

FORMULAE FOR COINING SPECIALIZED LUGANDA TERMS

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ABBREVIATIONS AND SYMBOLS

F	prefix
F ⁺	nominal prefix with initial vowel
F ₊	prefix in plural
H	suffix
L	postsuffix such that L = •a/ wa/ (y)e// e/ u// i/ o
oku•	prefix of verb in citation form
R	verb root, simple or extended
S	nominal stem
S'	subordinating clause
S''	sentence
S _{num}	numeral stem
W''	phrase
X	word or word-segment in English
Z	word in Luganda
<u>Adl</u>	adverbial
<u>C</u>	complement
<u>O</u>	object
<u>S</u>	subject
<u>V</u>	predicator
•	agglutinational boundary (in Luganda); syllable boundary (in English)
:	"is fulfilled/ realized/ represented by"

- / alternative
- < from
- () occasionality/ optionality brackets
- [] block brackets

INTRODUCTORY NOTES ON THE FOURTH EDITION

1. The first, second, and third editions of this research output appeared in October, November, and December 2022 respectively. For the present edition we have not only precised some of the term-coining formulae, but also added a part delving in the principles of terminology development. However, the part setting out German-Luganda affixes and combining forms has been discarded in order not to destabilize those members of the Team for Articulation of Specialized Luganda (TASL) who may not be familiar with the German medium.
2. In this edition we generalize the English-Luganda formulae as follows:

Rule 1

$$[[F/C] \cdot X] / [X \cdot [H/C]] \equiv \text{oku} \cdot S/R \cdot (a)H \cdot a \vdash F \cdot S/R \cdot (a)H \cdot L$$

Rule 2

$$[[F/C] \cdot X] / [X \cdot [H/C]] \equiv [F \cdot C \quad F_2 \cdot R \cdot a / wa / (y)e \quad Z] \vdash F \cdot R \cdot a / wa / (y)e \cdot Z \vdash \\ R^+ \cdot a / wa / (y)e \cdot Z$$

Rule 3

$$[[F/C] \cdot X] / [X \cdot [H/C]] \equiv [F_1 \cdot C_1 \quad F_{1s} \cdot \text{ekuusa ku} \quad F_2 \cdot C_2] \vdash F_1 \cdot C_1 \cdot C^+_2$$

PART 1: PRINCIPLES OF TERMINOLOGY DEVELOPMENT

1. PREVIEW

In a seminal paper on the terminology development of Kiswahili Tumbo (1982:87) reports:

[In] 1968 it was proclaimed that Kiswahili should slowly replace English as a medium of instruction in the educational system [of Tanzania] up to the university level.

However, in 2023 formal sciences (logic and mathematics), natural sciences (physics, chemistry, botany and zoology), and applied sciences like informatics, technology, agriculture, and medicine are still taught in English at Tanzanian universities¹. One would be motivated to ask what has gone wrong in the process of terminological modernization of Kiswahili over the years. But it will be proper to receive Tumbo's recommended approach to terminology development which consists in:

- i. splitting all human knowledge into specialized fields
- ii. conceptual analysis by subject field specialists
- iii. training subject field specialists in the principles of terminology
- iv. cooperation of subject field specialists with linguists to coin specialized terms.

Tumbo (1982:89)

It is the contention of the present paper that the very involvement of linguists in the actual coining of terms is what led to the lack of progress.

This paper is divided into five major sections. First, the term 'term' is defined. Second, a so-called PEGITOSCA Criterion for term status of an expression is presented and characterized. Third, a radically new method of conceptual analysis is presented and defended. Fourth, it is argued that consistent fulfillment of the PEGITOSCA Criterion necessitates the expressional extrapolation of the planned language. Luganda is taken as a case for exemplification. Finally, some prototypical terminological systems are displayed in Sec 6

2. DEFINITION OF THE TERM "TERM"

An expression W^L (a phrase W in any language L) is a term T_L if and only if it represents a concept Θ and fulfills an acceptability function $A(P, E, G, I, T, O, S, C)$

where A = acceptability,

P = precision

E = economy

G = generativity (or productivity)

I = internationality

T = transparency

O = objectivity

S = systemicity

C = consistency of the term T_L

In the symbolic paraphrase of the definition [1]

[1] $T_L = [\Theta + W^L + A(P, E, G, I, T, O, S, C)]$

$A(P, E, G, I, T, O, S, C)$ is the PEGITOSCA Criterion².

3. EXEMPLIFICATION OF THE SUBCRITERIA OF PEGITOSCA

In Luganda precision can be illustrated as in [2]

[2] i) force = **ekikasi**, work = **omulimu**, energy = **amaanyi**

ii) mass = **obutole**, weight = **obuzito**

It will be noted that to attain precision, the coinages **ekikasi** and **obutole** are contrived such that **ekikasi** < **oku•kak•a** 'to force' and **obutole** < **ekitole** 'lump'.

[3] German "Zivilluftfahrtversicherungsgesellschaft" = English "Civil Aviation Insurance Company" affords us an example of (language – relative) economy.

There are more than 900 **electro•X** and about 250 **micro•X** words according to Dorian (1978). Therefore, we can say that **electro-** and **micro-** are productive combining forms³.

Logical, mathematical, physics, and chemical symbols are internationally stipulated. The International Union for Pure and Applied Physics (IUPAP), the International Union for Pure and

Applied Chemistry (IUPAC), the International Commission for Botanical Nomenclature (ICBN) and the International Commission for Zoological Nomenclature (ICZN) regulate terminology and standards on the international level⁴.

Language nationalism and/ or level of education of the prospective terminology users may lead to transparency or opacity of a term as in [4]

- [4] i) German **Sternkunde** = **Astronomie** "astronomy"
ii) Kiswahili **elimunyota** = **astronomia** "astronomy"

But it should be conceded that opacity will only prevail if the German or Kiswahili speaker does not know Classical Greek intimately⁵.

In the so-called exact sciences of logic, mathematics, physics, chemistry, and biology we prefer objective to subjective terms.

Systemicity as captured formulaically by C_nH_{2n+2} is a hallmark of chemical nomenclature⁶. The alkanes form a system, the first of which is **meth•ane** CH_4 ⁶.

If X_1 and X_2 are propositions and a conjunction of X_1 and X_2 is false, i.e. $[X_1 \wedge X_2] = 0$, then X_1 is inconsistent with X_2 . Otherwise, if $[X_1 \wedge X_2] = 1$, then X_1 and X_2 are a consistent set of propositions⁷.

As far as acceptability is concerned, can it ever happen that A(P, E, G, I, T, O, S, C) is optimized by a highly qualified coiner (subject field specialist) and yet be rejected by the relevant terminology user community? Yes, if, for instance, the coiner's spelling, or newly extrapolated affix is deemed to be unacceptable⁸.

4. CONCEPTUAL ANALYSIS

If we go along with Matthews (2007), a concept is

a mental construct seen as mediating between a word and whatever it denotes or is used to refer to⁹.

Hence, what the English 'dog' and Kiswahili 'mbwa' have in common is the concept *dog*. The author has arranged conceptual entities in ascending order of complexity: quantity, quality, form, proposition, set, number, degree, length, neighbour, direction, ordered object, matter, change, non-change, time, energy, material object, living being, plant,

animal, human, perceiver, mental being, non-material object, emotional being, institution, supernatural being. He has also arranged conceptual predicates again in ascending order of complexity: change bearer, non-change bearer, reference, dynamic contactor, static contactor, contactee, dynamic causer, static causer, and causee. Now, let the conceptual entities be arranged vertically from I – XXVII and the conceptual predicates be arranged horizontally from 1 – 9. Furthermore, if y = conceptual entity and F = conceptual predicate, then yF is a conceptual element. What emerges is a periodic table of conceptual elements with 27 periods a, q, ... i, b; and 9 conceptual groups B, Z, R, ... , C, K, E¹⁰.

A PERIODIC TABLE OF CONCEPTUAL ELEMENTS

		1 B	2 Z	3 R	4 N	5 T	6 A	7 C	8 K	9 E	
I	a	aB	aZ	aR	aN	aT	aA	aC	aK	aE	Quantity
II	q	qB	qZ	qR	qN	qT	qA	qC	qK	qE	Quality
III	φ	φB	φZ	φR	φN	φT	φA	φC	φK	φE	Form
IV	p	pB	pZ	pR	pN	pT	pA	pC	pK	pE	Proposition
V	s	sB	sZ	sR	sN	sT	sA	sC	sK	sE	Set
VI	n	nB	nZ	nR	nN	nT	nA	nC	nK	nE	Number
VII	γ	γB	γZ	γR	γN	γT	γA	γC	γK	γE	Degree
VIII	l	lB	lZ	lR	lN	lT	lA	lC	lK	lE	Length
IX	j	jB	jZ	jR	jN	jT	jA	jC	jK	jE	Neighbor
X	d	dB	dZ	dR	dN	dT	dA	dC	dK	dE	Direction
XI	o	oB	oZ	oR	oN	oT	oA	oC	oK	oE	Ordered object
XII	m	mB	mZ	mR	mN	mT	mA	mC	mK	mE	Matter
XIII	c	cB	cZ	cR	cN	cT	cA	cC	cK	cE	Change
XIV	k	kB	kZ	kR	kN	kT	kA	kC	kK	kE	Non-change
XV	t	tB	tZ	tR	tN	tT	tA	tC	tK	tE	Time
XVI	e	eB	eZ	eR	eN	eT	eA	eC	eK	eE	Energy
XVII	r	rB	rZ	rR	rN	rT	rA	rC	rK	rE	Material object
XVIII	v	vB	vZ	vR	vN	vT	vA	vC	vK	vE	Living being
XIX	f	fB	fZ	fR	fN	fT	fA	fC	fK	fE	Plant
XX	z	zB	zZ	zR	zN	zT	zA	zC	zK	zE	Animal
XXI	h	hB	hZ	hR	hN	hT	hA	hC	hK	hE	Human
XXII	w	wB	wZ	wR	wN	wT	wA	wC	wK	wE	Perceiver
XXIII	u	uB	uZ	uR	uN	uT	uA	uC	uK	uE	Mental being
XXIV	x	xB	xZ	xR	xN	xT	xA	xC	xK	xE	Non-material object
XXV	g	gB	gZ	gR	gN	gT	gA	gC	gK	gE	Emotional being
XXVI	i	iB	iZ	iR	iN	iT	iA	iC	iK	iE	Institution
XXVII	b	bB	bZ	bR	bN	bT	bA	bC	bK	bE	Supernatural being
		Change Bearer	Non-Change Bearer	Reference	Dynamic Contactor	Static Contactor	Contactee	Dynamic Causer	Static Causer	Causee	

The ascending order of complexity of conceptual entities seems to correlate with the pure subject fields as is shown in [5].

- [5] i) a – p logic
- ii) a – o mathematics
- iii) a – r physics and chemistry
- iv) a – v biology
- v) a – f botany
- vi) a – z zoology
- vii) a – g psychology
- viii) a – i sociology
- ix) a – b "transology" (for lack of an already – existing precise term)¹¹

On the link between language and mind Chomsky (1972) writes:

When we study human language, we are approaching what some might call the “human essence,” the distinctive qualities of mind that are, so far as we know, unique to man [*sic*].

While agreeing with Chomsky that the qualities of mind are unique to human, this author is inclined to go farther by positing that language is a system that maps newtonian and newtonianized reality on the screen of the human mind¹².

Absolute/ relative (non-)change, i.e. $\text{force} = \text{mass} \times \text{acceleration} = 0$ involves the simple/ complex predicates: [B], [BR]; [Z], [ZR]. Dynamic/ static contact, i.e. $\text{force}_{12} = -\text{force}_{21}$, involves the complex predicates [NA], [TA]. Dynamic/ static causation, i.e. $\text{force} = \text{mass} \times \text{acceleration} \neq 0$, involves the complex predicates [CE], [KE].

Conceptual analysis/ synthesis is formalizable as we show in [6]¹³.

[6] i) $\frac{\text{The door}}{r} \frac{\text{opens}}{[B]}$	rB
ii) $\frac{\text{The door}}{r} \frac{\text{is}}{[ZR]} \frac{\text{open}}{q}$	rZqR
iii) $\frac{\text{The warden}}{h} \frac{\text{finds}}{[NA]} \frac{\text{the key}}{r}$	hNrA
iv) $\frac{\text{The warden}}{h} \frac{\text{has}}{[TA]} \frac{\text{the key}}{r}$	hTrA
v) $\frac{\text{The key}}{r_1} \frac{\text{opens}}{C[B]E} \frac{\text{the door}}{r_2}$	r ₁ C[r ₂ B]E
vi) $\frac{\text{The warden}}{h} \frac{\text{opens}}{C[B]E} \frac{\text{the door}}{r_2}$	hC[r ₂ B]E
vii) $\frac{\text{The warden}}{h} \frac{\text{opens}}{C[C[B]E]E} \frac{\text{the door}}{r_2} \frac{\text{with the key}}{r_1}$	hC[r ₁ C[r ₂ B]E]E
viii) $\frac{\text{The student}}{h} \frac{\text{is learning}}{[NA]} \frac{\text{the theory}}{x}$	hNxA
ix) $\frac{\text{The student}}{h} \frac{\text{knows}}{[TA]} \frac{\text{the theory}}{x}$	hTxA
x) $\frac{\text{The lecturer}}{h_1} \frac{\text{is teaching}}{C[NA]E} \frac{\text{him}}{h_2} \frac{\text{the theory}}{x}$	h ₁ C[h ₂ NxA]E

Propositions [6 (vii)] and [6 (x)] are paraphrasable as in [7]

[7] (i) The warden causes the key to cause the door to open.

