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Comparative Analysis of the Numeral Systems of Ígálà, Yoruba, German and English

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Abstract

This study undertakes a comparative analysis of the numeral systems of Igala, Yoruba, English and German. An essential part of data collation for the study comprises compilation of comparative wordlists of Ígálà, Yoruba, German and English numeral systems in addition to the writer's personal observation and knowledge of the systems. The investigation reveals that the complexity of deriving especially non-basic numerals in the languages involves three predominant arithmetic processes of addition, subtraction (Yoruba in particular) and multiplication in addition to certain grammatical processes, especially vowel elision, clipping, compounding and so on. In addition, the summary of the quasi constraints or derivational patterns for the languages reveals that whereas German and English maintain very similar patterns because of their very close affinity as sisters from the same parent, it is not so with Ígálà and Yoruba even though both belong to the same language family. Incorporating insights from optimality theory, the paper argues that even though numeracy and the constraints that ensure well-formedness of numerals are somewhat universal, parametric variations abound. The actual patterning of the sequences of the derivational processes in individual languages may be very similar but definitely not the same, no matter how closely related the languages concerned may be. If not, they would cease to represent core grammars of different languages.

1 Introduction

In the early days of some comparison between Ígálà and Yoruba, some scholars had argued that the strong linguistic affinity between Ígálà and Yoruba is such that the two languages can have a common dictionary (Etu 1999: 5). Some even referred to Ígálà as a dialect of Yoruba (Forde 1951; Westermann/Bryan 1952) or a language resulting from the fusion of Yoruba and Idoma (Silverstein 1973). Similar assumptions have persisted in some quarters even at present. In the same vein, there appeared to be some misunderstanding, at some point, on the nature of the relationship between English and German at certain quarters with the attendant controversy of which is the "based off of" the other. Against this background therefore, the first and primary aim of this paper is to show through a comparative descriptive analysis of the derivational processes of the numeral systems of Ígálà, Yoruba, German and English, the extent to which linguistic data like numerals can help us to understand more about the nature of the linguistic relationship among languages even of the same family. This way, we can avoid certain overstatements and some misleading assertions or assumptions on linguistic relationship.

Secondly, just as languages must name things and talk about them, virtually all human languages count things. By this token, numeration is somewhat a universal phenomenon. Likewise, in modern considerations following the dictates of optimality theory (OT) whose main goal is to develop and examine the way that representational well-formedness determines the assignment of grammatical structure; constraints are also adjudged to be

universal. As Prince and Smolensky (1993) have argued, universal grammar generates a set of highly general and somewhat conflicting well-formedness constraints, which are all operative, functional and attested in specific languages as core grammars. As it were, resolving these often conflicting universal constraints in terms of ordering them according to language specific preference is what distinguishes one language from another (see also Omachonu 2007). Suffice it to say that even though this study is not purely a constrained-based analysis; it incorporates insights from OT orientation into the comparative descriptive analysis of the numeral systems of Ígálà, Yoruba, German and English with a view to discovering the uniqueness of the individual languages in this respect as well as the relationship between them as sub-sets of the universal grammar. With this, the second aim of this paper is to argue that the what, where, how and why of the derivational processes in the numeral systems of these languages could first be interpreted as universal imperatives for well-formedness, the individual language preference which when compared across languages could reveal the unique identity of each language.

Lastly, the third focus of this study, though closely related to the first two, is to do a comparison within a comparison. This is to be achieved by comparing the summary of the derivational processes (captured in form of summation of formulae or quasi constraints for each of the languages) between the two sets of languages (Ígálà/Yoruba vs. German/English) to see whether the nature of the relationship is the same for both sets or not.

2 The Languages and their Known Relationships

2.1 German and English

Both German and English language, it is common knowledge; belong to the Indo-European languages family. They were first of all, by origin, West Germanic languages, originally spoken by the Saxons in northern Germany and brought to the British Isles in the 5th century (Pfeffer/Cannon 1994). However, there appears to be some misunderstanding of the relationship between English and German at certain quarters. The controversy or misunderstanding is whether it is English that borrowed from German or German from English considering the affinities between the two. From an informed opinion, neither English nor German is "based off of" the other and it is not that they borrowed from each other mutually. The truth is that the two simply come from a common ancestor known as Common West Germanic (CWG). This was an ancient Germanic language that split from an even more ancient Germanic language (Proto-Germanic). It eventually gave rise to Old High German, the ancestor of German and other High Germanic languages as well as Old Saxon which is the ancestor of Low Germanic languages, such as Dutch and Anglo-Saxon, which in turn was the direct ancestor of English (Hawkins 1986; Pfeffer/Cannon 1994; Uwalaka 2001; Crystal 2010). By implication, English and German both descended from the West Germanic even though their relationship has been somewhat blurred by the great influx of Norman French words into the English lexicon consequent upon the Norman conquest of England in 1066. Even as they went their separate ways, developed in different ways and with different influences and grew more apart with time, there are still many similarities between them because they come from a common root.

2.2 Igala and Yoruba

Whereas English and German may need little or no introduction because they are both languages of wider communication with English[1] being spoken in more countries/nations of

[1] English is spoken natively by well over 300 million people mainly in Great Britain, the United States of America, Australia, Canada, New Zealand, Ireland and other parts of the world. At present, it is spoken in about

the world both as first and/or second language, Ígálà and Yoruba may require some introduction. In fact, Ígálà is hardly known. Ígálà belongs to the West Benue-Congo and more precisely one of the 'Yoruboid' languages in Nigeria (Williamson 1973). Other languages in this group are Yoruba and Itsekiri. Ígálà is a dominant language spoken in Kogi State, North Central Nigeria (West Africa). It is a minority language in Nigeria spoken by over two million people who live on the eastern part of Kogi State (Kogi East Senatorial District) covering nine (9) Local Government Areas of the state: Ankpa, Bassa, Dekina, Ibaji, Idah, Igalamela/Ọdọlu, Ofu, Ọlamabọrọ and Ọmala. It is under-documented and sparsely described. At present, the language is spoken beyond the political boundaries of the former Ígálà[2] division but definitely not outside Nigeria.

The Yoruba language, unlike Ígálà, is one of the most intensively studied languages of Africa. According to Adewole (2007: 23), there are about sixteen Universities in the United States where Yoruba is studied (see also Fabunmi 2010). Yoruba is equally West Benue-Congo of the Niger-Congo phylum of African languages (Williamson/Blench 2000). Yoruba is regarded as one of the three major languages of Nigeria and majority of the speakers of the language reside in the Southwestern part of Nigeria with a population of over twenty million (Grimes 1996). Again, unlike Ígálà that is not spoken outside Nigeria, Yoruba is spoken in countries like Republic of Bénin, Togo, Ghana, Cote D'ivoire, Sudan and Sierra-Leone. The language is even spoken outside the Africa continent as one finds a great number of speakers of the language in Brazil, Cuba, Haiti, Caribbean Islands, Trinidad and Tobago, UK and America (see Hunt 1977; Abimbola 1978).

