A FORMALIZED THEORY OF KINSHIP TERMINOLOGY

By

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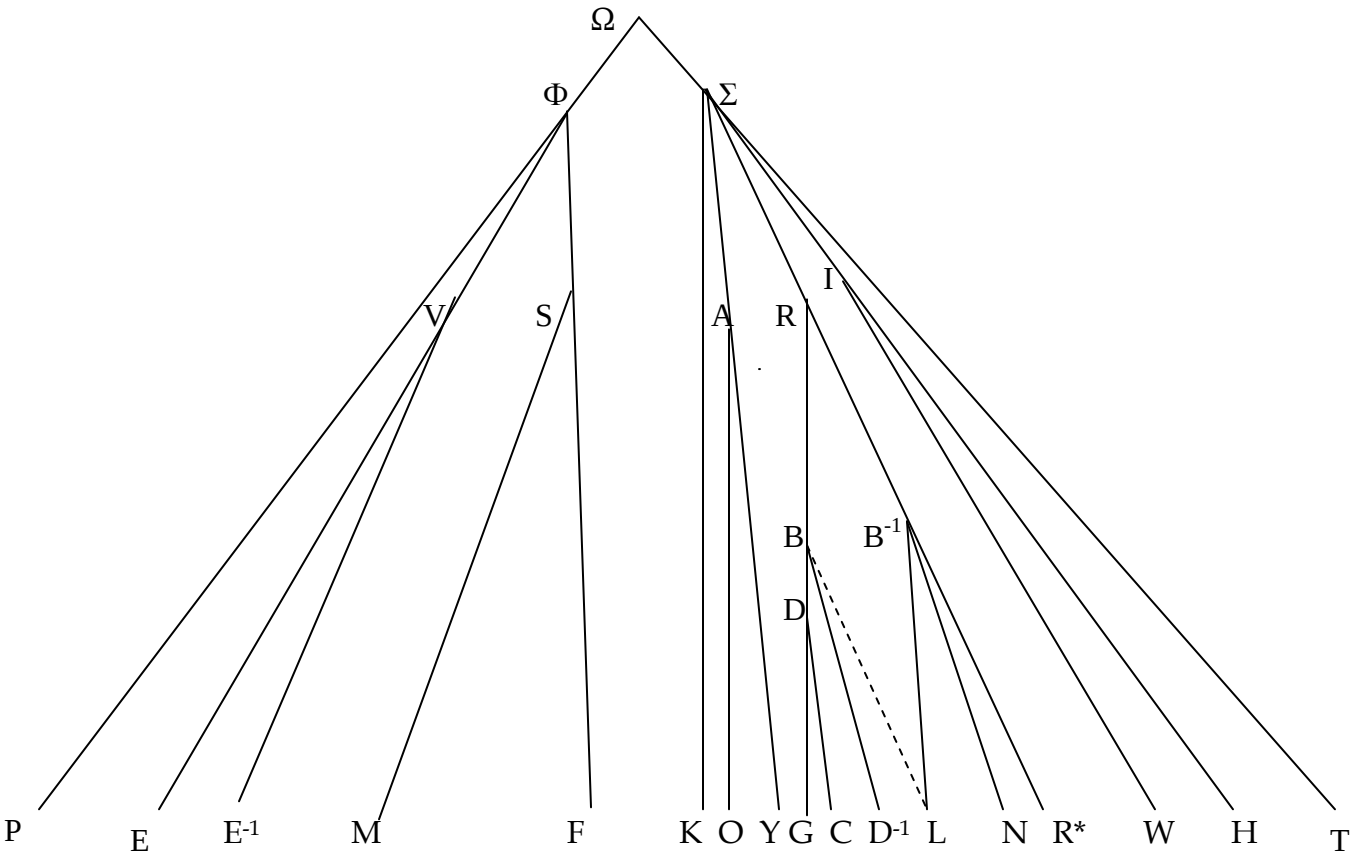
Abstract

By developing a universal kinship language, I attempt in this paper to resolve the perennial problem of discussing a kinship term system of one language community using a language of another language community. First, I posit inflectional categories of person and number as relevant to kinship terminology. Second, I stipulate the unary predicates of generation, life, and sex; and binary predicates of (non)blood relation, age, clan, co-membership, inheritance, and taboo. Third, I nuance the kinship predicates on consideration of co-sharing (full and partial), negation, converseness, and quasi-relation.

The problem of using a language of one speech community to discuss the kinship term system of another speech community is the concern of the present paper. The sole objective of this paper is to present and exemplify what is meant to be a universal kinship language. Letting Ω stand for a kinship predicate, we discern one-place and two-place predicates Φ and Σ respectively as the adjoining diagram shows.