(ii) The lecturer is causing the student to learn the theory.

If conceptual predicates are juxtaposed with sentence patterns, interesting correspondences become evident as is shown in [8]

[8]	(i)	[Σ]	<u>S</u>	<u>V</u>		where $\Sigma = B/ Z$
	(ii)	[ΣR]	<u>S</u>	<u>V</u>	<u>C/ Adl</u>	
	(iii)	[ΨA]	<u>S</u>	<u>V</u>	<u>O</u>	where $\Psi = N/ T$
	(iv)	$\Phi[\Sigma]E$	<u>S</u>	<u>V</u>	<u>O</u>	where $\Phi = C/ K$
	(v)	$\Phi[\Sigma R]E$	<u>S</u>	<u>V</u>	<u>O</u>	<u>C/ Adl</u>
	(vi)	$\Phi[\Psi A]E$	<u>S</u>	<u>V</u>	<u>O</u>	<u>O</u>
	(vii)	$\Phi[\Phi[\Sigma]E]E$	<u>S</u>	<u>V</u>	<u>O</u>	<u>O</u>

The concepto-sentential correspondences play a major part in extrapolative work towards suffixes and combining forms (cf Sec 5).

5. EXPRESSIONAL EXTRAPOLATION OF LUGANDA

By expressional extrapolation we understand the systematic generation of new affixes on the pattern/ basis of already-existing ones or intensified application of already-existing lexeme formation rules. Presumably, all languages subtly tend to meet the subcriterion of economy by developing affixes following the order given in [9]

[9] $S'' > S' > W'' > C > S/ R > F/ H$

The formation of the mutative suffix "-en" in [10]

[10]	(i)	<u>The sky_{l³} becomes_[BR] black_q.</u>	[l ³ B q R]: < <u>S</u> <u>V</u> <u>C/ Adl</u> >
	(ii)	<u>The sky_{l³} blackens_[B].</u>	[l ³ B]: < <u>S</u> <u>V</u> >

is an apt illustration of sentence pattern reduction exhibited in [11]

[11]	(i)	[Σ]: < <u>S</u> <u>V</u> >
	(ii)	[Σ]: < <u>S</u> <u>V</u> <u>C/ Adl</u> >
	(iii)	[ΨA]/ [$\Phi[\Sigma]E$]: < <u>S</u> <u>V</u> <u>O</u> >
	(iv)	[$\Phi[\Sigma R]E$]: < <u>S</u> <u>V</u> <u>O</u> <u>C/ Adl</u> >
	(v)	[$\Phi[\Psi A]E$]/ [$\Phi[\Phi[\Sigma]E]E$]: < <u>S</u> <u>V</u> <u>O</u> <u>O</u> >

The most generalized expressional labelling of conceptual predicates in Luganda concurs extrapolatively with [10] and [11] as shown in [12]

- [12] (ia) [B]: **okukyuka/ okufuuka** (ib) [Z]: **okuba**
(iiia) [BR]: **okukyukila/ okufuukila** (iib) [Z]: **okubeela**
(iiia) [NA]: **okukuuta-ku/ okukwata-ku** (iiib) [TA]: **okwekuusa-ku/ okukwata-ku/ okufa-ku**
(iv) [Φ [Π]E]: **okuleet(el)a**, where [Π] = [Σ]/ [Σ R]/ [Ψ A]
(v) [Φ [Φ [Π]E]E]: **okuleet(el)a okuleet(el)a**

For the benefit of the reader who may not be familiar with the Luganda labels in [12], the renditions suggested in [13] may prove handy.

- [13] (ia) [B]: "to change/ become" (ib) [Z]: "to be/ exist"
(iiia) [BR]: "to relatively change/ become" (iib) [ZR]: "to be relative"
(iiia) [NA]: "to contact" (iiib) [TA]: "to be in contact with"
(iv) [Φ [Π]E]: "to cause"
(v) [Φ [Φ [Π]E]E]: "to cause to cause"

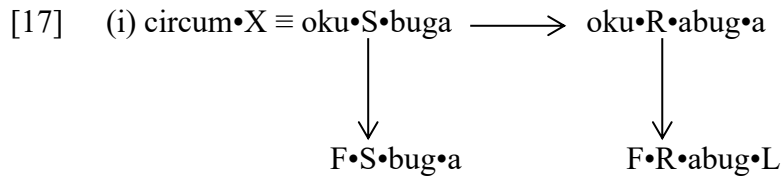
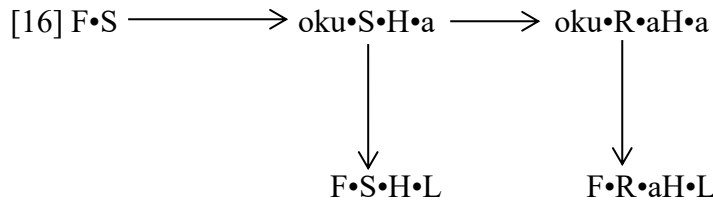
5.1 Extrapolated Lexeme Formation Rules

From the data in [14], the lexeme formation rule in [15] is extrapolatable.

- [14] (i) $F \cdot S \longrightarrow oku \cdot S \cdot H \cdot a \longrightarrow F \cdot S \cdot H \cdot L$
en•naku oku•naku•wal•a F_a•naku•wav•u
“misery” “to become miserable” “miserable”
- (ii) $oku \cdot R \cdot a \longrightarrow oku \cdot R \cdot H \cdot a \longrightarrow F \cdot R \cdot H \cdot L$
oku•naab•a oku•naab•il•a eki•naab•il•o
“to wash oneself” “to wash oneself in/at” “washroom”

- [15] $F \cdot S / R \cdot H \cdot a \longrightarrow F \cdot S / R \cdot (a) H \cdot L$

Therefore, the sequence in [16] is possible, and is exemplified in [17]



(iia) circumlunar \equiv $\text{F}_a\cdot\text{ezi}\cdot\text{bug}\cdot\text{a}$ \square $\text{omu}\cdot\text{ezi}\cdot$ “moon”

(iib) circumscribe \equiv $\text{oku}\cdot\text{wandiik}\cdot\text{abug}\cdot\text{a}$ \square $\text{oku}\cdot\text{wandiik}\cdot\text{a}$ “to write”

From the data in [18], we extrapolate the rule in [19]

- [18] (i) [$\text{eki}\cdot\text{ntu}$ $\text{ki}\cdot\text{tt}\cdot\text{a}$ abantu] \longrightarrow $\text{eki}\cdot\text{tt}\cdot\text{a}\cdot\text{bantu}$
“it kills people” “genocide”
- (ii) [$\text{eki}\cdot\text{ntu}$ $\text{ki}\cdot\text{banj}\cdot\text{a}$ mpola] \longrightarrow $\text{eki}\cdot\text{banj}\cdot\text{a}\cdot\text{mpola}$
“it duns softly” “soft loan”
- (iii) [omwana $\text{a}\cdot\text{ggul}\cdot\text{a}$ enda] \longrightarrow $\text{omu}\cdot\text{ggul}\cdot\text{a}\cdot\text{nda}$
“child opens womb” “first-born”
- (iv) [omwana $\text{a}\cdot\text{ggal}\cdot\text{a}$ enda] \longrightarrow $\text{omu}\cdot\text{ggal}\cdot\text{a}\cdot\text{nda}$
“child opens womb” “last-born”
- (v) [omuntu $\text{a}\cdot\text{yagalw}\cdot\text{a}$ abantu] \longrightarrow $\text{omw}\cdot\text{ayagalw}\cdot\text{a}\cdot\text{bantu}$
“He/she is liked by the people” “popular person”

[19] [$\text{F}\cdot\text{S}$ $\text{F}_{\text{pro}}\cdot\text{R}\cdot\text{a}/$ wa Z] \rightarrow $\text{F}\cdot\text{R}\cdot\text{a}/$ $\text{wa}/$ $(\text{y})\text{e}\cdot\text{Z}^*$

The extrapolated part of [19] is exemplified in [20].

- [20] [omwana awandiise bubi ebbaluwa] \rightarrow “child has written the letter badly”
[ebbaluwa empandiike obubi] \rightarrow empandiikebubi
“the badly written letter” “the badly-written”

The extrapolation in [22] is supported by data in [21].

- [21] (i) [mu•ko li•lomi] → mu•ko•ddomi
 $F_1 \cdot S_1$ li•S₂ $F_1 \cdot S_1 \cdot S_2^+$
 "in-law male" "male in-law"
- (ii) [nnam•pulil•a li•zib•i] → nnam•pulil•a•zzib•i
 $F_1 \cdot R_1 \cdot a$ li•R₂L $F_1 \cdot R_1 \cdot a \cdot R_2^+ \cdot L$
 "hearer hard" "a person who is hard of hearing"
- (iii) [omu•wala li•lume] → omu•wala•ddume
 $F_1 \cdot S_1$ li•S₂ $F_1 \cdot S_1 \cdot S_2^+$
 "girl male" "tomboy"
- (iv) [omu•wala li•yana] → omu•wala•jjana
 $F_1 \cdot S_1$ li•S₂ $F_1 \cdot S_1 \cdot S_2^+$
 "girl young" "well-developed teen-age girl"
- (v) [oku•sek•a li•buniz•a] → oku•sek•a•bbuniz•a
 $F_1 \cdot R_1 \cdot a$ li•R₂•a $F_1 \cdot R_1 \cdot a \cdot R_2^+ \cdot a$

[22] [$F_1 \cdot S_1 / R_1 \cdot L$ li•S₂ / R₂•L] → $F_1 \cdot C_1 \cdot C_2^+$

While the rule in [15] leads to complex lexemes, those in [19] and especially [22] can be invoked to deal with virtually all English combining-form compounds with hardly any palpable apprehension. Let us look at examples of combining-form words in [23].

- [23] (i) F•tono → Z•ttono ≡ micro•X
 "small"
- (ii) F•nene → Z•ddene ≡ macro•X
 "large"
- (iii) ama•meme → Z•mmeme ≡ electro•X¹⁴
 "electricity"
- (iv) en•kasi → Z•kkasi ≡ cyber•X
 "oar"

- (v) $em\bullet baziso \rightarrow Z\bullet bbaziso \equiv computer\bullet X^{15}$
"computer"
- (vi) $ama\bullet ka \rightarrow Z\bullet kka \equiv eco\bullet X$
"home"
- (vii) $oku\bullet tuuka \rightarrow Z\bullet ttuuka \equiv ortho\bullet X$
"to become right"
- (viii) $en\bullet si \rightarrow Z\bullet ssi \equiv geo\bullet X$
"earth"
- (ix) $obu\bullet lamu \rightarrow Z\bullet ddamu \equiv bio\bullet X$
"life"
- (x) $F\bullet kise \rightarrow Z\bullet kkise \equiv crypto\bullet X$
"hidden"
- (xi) $ebugumu \rightarrow Z\bullet bbugumu \equiv thermo\bullet X$
"heat"
- (xii) $kyenkana \rightarrow Z\bullet kkyenka \equiv virtual\bullet X$
"virtually"

5.2 Expressing Fundamental Concepts

It should be underscored that the very essence of terminology development is for the developer to systematically classify and express concepts in his/ her natural language. To that end, the periodic table of conceptual elements in Sec 4 seems to provide an extremely good point of departure, for it purports to encompass all human knowledge. To illustrate this point, we wish to consider three fundamental concepts, namely gradation (γ), direction (d), and order (o)¹⁶.

5.2.1 Gradation

In specialized Luganda, gradation can be expressed as in [24] with examples in [25].

[24]	(i)	F•S•Ø	F•S•ja	F•S•jja
	(ii)	F•S•Ø	sse•F•S	sse•F+•S
	(iii)	F•S•(ona)	F•S•Ø	F•S•(ena)
[25.1]	(ia)	ekibangilizi "area"	ebbangaja "volume"	ebbangajja "hyperspace"
	(ib)	ekibuga "town"	ekibugaja "city"	ekibugajja "megacity"
	(ic)	F•S•ttono "micro•X"	F•S•ttonoja "ultramicro•X"	F•S•ttonojja "micromicro•X"
	(id)	F•S•ddene "macro•X"	F•S•ddeneja "ultramacro•X"	F•S•ddenejja "macromacro•X"
	(ie)	eggwangawansa "tribe"	eggwangawansaja "subtribe"	eggwangawansajja "infratribe"
	(if)	olulimiwansa "dialect"	olulimiwansaja "subdialect"	olulimiwansajja "infradialect"
	(iia)	edduuka "shop"	sseduuka "supermarket"	ssemaduuka "hypermarket"
	(iib)	olutalo "war"	sselutalo "major war"	ssematalo "world war"

[25.2] Gradation of Size

10^{12}	•	macromacro•X	wagu•S
10^9	•	ultramacro•X	sselu•S•ena
10^6	•	macro•X	walu•S•ena
10^3	•	maxi•X	olu•S•ena
10^2	•	hyper•X	sselu•S
10^1	•	super•X	walu•S
10^0	•	Ø•X	F•S
10^{-1}	•	hypo•X/ sub•X	wapi•S
10^{-2}	•	infra•X	ssepi•S
10^{-3}	•	mini•X	epi•S•ona
10^{-6}	•	micro•X	wapi•S•ona
10^{-9}	•	ultramicro•X	ssepi•S•ona
10^{-12}	•	micromicro•X	waka•S

[25.3] Gradation of Vertical Position

•	Z•gwajaja	= df Z•gwajja
•	Z•gwaja	
•	Z•gwa	ekya waggulu (above/ over)
•	Z•gulajaja	= df Z•gulajja
•	Z•gulaja	
•	Z•gula	eky'okungulu (on top of)
•	Z•Ø	
•	Z•gala	eky'oku ntobo (at the bottom of)
•	Z•galaja	
•	Z•galajaja	= df Z•galajja
•	Z•nsa	ekya wansi (below/ under)
•	Z•nsaja	
•	Z•nsajaja	= df Z•nsajja

5.2.2 Order

The concept of order subsumes those of the neighbourhood (j) and direction (d). For illustration of expressing order let the data in [26] be studied.

