

PLS DO NOT QUOTE WITHOUT CONTACTING ME

Gender in Kuot, an East Papuan isolate

NB: Some bonus materials added, marked with ✨

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Kuot – my main points

A complexity metric needs to

- ☞ recognize *opaque* as a possible value for assignment (next to formal & semantic) to make a fair comparison between languages
- ☞ calculate the *relative constancy/consistency* of indexer
 - forms
 - loci (on targets)

I also ask: *whose complexity?*

Papua New Guinea (PNG)





New Ireland



Kuot at a glance ✨

- VSO
- tense: non-future vs. future
- several affixation orders for core arguments (dep. on verb class)
- genders: masc & fem, in sg only

Abbreviations

S	subject	stm ₂	2nd part of bipartite V stem
O	object	DEM	demonstrative
1, 2, 3	persons	REL _R	“relator”
m	masculine sg	HAB	habitual
f	feminine sg	CONT	continuous
d	dual	NEG	negation
p	plural		
n	inclusive		
x	exclusive		

Kuot gender

The System:

masc	dual	plural
fem		

Gender in 3rd person singular only;
glossing therefore economized thus:

3m	3d	3p
3f		

Kuot gender



An example

u-la *a-ko-on,* /em/
3mS.NFUT-go 3mO-throw-3mS.NFUT /TP/

mu-i-o=rə *sop-ien* *u-sik* *ləbot.*
come-3fS-stm₂=ASP hang-3fS 3f-DEM triggerfish(f)

‘he went (and) threw it [the fishnet(m)],
this triggerfish came (and) hung.’

Kuot gender

In principle:

1. no 3pers sg without gender
2. no du/pl with gender
3. one noun = one gender (no manipulation)

Exceptions are fairly standard,
some examples added at the end (✳)

m	du	pl
f		

Kuot gender indexing

Gender is indexed on

- demonstratives
- prepositions (often)
- “relator” in attribute construction
- possessives (possessor & possessee)
- free pronominals
- verbs (S, A & O)
- adjectives (S)

m	du	pl
f		

Kuot gender assignment

	% of N
✓ formal: declensions & action nominalization of verbs in classes 2&3	32
✓ sex (biol. gender, in higher animates)	5
? other semantics?	
– many abstracts = f (also nominalized adj & V)	?
– many fruits/nuts = f, and their trees = m	?
✗ the rest ... utter bewilderment!	64

Based on corpus of >1600 nouns

NB: all numbers slightly wobbly but overall proportions correct.

Kuot declensions

Excursion to declensions – to do with non-singular formation

	SG	PL	transl.	rule
reg, V-final	<i>lu</i>	<i>lup</i>	‘hole’	+p
reg, C-final	<i>nər</i>	<i>nərip</i>	‘rosewood’	+(V)p
	<i>kap</i>	<i>kapup</i>	‘mumu tongs’	

Other declensions based on part of sg removed to form non-sg:

“ma”	<i>paimə</i>	<i>paip</i>	‘breadfruit seed’	-mə +p
“nəm”	<i>obinəm</i>	<i>obip</i>	‘canoe’	-nəm +p*
“bam”	<i>nebam</i>	<i>nebəp</i>	‘feather’	-am +əp

... and more.

PL often irregular, and sometimes *-bip* for across all declensions.

Dual nearly always formed by adding *-ien* to plural form.

*but much irregularity, as in several decl

Kuot declensions

Declension sizes (% of all N)

regular:	69
ma(+nma)	14.5
na	4
bun	2
bu	1.5
nəm	4
nim	2.5
bam	2.5
uom	1

Decl. gender profiles (% within)

m	f	m/f
35.5	52	10.5
95.5	1	3
81	8.5	8.5
3.5	96.5	0
9	86.5	4.5
2	100	0
2.5	90	0
0	100	0
0	100	0



Kuot declensions – origins(?)

- declensions not productive (but were at arrival of Oceanic speakers)
- presumably arose in some sort of compounding, or classification using nouns
- gender association of declension nouns < the added bit
- semantics mostly lost, but some remnants



Kuot declensions – origins(?)