P^{σ} = df	"_____ is of σ-generation", where σ = …-3, -2, -1, 0, +1, +2, +3, …
V = df	" _____is living or dead"
E = df	" _____is living"
E^{-1} = df	" _____is dead"
S = df	"_____ is male or female"
M = df	"_____ is male"
F = df	" _____is female"
K = df	"_____is clansperson of _____"
A = df	"_____is older or younger than _____"
O = df	"_____is older than _____"
Y = df	"_____is younger than _____"
R = df	"_____ is a relative of _____"

B = df "_____ is a blood relative of _____"
B^- = df "_____ is a non-blood relative of _____"
D = df "_____ is a direct blood relative of _____"
D^- = df "_____ is an indirect blood relative of _____"
G = df "_____ is a genitor of _____"
C = df "_____ is a genetic product of _____"
L = df "_____ is an affine of _____"
N = df "_____ is a person divorced from _____"
R* = df "_____ is a quasi-relative of _____"
I = df "_____ is a testator or heir of _____"
W = df "_____ is a testator of _____"
H = df "_____ is an heir of _____"
T = df "_____ is a person sexually tabooed to _____"

a, b, c, … , x, y, z = df kin variables

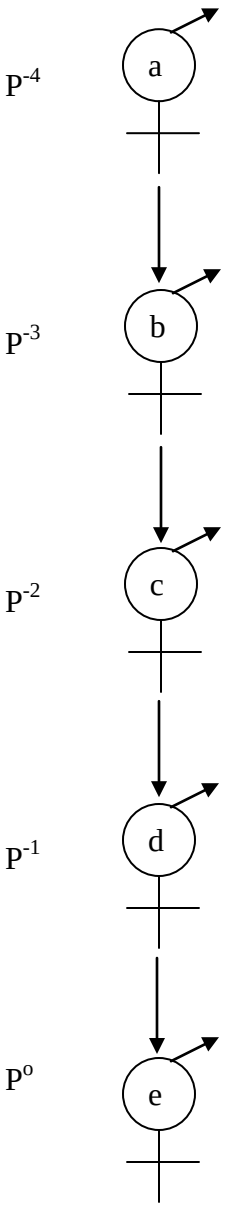
π = 1, 2, 3 = df first person: singular, second person, third person

ν = 1, 2, 3 = df singular , dual/plural, trial/plural

$\Omega^{=}$ = df full co-sharing
$\Omega^{=½}$ = df partial co-sharing
$\Omega^{-½}$ = df negation of Ω
Ω' = df converse of Ω
Ω^* = df quasi-relation

In what follows, [KD□□], [KF□□], [KL□□], [EL□□], [LL□□], [KR□□] introduce kinship diagram, kinship formula; universal kinship language, English kinship language, and Luganda kinship language and kingship rule sentences respectively.

[KD01]



[KF01] a = <P-4S>(a)G<PoS>(e)

[KL01] a is a previous fourth – generation male or female genitor of a reference–generation male or female e.

[EL01] a is a **great-great-grandparent** of e.

[LL01] a is **jjajja nnakasatwe** of e.

[KF02] b = <P-3S>(b)G<Po S>(e)

[KL02] b is a previous third–generation male or female genitor of a reference –generation male or female e.

[EL02] b is a **great-grandparent** of e.

[LL02] b is **jjajja nnakabilye** of e.

[KF03] c = <$P^{-2}S$> G <$P^{o}S$> (e)

[KL03] c is a previous second-generation male or female genitor of a reference-generation male or female e.

[EL03] c is a **grandparent** of e.

[LL03] c is **jjajja** of e.

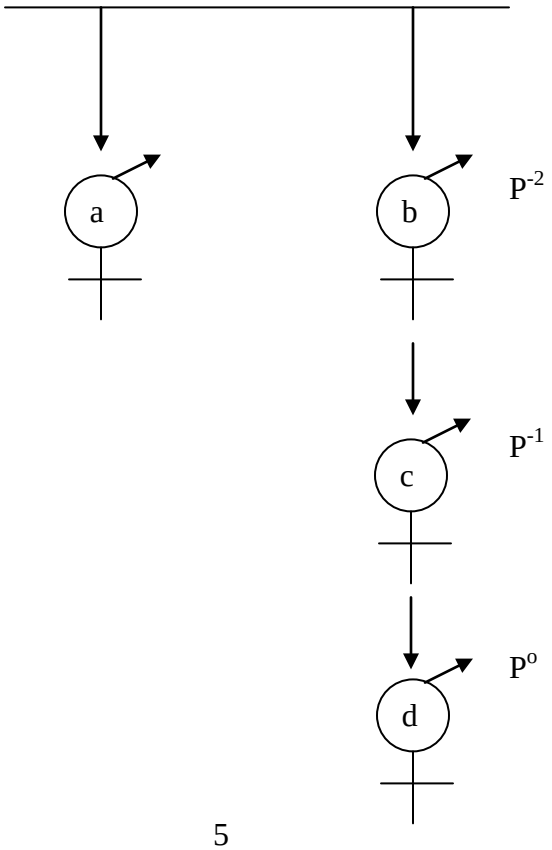
[KF04] d = <$P^{-1}S$>(d)G<$P^{o}S$>(e)

[KL04] d is a previous first-generation male or female genitor of a reference-generation male of female e.

[EL04] d is a **parent** of e.

[LL04] d is **omuzadde** of e.