[26]	(i)	oku•ggal•a	#	oku•ggul•a
		"to close"		"to open"
	(ii)	oku•bal•a	#	oku•bul•a
		"to become plentiful"		"to disappear"
	(iii)	oku•bbik•a	#	oku•bbuk•a
		"to immerse"		"to bounce back"
	(iv)	oku•kal•a	#	oku•kul•a
		"to dry up"		"to grow up"

We may generalize from the data in [26] to [27]:

[27] oku• (K)Ka/ e/ i Ka # oku• (K)Ko/ uKa, where K is a consonant)
as the extrapolative move required. [27] expresses contrast which we
may exemplify in [28].

[28]	(i)	oku•R•agala	#	oku•R•agula
		"down•X"		"up•X"
	(ii)	F•S•kyana	#	F•S•kyuna
		"homeo•X"		"poikilo•X"
	(iii)	F•S•yawa	#	F•S•yuwa
		"hetero•X, mixed-X"		"homo•X, same-X"
	(iv)	F•S•nkana	#	F•S•nkuna
		"equi•X, iso•X"		"aniso•X"
	(v)	F•S•nnana	#	F•S•nnona
		"artificial X"		"original X, proto•X, ur•X"
	(vi)	F•S•ssonja	#	F•S•ssanja
		"discrete X"		"continuous X"
	(vii)	F•S•mag•L	#	F•S•mug•L
		"random X"		"systematic X"
	(viii)	ttaba•Z	#	ttuba•Z
		"general X"		"special X"
	(viii)	F•S•ttuuka	#	F•S•ttaaka
		"ortho•X"		"unortho•X"

5.2.3 Direction

- [1] (i) oku•S•w(al)a = "to become F•S"
(ii) oku•S•wuka # oku•S•w(al)a
- [2] (ia) oku•S•nawa = "to become pertinent to F•S"
(ib) oku•S•nuwa # oku•S•nawa
(iia) oku•S•mawa = "to become F•S•ma"
(iib) oku•S•muwa # oku•S•mawa
(iia) oku•S•pawa = "to become an element/ member of F•S•ma"
(iiib) oku•S•puwa # oku•S•pawa
(iva) oku•S•vawa = "to become F•S•va"
(ivb) oku•S•vuwa # oku•S•vawa
(va) oku•S•cawa = "to become a part of F•S•va"
(vb) oku•S•cuwa # oku•S•cawa
- [3] (i) F•S•bela = "F•S which is in front"
(ii) F•S•bega = "F•S which is at the back"
(iii) F•S•bwa = "F•S which is outside"
(iv) F•S•kwa = "F•S which is on the surface"
(v) F•S•mwa = "F•S which is inside"
(vi) F•S•gwa = "F•S which is above/ up"
(vii) F•S•nsa = "F•S which is below/ under// on the undersurface"
(viii) F•S•kata = "F•S which is in the middle"
(ix) F•S•ndamwa = "F•S which is within// in there"
(x) F•S•kiika = "F•S which is across"
(xi) F•S•kumpa = "F•S which is near"
(xii) F•S•wala = "F•S which is far"

- [4]
- (ia) oku•S•**la** = "to face F•S"
 - (ib) F•S•**la** = "that which faces F•S "
 - (iia) oku•S•**ka** # oku•S•**la**
 - (iib) F•S•**ka** # F•S•**la**
 - (iii) oku•S•**belala** = "changing of an entity to become F•**bela**"
 - (iv) oku•S•**begala** = "changing of an entity to become F•**bega**"
 - (v) oku•S•**bwala** = "changing of an entity to become F•**bwa**"
 - (vi) oku•S•**kwala** = "changing of an entity to become F•**kwa**"
 - (vii) oku•S•**mwala** = "changing of an entity to become F•**mwa**"
 - (viii) oku•S•**gwala** = "changing of an entity to become F•**gwa**"
 - (ix) oku•S•**nsala** = "changing of an entity to become F•**nsa**"
 - (x) oku•S•**katala** = "changing of an entity to become F•**kata**"
 - (xi) oku•S•**ndamwala** = "changing of an entity to become F•**ndamwa**"
 - (xii) oku•S•**kiikala** = "changing of an entity to become F•**kiika**"
 - (xiii) oku•S•**kumpala** = "changing of an entity to become F•**kumpa**"
 - (xiv) oku•S•**walala** = "changing of an entity to become F•**wala**"

- [5]
- (i) F•S•**mbela** = "an entity which is in front of F•S"
 - (ii) F•S•**mbega** = "an entity which is behind F•S"
 - (iii) F•S•**bwela** = "an entity which is outside F•S"
 - (iv) F•S•**kunga** = "an entity which is on the surface of F•S"
 - (v) F•S•**munda** = "an entity which is inside F•S"
 - (vi) F•S•**wagwa** = "an entity which is above/ over F•S"
 - (vii) F•S•**wansa** = "an entity which is below/ under F•S"
 - (viii) F•S•**wakata** = "an entity which is in between F₊•S"
 - (ix) F•S•**mundamwa** = "an entity which is within F•S"
 - (x) F•S•**nkiika** = "an entity which is across F•S"
 - (xi) F•S•**laana** = "an entity which is near F•S"

(xii) **F•S•suula** = "an entity which is far from F•S"

- [6]
- (i) **oku•S•belaka # oku•S•belala**
 - (ii) **oku•S•begaka # oku•S•begala**
 - (iii) **oku•S•bwaka # oku•S•bwala**
 - (iv) **oku•S•kwaka # oku•S•kwala**
 - (v) **oku•S•mwaka # oku•S•mwala**
 - (vi) **oku•S•gwaka # oku•S•gwala**
 - (vii) **oku•S•nsaka # oku•S•nsala**
 - (viii) **oku•S•kataka # oku•S•katala**
 - (ix) **oku•S•ndamwaka # oku•S•ndamwala**
 - (x) **oku•S•kiikaka # oku•S•belala**
 - (xi) **oku•S•belaka # oku•S•kiikala**
 - (xii) **oku•S•walaka # oku•S•walala**

[7] Anatomical Directions

- (1) (i) "oral" ≡ (ia) **F_a•mwa•na**
(ib) **F_a•mwa•la**
- (ii) "adoral" ≡ **F_a•mwala**
- (2) "aboral" ≡ **F_a•mwa•ka**
- (3) "anterior" ≡ (3i) **F_a•beli•na**
(3ii) **F_a•beli•la**
- (4) "posterior" ≡ (4i) **F_a•bega•na**
(4ii) **F_a•bega•la**
- (5) "dorsal" ≡ (5i) **F_a•solya•na**
(5ii) **F_a•solya•la**
- (6) "ventral" ≡ (3i) **F_a•buto•na**
(3ii) **F_a•buto•la**

(7)	"caudal"	≡	(3i) F _a •kila•na
			(3ii) F _a •kila•la
(8)	"lateral"	≡	F _a •nna•luuyi
(9)	"medial"	≡	(9i) F _a •kati•na
			(9ii) F _a •kati•la
(10)	"proximal"	≡	F _a •laanajja (<oku•lilaanajja)
(11)	"distal"	≡	F _a •sudde, F _a •wala•na
(12)	"cephalic"	≡	F _a •twe•na
(13)	"cranial"	≡	F _a •wanga•na
(14)	"superior"	≡	F _a •gula
(15)	"inferior"	≡	F _a •gala

5.3 Tangible Results

At this juncture, the author wishes to propound three major results from his work so far:

1. He has compiled a list of some 1550 English-Luganda combining forms (see Kiingi (Nov 2021)).
2. He has obtained some 250 affixes through extrapolation (see Kiingi (Dec 2022)).
3. He has now moved to a vantage point from which, applying the three newly extrapolated lexeme formation rules, he can render virtually all English compound terms into specialized Luganda.

6. SOME PROTOTYPICAL TERMINOLOGICAL SYSTEMS

6.1 Rendition of X•illion into Luganda

X•illion ≡ aka•S_{num}•kkadde¹⁷

(i)	10 ⁶³	vigintillion	≡	akaabilikkadde
(ii)	10 ⁶⁰	novemdecillion	≡	akakumyendakkadde
(iii)	10 ⁵⁷	octodecillion	≡	akakuminaanakkadde
(iv)	10 ⁵⁴	septendecillion	≡	akakumisanvukkadde

(v)	10^{51}	sexdecillion	≡	akakumikaagakkadde
(vi)	10^{48}	quindecillion	≡	akakumitaanokkadde
(vii)	10^{45}	quattuordecillion	≡	akakuminakkadde
(viii)	10^{42}	tredecillion	≡	akakumisatukkadde
(ix)	10^{39}	duodecillion	≡	akakumbilikkadde
(x)	10^{36}	undecillion	≡	akakumimukkadde
(xi)	10^{33}	decillion	≡	akakumikkadde
(xii)	10^{30}	nonillion	≡	akendakkadde
(xiii)	10^{27}	octillion	≡	akanaanakkadde
(xiv)	10^{24}	septillion	≡	akasanvukkadde
(xv)	10^{21}	sextillion	≡	akakaagakkadde
(xvi)	10^{18}	quintillion	≡	akataanokkadde
(xvii)	10^{15}	quadrillion	≡	akanakkadde
(xviii)	10^{12}	trillion	≡	akasadukkadde
(xix)	10^9	billion	≡	akabilikkadde
(xx)	10^6	million	≡	akamukkadde
(xxi)	10^3	thousand	≡	olukumi
(xxii)	10^2	hundred	≡	ekikumi
(xxiii)	10^1	ten	≡	ekkumi

6.2 Rendition of *Systeme International* (SI) Prefixes into Luganda¹⁸

10^{30}	quecca•X	ssessegugu•S•ena = df huggu•S•ena
10^{27}	ronna•X	ssegugu•S•ena = df sseggu•S•ena
10^{24}	yotta•X	ssegu•S•ena
10^{21}	zetta•X	wagu•S•ena
10^{18}	exa•X	ogu•S•ena
10^{15}	peta•X	ssegu•S
10^{12}	tera•X	wagu•S
10^9	giga•X	sselu•S•ena
10^6	mega•X	walu•S•ena

10 ³	kilo•X	olu•S•ena
10 ²	hecto•X	sselu•S
10 ¹	deca•X	walu•S
10 ⁰	X	F•S
10 ⁻¹	deci•X	wapi•S
10 ⁻²	centi•X	ssepi•S
10 ⁻³	milli•X	epi•S•ona
10 ⁻⁶	micro•X	wapi•S•ona
10 ⁻⁹	nano•X	ssepi•S•ona
10 ⁻¹²	pico•X	waka•S
10 ⁻¹⁵	femto•X	sseka•S
10 ⁻¹⁸	atto•X	aka•S•ona
10 ⁻²¹	zepto•X	waka•S•ona
10 ⁻²⁴	yocto•X	sseka•S•ona
10 ⁻²⁷	ronto•X	ssekaka•S•ona = df ssekka•S•ona
10 ⁻³⁰	quecto•X	ssessekaka•S•ona = df hukka•S•ona

6.3 Gandization of some International Chemical Affixes and Combining Forms¹⁹

English	Luganda	English	Luganda
-ane	-aani	-al	-ali
-ene	-eeni	-ol	-oli
-yne	-yini	-yl	-yili
-ate	-aati	-ile	-iili
-ase	-aasi	-ide	-iidi
-ose	-oosi	-ic	-iki
aqua-	aqwa-	dehydro-	dehydro-
aza-	aza-	deoxy-	deoxyi-
azido-	aziido-	des-	des-
but-	but-	deuterio-	deuterio-

bromo-	bromo-	diazo-	diazo-
sec-	sek-	disulfido-	disulfido-
tert-	tert-	endo-	endo-
catena-	catena-	epi-	epi-
chloro-	kloro-	eth-	eth-
cis-	cis-	exo-	exo-
closo-	kloso-	fac-	fac-
cyano-	syano-	fluoro-	fluoro-
cyclo-	syiklo-	formyl-	formyl-
cycloalk-	syikloalk	friedo-	friedo-
de-	de-	halocarbonyl-	halokarbonyl-
dec-	dek-	hept-	hept-
dithio-	dithio-		
hex-	hex-	para-	para-
homo-	homo-	pent-	pent-
hydro-	hydoro-	per-	per-
hypo-	hyipo-	peroxo-	peroxo-
hydroxyl-	hidroxyil-	prop-	prop-
iso-	iso-	pyro-	pyro-
meth-	meth-	rac-	rac-
meta-	meta-	rel-	rel-
methoxo-	metoxo-	seco-	seko-
methylene-	metyleeni-	sulfo-	sulfo-
neo-	neo-	syn-	syin-
nido-	niido-	thioxo-	thioxo-
nitro-	nitro-	trans-	trans-
nitroso-	nitroso-	tritio-	tritio-
nitrosyl-	nitrosyil-	uranyl-	uranyil-
nitryl-	nitryil-	vinyl-	vinyil-
non-	non-	-co-	-ko-
nor-	nor-	-io-	-io-
ortho-	ortho-		
oxa-	oxa-		