One could rightly infer that there is a linguistic affinity between Ígálà and Yoruba as members of the West Benue-Congo of the Niger-Congo phylum of African languages and more precisely Yoruboid languages spoken in Nigeria but whether the relationship is similar to that between English and German is yet to be determined. Unlike the relationship between German and English as co-descendants from a common ancestor known as Common West Germanic (CWG), there is no such evidence in the literature yet to explain the relationship between Ígálà and Yoruba. For instance, whereas Forde (1951) and Westermann and Bryan (1952) referred to Ígálà as a dialect of Yoruba, Armstrong (1951) in his own attempt to answer the question has argued that the most definite statement that can be made is that the Ígálà had a common origin with the Yoruba and that the separation took place long ago to allow for their fairly considerable linguistic differences. How true is this and what is the exact meaning of common origin in this context? Is it in terms of common ancestry or just long period of association? These questions have remained largely unanswered. In all, what comes closer to a more tenable and or acceptable explanation are Akinkugbe's (1976, 1978) attempts at an internal linguistic classification and comparative study of the 'Yoruboid', a term coined by Williamson (1973) to designate the group of languages comprising Yoruba, Itsekiri and Ígálà as a genetic group. To her, Ígálà is neither a dialect of Yoruba nor a language resulting from the fusion of Yoruba and Idoma as claimed by Silverstein (1973) but rather a language that shares with Yoruba a "common ancestor" that was neither Yoruba nor Ígálà but a Proto-Yoruba-Ígálà. To this end, part of the promises of this present study is to validate and justify Akinkugbe's position with authentic linguistic data from numeral systems of both languages. In the next section, we discuss issues on the classification and reconstructions of the Benue-

forty-two (42) countries of the world which shows that it is a well-developed international language (Uwalaka 2001; Crystal 2010). It is further argued that twenty-two (22) countries out of the forty two (42) use it as first language.

[2] The language is equally spoken in some communities outside Kogi state: Èbú in Delta state, Ólóhí & Ìfèkwù in Edo State, Ógwúrúgwú, Ọjọ́, Ìgá and Àsàbá in Enugu State, Òdòkpè, Ńjàm, Ìnọ́mà, Àlá, Ìgbédọ̀, Ónúgwá, Òdè, Ìgbòkènyi and Ìlá in Anambra State.

Congo phylum to which Igala and Yoruba belong with a view to throwing more light on Igala-Yoruba relationship and the development of Benue-Congo in general.

2.3 On the Reconstructions of the Benue-Congo: The State of the Art

The Benue-Congo language family could be said to be the largest and most complex branch of the Niger-Congo language phylum in Africa. They are found in present-day Nigeria, but when considered together with Bantu (accepting Greenberg's 1966 inclusion of Bantu in Benue-Congo), they cover also most of Eastern and Southern Africa. In the words of Williamson and Blench (2000: 30):

> The Benue-Congo languages, as currently conceived, occupy a vast area; roughly, the southern two-thirds of Nigeria and Cameroon, the southern part of the Central African Republic and Congo (Brazzaville), and the greater part of the DRC, Tanzania, Uganda, Kenya, the Comoros Islands, Mozambique, Angola, Rwanda, Burundi, Namibia, Zambia, Malawi, Zimbabwe, Botswana, Swaziland, South Africa, Lesotho, Equatorial Guinea and Gabon, with an outlier in Somalia.

The present-day 'Benue-Congo', it should be noted, is composed of two elements from former classifications, the Kwa and Benue-Congo languages of Greenberg. Whereas the name Kwa refers back to Krause (1895) who used it for the languages between Western Ivory Coast and Yorubaland, the name 'Benue-Congo' is accredited to Greenberg (1963, 1966) who introduced it to circumvent the 'Semi-Bantu' terminology of Johnston (1919–1922). Greenberg's terminology was intended to indicate a genetic group, but also to emphasize the inclusion of the Bantu group. Consequently, four branches emerged from the Benue-Congo family namely: Platoid, Jukunoid, Cross River and Bantoid. Other attempts to reconstruct the Benue-Congo by Shimizu (1975) and Gerhardt (1989) subsumed Jukunoid under Platoid. Similarly, Bennett and Sterk's (1977) major revision saw the Benue-Congo expanded with the addition of the eastern branches of Greenberg's Kwa. These branches were grouped together as West Benue-Congo and Greenberg's original Benue-Congo, then renamed East Benue-Congo. In addition, following Ohiri-Aniche's (1999) suggestion that Ukaan with Akpes forms a bridge between West and East Benue-Congo as well as Connel's (1998) proposal of a link between Ukaan and Cross River languages, Ukaan is therefore placed as an independent branch of East Benue-Congo. These modifications consequent upon these attempts at reconstructions yields the family tree below (see also Williamson/Blench 2000; Blench 2004).

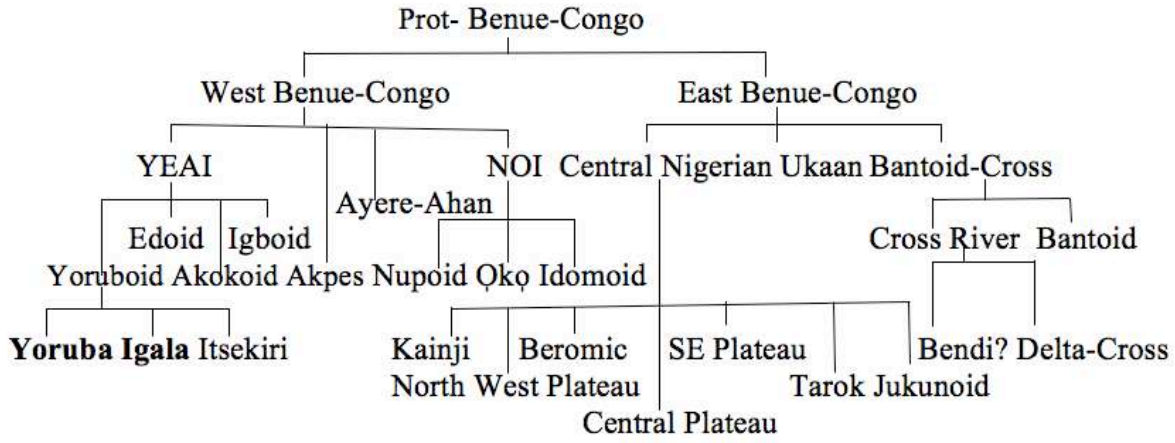

Figure 1: Reconstruction of the Benue-Congo-languages

West Benue-Congo which comprises Igala and Yoruba corresponds to the former Easter Kwa which, according to Williamson and Blench (2000: 31), is spoken over the greater part of

southern Nigeria, extending further north in the west than in the east, and overlapping into Benin. The largest languages in the family are Yoruba and Igbo spoken by over 20 million and over 15 million people respectively (c. f. Grimes 1996). The list below summarizes the salient linguistic features of West Benue-Congo as culled from Williamson and Blench (2000: 31):

i. Noun classes: Full(Gade)/reduced (Edoid)/remnant (Yoruba); prefixes

ii. Verbal extensions: Edoid has a number (often indicating plurality) and Igboid many, most of which are new developments.