[KD05]



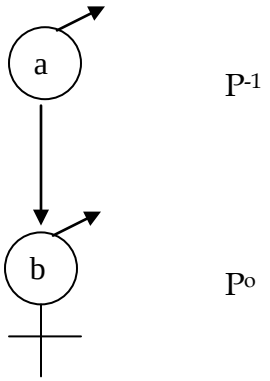
[KF05] a = <$P^{-2}S$>(a)$C^{=}$ <$P^{-2}S$>(b)G<$P^{o}S$>(d)

[KL05] a is a previous second-generation male or female genetic co-product of the second-generation male or female b who is a genitor of a reference-generation male or female d.

[EL05] a is a **great-uncle** or **–aunt** of d.

[LL05] a is **jjajja** of d.

[KD06]



P^{-1}

P^{o}

[KF06] a = <$P^{-1}M$>(a)G<$P^{o}S$>(b)

or more simply:

a = M(a) G S(b)

[KL06] a is a previous first-generation male genitor of a reference-generation male or female b.

[EL06] a is the **father** of b.

[LL06] a is **taata** of b.

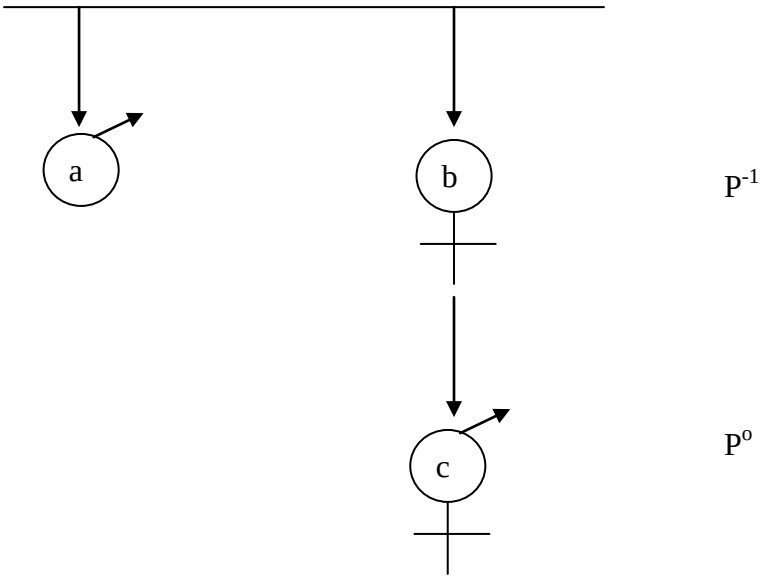
[KF07] a = F(a)G S(b)

[KL07] a is the female genitor of a male or female b.

[EL07] a is the **mother** of b.

[LL07] a is **maama** of b.

[KD08]



[KF08] a = M(a) C= F(b)GS(c)

[KL08] a is a male genetic co-product of the female genitor of a male or female c.

[EL08] a is a **maternal uncle** of c.

[LL08] a is **kojja** of c.

[KF09] a = F(a) C=M(b)GS(c)

[KL09] a is a female genetic co-product of the male genitor of a male or female c.

[EL09] a is a **paternal aunt** of c.

[LL09] a is **ssenga** of c.

[KF10] a = M(a) C=M(b)GS(c)

[KL10] a is a male genetic co-product of the male genitor of a male or female c.

[EL10] a is a **paternal uncle** of c.

[LL10] a is **taata omuto** of c.

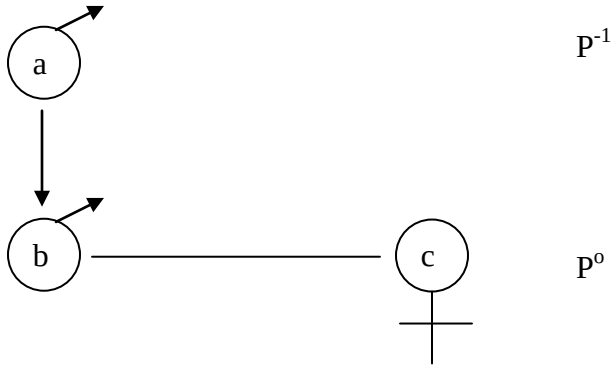
[KF11] a = F(a) C=F(b)GS(c)

[KL11] a is a female genitor co-product of the female genitor of a male or female c.

[EL11] a is a **maternal aunt** of c.

[LL11] a is **maama omuto** of c.

[KD12]



[KF12] a = M(a)GM(b)LF(c)

[KL12] a is a male genitor of a male affine of a female c.

[EL12] a is a **father-in-law** of c.

[LL12] a is **ssezaala** of c.

[KF13] a = F(a)GM(b)LF(c)

[KL13] a is the female genitor of a male affine of a female c.

[EL13] a is a **mother-in-law** of c.

[LL13] a is **nnyazaala** of c.

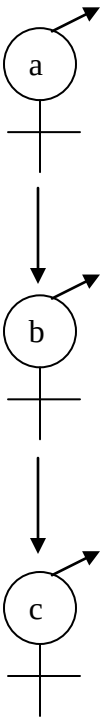
[KF14] c = F(c) LM(b)CM(a)

[KL14] c is a female affine of a male genetic product of a male a.

[EL14] c is a **daughter-in-law** of a.