6.4 Zoological Taxonomy

<u>Neo-Latin</u>	<u>English</u>	<u>Luganda</u>
REGNUM	KINGDOM	OBWA•KABAKA ²⁰
subregnum	subkingdom	wapi•kabaka
infraregnum	infrakingdom	ssepi•kabaka
superphylum	superphylum	walu•solya
PHYLUM	PHYLUM	AKA•SOLYA
subphylum	subphylum	wapi•solya
superclassis	superclass	walu•siga
CLASSIS	CLASS	ESSIGA (<ELI•SIGA)
subclassis	subclass	wapi•siga
infraclassis	infraclass	ssepi•siga
supercohortus	supercohort	epi•sigo•ona
cohortus	cohort	wapi•sigo•ona
subcohortus	subcohort	ssepi•sigo•ona
infracohortus	infracohort	waka•siga
superordo	superorder	walu•tuba
ORDO	ORDER	OMU•TUBA
subordo	suborder	wapi•tuba
infraordo	infraorder	ssepi•tuba
superfamilia (-oidea)	superfamily	walu•nyilili
FAMILIA (-idae)	FAMILY	OLU•NYILILI
subfamilia (-inae)	subfamily	wapi•nyilili
infracamilia	infracamily	ssepi•nyilili
supertribus	supertribe	epi•nyilily•ona
tribus (-ini)	tribe	wapi•nyilily•ona
subtribus (-ae, -i)	subtribe	ssepi•nyilily•ona
infracribus	infracribe	waka•nyilili

supergen	supergen	walu•kulilo
GENUS	GENUS	EKI•KULILO
subgen	subgen	wapi•kulilo
infragen	infragen	ssapi•kulilo
superspecies	superspecies	wapi•yu
SPECIES	SPECIES	ENJU <EN•YU>
subspecies	subspecies	watu•yu

6.4.1 Taxonomy of the Dog²¹

REGNUM	ANIMALIA	OBWA•KABAKA	OBWENSOLO
Subregnum	Metazoa	Wapikabaka	Wapyazinvannyuma
PHYLUM	CHORDATA	AKA•SOLYA	AKAZINNALUGUWA
Subphylum	Vertebrata	Wapi•solya	Wapyazinnalugongo
Superclassis	Tetrapoda	Walu•siga	Walwazinnamagulwana
CLASSIS	MAMMALIA	ESSIGA (<ELI•SIGA)	ELYAZINNAMABEELE
Subclassis	Theria	Wapi•siga	Wapyenjizzi
Infraclassis	Eutheria	Ssepi•siga	Ssepyenjizziwawu
Cohortus	Ferungulata	Wapi•sigo•ona	Wapyazinnabinuulokkambwe
Superordo	Ferae	Walu•tuba	Walwenkambwe
ORDO	CARNIVORA	OMUTUBA	OGWENDYANNYAMA
Subordo	Fissipeda	Wapi•tuba	Wapyazinnabigelejjaseemu
Superfamilia	Canoidea	Walu•nyilili	Walwembwa
FAMILIA	CANIDAE	OLU•NYILILI	OLWEMBWA
Subfamilia	Caninae	Wapi•nyilili	Wapyembwa
GENUS	CANIS	EKI•KULILO	EKYEMBWA
SPECIES	FAMILIARIS	ENJU (<EN•YU)	NNABULIJO

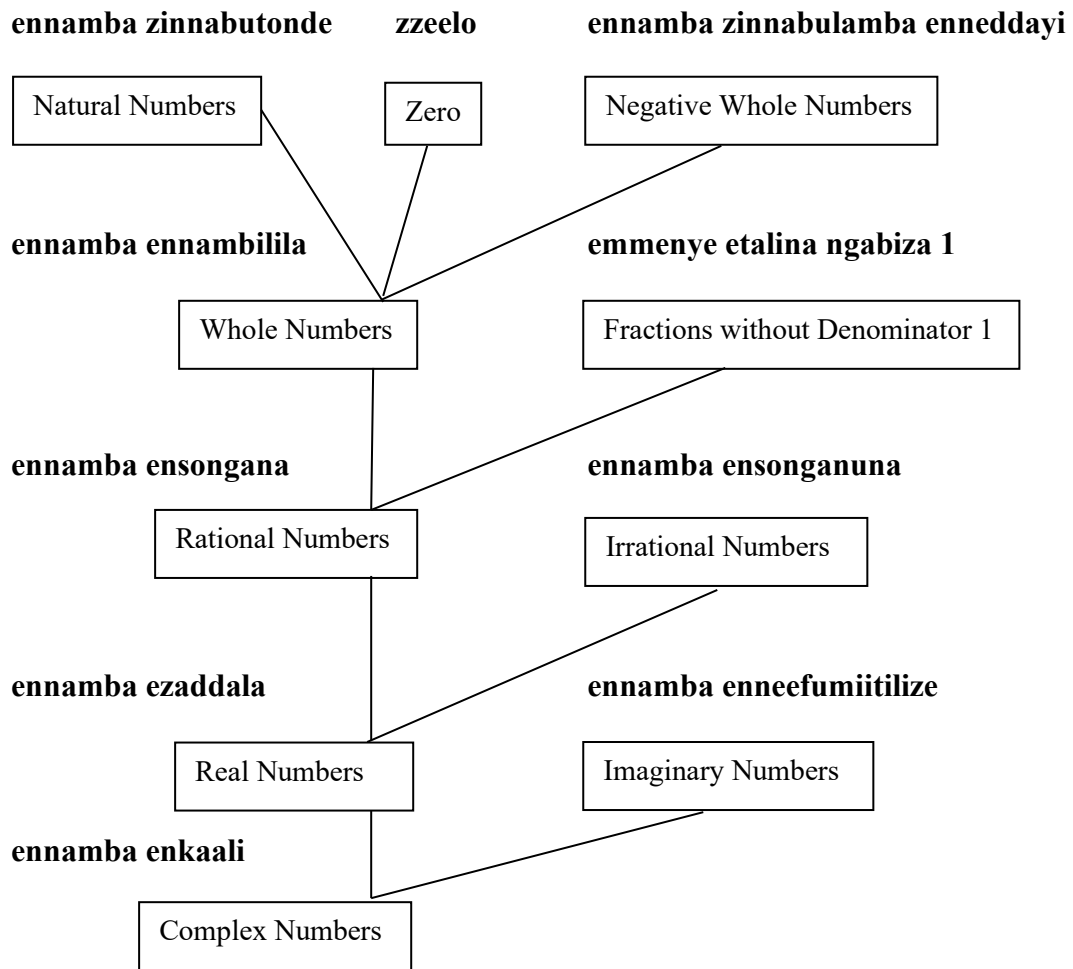
The systematic name is **Ekyembwa nnabulijjo**.

6.4.2 Taxonomy of the Human

REGNUM	ANIMALIA	OBWA•KABAKA	OBWENSOLO
Subregnum	Metazoa	Wapikabaka	Wapyazinvannyuma
PHYLUM	CHORDATA	AKA•SOLYA	AKAZINNALUGUWA
Subphylum	Vertebrata	Wapi•solya	Wapyazinnalugongo
Superclassis	Tetrapoda	Walu•siga	Walwazinnamagulwana
CLASSIS	MAMMALIA	ESSIGA	ELYAZINNAMABEELE
Subclassis	Placentalia	Wapisiga	Wapyazinnakisungwa
ORDO	PRIMATES	OMUTUBA	OGWAZISSENKULU
Superfamilia	Hominoidea	Walunyilili	Walwennyintu
FAMILIA	HOMINIDAE	OLUNYILILI	OLWENNYINTU
GENUS	HOMO	EKIKULILO	EKYOMUNTU
SPECIES	SAPIENS	ENJU	NNABUGEZI

The systematic name is **Ekyomuntu nnabugezi**.

6.5 Classification of Numbers



6.6 Hierarchy of Anatomical Structure

"BODY"	≡	OMUBILI	F•S• vamama = df F•S• ga
"ORGAN SYSTEM"	≡	OMUYUNGO GW'EMILUKEVAMA	F•S• vama
"ORGAN"	≡	EKILUKEVA	F•S• va
"TISSUE"	≡	EKILUKE	F•S
"CELL"	≡	AKASENGEJJA	F•S• ca
"ORGANELLE"	≡	AKASENGEJJACA	F•S• cama
"BIOCHEMICAL"	≡	EKIKEMIYANADDAMU	F•S• camama = df F•S• fa

7. CONCLUSION

From the foregoing, two inferences can be drawn. First, once subject field specialists are trained in general linguistics and the linguistic structure of their language whose corpus is being planned, there is no need of involving the linguists in the **actual term coining**.

Second, with **radical expressional extrapolation** terminological maturity is reachable in, say, **five years**; but if the terminologically weak language is left to its own devices, it may take at least **1- 1½ centuries** to terminologically mature.

8. ENDNOTES

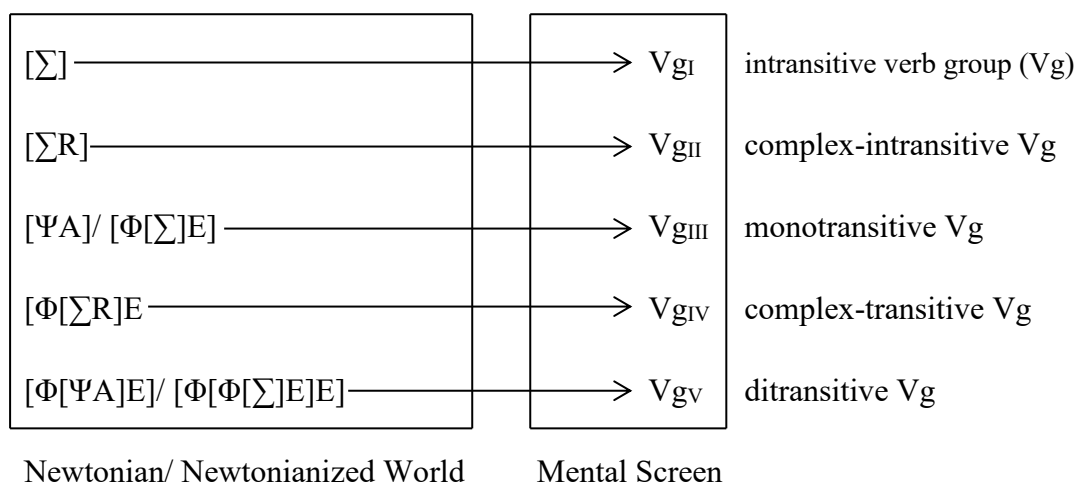
1. In a personal communication on 23 February 2023, Mr Abraham Wepukhulu, a Kiswahili teacher at Bududa Secondary School, informed me that the Government of Tanzania had reinstated English as the medium of instruction at secondary school level.
2. Acceptability is a subcriterion which in turn is a function of the other subcriteria for term status of an expression.
3. P H Matthews (2007) defines "combining form" as "a form of a word, or a form related to or in meaning like a word, used only as an element in compounds: e.g. *Anglo-* in *Anglo-American* or *socio-* in *socio-economic*; *retro-* in *retrovirus* or *bio-* in *biotechnology*". For Luganda, a combining form C is given as: C = S/ [R•L] e.g. **ddeka•** in **ddekabusa** "devastating" or **•ddomi** in **mukoddomi** "male in-law"
4. Consequently, a coiner of natural-scientific terms should ideally be competent in his/her subject field and linguistics.
5. Will Luganda subject-field specialists prefer **kompyuta** to **embaziso** even though "to compute" \equiv **okubazisa** (< **okubaza** < **okubala**)?
6. "Marsh gas" is the non-systematic name for CH₄.
7. Letting 1 and 0 be the truth values "true" and "false" respectively, the following truth-table shows us the four possible situations in relation to X₁ and X₂.

X ₁	^	X ₂
0	0	0
0	0	1
1	0	0
1	1	1

$[X_1 \wedge X_2] = 1$ if and only if $X_1 = X_2 = 1$

8. For remarks on gandization of international chemical affixes and combing forms, see Note 19.
9. Matthews' definition of "concept" is consistent with meaning as being sense and reference of an expression.
10. Newton's first, third, and second laws of motion underlie the conceptual predicates B, Z, R; N, T, A; C, K, E respectively.
11. We are using the word "transology" to mean the study of what putatively exists beyond our perceptual, cognitive, axiological and emotional experience.

12.



$$[\Sigma] = [B] / [Z]$$

$$[\Sigma R] = [BR] / [ZR]$$

$$[\Psi A] = [NA] / [TA]$$

$$[\Phi E] = [CE] / [KE]$$

13. We may interpret the formalizations as follows:

- (i) physical change
- (ii) physical non-change
- (iii) perceptual change
- (iv) static contact
- (v) instrumental causation of physical change
- (vi) human causation of physical change

- (vii) human causation of instrumental causation of physical change
- (viii) dynamic cognitive contact
- (ix) nondynamic cognitive contact
- (x) human causation of dynamic cognitive contact

14. Kiswahili **u•meme** ≡ "electricity"; **ama•meme** is adapted in preference to the already established **ama•sannyalaze** ≡ "electricity".