iii. Pronouns: Independent, subject, object, possessive

iv. Sentence order: SMVOA, SVMOA, Prepositions

v. Noun phrase: N+Gen; N+Poss; N+Adj; N+Num; N+Dem; N+Definite

In spite of subsequent attempts at constructing the Benue-Congo by Stewart (2002) and Blench (2004) or some languages within the Benue-Congo family by Kambon (2005) and Babaev (2008), Williamson and Blench's model remains, for now, the most recent, comprehensive and scholarly model on the table (see also Kambon 2005: 19). Consequently, very few reliable comparative works exist in the literature on this subject matter. Unlike the case of Indo-European (to which English and German belong), where total coverage has been achieved (Kambon 2005; Babaev 2008), reconstructing the Benue-Congo still leaves much to be desired. It is amazing that even over forty years after Greenberg's classification, the state of comparative research in Benue-Congo remains inadequate. There is clearly lack of effort as just few people including Africanists and/or African linguists dedicate their studies to the comparative reconstruction of Niger-Congo and the Benue-Congo in particular. As Williamson (2000) has argued, even in the Niger-Congo as a whole, since the two major attempts by Greenberg (1963, 1966) and Mukarovsky (1976–1977), no serious effort to reconstruct the Niger-Congo and by implication, the Benue-Congo has yet been made. She acknowledges that some of the factors responsible for the delay are (1) the vast number of languages in the group which makes it practically impossible to identify and document all the languages in the family and (2) the corresponding lack of written records or available collated relevant data in the languages. In other words, the many uncertainties and lacunae in basic data, Williamson and Blench (2000: 41) have argued, constitute an impediment or 'unfortunate limitation on any full-scale reconstruction'.

Apart from the issue of inadequate attention, there is also the problem of methodology in the available studies even from the early periods of the attempts at classification and reconstruction of African languages such as Koelle (1854), Westermann (1911, 1927), Greenberg (1963, 1966) and Mukarovsky (1976–1977). However useful these earlier classifications may appear, they have failed to provide a dependable historical schema or theoretical framework for the development of the phylum as a whole hence there have been some attempts at revision of these earlier grouping or classifications (c. f. Blench 2004). In the same vein, Williamson (1971: 252) observes that despite her comparative wordlists study of the Benue-Congo languages, no convincing lexical innovations were found for BC despite its acceptance as a grouping. However, Williamson (2000) has drawn attention to the fact that the time is ripe to attempt serious reconstruction of Niger-Congo and by implication the Benue-Congo as she posits that the materials and the tools are now available for the task.

3 Methods for the Present Study

Data gathering for this study commenced with compilation of comparative wordlists of Ígálà, Yoruba, English and German numeral systems in addition to the researcher's personal observation of the systems as a trained linguist who is a native speaker of Ígálà, speaks

English as a second language and possesses some level of proficiency in Yoruba and German. The study handles numerals 1–1000(cardinal numbers only). The figures (numerals 1–1000) are classified into five groups as presented in tables I–V and the variables for derivations (also figures) coded using letters of the English alphabet: **A** represents 1–9, **B** represents 10 (basic), **C** represents 20 (Basic), **D** represents 30, **E** represents 100 and **F** for 200. These six variables: A, B, C, D, E, F interact with the three relevant constraints or imperatives for well-formedness (add, subtract and multiply) to arrive at the formulae or patterns for deriving the numerals 1–1000 in each of the languages. The imperatives to add, subtract and multiply identified in the arithmetic processes involved in the derivations of numerals in the languages were captured as prototype, pseudo or quasi constraints which in turn were summarized as ordered by the preferences each of the languages allows. This is so arranged for the purpose of "at a glance comparison". Lastly, even though I have rendered the data from the other three languages in phonetic transcription, I have left most data from English in the orthography to serve as a guide to readers who may not have knowledge of Ígálà, Yoruba and German.

4 Data Presentation and Analysis

Figure	Igálà	Yoruba	German	English
1	ínyẹ́/ókà [íɲɛ́/ ókà]	ěnin/ọ̀kan [ěnĩ/ɔ̀kã]	eins ['ains]	one ['wʌn]
2	èjì [èʤì]	èjì [èʤì]	zwei ['ʦvai]	two ['tu:]
3	ẹ̀tā [`ɛtā]	ẹ̀ta [ɛ̀tā]	drei ['drai]	three ['θri:]
4	ẹ̀lẹ̀ [`ɛl`ɛ]	ẹ̀rín [ɛ̀rî]	vier ['fi:a]	four ['fɔ:]
5	ẹ̀lú [`ɛlú]	àrún [àrũ]	fünf ['fʲünf]	five ['faiv]
6	ẹ̀fà [`ɛfà]	ẹ̀fà [ɛ̀fà]	sechs ['zɛks]	six ['siks]
7	èbiē [èbjiē]	èje [èʤe]	sieben ['zi:bn̩]	seven ['sevən]
8	ẹ̀jọ̄ [èʤɔ̄]	ẹ̀jọ [èʤɔ̄]	acht ['axt]	eight ['eit]
9	ẹ̀lá [`ɛlá]	ẹ̀san [èsã]	neun ['nɔin]	nine ['nain]
10	ẹ̀gʷá [`ɛgʷá]	ẹ̀wá [èwá]	zehn ['ʦɜ:n]	ten ['ten]

Table 1: Basic Numerals 1–10 (1–9 = Set A)

From Table I above, the numerals 1–10 are all basic forms in the four languages. No derivation is involved. However, considering the syllable structures of the forms for 1–10 in the languages, one would discover that whereas Ígálà and Yoruba maintain a VCV, (disyllabic) open syllable structure, English has monosyllabic closed syllable structure CVC for numerals 1, 5, 9, and 10, CVCC for 6, and VC for 8, then monosyllabic open syllable structure for 2, 3 and 4 while only numeral 7 is disyllabic combining both open and closed syllable structures – CV$CVC as in ['seven]. Similarly, German also has varied syllable structures in the forms of VCC (closed syllable) for 1 and 8, CVC for 9 and 10, CVCC for 5 and 6, and open syllable structure for numerals 2(CCV), 3 and 4. Equally, numeral 7 in German is disyllabic combining both open and closed syllable structures in the pattern CV$CVC as in ['zi:bn̩].