[LL14] c is **mukaamwana** of a.

[KD15]



P^{o}

P^{+1}

P^{+2}

[KF15] c = <P^{+2}S>(c)C<P^{o}S>(a)

[KL15] c is a following second-generation male or female genetic product of a reference-generation male or female a.

[EL15] c is a **grandchild** of a.

[LL15] c is **omuzzukulu** of a.

[KF16] b = S(b)CS(a)

[KL16] b is a male or female genetic product of a male or female a.

[EL16] b is a **child** of a.

[LL16] b is **omwana** of a.

[KF17] b = M(b)CS(a)

[KL17] b is a male genetic product of a male or female a.

[EL17] b is a **son** of a.

[LL17] b is **mutabani** of a.

[KF18] b = F(b)CS(a)

[KL18] b is a female genetic product of a male or female a.

[EL18] b is a **daughter** of a.

[LL18] b is **muwala** of a.

[KF19] c = S(c)CF(b)C=M(a)

[KL19] c is a male or female genetic product of a female genetic co-product of a male a.

[EL19] c is a **nephew** or **niece** of a.

[LL19] c is **omujjwa** of a.

[KF20] c = M(c)CF(b) C=M(a)

[KL20] c is a male genetic product of a female genetic co-product of a male a.

[EL20] c is a **nephew** of a.

[LL20] c is **omujjwa** of a.

[KF21] c = F(c)CF(b) C=M(a)

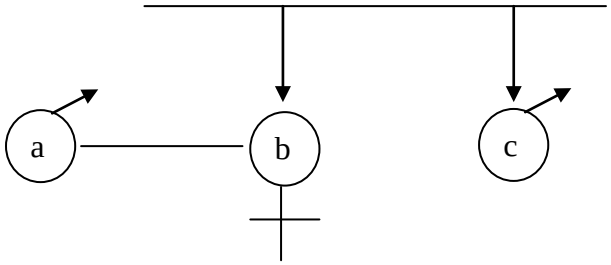
[KL21] c is a female genetic product of a female genetic co-product of a male a.

[EL21] c is a **niece** of a.

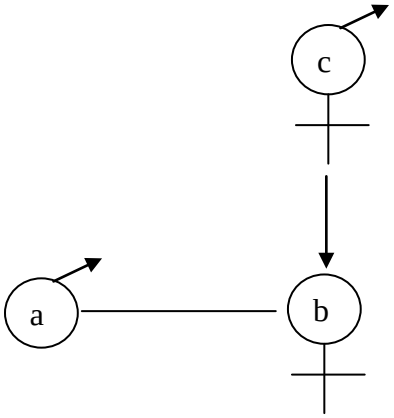
[LL21] c is **omujjwa** of a.

[LL22] a is **omuko** of c.

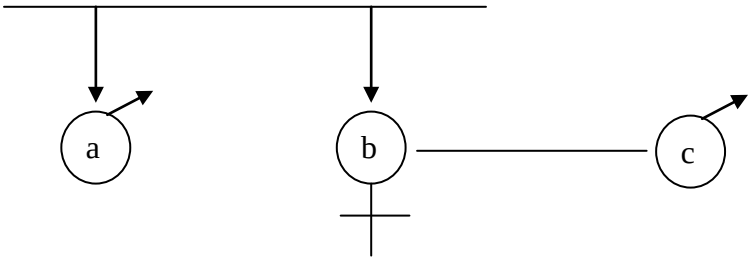
[KD22(a)]



[KD22(b)]



[KD22(c)]



[KF22(a)] a = M(a)LF(b) C=M(c)

[KL22(a)] a is a male affine of a female genetic co-product of a male c.

[KF22(b)] a = M(a) LF(b)CS(c)

[KL22(b)] a is a male affine of a female genetic product of a male or female c.

[KF22(c)] a = M(a) C=F(b)LM(c)

[KL22(c)] a is a male genetic co-product of a female affine of a male c.

[EL22(a)] a is a **brother-in-law** of c.

[EL22(b)] a is a **son-in-law** of c.

[EL22(c)] a is a **brother-in-law** of c.

[EL23] a is a **sibling** of b.

[KF23] a = S(a)C$^{=}$S(b)
[KL23] a is a male or female genetic co-product of a male or female b.

[EL24] a is a **brother** of b.

[KF24] a = M(a) C$^{=}$S(b)

[KL24] a is a male genetic co-product of a male or female b.

[EL25] a is a **sister** of b.

[KF25] a = F(a) C$^{=}$S(b)

[KL25] a is a female genetic co-product of a male or female b.

[LL26] a is **mwannyina** of b.

[KF26] a = S(a) C$^{=}$S'(b)

[KL26] a is a male or female genetic co-product of an opposite-sex b.

[LL27] a is **muganda** of b.

[KF27] a = S(a) C$^{=}$ S$^{=}$(b)

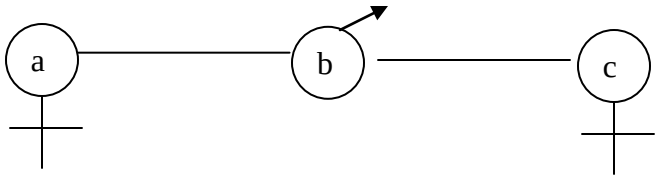
[KL27] a is a male or female genetic co-product of a same-sex b.