15. **embaziso** is adopted in preference to **kompyuta** (cf Note 5).

16. The fundamental concepts involved in the study of mathematics are: a, q, φ, p, s, n, γ, l, j, d, o: in other words, a student of mathematics is required to articulate gradation, order and direction.

17. $10^{3(n+1)} = X \bullet \text{illion} \equiv \text{aka} \bullet S_{\text{num}} \bullet \text{kkadde}$,

Where $n = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10$

$$\begin{array}{c}
 X = \text{bi} \left| \text{tri} \right| \text{quadr} \left| \text{quint} \right| \text{sext} \left| \text{sept} \right| \text{oct} \left| \text{non} \right| \text{dec} \left| \text{undec} \right| \text{duodec} \left| \right. \\
 = 2 \left| = 3 \right| = 4 \left| = 5 \right| = 6 \left| = 7 \right| = 8 \left| = 9 \right| = 10 \left| = 1+10= 11 \right| = 2+10= 12 \left| \right.
 \end{array}$$

$$\begin{array}{c}
 \left| \text{tredec} \right| \left| \text{quattuordec} \right| \left| \text{quindec} \right| \left| \text{sexdec} \right| \left| \text{septendec} \right| \left| \text{octodec} \right| \\
 = 3+10 = 13 \left| = 4+10 = 14 \right| = 5+10 = 15 \left| = 6+10 = 16 \right| = 7+10 = 17 \left| = 8+10 = 18 \right|
 \end{array}$$

$$\begin{array}{c}
 \left| \text{novemdec} \right| \left| \text{vigint} \right| \\
 = 9+10 = 19 \left| = 20 \right|
 \end{array}$$

aka•S_{num}•kkadde results from the application of the formula $F_1 \bullet C_1 \bullet C_2^+$.

18. The prefix **sse•** intensifies more than **wa•**; **(o)gu•** > **(o)lu•** > **(e)pi•** > **(a)ka•**

where > stands for the greater – than relation. The prefix **(e)pi•** is adopted from Common Bantu.

19. The notational needs in the fields of logic, mathematics, physics, and chemistry necessitate the adoption the entire Roman alphabet and the Greek alphabet. The affixes and combining forms laid down by the IUPAC will be ganded through Standard Average European, i.e. not directly from English (the anglicized SAE); for example, "alkane" will be assimilated to Luganda as **alkaani** and not **alukeeni**. Retention of SAE consonant clusters will be the order of the day. The lexeme formation rule $F_1 \bullet C_1 \bullet C_2^+$ will be applied to English compounds $\langle X_1 X_2 \rangle$ in which X_1 is adjectival. For example, CaCl_2 **calcium chloride** is:

German **Calciumchlorid**

French **chlorure de calcium** ("chloride of calcium")

Luganda **kloriidi ya kalsiumu** ("chloride of calcium") → **kloriidikkalsiumu**

20. The ICZN stipulates that zoological nomenclature be conducted in neo-Latin. The seven principal taxa, namely KINGDOM, PHYLUM, CLASS, ORDER, FAMILY, GENUS, and SPECIES are named in Luganda using the kiGanda clan nomenclatural system. The taxonomic labels in Luganda are distinct in terms of nominal prefixes: **OBU•**, **AKA•**, **ELI•**, **OMU•**, **OLU•**, **EKI•** and **EN•**. To a limited extent, neo-Latin evidences distinctive suffixes: **-oidea**, **-idae**, **-inae**, **-ini**, **-ae** and **-i** as shown in Sec 6.4.

21. The formula for systematically naming an animal in Luganda is:

Ekya•Z₁ nna•Z₂

Consider the following examples:

- (i) **Canis familiaris** }
"dog" *embwa*
Ekyembwa nnabulijjo }
- (ii) **Canis lupus** }
"dog" *omusege*
Ekyembwa nnamusege }
- (iii) **Musca domestica** }
"housefly" *ensowela*
Ekyensowela nnamumaka }
- (iv) **Felis catus** }
"cat" *kkapa*
Ekyakkapa nnakkapa }
- (v) **Pan paniscus** }
"bonobo" *bonobo*
Ekyabonobo nnabonobo }
- (vi) **Crocodilus niloticus** }
"Nile crocodile" *goonya*
Ekyagoonya nnakiyila }
- (vii) **Lates niloticus** }
"Nile perch" *empuuta*
Ekyempuuta nnakiyila }

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PART 2: ENGLISH-LUGANDA FORMULAE

- | | | |
|----------------------------------|---|---|
| 1. ab(s)•X | ≡ | (i) F•S•la
(ii) oku•S•la
□ oku•S•ka # oku•S•la |
| 2. acting X | ≡ | omu•nga•Z |
| 3. ad•X | ≡ | (i) F•S•ka
(ii) oku•S•ka
□ oku•S•la # oku•S•ka |
| 4. X•ad | ≡ | F•S•ma |
| 5. after•X | ≡ | F•S•gonga |
| 6. X•age = X•ad q.v. | | |
| 7. X•aholic ~ X•oholic | ≡ | F•sibe•Z |
| 8. X•al | ≡ | (i) F•S•na
(ii) F•nna•Z |
| 9. X•algia | ≡ | F•luma•Z |
| 10. X•alia | ≡ | F•S•nywama |
| 11. all- X | ≡ | F•S•yanna |
| 12. allo•X | ≡ | F•S•lala |
| 13. ambi•X | ≡ | F•S•zomba |
| 14. amphi•X = ambi•X q.v. | | |
| 15. an•X ~ a•X | ≡ | F•S•nuna
□ F•S•nuna # F•S•na |
| 16. X•an = X•al q.v. | | |

17. **ana•X** ≡ **F•S•gula**
18. **X•ana ~ X•iana** ≡ **F•S•maala**
19. **aniso•X** ≡ **F•S•nkuna**
□ **F•S•nkuna # F•S•nkana**
20. **ante•X** ≡ **F•S•mbela**
21. **anti•X** ≡ **F•S•konta**
22. **apo•X** ≡ **F•S•wala**
23. **après•X = after•X** q.v.
24. **X•ar = X•al** q.v.
25. **arch•X** ≡ **sse•F₊⁺•S**
26. **X•arium ~ X•ary** ≡ **F•S•wilo**
27. **artificial X** ≡ **F•S•nnana**
□ **F•S•nnana # F•S•nnona**
28. **X•ary = X•arium, X•al** q.v.
29. **X•iasis ~ X•osis** ≡ **F•lwala•Z**
30. **X•aster** ≡ **F•S•geenya**
31. **X•ate** ≡ (i) **obu•S, obwa•Z**
(ii) = **X•al** q.v.
(iii) = **X•ad** q.v.
(iv) **oku•S•wa**
32. **X•ati = X•ad** q.v.
33. **atto•X** ≡ **atto•S/ aka•S•ona** (SI 10⁻¹⁸)
34. **auto•X¹** ≡ **F•S•yina**
35. **auto•X²** ≡ **F₁•S₁•ggaali**

36. back •X	≡	(i) F•S• bega (ii) oku•R• aka
37. bene •X	≡	F•S• lunga
38. bi(n) •X	≡	(i) F• nna •F ₊ •S•F _{num} • bily •e (ii) F _{nom} •R• a/wa/(y)e •F _{num} • bily •e (iii) F•F ₊ •S•F _{num} • bily •e
39. by(e) •X	≡	F•S• waaya
40. caco •X	≡	F•S• bbijja
41. calli •X	≡	F•S• ttona
42. cata •X	≡	F•S• gala □ F•S• gala # F•S• gula
43. X• cele	≡	F• zimba •Z
44. centi •X	≡	senti •S/ssepi•S (SI 10 ⁻²)
45. circum •X	≡	F•S• buga
46. cis •X	≡	F•S• luna
47. co •X	≡	(ia) F•S• gana (ib) oku•R• agana (iia) oku•S• mawa (iib) oku•R• ama (iia) F•S• mala (iiib) oku•R• amala
48. coeno •X	≡	F•S• gana
49. common X	≡	F•S• gana
50. complex X	≡	F•S• kkaali
51. compound X	≡	F•S• ggatte
52. comprehensive X	≡	F•S• zzinge

53. computer X	≡	F•S•bbaziso
54. con•X ~ com•X	≡	(i) oku•S•mawa (ii) oku•R•ama
55. contra•X ~ counter•X	≡	(i) anti•X q.v. (iia) oku•S•kasa (iib) oku•R•akasa
56. counterpart X	≡	F•S•gana
57. cross•X	≡	(i) F•S•kiika (ii) oku•R•akiika
58. crypto•X	≡	F•S•kkise
59. X•cule ~ X•culus ~ X•cle	≡	aka•S
60. cyber•X	≡	F•S•kkasi
61. de•X	≡	oku•S•wuka, oku•S•wula
62. deca•X	≡	deka•S/ walu•S•ena (SI 10 ¹)
63. deci•X	≡	desi•S/ wapi•S (SI 10 ⁻¹)
64. demi•X	≡	F•S•bbilyaye
65. deputy X	≡	F•S•ssigile
66. dextro•X	≡	F•S•ddyo
67. di•X = bi(n)•X q.v.		
68. dia•X	≡	(i) F•S•yima (ii) = cross•X q.v.
69. diplo•X	≡	F•S•bbilye
70. dis•X	≡	(i) = de•X q.v. (ii) F•ta•R•a(•Z)

71. discrete X	≡	F•S•ssonja □ F•S•ssonja # F•S•ssanja
72. X•dom	≡	(i) obu•S (ii) F•S•ma
73. double X	≡	F•S•bbilye
74. down•X	≡	(i) oku•S•gala (ii) oku•R•agala
75. duo•X = bi(n)•X q.v.		
76. duplo•X = diplo•X q.v.		
77. X duration/ time/ period	≡	ekiseela•C⁺
78. dys•X	≡	F•S•zzibu
79. e- X (< electronic X)	≡	Z-m (<F_a•memoona)
80. ecto•X	≡	F•S•bwa
81. X•ectomy	≡	F•saama•Z
82. X•ed¹	≡	F•nna•Z
83. X•ed²	≡	F•R•wa/ e/ u
84. eigen•X = auto•X q.v.		
85. X•eme	≡	F•S•lalama
86. empty X	≡	F•leela•Z
87. en•X ~ endo•X ~ ento•X	≡	F•S•mwa
88. enantio•X = anti•X q.v.		
89. X•en	≡	F•R•wa/ e/ u
90. epi•X	≡	F•S•kunga

91. equi•X	≡	F•S•nkana
92. X•er = X•al q.v.		
93. X•ery = X•al q.v.		
94. X•esce	≡	oku•S•wala
95. X•ese	≡	(i) F•nna•Z (ii) olu•nna•Z
96. X•esque	≡	oku•S•gela
97. X•etum	≡	F•S•wilo
98. eu•X	≡	F•S•wooma, oku•R•awooma
99. ex•X	≡	(i) F•S•bwa (ii) F•S•gula (iii) F•S•yima (iv) oku•S•wula, oku•S•Ula (v) omu•yako•Z
100. exa•X	≡	exa•S/ ogu•S•ena (SI 10 ¹⁸ ; Computing 2 ⁶⁰)
101. exo•X	≡	oku•S•bwala □ oku•S•bwala # oku•S•bwaka; exo•X # endo•X
102. extensive X	≡	F•R•anyuut•L (<oku•R•anyuuta)
103. extra•X	≡	(i) F•S•bwela (ii) F•S•yela
104. extreme X	≡	F•S•jja
105. extro•X	≡	oku•S•bwala

106. X•facient	≡	F•kola•Z
107. fake X	≡	F•S•gginge
108. X-fashion	≡	F•S•gela
109. femto•X	≡	femto•S/ sseka•S (SI 10 ⁻¹⁵)
110. X•ferous ~ X•gerous	≡	F•weeka•Z
111. X•fold	≡	F•S _{num} •ye
112. fore•X	≡	F•S•mbela
113. X•form	≡	F•kula•S ⁺
114. X•free	≡	F•wuuka•Z □ F•wuuka•Z # F•weeka•Z
115. X frequency	≡	omu•R•atelo
116. front X	≡	F•S•bela
117. X•ful	≡	(i) F•S•na (ii) F•S•jjula
118. further X	≡	F•S•kila
119. X•gen	≡	F•S•yi
120. general X	≡	ttaba•Z
121. X•genesis	≡	obu•S•ya
122. X•gerous	=	X•ferous q.v.
123. giga•X	≡	giga•S/ sselu•S•ena (SI 10 ⁹ ; Computing 2 ³⁰)
124. gradual X	≡	F•S•wol•L
125. X•gram	≡	F•kobwa•Z □ cf X•graph
126. X•graph	≡	F•koba•Z □ cf X•gram

127. X•graphy	≡	(i) enkoba•Z (ii) kakoba•Z
128. half•X = demi•X	≡	Z•bbilyaye
129. half X•ed	≡	F•R•wa/ ye/ e/ u•bbilyaye
130. haplo•X	≡	F•S•nniina
131. head of X	≡	omu•kuu•Z
132. hecto•X	≡	hekto•S/ sselu•S (SI 10²)
133. hemi•X = half•X q.v.		
134. hetero•X	≡	F•S•yawa
135. holo•X	≡	F•S•lamba
136. homeo•X	≡	F•S•kyana
137. homo•X	≡	F•S•yuwa
138. hyper•X	≡	(i) sselu•S (ii) F•S•jja (iii) ssema•Z
139. hypo•X	≡	wapi•S
140. X•i	≡	(i) F•S•na (ii) F•nna•Z
141. X•iana ~ X•ana q.v.		
142. X•iatrics ~ X•iatry	≡	kasawa•Z
143. X•ic ~ X•ical = X•al q.v.		
144. X•ics ~ X•ic	≡	kanna•Z
145. idio•X = auto•X q.v.		