Figure	Ígálà	Yoruba	German	English
	B + A	**A + B/C-A**	**A + B**	**A + B**
11	ègʷákà 10 + 1	mɔ̀kãlá 1 + 10	'ɛlf 11	i'lɛvən 11
12	ègʷédʒì 10 + 2	médʒìlá 2 + 10	'ʦvœlf 12	'twɛlv 12
13	ègʷétā 10 + 3	mɛ́tālá 3 + 10	'draiʦɜ:n 3 + 10	θɜ:'ti:n 3 + 10

14	èg^{w}élè 10 + 4	mɛ́rîlá 4 + 10	'firtsɜ:n 4 + 10	fɔ:'ti:n 4 + 10
15	èg^{w}élū 10 + 5	mɛ́èɛ́dógű -5 + 20	'fynftsɜ:n 5 + 10	fif'ti:n 5 + 10
16	èg^{w}éfà 10 + 6	mɛ́rîdîlógű 4 from 20	'zɛçtsɜ:n 6 + 10	siks'ti:n 6 + 10
17	èg^{w}ébjiē 10 + 7	mɛ́tàdîlógű 3 from 20	'zi:ptsɜ:n 7 + 10	sevən'ti:n 7 + 10
18	èg^{w}édʒɔ̄ 10 + 8	médʒìdîlógű 2 from 20	'axtsɜ:n 8 + 10	ei'ti:n 8 + 10
19	èg^{w}élā 10 + 9	mɔ̀kãdîlógű 1 from 20	'nɔintsɜ:n 9 + 10	nain'ti:n 9 + 10

Table 2: Numerals 11–19 Derived

Preference in form of quasi constraints or formulae for deriving numerals in the languages

Ígálà: **B + A >>**[3] **A + B >> A + B/C-A**
Yoruba: **A + B/C-A >> B + A**
German: **A + B >> B + A >> A + B/C-A**
English: **A + B >> B + A>> A + B/C-A**

In table 2, numerals 11 and 12 for both German and English appear to be basic because they are neither derived through addition nor multiplication. But for Ígálà, the numerals 11 through 19 are all derived using addition with base 10. Similarly from numerals 13 through 19 for German and English (including Ígálà), the derivations involve only addition with base 10. However, the difference between Ígálà and the other two (German and English) here is that whereas it adds the lower figures 1–9 to base 10, the others add 10 to the lower figures (see the derivation of numerals 13–19 in the table above). Contrary to the above, Yoruba presents somewhat more complex derivation processes of using conventional terms such as *lé ní…* (increase by/more than) and *ó dín…/dín nií…* (it reduces/reduces) to derive 11–14 and 15–19 respectively. Through the use of these terms, 11–14 and 15–19 are derived thus (see also Oyebade 2010 and Babarinde forthcoming):

11 = Mókànlélẹ́wàá = mókànlá 'one more than ten'
12 = Méjùlélẹ́wàá = méjùlá 'two more than ten'
13 = Mẹ́tàlélẹ́wàá = mẹ́tàlá 'three more than ten'
14 = Mẹ́rinlélẹ́wàá = mẹ́rinlá 'four more than ten'

15 = mú-árùn-dín-ní-ogún = mẹ́ẹ̀dógún 'twenty lesser than five'
16 = mú- ẹ́rin-dín-ní-ogún = mẹ́rìndínlógún 'twenty lesser than four'
17 = mú- ẹ̀tà -dín-ní-ogún = mẹ́tàdínlogún 'twenty lesser than three'
18 = mú- éjì -dín-ní-ogún = méjìdínlogún 'twenty lesser than two'
19 = mú-ọ̀kan-dín-ní-ogún = mọ́kàndínlógún 'twenty lesser than one'

A careful observation of the data above would reveal both clipping and ellipsis at morphological and syntactic levels of analysis respectively. This is because the derivation of the numerals 11–19 in Yoruba involves some phrasal and or full sentential expressions. Besides, the presence of the lateral approximant /l/ in 16–19 is a process of phonological

[3] Whereas '+' and '^x' stand for addition and multiplication respectively, >> (left-to- right) represents derivation order preference to show that a language prefers the sequence on the left to the one(s) to the right.

alternation. In Yoruba, /l/ and /n/ are allophones. Therefore, while /n/ goes with nasalised vowels, /l/ goes with oral vowels. Supposedly, in **din ni ogun** 'less than twenty' the combination of **ni ogun** becomes **logun** because the nasal vowel /i/ after **n** is deleted at the juncture, so **n → l** before /o/ in **ogun**. In all, whereas the coming together of the words that represent the figures to be added and or subtracted involves vowel elision in both Ígálà and Yoruba and phonological alternation in Yoruba only, it is not so with German and English. Except that in German, one notices sound mutations in numerals 14–17 and segment/consonant deletion as it affects numerals 17 (zi:bn̩ →zi:p in zi:pʦɜ:n) and 18 (axt →ax in 'axʦɜ:n). In addition, while Yoruba overtly expresses the imperatives to add and subtract, for the other three, Ígálà, German and English, there are no such overt expressions of the addition and no subtraction is involved.