[LL28] a is **muggya** of c.

[KF28] a = F(a)LM(b)LF(c)

[KL28] a is a female affine of a male affine of a female c.

[KD28]

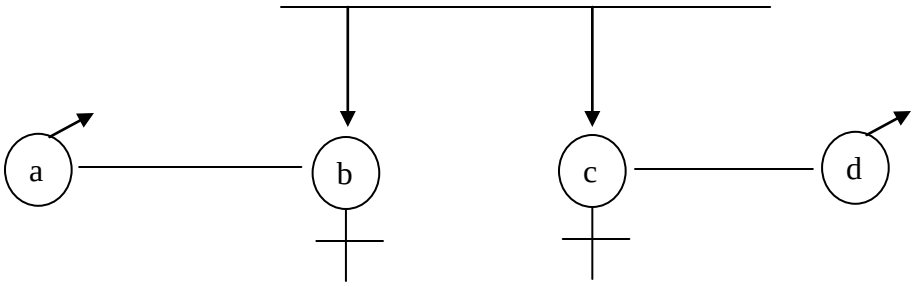


[LL29] a is **musangi** of d.

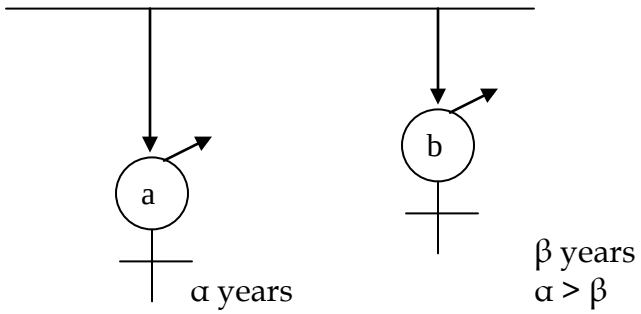
[KF29] a = M(a)LF(b) C=F(c)LM(d)

[KL29] a is a male affine of a female genetic co-product of a female affine of a male d.

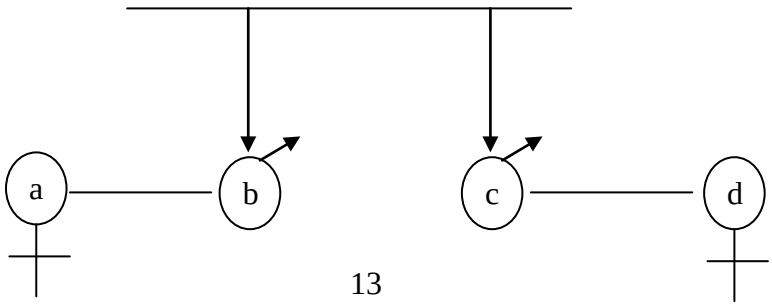
[KD29]



[KD30(a)]



[KD30(b)]



[KF30(a)] a = S(a)[O C$^{=}$]S(b)

[KL 30(a)] a is a male or female older genetic co-product of a male or female b.

[KF30(b)] a = F(a)LM(b) C$^{=}$M(c)LF(d)

[KL30(b)] a is a female affine of a male genetic co-product of a male affine of a female d.

[LL30(a)] a is **baaba** of b.

[LL30(b)] a is **baaba** of d.

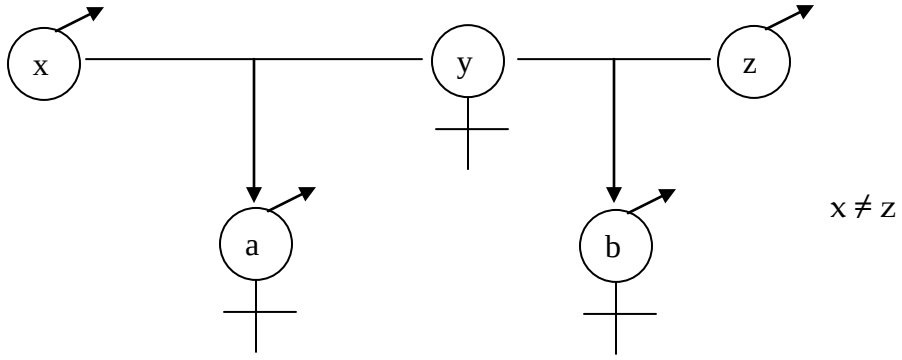
[KF31] b = <S 3.1>(b)[Y C$^{=}$]<S 1.1>(a)

[KL31] b is a third-person-singular male or female younger genetic co-product of a first-person-singular male or female a.

[EL31] b is a **younger sibling** of me a.

[LL31] b is **mwanawattu** of me a.