146. X•ile	≡	(i) F _{pro} •a•(o)•ku•R•a (ii) F•R•ayinza (iii) oku•S _{num} •kuma
147. X•illion	≡	aka•S _{num} •kkadde
148. X•illionth	≡	aka•S _{num} •a•kkadde
149. in•X ¹	≡	F•S•nuwu
150. in•X ²	≡	(i) F•S•mwa (ii) oku•S•mwala
151. X•in(e)	≡	F•vaama•Z
152. infra•X	≡	(i) ssepi•S (ii) F•S•galaja
153. X•ing	≡	(i) oku•R•a/ wa (ii) obu•R•e/ i (iii) F _a •R•a/ wa
154. inter•X	≡	(i) F•S•wakata (ii) oku•R•agana (iii) ttaba•F ₊ •S
155. intensive X	≡	F•R•anyit•L
156. intra•X	≡	(i) F•S• kwamwa (ii) F•S• mwamwa (iii) F•S• ndamwa
157. intro•X	≡	oku•S•mwala

158. **X•ish** ≡ (i) **F•S•nga**
(ii) **F•nna•Z**
(iii) **F_a•R•/k/fu, F_a•R•/l/vu**
159. **X•ism** ≡ (i) **F•kiza/ laba•Z** [IDEOLOGY/ THEORY]
(ii) **eli•S, R⁺•a(•Z)** [SUPERAVERAGE]
160. **iso•X = equi•X** q.v.
161. **X•ite** ≡ (i) **F•S•nga**
(ii) **F•nna•Z**
162. **X•itis** ≡ **F•yaka•Z**
163. **X•ive** ≡ **F•R•i**
164. **X•ize** ≡ **oku•S•wala/ waza**
165. **juxta•X** ≡ **oku•R•alaana**
166. **kilo•X** ≡ **kilo•S/ olu•S•ena** (SI 10³; Computing 2¹⁰)
167. **X•latry** ≡ **F•sinza•Z**
168. **X•less** ≡ **F•S•nuna**
169. **X•let** ≡ **aka•S**
170. **X•like** ≡ **F•wanga•Z**
171. **X•logy** ≡ **kanna•Z, (kalojja•Z)**
172. **macro•X** ≡ (i) **walu•S•ena**
(ii) **F•S•ddene, F•S•ggwanvu**
□ **ultramacro•X** ≡ **F•S•ddeneja**
173. **macromacro•X** ≡ (i) **wagu•S**
(ii) **F•S•ddenejja, F•S•ggwanvujja**

174. **mal•X = dys•X** q.v.
175. **X•mania** ≡ **F•lala•Z**
176. **many-X** ≡ (i) **F•F₊•S•F_{num}•ngye**
(ii) **F_{nom}•nna•F₊•S•F_{num}•ngye**
(iii) **F_{nom}•R•a/ wa/ (y)e•F_{num}•ngye**
177. **maxi•X** ≡ **olu•S•ena**
178. **medi•X** ≡ **F•S•kata**
179. **mega•X** ≡ **mega•S/ walu•S•ena** (SI 10⁶; Computing 2²⁰)
180. **mer•X ~ X•mer ~ X•merous** ≡ (i) **F•S•ca**
(ii) **F•S•ttundu**
181. **meso•X = medi•X** q.v.
182. **meta•X** ≡ (i) **F•S•gonga**
(ii) **F•S•yela**
(iii) **F•S•kyuka**
183. **X•metrics ~ X•metry** ≡ **kapima•Z**
184. **micro•X** ≡ (i) **mikro•S/ wapi•S•ona** (SI 10⁻⁶)
(ii) **F•S•ttono**
□ **ultramicro•X** ≡ **F•S•ttonoja**; **micromicro•X** ≡ **F•S•ttonojja**
185. **micromicro•X** ≡ **waka•S**
186. **mid•X = medi•X** q.v.
187. **milli•X** ≡ **milli•S/ epi•S•ona** (SI 10⁻³)
188. **mini•X** ≡ **F•S•ttono, F•S•ffunda**
189. **mio•X** ≡ **F•keewa•Z**

190. mixed •X	≡	F•S•yawa
191. mono •X	≡	(i) F•F₁•S•F_{num}•mwe (ii) F_{nom}•nna•F•S•F_{num}•mwe (iii) F_{nom}•R•a•F_{num}•mwe
192. X•morphic = X•form q.v.		
193. multi •X = many-X q.v.		
194. nano •X	≡	nano•S/ ssepi•S•ona (SI 10 ⁻⁹)
195. neo •X	≡	F•S•ppya
196. near X	≡	F•S•kumpa
197. X network	≡	omutimbagano gwa F₊•S
198. X• nomics ~ X• nomy	≡	kanna•Z (kateeka•Z)
199. non •X	≡	(i) F•ta•R•a/ (y)e/ wa•Z (ii) zzila•F•S
200. X• oid ~ X• ode	≡	F•wanga•Z
201. oligo •X	≡	F•S•bbatu
202. X• oma = X• cele	≡	F•zimba•Z
203. omni •X = all- X q.v.		
204. one-X = mono •X q.v.		
205. X organization	≡	omukungo gwa F₊•S
206. original X	≡	F•S•nnona
207. ortho •X	≡	F•S•ttuuka
208. X• ose	≡	(i) oku•S•na (ii) F•nna•Z

209. X•osis	≡	F•lwala•Z
210. X•ous = X•ose q.v.		
211. out•X	≡	(i) F•S•bwa (ii) oku•S•bwala (iii) oku•S•leebya
212. over•X	≡	(i) F•S•gwa (ii) F•S•wagwa (iii) oku•S•sukka (iv) F•ssukka•Z, ssukka•Z
213. own-X = auto•X q.v.		
214. paleo•X	≡	F•S•kkaddejja
215. palin•X = back•X q.v.		
216. pan•X = all-X q.v.		
217. para•X ¹	≡	F•S•laana
218. para•X ²	≡	F•S•ttaasa
219. X•parous	=	F•zaala•Z
220. particular X	≡	F•S•ca
221. pen(e)•X	≡	F•S•kump•L
222. X•penia	≡	F•liba•Z
223. per•X = dia•X q.v.		
224. peri•X	≡	F•S•buga

225. X•person	≡	(i) omu•S•na
		(ii) omu•(nna)•Z
		(iii) owa•F ₁ •F ₂ •S
226. peta•X	≡	peta•S/ ssegu•S (SI 10 ¹⁵ ; Computing 2 ⁵⁰)
227. X•philia	≡	F•ee•yuna•Z
228. X•phobia	≡	F•kyawa•Z
229. pico•X	≡	piko•S/ waka•S (SI 10 ⁻¹²)
230. plagio•X	≡	F•S•ssulika
231. pleo•X	≡	F•S•ggwela
232. pluri•X	≡	F•S•ggwaka
233. poikilo•X	≡	F _a •S•kyuna
234. poly•X = many-X q.v.		
235. post•X = after-X q.v.		
236. potenti•X	≡	F•S•jjinza
237. pre•X	≡	F•S•mbela
238. pro•X	≡	(i) oku•S•wala/ waza
		(ii) oku•R•ala/ aza
		(iii) omu•S•mmyuka
239. X•proof	≡	F•guma•Z
240. proper X	≡	F•S•yina
241. proto•X	≡	F•S•ssooka, F•S•nnona
242. pseudo•X	≡	F•S•ddyeka
243. quasi•X	≡	F•S•linga

244. quecca•X	≡	qwekka•S (SI 10 ³⁰)
245. quecto•X	≡	qwekto•S (SI 10 ⁻³⁰)
246. random X	≡	F•S•maga □ F•S•maga # F•S•muga
247. X range/ series	≡	F•S•nyila
248. re•X	≡	(i) oku•R•adama (ii) oku•R•adamma (iii) oku•R•adiza (iv) F•S•ggya (v) oku•R•agya → F•R•agy•L (vi) oku•R•<i>U</i>ta (vii) oku•S•wuka/ wula (viii) oku•R•<i>U</i>ka/ <i>U</i>la
249. X- ready	≡	F•linze•Z
250. recti•X	≡	(i) oku•R•atuuka (ii) F•S•tuuka; F•R•atuuk•L
251. retro•X	≡	oku•R•aka F•S•ka
252. ronna•X	≡	ronna•S (SI 10 ²⁷)
253. ronto•X	≡	ronto•S (SI 10 ⁻²⁷)
254. same-X	≡	(i) F•S•yuwa (ii) F•S•kima

255. self-X	≡	(i) oku•S•yina, oku•R•ayina
		(ii) oku•ee•R•a
256. semi•X = half•X q.v.		
257. serial X	=	F•S•nyila
258. side X	≡	(i) oku•R•aluuya
		(ii) F•S•dduuya
259. similar to X	=	F•faana•Z
260. simple X	≡	F•S•nniina
261. simultaneous X	≡	F•S F _a •seelankanyi
262. single X	≡	F•S F _a •mubaze
263. sinistro•X	≡	F•S•kkono
264. sole X	≡	F•S•yakka
265. some X	≡	F•S•wunna
266. X•some	≡	(i) F•S _{num} •ma
		(ii) F•S•ca
		(iii) F•zaala•Z
267. X•speak	≡	F•S•ddikya
268. X-shaped	≡	F•kula•S ⁺
269. X•ship	≡	F•S•ma
270. special X	≡	(i) F•S•kkiza
		(ii) ttuba•Z
		□ ttuba•Z # ttaba•Z
271. X•stasis	≡	F•komya•Z

272. step•X	≡	F•S•ffumbo
273. X-style	≡	F•S•gel•a
274. X structure	≡	omuzimbe gwa F+•S
275. sub•X	≡	(i) wapi•S (ii) F•S•wansa
276. sudden X	≡	F•S•yanga, oku•R•ayanga
277. super•X	≡	(i) walu•S (ii) F•S•gwa □ cf sub•X (iii) = over•X q.v.
278. syn•X = con•X ~ com•X q.v.		
279. X system	≡	omuyungo gwa F+•S
280. systematic X	≡	F•R•amugo □ oku•R•amaga # oku•R•amuga
281. sui•X	≡	oku•ee•R•a
282. tauto•X	≡	F•S•kkima
283. tele•X	≡	F•S•ggwala (<oku•S•wala <ewala)
284. ter•X	≡	(i) F•F+•S•F_{num}•satwe (ii) F_{nom}•R•a/ wa/ (y)e•F_{num}•satwe (iii) F_{nom}•nna•F+•S•F_{num}•satwe
285. tera•X	≡	tera•S/ wagu•S (SI 10 ¹² ; Computing 2 ⁴⁰)
286. top X	≡	F•S•ttikko

287. trans•X	≡	(i) F•S•yima
		(ii) F•S•lula
		(iii) F•S•yela
		(iv) F•S•saaba
288. tri•X: cf bi(n)•X		
289. X•tuple	≡	F•S_{num}•ye
290. uber•X	≡	F•S•ssukkajja
291. ultra•X	≡	(i) F•S•ssukkaja
		(ii) F•S•ddula
		(iii) F•S•jjela
292. ultramacro•X	≡	(i) F•S•ddeneja
		(ii) sselu•S•ena
293. ultramicro•X	≡	(i) F•S•ttonoja
		(ii) ssepi•S•ona
294. un•X	≡	(i) F•ta•R•a•Z
		(ii) F•S•konta, oku•R•<i>Uta</i>
		(iii) oku•R•<i>Uka/ Ula</i>
295. under•X	≡	(i) F•S•wansa
		(ii) oku•R•addidda
		(iii) oku•R•abogwa
296. uni•X = mono•X q.v.		
297. unique X	≡	F•S•nuta

298. X universe	≡	omuwanno gwa F₊•S (<oku•wanna)
299. universal X	≡	F•S•wanna
300. up•X	≡	F•S•gula, oku•R•agula
301. X•ure	≡	(i) obu•S, obwa•Z (ii) F•R•e/ o (iii) F•S•ma
302. ur•X	≡	(i) F•S•ssooka, F•S•nnona (ii) F•S•jja
303. vice-X	≡	omu•fo•Z, F•S•mmyuka
304. virtual X	≡	F•S•kkyenka
305. W ₁ of W ₂	≡	Y₁•a•Y₂
306. W ₁ per W ₂	≡	Y₁•li•Y₂
307. X•ward(s)	≡	(i) oku•S•lila (ii) oku•S•waZa
308. X•ware	≡	F•S•nywama
309. X•work	=	(i) omu•S•cama (ii) omuzimbe gwa F₊•S (iii) oku•S•yunga
310. worth X-ing, X•worthy	=	oku•saana/ gasa•ku•R•a
311. X•y	≡	(i) F•S•na (ii) F•nna•Z
312. yotta•X	≡	yotta•S/ ssegu•S•ena (SI 10²⁴)
313. yocto•X	≡	yokto•S/ sseka•S•ona (SI 10⁻²⁴)

314. **zepto•X** ≡ **zepto•S/ waka•S•ona** (SI 10^{-21})