“bam” probably from *bābam* ‘leaf’;
many “bam” nouns are either to do with
leaves, or have a singulative sense, e.g.:

<i>opəliobu</i>	‘breadfruit tree’
<i>opələbam</i>	‘breadfruit leaf’
<i>larəbam</i>	‘sardine’ *
<i>pibam</i>	‘fish scale’
<i>ləbiebam</i>	‘wood chip’
<i>ləpərebam</i>	‘leaflet of coconut frond’
<i>binbam</i>	‘rib’

(* cf *larəmə* ‘school of sardines (m)’, both PL: *lərəp*)

However, no declension is fully consistent,
and many rather messy!



Kuot declensions and (non-)transparency

- both gender and number are non-predictable
- no speaker is willing to guess
 - if they do not know the singular, they will suggest neither gender nor form
 - if they do not know the plural only few will speculate
 - this is so even if the linguist sees it is a *ma* word (the least irregular special declension) or whatever
- perhaps unsurprising given items such as

Sg *kuadə* Pl *kuadəbip* ‘buttock (f)’

Sg *kuadəmə* Pl *kuadəp* ‘fishnet sinker (m)’

Kuot declensions and (non-)semantics

- only twice have I noted speaker reactions seemingly to do with the *semantics* of gender assignment:
 1. haha, how weird it would be to use feminine for ‘pen’!
 2. those west coast people are truly odd, to use feminine for betel pepper!?!
- though there is plenty complaining of perceived gender mistakes (in usage by me, or in text, etc.), and overall low awareness of variability
 - variability mostly inter-speaker & inter-dialectal; rarely intra-speaker



Kuot declensions and probing semantics

- gender-deterministic declensions, together with oddball plural formations like *-bip*, work to obscure potential semantic gender areas; 2 exx:
 1. 15 sets of synonyms differ in gender; only 5 can be used (fig tree (sp.), parrotfish (some spp.), ridge cap, dust, stick to kill fire in mumu); the rest have problems:
 - one or both terms are declension governed (goatfish, kerosene wood, starling (sp.), branch/twig, rattan vine)
 - dodgy synonyms (sun, behaviour, feast/carving)
 - one term is m/f (sea snake, whetstone rock)

Kuot declensions and probing semantics

- gender-deterministic declensions... (cont'd)
- 2. 178 names of trees (with known gender),
83 masc, 93 fem, 2 m/f; of these, 70 are in special declensions
- when the rest is broken down by size, habitat, usefulness (or shape) of fruit/seeds/nuts or wood/leaves/sap/bark etc., the categories are too small to generalize from
- and this is probably my best-covered lexical domain... (could stare for longer I guess)

Kuot

The Point (with the declension saga)

- recall:
 - 5% assigned by biological gender;
 - 32% by declensions
 - 63% *residue* (actually c. 95% as speakers have no system for Sg-Pl relations, i.e. don't identify declensions!)
- so, if you agree that Kuot gender assignment is non-simple...

☞ ... to capture it, a *complexity metric* needs to recognize *opaque* as a possible value for assignment (next to formal & semantic)

(difficult to quantify, I know, whose assessment, etc...?)

Kuot – gender & world view

Follow-up point:

- for Kuot, since the speakers cannot assign nouns from general principles (and loan words in particular vary between speakers), cracking the system could not be a matter of better access to world view etc...

Kuot – whose complexity?

Bonus point:

☞ whose complexity? & where?

... i.e., if linguists can resolve X% of German gender assignment after decades of pondering, but it is not there to speakers or learners – what is it that we study?

or: it's fine to study system complexity as such, but it is worth noting that it may not necessarily translate into cognition (at least synchronically)

Kuot – whose complexity?

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Thanks to Matthew Dryer for pointing out that this is a poor analogy: German speakers *know* what to do with a new noun, and are in agreement; the linguists just have a hard time pinpointing the principles they use. Kuot speakers do not have access to principles and new or little-known nouns are treated in an inconsistent manner.

Kuot – origin of the mess=?

So how did the system(?) get into such a state of disarray?

My guess: semantic drift over a long period of time

- a new-ish system is presumably tidy-ish
- polysemy is the likely mechanism
- note: only the semantics of Kuot gender is in trouble; there is no ‘decline’ or ‘decay’ in terms of loss of categories, or one gender taking over
- rather, gender is rigorously marked across all categories that show concord, with morphology intact
- i.e.: the grammatical system is operating; the semantic one is not

Kuot – moving on to indexing

I would argue that for Kuot,

☞ a complexity metric would also need a way of calculating *consistency of indexing* in terms of

A. form

B. locus

Kuot indexing forms for 3sg m&f

Or: how many exponents per (single or cumulative) category?