[KD32]



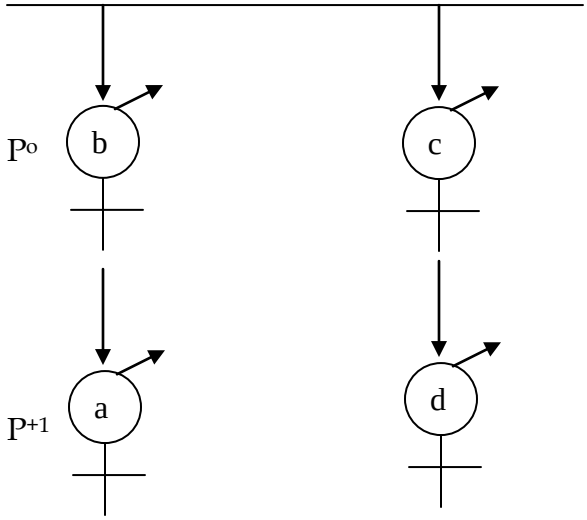
[KF32] a = S(a) C$^{=½}$S(b)CF(y)GS(a)

[KL32] a is a male or female half-genetic co-product of a male or female genetic product of a female genitor of the male or female a

[LL32] a is **omubbeele** of b.

[EL32] a is a **maternal half-sibling** of b.

[KD33]

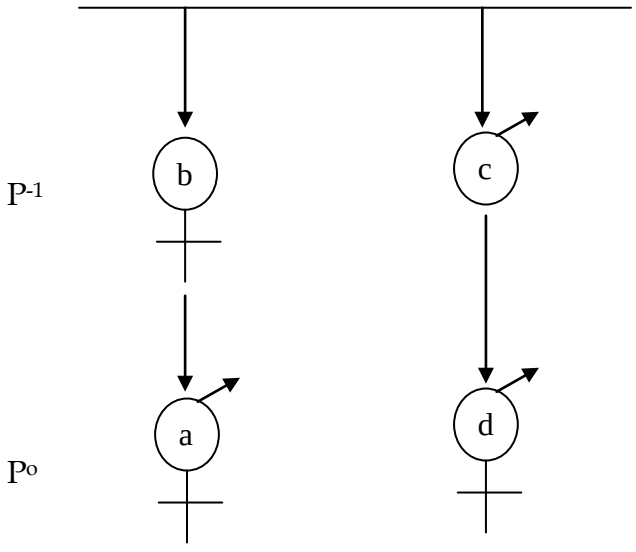


[KF33] a = S(a)CS(b) C=S(c)GS(d)

[KL33] a is a male or female product of male or female genetic co-product of a male or female genitor of male or female d

[EL33] a is a **first cousin** of d.

[KD34]



[KF34] a = S(a)CF(b) C$^{=}$M(c)G S′(d)

[KL34] a is a male or female genetic product of a female genetic co-product of a male genitor of an opposite-sex d.

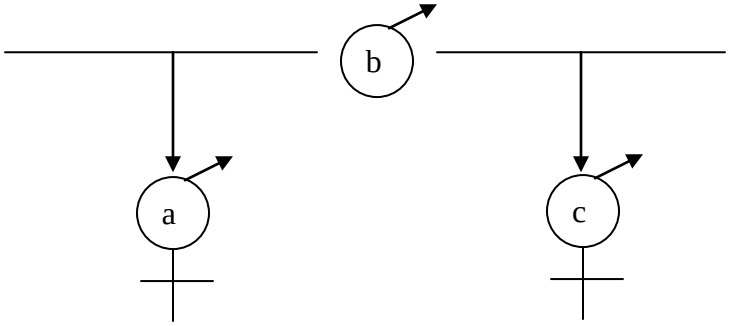
[LL34] a is **kizibwe** of d.

In Kiganda culture [KF35] holds.

[KF35] a = S(a)CF(b) C$^{=}$M(c)GS′(d) → a = S(a)T S′(d)

[KL35] a is a male or female genetic product of a female genetic co-product of a male genitor of an opposite-sex d, then a is a male or female tabooed to the opposite-sex d.

[KD36]



[KF36] a = S(a) C$^{=½}$S(c)CM(b)GS(a)

[KL36] a is a male or female half-genetic co-product of a male or female genetic product of a male genitor of the male or female a.

[EL36] a is a **paternal half-sibling** of c.

[LL36] a is **muganda** or **mwannyina** of c. cf. [LL26-27]

[KD37]

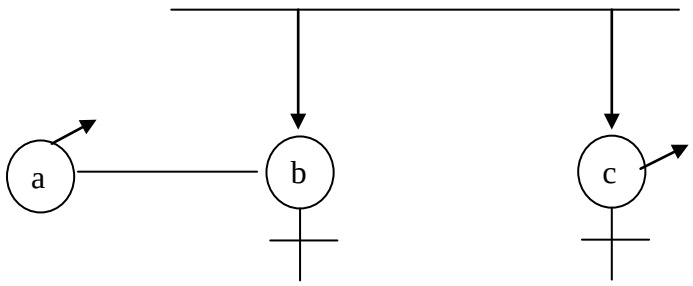
[KF37] a = S(a)CS(b)LS'(c)G^{-1} S(a)

[KL37] a is a male or female genetic product of a male or female affine of an opposite-sex nongenitor of the male or female a.

[EL37] a is a **stepchild** of c.

[LL38] a is **mulamu** of c.