315. **zetta•X** ≡ **zetta•S/ wagu•S•ena** (SI 10^{21})

PART 3: LUGANDA-ENGLISH FORMULAE

01. aka•S	≡	X•cule ~ X•culus ~ X•cle, X•let
02. aka•S•ona	≡	10 ⁻¹⁸ atto•X
03. aka•S _{num} •a•kkadde	≡	X•illionth
04. aka•S _{num} •kkadde	≡	X•illion
05. eki•kiza/ laba•Z	≡	X•ism □ omu•kiza/ laba•Z ≡ X•ist
06. ekiseela•C ⁺	≡	X duration/ time, period
07. epi•S•ona	≡	10 ⁻³ milli•X, mini•X
08. F•weeka•Z	≡	X•ferous/ gerous
09. F•wuuka •Z	≡	X•free
10. F•ee•yuna	≡	X•philia
11. F•faana•Z	≡	similar to X
12. F•guma•Z	≡	X•proof
13. F•S•jjula	≡	X•ful
14. F•keewa•Z	≡	mio•X
15. F•koba•Z	≡	X•graph
16. F•koba•Z	≡	X•graphy
17. F•kobwa•Z	≡	X•gram
18. F•kola•Z	≡	X•facient
19. F•komya•Z	≡	X•stasis
20. F•kula•S ⁺	≡	X•form, X•morphic, X-shaped
21. F•kyawa•Z	≡	X•phobia
22. F•lala•Z	≡	X•mania
23. F•leela•Z	≡	empty-X
24. F•liba•Z	≡	X•penia

25. F•linze•Z	≡	X-ready
26. F•luma•Z	≡	X•algia
27. F•lwala•Z	≡	X•iasis ~ X•osis
28. F•nna•Z	≡	X•al, X•ed, X•er, X•ese, X•i, X•ic, X•ical, X•ish,
29. F•R•abogw•L	≡	under•X
30. F•R•addidd•L	≡	under•X
31. F•R•amug•L	≡	systematic X
32. F•R•anyiito, F•R•anyiit•L	≡	intensive X
33. F•R•anyuut•L	≡	extensive X
34. F•R•ayinza	≡	X•ile
35. F•R•wa/ ye/ e/ u•bbilyaye	≡	half-X•ed, semi-X•ed
36. Fa•S•la	≡	ad•X, X•ward
37. F•S•bbatu	≡	oligo•X
38. F•S•bbaziso	≡	computer X
39. F•S•bela	≡	front X
40. F•S•bijja, F•R•abijj•L	≡	caco•L
41. F•S•buga, F•R•abug•L	≡	circum•X, peri•X
42. F•S•bwa	≡	ecto•X, ex•X
43. F•S•bwa, F•S•bwal•L	≡	out•X
44. F•S•bwal•L	≡	exo•X, extro•X
45. F•S•bwela	≡	extra•X
46. F•S•ca	≡	particular X, X•mer ~ X•merous, X•some
47. zzila•F•S	≡	non•X
48. F•S•ddene	≡	macro•X
49. F•S•ddeneja	≡	ultramacro•X

50. F•S•ddenejja	≡	macromacro•X
51. F•S•ddikya	≡	X•speak
52. F•S•ddula	≡	ultra•X
53. F•S•dduuya, F•R•aluuy•L	≡	side-X
54. F•S•ddyeka	≡	pseudo•X
55. F•S•ddyo	≡	dextro•X
56. kkonta•F•S	≡	anti•X
57. F•S•ffumbo	≡	step•X
58. F•S•ffunda	≡	mini•X
59. oku•R•ala	≡	pro•X
60. F•S•gala, F•R•agal•L	≡	cata•X, down•X
61. F•S•gela	≡	X•fashion, X•esque, X•style
62. F•S•ggaali	≡	auto•X
63. F•S•ggatte	≡	compound X
64. F•S•gginge	≡	fake X
65. F•S•ggwaka	≡	pluri•X
66. F•S•ggwala	≡	tele•X
67. F•S•ggwanvu	≡	macro•X
68. F•S•ggwela	≡	pleo•X
69. F•S•gonga	≡	after•X, après•X, meta•X, post•X
70. F•S•gula, F•R•agul•L	≡	ana•X, ex•X, up•X
71. F•S•gwa	≡	super•X
72. F•S•gwa, F•S•waggwa	≡	over•X
73. F•S•gwaja	≡	hyper•X
74. F•S•bbilyaye	≡	demi•X, half•X, hemi•X

75. F•S•jjela	≡	ultra•X
76. F•S•jjinza	≡	potenti•X
77. F•S•ka, F•R•ak•L	≡	back•X, palin•X, retro•X
78. F•S•kas•L, F•R•akas•L	≡	counter•X, X counterpart
79. F•S•kata	≡	medi•X, meso•X mid•X
80. F•S•kila, F•R•akil•L	≡	further•X
81. F•S•kima	≡	same-X
82. F•S•kkaali	≡	complex X
83. F•S•kkaddejja	≡	paleo•X
84. F•S•kkasi	≡	cyber•X
85. F•S•kkima	≡	tauto•X
86. F•S•kkise	≡	crypto•X
87. F•S•kkiza	≡	special X
88. F•S•kkono	≡	sinistro•X
89. F•S•kkyenka	≡	virtual X
90. F•S•konta, F•R• <i>Ut</i> •L	≡	anti•X, contra•X ~ counter•X, enantio•X, un•X
91. F•S•kump•L	≡	pen(e)•X
92. F•S•kumpa	≡	near X
93. F•S•kunga	≡	epi•X
94. F•S•kwamwa	≡	intra•X
95. F•S•kyana	≡	homeo•X
96. F•S•kyuka	≡	meta•X
97. F•S•laana, F•R•alaan•L	≡	juxta•X, para•X
98. F•S•lala	≡	allo•X
99. F•S•lalama	≡	X•eme

100.F•S•lamba	≡	holo•X
101.F•S•leebya•L, F•R•aleebya•L	≡	out•X
102.zzila•F•S	≡	non•X
103.F•S•linga	≡	quasi•X
104.F•S•lula	≡	trans•X
105.F•S•luna	≡	cis•X
106.F•S•lunga, F•R•alung•L	≡	bene•X
107.F•S•ma	≡	X•ad, X•age, X•ati, X•dom, X•ship
108.F•S•ma	≡	X•ure
109.F•S•maala	≡	X•ana ~ X•iana
110.F•S•maasa, F•R•amaas•L	≡	ante•X, fore•X, pre•X
111.F•S•maga, F•R•amag•L	≡	random•X
112.F•S•mala, F•R•amal•L	≡	co•X
113.F•S•mmyuka	≡	vice – X
114.F•S•mwa	≡	en•X ~ endo•X ~ ento•X ~ in•X
115.F•S•mwal•L	≡	in•X
116.F•S•mwamwa	≡	intra•X
117.F•S•na	≡	X•al, X•an, X•ar, X•ferous ~ X•gerous, X•ful, X•i, X•ic, X•ical, X•ish, X•ite, X•ose, X•ous
118.F _{nom} •nna•F ₊ •S•F _{num} •ngye	≡	many- X, multi- X, poly•X
119.F•S•nkana, F•R•ankan•L	≡	equi•X, iso•X
120.F•S•nkuna	≡	aniso•X
121.F•S•nnana	≡	artificial X
122.F•S•nniina	≡	haplo•X
123.F•S•nniina	≡	simple X

124.F•S•nnona	≡	original X, proto•X, ur•X
125.F•S•nsaja	≡	hypo•X
126.F•S•nut•L, F•R•anut•L	≡	unique•X
127.F•S•nyila, F•R•anyil•L	≡	X range/ series
128.F•S•nywama	≡	X•ware, X•alia
129.F•S•ppya	≡	neo•X
130.F•S•saab•L, F•R•asaab•L	≡	cross•X, dia•X, per•X
131.F•S•ssigile	≡	deputy X
132.F•S•ssonja	≡	discrete X □ F•S•ssonja # F•S•ssanja
133.F•S•ssooka	≡	proto•X
134.F•S•ssukka, F•R•asukk•L, ssukka•Z	≡	over•X
135.F•S•ssukkaja	≡	ultra•X
136.F•S•ssukkajja	≡	uber•X
137.F•S•ssulika	≡	plagio•X
138.F•S•suul•L	≡	apo•X
139.F•S•tona, F•R•aton•L	≡	calli•X
140.F•S•ttaasa	≡	para•X
141.F•S•ttikko	≡	top•X
142.F•S•ttono	≡	micro•X
143.F•S•ttundu	≡	X•mer ~ X•merous
144.F•S•ttuuka, F•R•attuuk•L	≡	ortho•X, recti•X
145.F•S•va	≡	holo•X
146.F _a •S•ka	≡	ab(s)•X
147.F•S•waaya, F•R•awaay•L	≡	by(e)•X
148.F•S•wakata	≡	inter•X

149.F•S•wal•L	≡	X•escent
150.F•S•wala	≡	apo•X, far X
151.F•S•gana	≡	co•X, coeno•X, common X, con•X ~ com•X, syn•X ~ sym•X
152.F•S•wanna	≡	universal X
153.F•S•wansa	≡	infra•X, sub•X
154.F•S•wansa, F•R•awans•L	≡	infra•X, sub•X, under•X
155.obu•S•ya	≡	X•genesis
156.F•S•wilo	≡	X•arium ~ X•ary, X•etum
157.F•S•wol•L, F•R•awol•L	≡	gradual X
158.F•S•wul•L	≡	ex•X
159.F•S•wunna	≡	some X
160.F•S•nuna	≡	an•X ~ a•X, X•less
161.F•S•yakka	≡	sole X
162.F•S•yanga, F•R•ayang•L	≡	sudden•X
163.F•S•yanna	≡	all-X, omni•X, pan•X
164.F•S•yawa	≡	hetero•X, mixed-X
165.F•S•yela	≡	trans•X
166.F•S•yela, F•R•ayel•L	≡	extra•X, meta•X
167.F•S•yima, F•R•ayim•L	≡	dia•X, cross•X, ex•X, per•X, through•X
168.F•S•yin•L, F•R•ayin•L	≡	auto•X, eigen•X, idio•X, own•X, self•X,
169.F•S•yina	≡	proper•X
170.F•S•yuwa	≡	homo•X, same-X
171.F•S•zomba	≡	ambi•X, amphi•X
172.F•S•zzibu	≡	dys•X, mal•X

173.F•S•zzinge	≡	comprehensive X
174.F•saama•Z	≡	X•ectomy
175.F•sinza•Z	≡	X•latry
176.F•S _{num} •ye	≡	X•fold, X•tuple
177.F•S _{num} •kuma	≡	X•ile
178.F•S _{num} •ma	≡	X•some
179.F•vaama•Z	≡	X•in(e)
180.F•wanga•Z	≡	X•like, X•oid ~ X•ode
181.F•yaka•Z	≡	X•itis
182.F•zaala/ zaalwa•Z	≡	X•gen
183.F•zaala•Z	≡	X•parous, X•some
184.F•zimba•Z	≡	X•cele, X•oma
185.F _{nom} •nna•F•S•F _{num} •mwe	≡	mono•X, one-X, uni•X
186.F _a •S•kyuna	≡	poikilo•X
187.ka•koba•Z	≡	X•graphy
188.ka•lojja•Z	≡	X•logy
189.ka•nna•Z	≡	X study, X•ic(s)
190.ka•pima•Z	≡	X•metrics ~ X•metry
191.ka•sawa•Z	≡	X•iatrics ~ X•iatry
192.ka•teeka•Z	≡	X•nomics ~ X•nomy
193.obu•S (~ obwa•Z)	≡	X•ate, X•dom
194.obu•S, obwa•Z	≡	X•ure
195.ogu•S•ena	≡	10 ¹⁸ exa•X
196.oku•ee•R•a	≡	sui•X, self-X
197.oku•R•adama, oku•R•adamma	≡	re•X

198.oku•R•adiza	≡	re•X
199.oku•R•agana	≡	inter•X
200.oku•R•agya	≡	re•X
201.oku•R•ala/ aza	≡	pro•X
202.oku•R•alaana	≡	juxta•X
203.oku•R•amwala	≡	intro•X
204.oku•R•ayinza	≡	X•ile
205.oku•S•laana	≡	juxta•X
206.oku•S•luuya, oku•R•aluuya	≡	side-X
207.oku•S•mwala	≡	intro•X
208.oku•S•wala/ waza	=	X•ize
209.oku•S•wuka, oku•S•wula	≡	de•X
210.olu•S•ena	≡	10 ³ kilo•X, maxi•X
211.omu•fo•Z	≡	vice – X
212.omu•geenya•R+•a/ (y)e/ wa	≡	X•aster, X•ista □ F•geenya•Z ≡ X•aster
213.omu•kuu•Z	≡	head of X
214.omu•nga•Z	≡	acting X
215.omu•S•cama	≡	X•work
216.omu•S•mmyuka	≡	pro•X
217.omu•S•yung•L	≡	X•work, X system
218.omu•waga•Z	≡	pro•X
219.omu•sibe•Z	≡	X•aholic ~ •X•oholic
220.sse•B•F+•S	≡	arch•X, chief X
221.ssegu•S	≡	10 ¹⁵ peta•X
222.ssegu•S•ena	≡	10 ²⁴ yotta•X

