? Digraphs can be easily confused with diphthongs.

- Orthographies and technology
 - Communities are "getting by" with less differentiation; e.g. leaving off diacritics because they aren't available without special apps
 - this is more easily done with a fewer number of diacritics
 - using numbers to help shorten longer words; e.g.
 - ·<waiwaisana> --> <wai/2sana>

- ·Forces at work shaping the orthography:
 - Vinguistics/phonemics
 - · community input
 - a healthy mixture of these two
 - striving to make it easier to read and to teach reading
 - bridging to official language literacy (English, Tok Pisin)

Overall impressions

Orthographies are moving towards:

- less of a felt need to fully reflect the phonemic reality in a language
- more of a felt need for the written language to mirror the official languages of English and Tok Pisin (bridging)
- more of a felt need to have a simpler orthography to utilize technology with one's mother tongue

Questions?

THANK YOU!

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Yisasi makakác nónim wayani

Mactiu <u>áfárémóni</u>

Yisasin anafű akeckúyîc ândăi

(Dk 3:23-38)

Yisasi Karaisi weni Dewictin ana wanimi Dewicti weni Ewaran ana wanimi Yisasin ankun nánni macní mukemóni. ² Ewaram wení Aisackim macdánimí Aisacki wení Yekopim macdánimí Yekopi wení Yura namac weankunnámác macdánimi 3 Yura weni Tema mandemí Perasin namac Siran namac yenkanda macdánimí Perasi wení Esaron macdánimí Esarom wení Dam macdánimí ⁴Dam wení Aminaracpín macdánimí Aminaracpí wení Nason macdánimí Nasom wení Saramon macdánimi ⁵ Saramon weni Decafi mandemi Boasin macdánimi Boasi wení Ructi mandemí Owectín macdánimí

Owectí weni Yésin macdánimi

⁶Yési weni Dewicti yikoyunic inánin macdánimi

Dewicti weni Yurayan ánac mandemí Soromoni macdánimi

⁷ Soromoni weni Diawoam macdánimi

Diawoam weni Awaisa macdánimi



Jisäsi mäkäkäc nonim wäyani

Metin äfäremoni

Jisäsin änafunän yiwikuci

¹ Jisäsi Mesäya Devitin äna wänimi, Deviti Äbrähamin änam wemoni. Äfo Jisäsin änkun yiwikuci mäcnimukemi:

² Äbrähami Äisakin äfoi,

Äisaki Jekopin äfoi,

Jekopi Juda nämäc wen äfäconän yifoin wemi.

Juda weni Tamami mändemi Peresinuc Serankändä mäkemoni.

Peresi Hesronin äfoi, Hesroni Ramin äfoi.

⁴Rami weni Äminädapin äfoi,

Äminädapi weni Nasonin äfoi,

Nasoni weni Salmonin äfoi.



Orthographic conventions

- replaced underscore with diaresis for different vowel quality
- eliminated all tone markings (acute and caron)
- c is used for glottal stop (common among related/nearby languages); now not written before a consonant (see Dewictin vs. Devitin)

Paléti ngê Yesu u vyee têdê u ngwo dy:ââ ngê

Mak 15:6-15, Luukî 23:13-25, Njon 18:39-19:16

15 M:ââ k:oo Nju tpémi yi naa ndîî u dye ghi ngê, yélini mbwa k:00 dnyimo kwo, Paléti ngê ngmêdpîmo pw:iipw:ii, apu, Nju tpémi yi nuw:o dmi mb:aamb:aa ngê paa pyaa we. Pini n:ii u pi pi knî y:00 u kwo dnyimo tpapê, yini yidpîmo pw:iipw:ii. 16 Yi m:aani ngê mbwa u mênê pi ngmêdoo kwo, u pi Mbadapas. Pi yintómu yi lama yi pini u pi doo ya. 17 Dini ghi n:ii ngê yoo kwodonkwodo a wó, Paléti ye póó wo, yepê, Ló pini u yi nmye ngma a kwo, nî pw:ii? Yepê, Mbadapas ay:aa pw:ii ó Yesu ay:aa pw:ii, pini n:ii p:uu ala kópu a tpapê ngópu, apu, Pini n:ii Chóó Lémi ngê a ngmidi ngê, wu vyîlo. 18 Paléti ngê yi kópu ye poo ngê, mu kópu u dîy:o u lama doo ya, Nju tpémi yi kada pini knî y:oo Yesu ka ń:ee dê kaa ngmê, a kêê k:00 u l:êê dîy:0 dê kaa ngmê.