[KD38(a)]

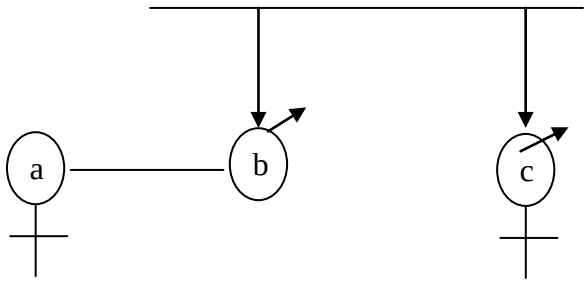


[KF38(a)] a = M(a)LF(b) $C^{=}$S(c)

[KL38(a)] a is a male affine of a female genetic co-product of a male or female c.

[EL38(a)] a is a **brother-in-law** of c.

[KD38(b)]



[KF38(b)] a = F(a)LM(b) C=S(c)

[KL38(b)] a is a female affine of a male genetic co-product of a male or female c.

[EL38(b)] a is a **sister-in-law** of c.

In Kiganda culture [KF39 – 40] hold.

[KF39(a)] [a = M(a)LF(b)] → [a = M(a)K^{-1}F(b)]

[KL39(a)] If a is a male affine of a female b, then a is a male nonclansperson of the female b.

[KF39(b)] [c = S(c)CM(a)] → [c = S(c)KM(a)]

[KL39(b)] If c is a male or female genetic product of a male a , then c is a male or female clansperson of the male a.

[KF40] [a = <ES>(a)I<ES>(b)] → [a = <ES>(a)K<ES>(b)]

[KL 40] If a is a living male or female testator or heir of b , then a is a living male or female clansperson of the living male or female b.

[KF41] a = M(a)NF(b)

[KL41] a is a male divorced from a female b.

[EL41] a is **divorced** from b.

[LL41] a and b are **bagattulule**.

[KF42] a = S(a)C*S(b)

[KL42] a is a male or female quasi-genetic product of a male or female b.

[EL42] a is an **adopted child** of b.

[LL42] a is **omwebonanye** of b.

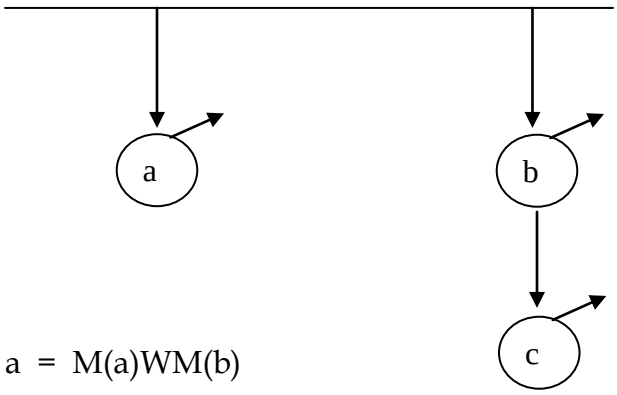
In concluding this paper, I wish to conjecture that the formula
a = <$P^{\sigma}VS\ \pi.\nu$>(a) [RAKIT]<$P^{\sigma}VS\ \pi.\nu$>(b) could play an appreciable role in the development of a general theory of kinship terminology. I hypothesize the following rule of kinship terminology:

[KR01] $a \sim b,\ b = \varphi(c) \vdash a = \varphi(c)$

where ~ and φ represent substitutability and functionality.

Consider the examples in [43] – [47] for Luganda.

[KD43]



[KF43(a)] a = M(a)WM(b)

[KL43(a)] a is a male testator of a male b.

[KF43(b)] b = M(b)GM(c)

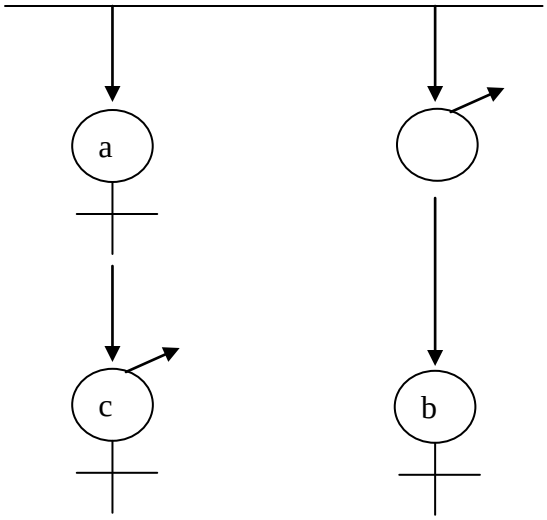
[KL43(b)] b is a male genitor of a male c.

[LL43(a)] a is **omulaamizi** of b.

[LL43(b)] b is **taata** of c.

[LL43(c)] a is **taata** of c.

[KD44]



[KF44(a)] a = F(a)WF(b)

[KL44(a)] a is a female testator of a female b.