Figure	**Ígálà**	**Yoruba**	**German**	**English**
	C + A	**A + C,-5+D/D-A**	**A + A x B**	**A x B+A**
20	ógʷú* 20	ogű* 20	'tsvantsiç 2 X 10	twenty ['twenti] 2 X 10
21	Ógʷúɲókēkà 20 + 1	ɔ̀kãlélógű́ 1 + 20	'ainɒntsvantsiç 1 and 2 X 10	twenty one 2 x10 1
22	ógʷúɲókēmēʤì 20 + 2	èʤìlélógű́ 2 + 20	'ʦvaiɒntsvantsiç 2 and 2 X 10	twenty two 2 x10 2
23	ógʷúɲókēmɛ́tā 20 + 3	ɛ̀tàlélógű́ 3 + 20	'draiɒntsvantsiç 3 and 2 X 10	twenty three 2 x10 3
24	ógʷúnɲókēmɛ́lɛ̀ 20 + 4	èrîlélógű́ 4 + 20	'fi:aɒntsvantsiç 4 and 2 X 10	twenty four 2 x10 4
25	ógʷúɲókēmɛ́lū 20 + 5	márundinlɔ́gbɔ̃ -5 + 30	'fʏünfɒntsvantsiç 5 and 2 X 10	twenty five 2 x10 5
26	ógʷúɲókēmɛ́fà 20 + 6	ɛ̀rîdîlɔ́gbɔ̃ 4 from 30	'zɛksɒntsvantsiç 6 and 2 X 10	twenty six 2 x10 6
27	ógʷúɲmébiē 20 + 7	ɛ̀tàdîlɔ́gbɔ̃ 3 from 30	'zi:bn̩ɒntsvantsiç 7 and 2 X 10	twenty seven 2 x10 7
28	ógʷúɲókēmɛ́ʤɔ̄ 20 + 8	èʤìdîlɔ́gbɔ̃ 2 from 30	'axtɒntsvantsiç 8 and 2 X 10	twenty eight 2 x10 8
29	ógʷúɲókēmɛ́lā 20 + 9	ɔ̀kãdîlɔ́gbɔ̃ 1 from 30	'nɔinɒntsvantsiç 9 and 2 X 10	twenty nine 2 x10 9

Table 3: Numerals 20–29 Derived

Preference in form of quasi constraints or formulae for deriving numerals in the languages

Ígálà: **C + A >> A + C,-5+D/D-A >> A+A x B >> AxB+A**
Yoruba: **A + C,-5+D/D-A >> C + A >> A+A x B >> AxB+A**
German: **A+A x B >> AxB+A >> B + A>> A + C,-5+D/D-A**
English: **A x B+A >> A + A x B >> B + A >> A + C,-5+D/D-A**

In table 3, numeral *ógwú** (20) in Ígálà and *ogű́** (20) in Yoruba are basic numerals while their equivalents in German and English are derived by multiplying base 10 by 2 (zwanzig, 2 X 10, twenty, 2 X 10) respectively. Even though numerals 21–29 for all the languages are derived, the patterns and sequences of the derivational processes are not the same. Ígálà employs only addition of lower figures 1–9 to base 20 but Yoruba uses equally a more complex derivation process (similar to the derivations of 11–14 and 15–19 discussed earlier) of adding the lower numerals 1–4 only to base 20 to derive 21–24, then changes to subtraction to derive 25–29 by subtracting the lower figures 1–5 from 30 to derive 25–29. In fact, it is

even more complex with deriving 25 as it combines the two simultaneously thus: -5 + 30 (márundinlɔ́gbɔ̃). Even though German and English effect the derivations using both addition and multiplication, it is not as complex as the derivations in Yoruba because theirs is more straight forward and very consistent. Even then, the two (German and English) equally differ in the ordering of the arithmetic processes involved in the derivations in terms of direction of application. German, for instance, starts the process from right to left with multiplication first and then addition, English goes from left to right even though the same derivation sequence of starting with multiplication and then addition is maintained (See the derivations of numerals 21–29 in Table 3 above). Overall, while Ígálà, Yoruba and German show overt expressions of conjunction (*-ɲókē-*, *-léló-/-dîló-* and *-und-* in Ígálà, Yoruba and German respectively) to express the addition and or subtraction, it is not so with English. However, in all the languages, the imperative for multiplication is only implied within the contexts.

Figure	**Ígálà**	**Yoruba**	**German**	**English**
	C+B, C x **A(B)**[4]	**C x A/-B+ 60, -B+ 80, -B+ 100**	**A** x **B**	**A** x **B**
30	ógʷégʷā* 20 + 10	ɔgbɔ̃ 30	'draiβiç 3 x 10	thirty 3 x 10
40	ógʷúmēʤì 20 x 2	ogóʤì 20 × 2	'fi:atsiç 4 x 10	forty 4 x 10
50	óóʤē* 50	àádɔ́tā 10 from 60	'fʊünftsiç 5 x 10	fifty 5 x 10
60	ógʷúmétā/ɔ̀gbɔ̀métā[5] 20 x 3	ɔgɔ́tā 20 × 3	'zɛçtsiç 6 x 10	sixty 6 x 10
70	ètègʷá* 20 x 3 +10	àádɔ́rĩ 10 from 80	'zi:ptsiç 7 x 10	seventy 7 x 10
80	ógʷúmélè/ɔ̀gbɔ̀mélè 20 x 4	ɔgɔ́rĩ 20 × 4	'axtsiç 8 x 10	eighty 8 x 10
90	èlègʷá* 20 x 4 +10	àádɔ́rũ-ű́ 10 from 100	'nɔintsiç 9 x 10	ninety 9 x 10

Table 4: Numerals 30, 40, 50, 60, 70, 80, 90

Preference in form of quasi constraints or formulae for deriving numerals in the languages

Ígálà: **C+B, C x A (B)** >> **C x A>> A** x **B**
Yoruba: **C x A/-B+60, -B+80, -B+100 >> C+B, C x A (B)** >> **A** x **B**
German: **A** x **B** >> **C x A>> C+B, C x A (B)**
English: **A** x **B** >> **C x A>> C+B, C x A (B)**

In table IV, the numeral 30 (ógʷégʷā*) in Ígálà is derived by simply adding base 10 to base 20 whereas the form for numeral 50 (óóʤē*) has no derivation history at all in the language. According to Omachonu (2011: 90), "One unique thing about the numeral fifty in Ígálà is that it appears completely independent. It is neither derived by any other numeral(s) nor does it contribute to deriving other numerals in the language…" Besides, the forms for numerals 70 (ètègʷá*) and 90 (èlègʷá*) combine both addition and multiplication in their derivations in Ígálà. As usual, apart from ɔgbɔ̃ (30) which could be said to be basic, Yoruba presents some

[4] The optional (B) as indicated for Ígálà means the derivation may involve three variables for some numerals as it affects numerals 70 and 90 in Table IV above.

[5] In Ígálà, ógwú and ɔ̀gbɔ̀ are used interchangeably in some contexts to refer to numeral twenty (20).

complex derivations, e. g., subtractions involving àádɔ́tā (10 removed 60) for 50, àádɔ́rĩ (10 removed 80) for 70 and àádɔ́rũ-ű́ (10 removed 100) for 90 and multiplication for 40 (ogódʒì), 60 (ɔgɔ́tā) and 80 (ɔgɔ́rĩ) derived by multiplying base 20 by 2, 3 and 4 respectively. But for German and English, it is simply by multiplying the lower figures 3–9 by base 10 consistently to derive 30, 40, 50, 60, 70, 80, and 90 respectively. However, it is to be noted that the derivations for Yoruba numerals have become so increasingly complex and complicated here that our earlier schema of using letters to represent numerals could no longer accommodate them hence the representation of actual figures (60, 80, 100) as reflected in Table 4 above. However, it is to be noted that multiplication starts at 40 in both Yoruba and Igala (see also Table 4).