Orthographic conventions

- 11 vowel phonemes 5 vowel letters plus 6 diacritics on same
- Nasalization is marked with a colon before the vowel.
- Length is marked with double vowel letters.
- Lots of prenasalization, labialization and/or palatalization on the consonants - nj, nd, pw, ngm

²⁰ Dameŋ ira ʒebedaio ŋonâŋ-ticnezi ŋokâ jahec-ticne Jesure maŋfuŋko bacjofa rarâ fodapehuc wiac mocte numucnewec. ²¹ Eme wiocnerâ muwec, "Go wemo wiacte egarekac?" Eme eki muwec, "Go mutec ŋokâ jahec-nane Wofuŋ sâko fua tâcnezokic dameŋ ira gâjoŋgao ŋifec â ŋifec ŋezepirec." ²² Mume Jesuzi âzâcnewec, "Ŋoŋe fuŋne kâuc bahuc iŋuc muŋgopieŋ. Noni opâ ʒaʒacne nâpemu i ŋohe sâcne nânicmu me?" Eme jahe mupic, "Ea, sâcne nanacmu." ²³ Mupire jasawec, "Opâ ʒaʒacne nânâ i nânicmu, â gâjoŋ-naneo ŋeŋe irec dâŋ mumu ine norao mi fokac, Mamac-nanezi mujarewec i jaŋe ŋeŋe ira ŋeniŋmu."

²⁴ Eme motec 10 jane dân i manarâ âgo jahec-jenic jahere mana sâqorem-bin. ²⁵ Eme Jesuzi hefârec-joparâ ʒinuc jazawec: "Mâren nicwofun jane nic rauc-jopahuc kinan qaqafâc-jenic bacjopaengopien, â fekicne jane omane qâhuc-joparâ nicbombon ejareengopien, i manaengopien. ²⁶ Ŋone ine inuc mi enzepien. Ŋoneraonec moczi fekicne ezo murâ gâcne nonere wahamicne erâ juzejec. ²⁷ Â micne ezo murâ gâcne nonere kinan qaqa erâ juzejec. ²⁸ Ŋic Fâri Wâtunne e inuc jaha none kinan qacneninte mâcne, e jahac kinan qaqa gie bahuc nic bocjaha kiwiric-jenic rorâ juju-ticne qikinneocte wahawec."

Yabem NT excerbit

8 Gêdên tonan Jesunê nacsenomi sêsa malac sêja sebe sênam ôli mo. 9 Ma awê Samariana tonan kêsôm gêdên en gebe "Aôm Juda ma aê awê Samariaŋa, mago amboac ondoc tec koten gebe jakên bu aôm ônôm nec." (Gebe Juda to lau Samaria nêŋ biŋ gelom tau atom:) 10 Go Jesu gêjô eŋ awa gebe "Aôm embe ôjala gên, tan Anôtô kêkên nan, to ŋac taŋ kêsôm gêdêŋ aôm gebe Ôkêŋ bu mênjanôm nan, go aômgen oten en gebe êkêŋ bu mata jaliŋa êndêŋ aôm." 11 Ma awê kêsôm gêdên en gebe "Apômtau, aômnêm laclu masi ma bu nec gacgen kêsêp gêja su, ma aôm oc ôkôc bu mata jalina tau anga ondoc. 12 Aêac tameni Jakob kêkên bumata tonec gêdên aêac. Êsêac to latui ma nê bôc sênôm bu tau. Aôm kôlêlêc eŋ su me." 13 Go

ma jamên tonec êtu jatê buna êtlam atom."

16 Ma Jesu kêsôm gêdêŋ eŋ golin "Ôna ômôêc nêm akweŋ, agêc ami amêŋ tonec." ¹¹ Tec awê gêjô eŋ awi gebe "Aêŋoc akweŋ masi." Go Jou kêsôm gêdêŋ eŋ gebe "Kôsôm jagedon gebe nêm akweŋ masi. ¹8 Aôm gojam ŋac lemeŋ teŋ su, ma ŋac, taŋ galo gôjam gômoa naŋ, nêm akweŋ eŋ atom Tec kôsôm jagêdêŋ."

19 Ma awê kêsôm gêdêŋ eŋ gelie "Apômtau, aê galic aôm propete ten 2º Aêac tameŋi teteŋ mec aŋga lôc ton ma amac tec asôm gebe ateŋ men ŋamala gêc Jerusalem." ^{2¹} Go Jenu kêsôm gebe "Awê, ôkêŋ êwiŋ aê gelie noc teŋ oc mêŋêsa, naŋ ateŋ mec êndên Tamoc aŋga lôc tônê to Jerusalem atom

Official languages of Papua New Guinea

- English taught in schools
- Tok Pisin an English-based pidgin/creole
 - mostly used along the north coast, highlands and islands
- Hiri Motu a simplified version of the Motu (Austronesian) language
 - · mostly used along the south coast; in decline