Target category	3m (n-fut/fut)	3f (n-fut/fut)
Dem; “attr. relr”	<i>i(-)</i>	<i>u(-)</i>
Subj. on adj	<i>-i</i>	<i>-u</i>
Subj. aff. Vcls 2&3	<i>u-/a-</i>	<i>i-</i>
‘Pro’ (obj; parts); prep	<i>a</i>	<i>o</i>
Obj. pref; prep	<i>a</i>	<i>o(u)</i>
Obj. suff. Vcls 2a	<i>-a/-ŋ</i>	<i>-o/-ŋ</i>
Subj. suff Vcl 1	<i>-oŋ/-aŋ</i>	<i>-ieŋ</i>

(Seems worse when the non-gendered part of the system is there)

Kuot indexing forms for 3sg m&f

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Target category	3m (n-fut/fut)	3f (n-fut/fut)
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Subj. aff. Vcls 2&3	<i>u-/a-</i>	<i>i-</i>
‘Pro’ (obj; parts); prep	<i>a</i>	<i>o</i>
Obj. pref; prep	<i>a</i>	<i>o(u)</i>
Obj. suff. Vcls 2a	<i>-a/-η</i>	<i>-o/-η</i>
Subj. suff Vcl 1	<i>-oη/-aη</i>	<i>-ieη</i>

(Seems worse when the non-gendered part of the system is there)

Kuot pronominal forms (exc. alienable poss) ☆

num	pers	Pers pron	Dem; attr. relator	Subj aff Vcl.II,III, n-fut/fut	Obj pro, parts, prep	Obj pref; prep	Adj.	Obj suff cl.IIa 3, n-fut/fut	Subj suff cl.I, n-fut/fut
SG	1	<i>turuo</i>	-	<i>tu/ta</i>	<i>tuo</i>	<i>to</i>	<i>to- -i</i>	-	<i>tun̄/taŋ</i>
	2	<i>nunuo</i>	-	<i>nu/na</i>	<i>nuo</i>	<i>no</i>	<i>no- -i</i>	-	<i>nun̄/naŋ</i>
	3m	-	<i>i(-)</i>	<i>u/a</i>	<i>a</i>	<i>a</i>	<i>-i</i>	<i>-a/-ŋ</i>	<i>oŋ/aŋ</i>
	3f	-	<i>u(-)</i>	<i>i</i>	<i>o</i>	<i>o(u)</i>	<i>-u</i>	<i>-o/-ŋ</i>	<i>ieŋ</i>
DU	1n	<i>bibi</i>	-	<i>bi</i>	<i>bi</i>	<i>bi</i>	<i>bi- -n</i>	-	<i>biŋ</i>
	1x	<i>i</i>	-	<i>i</i>	<i>i</i>	<i>i</i>	<i>i- -n</i>	-	<i>iŋ</i>
	2	<i>mame</i>	-	<i>ma</i>	<i>me</i>	<i>me</i>	<i>ma- -n</i>	-	<i>maŋ</i>
	3	-	<i>li-</i>	<i>li</i>	<i>li(e)</i>	<i>le</i>	<i>-n</i>	<i>-an/-ŋan</i>	<i>liŋ</i>
PL	1n	<i>bubuo</i>	-	<i>bu</i>	<i>buo</i>	<i>bu</i>	<i>bu- -m</i>	-	<i>buŋ</i>
	1x	<i>papa</i>	-	<i>pa</i>	<i>pa</i>	<i>pa</i>	<i>pa- -m</i>	-	<i>paŋ</i>
	2	<i>mimi</i>	-	<i>mi</i>	<i>mi</i>	<i>mi</i>	<i>mi- -m</i>	-	<i>miŋ</i>
	3	-	<i>mi(-)</i>	<i>me</i>	<i>ma</i>	<i>ma</i>	<i>-m</i>	<i>-am/-m</i>	<i>meŋ</i>