Figure	**Ígálà**	**Yoruba**	**German**	**English**
	C x **A** x **A**	**F x A (- E)**	**A** x **E**	**A** x **E**
100	óg^{w}úmélū/ɔ̀gbɔ̀mélū 20 x 5	ɔgɔ́rű́-ű́ 20 x 5	'ainhʊndɐt 1x100	one hundred 1x100
200	óg^{w}úmélūmédʒì/ɔ̀gwá /ɔ̀gwɔ́kɔ́[6] (20 x 5) x 2	igbā 200 (basic)	'ʦvaihʊndɐt 2 x 100	two hundred 2 x 100
300	óg^{w}úmélūmétā (20 x 5) x 3	oodunrű́ 300 (basic)	'draihʊndɐt 3 x 100	three hundred 3 x 100
400	óg^{w}úmélūmélè (20 x 5) x 4	irĩwó 400 (basic)	'fi:ahʊndɐt 4 x 100	four hundred 4 x 100
500	óg^{w}úmélūmélū (20 x 5) x 5	eedɛgbèta 100 from (200× 3)	fʲünfhʊndɐt 5 x 100	five hundred 5 x 100
600	óg^{w}úmélūméfà (20 x 5) x 6	ɛgbèta 200× 3	'zɛkshʊndɐt 6 x 100	six hundred 6 x 100
700	óg^{w}úmélūmébiē (20 x 5) x 7	eedɛgbèrĩ́ 100 from (200×4)	'zi:bn̩hʊndɐt 7 x 100	seven hundred 7 x 100
800	óg^{w}úmélūédʒɔ̄/íʧámù[7] (20 x 5) x 8	ɛgbèrĩ́ 200 × 4	'axt hʊndɐt 8 x 100	eight hundred 8 x 100
900	óg^{w}úmélūmélā (20 x 5) x 9	eedɛgbèrű́ 100 from (200×5)	'nɔinhʊndɐt 9 x 100	nine hundred 9 x 100
1000	íʧámùɲɔ́gwɔkɔ (800 + 200)	ɛgbèrű́ 200x5	aintauzn̩t 1x 1000	one thousand 1x1000

Table 5: Numerals 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000

Preference in form of quasi constraints or formulae for deriving numerals in the languages

Ígálà: **C** x **A** x **A >> F x A (- E) >> A** x **E**
Yoruba: **F x A (- E) >> C** x **A** x **A >> A** x **E**
German: **A** x **E >> C** x **A** x **A>> F x A (- E)**
English: **A** x **E >> C** x **A** x **A>> F x A (- E)**

As could be observed from Table 5 above , for numeral 'hundred', whereas German and English have basic forms that look very much alike; 'hundert' [hʊndɐt] and 'hundred'

[6] The numeral 200 in Ígálà has three acceptable forms; the derived (ógwú-mę́lū mę́jì, 20 x 5 x 2), ọ̀gwọ́kó and ọ̀gwá.

[7] The numeral 800 has two acceptable forms in Ígálà. It has a derived form, *ógwú-mę́lū mę́jō* (20 x5 x 8) and a basic or unitary form, *ícháמù* meaning 800 also.

respectively, the Ígálà numeral for hundred goes through a derivation process of multiplying base 20 by 5 to arrive at one hundred (ógʷúmɛ́lū/ɔ̀gbɔ̀mɛ́lū). Similarly, for 200–900, the derivation process involves double multiplication by first multiplying base 20 by 5 to arrive at a hundred, and then multiplying the hundred by a lower figure (2–9) to arrive at the number of hundreds required (see the derivations of 200–900 for Ígálà on Table 5 above). Yoruba shares a very similar experience with Ígálà on the derivation of 100. Numerals 200, 300 and 400 are basic in Yoruba. Numerals 500, 700, and 900 are derived through a combination of subtraction and multiplication whereas numerals 600, 800 and 1000 are derived by multiplying 200 by 3, 4, and 5 respectively. For German and English, it is single multiplication event of multiplying the lower basic figures 1–9 by a hundred to arrive at the number of hundreds required. Again, for numeral 'thousand' while German and English have basic forms that look very much alike also; 'tausend'[tauzn̩t] and 'thousand' respectively, in Ígálà, deriving a thousand goes through adding 200 (ɔ̀gwɔ́kɔ́) to 800 (íʧ̌ámù) which is read as íʧ̌ámùɲɔ́gwɔkɔ (800 + 200) to derive a thousand in Ígálà.

All said and done, we present below a summary of the quasi constraints, if you like, formulae needed to derive numerals 10–100 (cardinal numbers only) in Ígálà and Yoruba, and 13–1000 (cardinal numbers only) in German and English as captured in Tables 2–5 above recalling that the letters A, B, C, D, E and F represent numerals and the arithmetic symbols or signs: **+**, **-** and **x** stand for the imperatives to add, subtract and multiply respectively. Thus, we have the following configurations for the languages as tabulated below:

Language	Table 2	Table 3	Table 4	Table 5
Ígálà	**B + A**	**C + A**	**C+B, C x A(B)**	**C x A x A**
Yoruba	**A + B/C-A**	**A + C, -5+D/D-A**	**C x A/-B+ 60, -B+ 80, -B+ 100**	**F x A (- E)**
German	**A + B**	**A+A x B**	**A x B**	**A x E**
English	**A + B**	**A x B+A**	**A x B**	**A x E**

Table 6: Summary

It is to be noted that the use of slashes as can be observed in Tables 2 and 3 for Yoruba (**A + B/C-A and -5+D/D-A**) shows that the two formulae so joined can both apply within the contexts but restricted to selected data respectively while the use of parenthesis as indicated for Ígálà (**C x A (B)**) and Yoruba (**F x A (- E)**)**,** as usual, denotes optionality (c. f.Tables 4 and 5). In all, even a quick glance at the summaries as tabulated above would reveal that, compared to German and English, Ígálà and Yoruba have more complex numeral systems with Yoruba being much more complex. Again, whereas the individual preferences for Ígálà and Yoruba differ radically from each other, for German and English, they prefer each other's preferred set of constraints to the extent that the ordering is almost the same all through except on one spot (see Table 3). Even then, it is marginal. The close affinity between German and English as languages not just of the same linguistic family but sisters from the same parent or descendants of the same ancestor explains the reason for this scenario (See the section on the relationship between German and English). Even at that, they are not completely identical or so identical to the extent that the grammar of one can be substituted for the other hence the variations, however minute, in their preferences shown above. For instance, where German has **A+A x B,** English prefers **A x B+A** instead (See Table 3 also).