223.ssegugu•S•ena	≡	10 ²⁷ ronna•X
224.sseka•S	≡	10 ⁻¹⁵ femto•X
225.sseka•S•ona	≡	10 ⁻²⁴ yocto•X
226.ssekaka•S•ona	≡	10 ⁻²⁷ ronto•X
227.sselu•S	≡	10 ² hecto•X, hyper•X
228.sselu•S•ena	≡	10 ⁹ giga•X, ultramicro•X
229.ssepi•S	≡	10 ⁻² centi•X, infra•X
230.ssepi•S•ona	≡	10 ⁻⁹ nano•X, ultramicro•X
231.ssessegugu•S•ena	≡	10 ³⁰ quecca•X
232.ssessekaka•S•ona	≡	10 ⁻³⁰ quecto•X
233.ttaba•F ₊ •S	≡	inter•X
234.ttaba•Z	≡	general X, inter•X
235.ttuba•Z	≡	special X
236.wagu•S	≡	10 ¹² tera•X, macromacro•X
237.wagu•S•ena	≡	10 ²¹ zetta•X
238.waka•S	≡	10 ⁻¹² pico•X, micromicro•X
239.waka•S•ona	≡	10 ⁻²¹ zepto•X
240.walu•S	≡	10 ¹ deca•X, super•X
241.walu•S•ena	≡	10 ⁶ mega•X
242.wapi•S	≡	10 ⁻¹ deci•X, hypo/ sub•X
243.wapi•S•ona	≡	10 ⁻⁶ micro•X
244.Z ₁ •a•Z ₂	≡	X ₁ of X ₂
245.Z ₁ •li•Z ₂	≡	X ₁ per X ₂
246.Z-m	≡	e-X

PART 4: LUGANDA DEFINITIONS OF SPECIALIZED LUGANDA AFFIXES AND

COMBINING FORMS

01. F•R•a/ **aja/ ajja** = [oku•R•a ku ddaala elisooka/ ely'okubili/ ely'okusatu]
02. F•S•Ø/ **ja/ jja** = [F•S eky'eddaala elisooka/ ely'okubili/ ely'okusatu]
03. oku•R•**abogwa** = [oku•R•a mu ngeli y'ekibogwe] † F•R•**abogw•L**
04. oku•R•**abuba** = [oku•R•a obubi] † F•R•**abub•L**
05. oku•R•**abuga** = [oku•R•a mu kubugiliza] † F•R•**abug•L**
06. oku•R•**agala** = [oku•R•a okwolekela wansi] † F•R•**agal•L**
07. oku•R•**ageenya** = [oku•R•a mu ngeli y'okugeegeenya] † F•R•**ageeny•L**
08. oku•R•**agela** = [oku•R•a mu bigelo] † F•R•**agel•L**
09. oku•R•**agula** = [oku•R•a okwolekela waggulu] † F•R•**agul•L**
10. oku•R•**aka** = [oku•R•a emabega] † F•R•**ak•L**
11. oku•R•**akiika** = [oku•R•a obukiika] † F•R•**akiik•L**
12. oku•R•**akoma** = [okukoma oku•R•a]
13. oku•R•**ala** = [oku•R•a mu maaso] † F•R•**al•L**
14. oku•R•**aleebya** = [okuleebya mu ku•R•a] † F•R•**aleeby•L**
15. oku•R•**alunga** = [oku•R•a obulungi] † F•R•**alung•L**
16. oku•R•**ama** = [oku•R•/la mu kibinja] † F•R•**am•L**
17. oku•R•**amaga** = [oku•R•a okulimu okumagamaga] † F•R•**amag•L**
18. oku•R•**amala** = [oku•R•a nga kumalayo] † F•R•**amal•L**
19. oku•R•**amuga** # oku•R•**amaga** q.v.
20. oku•R•**annyhonga** = [oku•R•/la ku mutindo omunnyhongo] † F•R•**annyhong•L**
21. oku•R•**anyila** = [oku•R•a okw'omu lunyiilili] † F•R•**anyil•L**
22. oku•R•**asaana** = [okusaanila oku•R•a]
23. oku•R•**asoba** = [oku•R•a mu ngeli ensobu]

24. oku•R•asukka = [okusukka mu ku•R•a] † F•R•asukk•L
25. oku•R•atanda = [okutandika oku•R•a]
26. oku•R•atela = [okutela oku•R•a] † F•R•atel•L
27. oku•R•atona = [oku•R•a mu ngeli y'okutona] † F•R•aton•L
28. oku•R•awaga = [okweyongela mu ku•R•a] † F•R•awag•L
29. oku•R•awela = [okumala/ okutwala ekiseela mu ku•R•a]
30. oku•R•awuga = [okukendeela mu ku•R•a] † F•R•awug•L
31. oku•R•ayima = [oku•R•a nga kuyitilamu ddala] † F•R•ayim•L
32. oku•R•ayinza = [okuyinza oku•R•a] † F•R•ayinza
33. oku•R•anyiita = [okunyiinyiitila oku•R•a] † F•R•anyiit•L
34. oku•R•uma # oku•R•ama q.v.
35. oku•R•ya = [okuleetela oku•R•a] † F•R•y•L
36. oku•S•ba = [okukiikilila F•S] † F•S•ba
37. oku•S•bela = [okuba F•S eky'embeli] † F•S•bela
38. oku•S•buga = [okuba F•S eky'olubugilizo] † F•S•buga, F•R•abug•L
39. oku•S•bwa = [okuba F•S eky'ebwelu] † F•S•bwa
40. oku•S•bwaka = [okusika okuva ebwelu wa F•S] † F•S•bwak•L
41. oku•S•bwala = [okusindika ebwelu wa F•S] † F•S•bwal•L
42. oku•S•bwela = [okuba ebwelu wa F•S] † F•S•bwela
43. oku•S•ca = [okuba ekitundu kya F•S] † F•S•ca
44. oku•S•dda = [okuba F•S ekya bulijjo] † F•S•dda
45. oku•S•gala = [okuba F•S ekyolekela wansi] † F•S•gala
46. oku•S•gela = 1) [okuba mu ngeli ya F•S] † F•S•gela
2) [okuteeka F•S mu bigelo] † F•S•gel•L

47. oku•S•gonga = [okuba emabega wa F•S] † F•S•gonga, F•R•agong•L
48. oku•S•gula = [okuba F•S ekyolekela waggulu] † F•S•gula
49. oku•S•gwa = [okuba F•S eky waggulu] † F•S•gwa
50. oku•S•ka = [okuyolekela emabega okuva ku F•S] † F•S•ka, F•R•ak•L
51. oku•S•kasa = [okukakasa F•S] † F•S•kas•L
52. oku•S•kata = [okuba F•S eky wakati] † F•S•kata
53. oku•S•kiika = [okuba F•S eky'obukiika] † F•S•kiika
54. oku•S•kila = [okukila F•S] † F•S•kila•, F•R•akil•L
55. oku•S•konta = [okukontana ne F•S] † F•S•konta, F•R•akont•L
56. oku•S•kumpa = (1) [okuba F•S eky'okumpi] † F•S•kumpa
(2) [kumpi okufuuka F•S] † F•S•kump•L
57. oku•S•kunga = [okuba F•S eky'okungulu] † F•S•kunga
58. oku•S•kuuma = [okukuuma F•S] † F•S•kuum•L
59. oku•S•kwa = [okuba F•S eky'okwo] † F•S•kwa
60. oku•S•kwamwa = [okuba F•S eky'okwo ela eky'omwo] † F•S•kwamwa
61. oku•S•kyana # oku•S•kyuna q.v.
62. oku•S•kyuka = [okukyuka mu F•S] † F•S•kyuk•L
63. oku•S•kyuna = [okukyukana mu F•S] † F•S•kyuna
□ oku•S•kyuna # oku•S•kyana q.v.
64. oku•S•la = [okuyolekela/ okusembelela F•S] † F•S•la, F•R•al•L
65. oku•S•laana = [okuba F•S eky'oku mulilaano] † F•S•laana, oku•R•alaana
66. oku•S•lala = [okuba ekimu ku bilala] † F•S•lala
67. oku•S•lalama = [okuba ekibinja kya F+S•lala] † F•S•lalama

68. oku•S•lamba = [okuba F•S ekilamba] † F•S•lamba, F•R•alamb•L
69. oku•S•leebya = [okuleebya mu F•S] † F•S•leeby•L
70. oku•S•linga = [okuba nga F•S mu ngeli enkyamu] † F•S•linga
71. oku•S•lula = [okubeela ku ludda luli olwa F•S] † F•S•lula
□ F•S•lula # F•S•luna q.v.
72. oku•S•luna = [okubeela ku ludda luno olwa F•S] † F•S•luna
□ F•S•luna # F•S•lula q.v.
73. oku•S•luuya = [okuba F•S eky'oku luuyi] † F•S•luuya
74. oku•S•ma = [okuba ekibinja kya F+S] † F•S•ma
75. oku•S•maala = [okuba emmaali ya F•S] † F•S•maala
76. oku•S•mbela = [okuba mu maaso ga F•S] † F•S•mbela, F•R•ambel•L
77. oku•S•maga = [okuba F•S eky'okumagamaga] † F•S•mag•L
78. oku•S•mala = [ekimalayo F•S] † F•S•mala F•R•amala
79. oku•S•munda = [okuba munda mwa F•S] † F•S•munda
80. oku•S•mwa = [okuba F•S eky'omunda] † F•S•mwa
81. oku•S•mwala = [okusindika munda mu F•S] † F•S•mwala•L
82. oku•S•mwamwa = [okuba F•S eky'omwomwo] † F•S•mwamwa
83. oku•S•na = [okwekuusa ku F•S] † F•S•na
□ F•S•na = F•nna•Z q.v.
84. oku•S•nata = [okufuuka eky'omulundi omulala] † F•S•nat•L
85. oku•S•nda = [okubeela ku nsonda ne F•S] † F•S•nda
86. oku•S•ndamwa = [okuba F•S eky'omunda omwo] † F•S•ndamwa
87. oku•S•nkana = [okwenkana mu F•S] † F•S•nkana

88. oku•S•nkuna # oku•S•nkana q.v.
89. oku•S•nnana # oku•S•nnona q.v.
90. oku•S•nnona = [okuba eky'ennonno ya F•S] † F•S•nnona, F•R•annon•L
91. oku•S•nsa = [okuba F•S eky wansi] † F•S•nsa
92. oku•S•nuta # oku•S•nata q.v.
93. oku•S•nwa = [okuba omunwe gwa F•S] † F•S•nwa
94. oku•S•nyila = [okuba olunyilili lwa F+•S] † F•S•nyila
95. oku•S•nywama = [okuba ekibinja kya F+•S•nywa] † F•S•nywama
96. oku•S•pa = [okuba kinnakibinja kya F•S] † F•S•pa
97. oku•S•saaba = [okuba F•S eky'okusaabala] † F•S•saab•L, F•R•asaab•L
98. oku•S•singa = [okuba omusingi gwa F•S]
99. oku•S•suula = [okwesuula okuva ku F•S] † F•S•suula, F•R•asuul•L
100. oku•S•twa = [okuba omutwe gwa F•S] † F•S•twa
101. oku•S•va = [okuba ekilamba kya F•S] † F•S•va
102. oku•S•waaya = [okuba eki/ akawaayilo kya/ ka F•S] † F•S•waaya, F•R•awaay•L
103. oku•S•wagwa = [okuba waggulu wa F•S] † F•S•wagwa
104. oku•S•wakata = [okuba mu makkati ga F•S] † F•S•wakata
105. oku•S•wala¹ = [okufuuka F•S] † F•S•wal•L
106. oku•S•wala² = [okubeela ewala mu F•S] † F•S•wala, F•R•awal•L
107. oku•S•wanna = [okuba eky byonna/ wonna] † F•S•wanna
108. oku•S•wansa = [okuba wansi wa F•S] † F•S•wansa
109. oku•S•wila = [okufuuka okubaamu/ okubaako F(+•S)] † F•S•wil•L
110. oku•S•wola = [okufuuka F•S empola] † F•S•wol•L, F•R•awol•L

111. oku•S•wula = [okuleetela oku•S•wuka] ⊢ F•S•wul•L
112. oku•S•yana = [okuba omwana wa/ gwa F•S]
113. oku•S•yanga = [okufuuka F•S amangu] ⊢ F•S•yang•L, F•R•ayang•L
 □ oku•S•yang # oku•S•wola q.v.
114. oku•S•yawa = [okuyawukana ne F•S ekili mu F+•S]
 □ F•S•yawa # F•S•yuwa q.v.
115. oku•S•yela = [okuba F•S eky'eli] ⊢ F•S•yela
116. oku•S•yima = [okuba F•S ekiyitilamu ddala] ⊢ F•S•yima
117. oku•S•yina = [okuba F•S F_{pro}•ennyini] ⊢ F•S•yina
 □ oku•R•ayina = [oku•R•a okulimu F•R•I F_{pro}•ennyini]
 ⊢ F•R•ayin•L
118. oku•S•yunga = [okuyunga F+•S]
119. oku•S•yuwa # oku•S•yawa q.v.
120. oku•S•za = [okuzikiliza F•S] ⊢ F•S•z•L
121. oku•S•zomba = [okubeela ku njuyi zombilili] ⊢ F•S•zomba/ F•R•azomb•L
123. omu•kuu•Z = [omukulu wa Z]
124. omu•sibe•Z = [oyo asibiddwa ku Z] ⊢ F•sibe•Z
125. omu•waga•Z = [oyo awagila Z] ⊢ F•waga•Z
126. omu•wuga•Z # omu•waga•Z q.v.