Kuot

alienable
possession

Possessor		Possessed			
num.	pers.	m	f	du	pl
SG	1	<i>tuaŋ</i>	<i>tun</i>	<i>tuaŋan</i>	<i>tuam</i>
	2	<i>nuan</i>	<i>nun</i>	<i>nuanjan</i>	<i>nuam</i>
	3m	<i>aŋ</i>		<i>aŋan</i>	<i>am</i>
	3f	<i>iaŋ</i>	<i>ien</i>	<i>iaŋan</i>	<i>iam</i>
DU	1n	<i>biŋ</i>		<i>biŋan</i>	<i>bim</i>
	1x	<i>iŋ</i>		<i>iŋan</i>	<i>im</i>
	2	<i>meŋ</i>		<i>meŋan</i>	<i>mem</i>
	3	<i>liaŋ</i>	<i>lion</i>	<i>liaŋan</i>	<i>liam</i>
PL	1n	<i>buauŋ</i>	<i>buouŋ</i>	<i>buauŋan</i>	<i>buam</i>
	1x	<i>paŋ</i>		<i>paŋan</i>	<i>pam</i>
	2	<i>miŋ</i>		<i>miŋan</i>	<i>mim</i>
	3	<i>meiaŋ</i>	<i>meion</i>	<i>meiaŋan</i>	<i>meiam</i>

Kuot indexing loci for 3sg m&f (1/3)

Dem, attr.relr, V2 subj (made-up exx.)

M: *U-la* [*i-sik* *i-lə* *ləklakə-i*]
 3mS.NFUT-go 3m-DEM 3m-RELR long-3m

F: *I-la* [*u-sik* *u-lə* *ləklakə-u*]
 3fS-go 3f-DEM 3f-RELR long-3f

‘The tall one went’

V3 subj & obj

M: *A-aga-u-lie*
 3mO-rest-3mS.NFUT-stm₂

F: *O-aga-i-lie*
 3fO-rest-3fS-stm₂

‘S/he helped him/her’

	3m (n-fut/fut)	3f (n-fut/fut)
Target category		
Dem; “attr. relr”	<i>i(-)</i>	<i>u(-)</i>
Subj. on adj	<i>-i</i>	<i>-u</i>
Subj. aff. Vcls 2&3	<i>u-/a-</i>	<i>i-</i>
‘Pro’ (obj; parts); prep	<i>a</i>	<i>o</i>
Obj. pref; prep	<i>a</i>	<i>o(u)</i>
Obj. suff. Vcls 2a	<i>-a/-ŋ</i>	<i>-o/-ŋ</i>
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Kuot indexing loci for 3sg m&f (2/3)

Dem, V2a obj, prep (authentic ex.)

[[*u-sik dram*] *lə* *buat* <...>
 3f-DEM drum(f) RELR HAB

me-opələ-o *burunəm* *u-na*]
 3pS-fill.water.3fO water(f) 3f-in

‘that drum (that) <...>
 they fill water in[it.f]’

V2a obj. future:

Eba me-opəla-ŋ
 FUT 3pS-fill.water-3sO.FUT

‘they will fill water’

Target category	3m (n-fut/fut)	3f (n-fut/fut)
Dem; “attr. relr”	<i>i(-)</i>	<i>u(-)</i>
Subj. on adj	<i>-i</i>	<i>-u</i>
Subj. aff. Vcls 2&3	<i>u-/a-</i>	<i>i-</i>
‘Pro’ (obj; parts); prep	<i>a</i>	<i>o</i>
Obj. pref; prep	<i>a</i>	<i>o(u)</i>
Obj. suff. Vcls 2a	<i>-a/-ŋ</i>	<i>-o/-ŋ</i>
Subj. suff Vcl 1	<i>-oŋ/-aŋ</i>	<i>-ieŋ</i>

Kuot indexing loci for 3sg m&f (3/3)

V1 subj., prep

te-adə-aŋ *irə-o* *kur*
 REFL-lean-3mS at-3f wall(f)

‘He leans on the wall’

V1 subj. & obj. (future)

Eba o-kimə-aŋ
 FUT 3fO-see-3mS.FUT

‘he will see her(/it.f)’

	3m (n-fut/fut)	3f (n-fut/fut)
Target category		
Dem; “attr. relr”	<i>i(-)</i>	<i>u(-)</i>
Subj. on adj	<i>-i</i>	<i>-u</i>
Subj. aff. Vcls 2&3	<i>u-/a-</i>	<i>i-</i>
‘Pro’ (obj; parts); prep	<i>a</i>	<i>o</i>
Obj. pref; prep	<i>a</i>	<i>o(u)</i>
Obj. suff. Vcls 2a	<i>-a/-ŋ</i>	<i>-o/-ŋ</i>
Subj. suff Vcl 1	<i>-oŋ/-aŋ</i>	<i>-ieŋ</i>

System complexity = ?