[KF44(b)] a = F(a)GS(c)

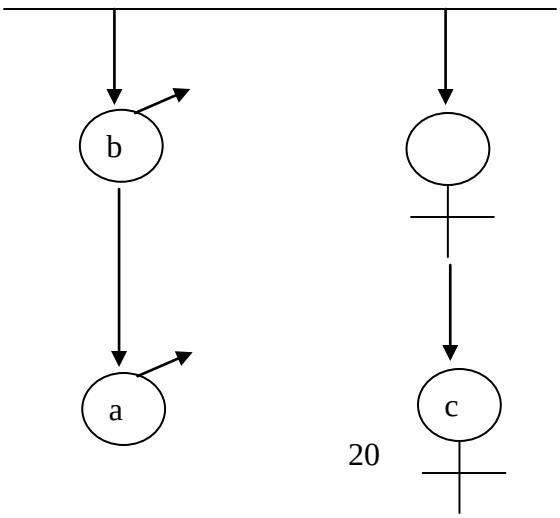
[KL44(b)] a is a female genitor of a male or female c.

[LL44(a)] a is **omulaamizi** of b.

[LL44(b)] a is **maama** of c.

[LL44(c)] b is **maama** of c.

[KD45]



[KF45(a)] a = <P^{+1}M>(a)H<P^{o}M>(b)

[KL45(a)] a is a following first-generation male heir of a reference –generation male b.

[KF45(b)] b = <P^{o}M>(b)T<P^{+1}F>(c)

[KL45(b)] b is a reference-generation male tabooed to a following first-generation female c.

[LL45(a)] a is **omusika** of b.

[LL45(b)] b is **azila** to c.

[LL45(c)] a is **azila** to c.

[KF46(a)] a = S(a)KS(b)

[KL46(a)] a is a male or female clansperson of a male or female b.

[KF46(b)] b = S(b)TS(c)

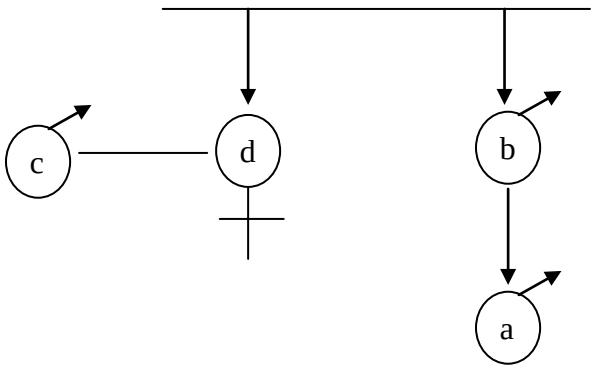
[KL46(b)] b is a male or female tabooed to a male or female c.

[LL46(a)] a is **munnakika** of b.

[LL46(b)] b is **azila** to c.

[LL46(c)] a is **azila** to c.

[KD47]



[KF47(a)] a = M(a)HM(b)

[KL47(a)] a is a male heir of a male b.

[KF47(b)] b = M(b) C=F(d)LM(c)

[KL47(b)] b is a male genetic co-product of a female affine of a male c.

[LL47(a)] a is **omusika** of b.

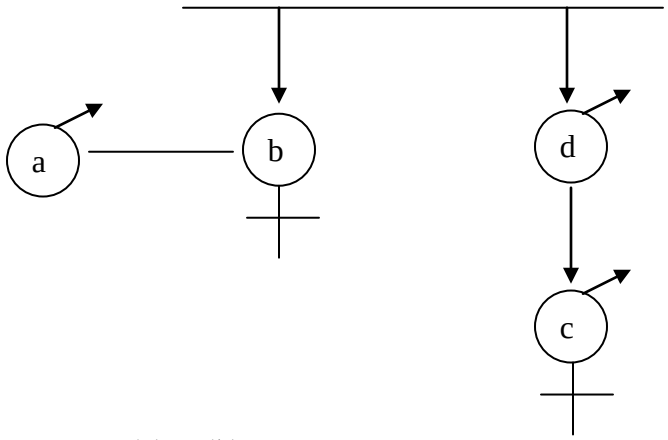
[LL47(b)] b is **omuko** of c.

[LL47(c)] a is **omuko** of c.

[KR02] a $\overset{+}{\bigcirc}$ b, b = φ(c) ⊢ a = φ(c)

where $\overset{+}{\bigcirc}$ represents affinity. [KR02] is exemplified in [48].

[KD48]



[KF48(a)] a = M(a)LF(b)

[KL48(a)] a is a male affine of a female b.

[KF48(b)] b = F(b) C=M(d)G S(c)

[KL48(b)] b is a female genetic co-product of a male genitor of a male or female c.

[EL48(a)] a is the **husband** of b.

[EL48(b)] b is an **aunt** of c.

[EL48(c)] a is an **uncle** of c.

The formal kinship language developed in this paper should be regarded as only tentative, for we are absolutely not certain whether all predicates relevant to kinship terminology have been exhausted. Nevertheless, whether provisional or not, the language promises to be a powerful instrument for analyzing kinship nomenclatural systems of various languages.

By interpreting ~ as inheritance or as clan membership predicate and by applying [KR01], we can understand apparently extended applications of kinship terms as in [LL44(c)], [LL45(c)] and [LL47(c)] in Luganda. For English [KR02] suggests as a rule of kinship terminology or, rather, nomenclature.

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