Trying to calculate Kuot complexity with Di Garbo's metric

Feature	Values	K value	Hmm	K Score	K alt?
GV (# gdr values)		2		0	0
AR (type of assignment)	all formal/sem. vs mixed		?? <40% formal, the rest opaque!	??	1
IND (# index target types)		>4	(count verb twice?)	1	1
CUM	(portmanteau stuff)	1	(well yes, but uninteresting (?))	1	1
M1		0		0	0
M2		0		0	0
			sum:	2	3
			score:	0,4	0,6

Indexer consistency

Swahili

yu-le *m-tu* *m-moja* *m-refu*
CL1-DEM CL1-person CL1-one CL1tall

a-li-ye-ki-som-a *ki-le* *ki-tabu* *ki-refu*
3sgS-PST-REL-read-FV CL7-that CL7-book CL7-long

‘That one tall person who read that long book.’

Swahili is the sort of system where Audring’s notion of ‘scaffolding’ (for learners) would work well – indexers are pervasive, and mostly consistent in form as well as locus (i.e., mainly alliterative prefixes).



Indexer consistency

Kuot and Swahili

- Swahili scores the maximum, 1, in Di Garbo's metric
- The big difference from Kuot for the metric is that Swahili has
 - many noun classes
 - manipulable gender assignment
- NB: I am *not* arguing that Kuot is even near the top ten most complex languages in the world, gender-wise!
0.6 may be a fair score.



Kuot, metrics, and gender complexity

But I do argue that:

- ☞ the multifold inconsistencies in Kuot gender assignment and expression, partly systematic, partly just irregular, do constitute complexity in ways that are not captured by current methods of quantifying complexity in gender systems.

NB: *absolutely **no** criticism* intended to those who have the courage to propose metrics!!!

• ∞ The End ∞ •

(Some bonus slides to follow)

Kuot & Chichewa ✨

Chichewa (from Audring); max end of scale for # of targets

(15) *Ichi* *ndi* *chi-tsílu* *chi-méné*

7.DEF.SG be 7-fool 7-REL

kalulú *a-na-chí-lémbéla* *kálata*

1.hare 1-PST-7-write.to/for 9.letter

‘This is the fool that the hare wrote a letter to/for.’

Kuot (own translation):

I-ro *la* *noŋ*

3m-here RELR fool(m/f)

la *o-mir-oŋ* *kapuna* *pas* *a-un*

RELR 3fO-write-3mS dog(m) letter(f) 3m-to/for

Yes, fewer targets *but* more variation; Kuot has *i-*, *-oŋ*, *a-* as exponents of the same morpheme (3sg.masc)

Kuot system basics ✨

m	du	pl
f		

1. Gender in 3rd person singular only

Exceptions

- future forms for object agreement in verb class 2a (non-fut. masc. *-a* and fem. *-o* neutralised in *-ŋ*)
- (alienable) possessives index both possessor and possessee; in some forms, masc. and fem. possesseees are not distinguished

Kuot system basics ✨

m	du	pl
f		

2. No dual or plural with gender

Exceptions

- Some kin & person terms, which have irregular & sometimes gendered dual forms
- Occasional claims of fem/masc alternatives for plural forms of adjectives (probably also dual)

Kuot system basics ✨

m	du	pl
f		

3. One noun = one gender (no manipulation)

Exceptions

- terms denoting humans – main words for pigs have separate terms (*kumurot/kumebun*); dogs too (*kapunə/laibun*) but masc used if unclear or unimportant; cats no one cares, usu masc; weirdly separate terms for rat/mouse (*kifəmə/kifəbun*)
- ‘stone’ (f =big, m = small (!)) – only case of gender-related meaning difference (in inanimates)
- interpersonal variation: NB intrapersonal variation seems very rare! (eg Ros bilum=f, RS bilum=m)
- some interdialectal variation

Kuot system basics ✨

m	du	pl
f		

- generally, unknown (referential) entities take masc; reference to a proposition or larger situation takes fem
- Q words *mani* ‘what’ & *aka* ‘who’ = masc if not overwhelmingly obviously not
- yet ‘fillers’ are gendered: ‘whatsit’ *mare/maro*; ‘do whatsit’ *mat-ba* takes full S and O agreement (unhelpful)