5 Summary of Findings and Discussion

From our analysis of the numerals so far, 1–10 in Table I above all appear to be basic forms in the four languages. No derivation is involved except that whereas Ígálà and Yoruba maintain

a VCV, (disyllabic) open syllable structure for the words representing the numerals, English and German have varied syllable structures (monosyllabic closed/open syllable structure, and disyllabic combining both open and closed syllable structures (CV$CVC)). In addition, whereas numerals 11 and 12 for both German and English appear to be basic they are derived in Ígálà and Yoruba. The numerals 11 through 19 in Ígálà are all derived using addition with 10 as the base. Similarly, numerals 13 through 19 for German and English are derived employing only addition using base 10 also. But for Yoruba, the derivations of 11–19 takes a combination of addition and subtraction; addition to base 10 to derive 11–14 and subtraction from base 20 to derive 15–19 using some conventional terms as discussed earlier under Table 2. Here, Ígálà tends to align more with English and German than Yoruba. However, while the coming together of the words that represent the figures to be added involves phonological processes such as vowel elision in Ígálà and Yoruba, and phonological alternation in Yoruba, it is not so with German and English.

Furthermore, the numeral 20 *ógwú* and *ogṹ* in Ígálà and Yoruba respectively are basic whereas their equivalents in German and English are derived by multiplying base 10 by 2 (tsvantsiç 2 X 10, twenty2 X 10) respectively. Besides, even though numerals 21–29 for all the languages are derived, the patterns and sequences of the derivational processes are not the same.

However, Yoruba employs a more complex derivation process above all by first adding the lower numerals 1–4 only to base 20 to derive 21–24, then changes to subtraction to derive 25–29 by subtracting the lower figures 1–5 from 30 to derive 25–29. For 25 in particular, it employs even a much more complex process as it combines both addition and subtraction. Overall, while Ígálà, Yoruba and German show overt expressions of conjunctions in the forms of *-ɲókē-* (Ígálà), *léló/dîló* (addition/subtraction in Yoruba) and *-und-* (German) to express the addition and or subtraction as is the case in Yoruba to derive 21–29, it is not so with English.

Similarly, the derivation of the numeral 30 (ógʷégʷā) in Ígálà is effected by simply adding base 10 to base 20 to derive 30. The form for numeral 50 (óójē [óódʒē]) is basic in Ígálà and has no such derivation history in the language but the forms for numerals 70(ètɛ̀gʷá) and 90 (èlɛ̀gʷá) combine both addition and multiplication in their derivations. As usual, apart from ɔgbɔ̃ (30) which could be said to be basic, Yoruba presents some complex derivations, e. g., subtraction involving àádɔ́tā (10 removed 60) for 50, àádɔ́rĩ (10 removed 80) for 70 and àádɔ́rũ-ṹ (10 removed 100) for 90 and multiplication for 40 (ogódʒì), 60 (ɔgɔ́tā) and 80 (ɔgɔ́rĩ) derived by multiplying base 20 by 2, 3 and 4 respectively. For German and English, the derivations are achieved by simply multiplying the lower figures 3–9 by base 10 consistently to derive 30, 40, 50, 60, 70, 80, and 90 respectively. Lastly, for numerals 'hundred' and 'thousand' while German and English have basic forms that look very much alike, the Ígálà numeral for hundred goes through a derivation process of multiplying base 20 by 5 to arrive at one hundred and for a thousand, it goes through adding 200 (ɔ̀gwɔ́kɔ́) to 800 (íʧámù) which is read as íʧámùɲɔ́gwɔkɔ (800 + 200) to represent a thousand. Yoruba shares a very similar experience with Ígálà on the derivation of 100. Numerals 200, 300 and 400 are basic in Yoruba. Numerals 500, 700, and 900 are derived through a combination of subtraction and multiplication whereas numerals 600, 800 and 1000 are derived by multiplying 200 by 3, 4, and 5 respectively.

In all, the complexity of deriving especially non-basic numerals in the languages involves addition, subtraction (Yoruba, to be precise) and multiplication as well as certain grammatical processes (phonological modifications, morphological and syntactic processes) such as vowel/ consonant deletion, sound mutation, compounding, clipping, blending (e. g. Ígálà, ètɛ̀gʷá (70)

and èlègʷá (90) in place of their full forms ɔ̀gbɔ̀mélāɲègʷá and ɔ̀gbɔ̀élɛ̀ɲègʷá respectively), noun phrase and even sentential expressions that yield several numeral forms in the languages. These, to an extent, represent aspects of the grammar of the affected languages. However, the pertinent questions to ask at this juncture which in turn would provoke further discussion are (1) to what extent do these findings reflect universal considerations in the light of the available literatures in the numeral systems of these and other languages? (2) What are the theoretical cum practical implications of the findings for the lexicon and descriptive analysis of the languages, especially the Ígálà language which for now has remained largely un(der)documented and only sparsely and insufficiently described or analysed?

For English and German, it may not be very necessary to repeat old stories but for Yoruba and Ígálà, it makes sense for obvious reasons. First, the two languages are still at some crucial stages of scholarship and description though with Yoruba being very far ahead of Ígálà. Secondly, in the opinion of Comrie (2005, 2006), numeral systems are even more endangered than languages; hence the imperative to document endangered numeral systems before they die out completely. As Omachonu (2011: 82) reports, "children nowadays rarely know how to count in Ígálà. Even adults mix up Ígálà with Hausa and English when they count money and other objects in the language". This is similar to the experience in Ọ̀kọ as reported in Atoyebi (n. d.). Even Yoruba is not completely safe because as Fabunmi (2010: 34) has argued, "Although the Yorùbá language is one of the most intensively studied languages of Africa, information about its many dialects and counting systems remains paltry." He argued further that consequent upon its complexity, the numeral system of the Yorùbá language is endangered to the extent that some Yorùbá scholars have proposed various methods by which the numerals system of the language could be made more "friendly" and less cumbersome to the users. As he reported, "the present generation of speakers of the language, most especially elites and teenagers are dropping the language's vigesimal system for the English decimal system (38)." Nevertheless, one could say that to a reasonable extent, a lot has already been done on the numeral system of Standard Yoruba. For instance, Oyetade (1996: 21–22), arguing to confirm from previous studies (Johnson 1921; Abraham 1958; Hurford 1975; Awobuluyi 1992) that the complexity of derivation in Yorùbá numerals involves very cumbersome and complicated manners of multiplication, addition and subtraction summarized the processes thus:

> One to ten are basic words and eleven to fourteen is expressed as 1 + 10, 2 + 10, 3 + 10 and 4 + 10 respectively. Fifteen to nineteen are expressed as 20 - 5, 20 - 4, 20 - 3, 20 - 2, 20 - 1 and twenty "ogún" is a basic word. Twenty-one to twenty-four are expressed as 20 + 1, 20 + 2, 20 + 3 and 20 + 4. Twenty-five to twenty-nine are expressed as 30 - 5, 30 - 4, 30 - 3, 30 - 2 and 30 -1. Thirty "ọgbọ̀n" is another basic word. A pattern similar to the one above is followed for thirty-one to thirty-four and thirty-five to thirty-nine. Forty "ogójì" from ogún + èjì is expressed as 20 × 2. The pattern of addition of 41 to 44 and subtraction for 45 to 49 is followed for numbers after fifty, sixty, seventy, eighty, etc. Fifty, àádọ́ta (èwádọ́ta in Ifẹ̀ dialect), is 60 - 10. This pattern is followed for àádọ́rin – 70 (80 - 10), àádọ́rùn-ún – 90 (100 - 10), àádọ́fà – 110 (120 - 10), àádóje – 130 (140 - 10), àádọ́jọ – 150 (160 - 10), àádọ́sàn-án – 170 (180 - 10), and àádọ́wàá – 190 which is also expressed as igba-dín-mẹ́wàá, or mẹ́wàá-dín-nígba (200 - 10). The pattern of multiplication used for forty is followed for 60 – ọgọ́ta – 20 × 3, 80 – ọgọ́rin – 20 × 4, 100 – ọgọ́rùn-ún – 20 × 5, 120 – ọgọ́fà – 20 × 6, 140 – ogóje – 20 × 7, 160 – ọgọ́jọ 20 × 8, 180 – ọgọ́sàn-án – 20 × 9 and another basic word, igba is used for 200.

The above excerpt when compared with our analysis of the Yoruba numeral system in this study will be in tandem with the results. However the complexities identified with analyzing the derivational processes involved in the Yoruba system has become a recurring decimal. Even in this present study, at some point, the derivations of the Yoruba numerals in particular became so increasingly complex and complicated that our earlier schema of using letters to represent numerals could longer accommodate them hence the representation of actual figures

(60, 80, 100) as reflected in Table IV above. Hurford (1975: 211) also experienced a similar problem in an attempt to capture the Yoruba numeral system in a descriptive framework. In his own words:

> Yoruba has what is probably the most unusual and complicated of any of the world's natural language numeral systems. This presents a number of problems for the descriptive framework we have developed so far in this study and some of these problems are quite serious.

This is so because as he argues further, subtraction is rarely used extensively throughout the whole numeral system by even a few languages that use it but Yoruba as he describes it, is "a spectacular exception to this general rule…" The theoretical implication of this is that theorists find it a bit difficult to develop a theoretical framework that can adequately capture the Yoruba numeral system because of its unique complexity.

Over with Yoruba, even though not much has been done on Ígálà in this aspect yet, Omachonu's (2011) comprehensive study of Ígálà numeral system where the numerals were classified into basic and non-basic (derivatives) whose derivations involve combining the basic numerals through some addition, multiplication or a combination of both processes equally agrees with the results of the present analysis on Igala. In addition, similar findings have been made in the previous studies of the numeral systems of other languages. For instance, in Ọ̀kọ, Atoyebi (n. d.) observes that the complexity of deriving especially non-basic numerals involves subtraction, multiplication and addition. In Koring, Anagbogu (2006) notes that the derivation of most secondary numerals involves addition using overtly expressed conjunction or addition morpheme while multiplication, if any, is merely implied in the context. A reference to some of these findings through implied comparison would help us to appreciate the importance of this kind of research as it relates to typological considerations as well as universality of the grammar of numeracy in languages. The fact that some of these languages did not show overt use of certain arithmetic processes like subtraction and division does not rule out completely the possibility of their applicability. For instance, a deeper search into the numeral system of Ígálà would reveal subtraction and division especially when counting money and fractions like half, quarter, as well as expressions such as less than and greater than are involved. For example, the expression; '*èlú ʧî èʤì*' (minus five from two) and '*ɛlú ʧî èlɛ̀*' (minus five from four) in Ígálà would mean seventy naira and one hundred and fifty naira respectively where *èʤì* would represent *ípámu*[8] *ɔ̀gbɔ̀méʤì* (₦80) and *èlɛ̀* representing *ípámù ɔ̀gbɔ̀mélɛ̀* (₦160) whereas *èlú́* (5) stands for *ípámù* mɛ́lū (₦10); accordingly, ₦80-₦10 = ₦70 and ₦160-₦10 = ₦150. In the same vein, two hundred naira in Ígálà is '*àkpúlù kà'* (one sack/bag of money), therefore to count one hundred naira, the Ígálàs would say *ùpkẹ́rú àkpúlù*, meaning half of *àkpúlù*, that is, the imperative to divide *àkpúlù* into two equal halves. It may be plausible to say that a deeper investigation into the numeral systems of other languages would reveal similar expressions.

6 Summary and Conclusion

Numeracy, it should be noted, is a very important aspect of any linguistic system. Counting and or numbering is an integral and inseparable part of the grammar of any language because there is hardly any meaningful linguistic discourse in a language that does not make reference to quantity, size, time, distance and weight in definite numbers (Omachonu 2011: 84). With this, numeral system can serve as a more authentic source of evaluation in any linguistic system. Also, as it has been argued (see Hurford 1975), if we are interested in discovering linguistic affinity/relationship or universals, or 'what forms of statements must be available

[8] The word *ípámù* is borrowed from the British pounds sterling to stand for two naira in Ígálà.

for a general and explanatory account of any language' (87), the most useful, dependable and powerful light is shed by a consideration of the numeral systems.

Thus far, incorporating insights from optimality theory, the paper has argued that even though numeration and the constraints or imperatives that ensure well-formedness of numerals are somewhat universal, parametric variations abound. The actual ordering or patterning of the sequences of the derivational processes in individual languages may be very similar as found between English and German yet not definitely the same, no matter how closely related the languages concerned may be. If not, they cease to represent core grammars of two different languages.

However, in spite of the parametric variations as it affects the individual languages as core grammars deriving from the universal, there is yet evidence of greater affinity between some languages than the others. Hence judging from the evidence available to us from this study, there is a greater level of affinity between English and German compared to that between Ígálà and Yoruba. Consequently, unlike the very close relationship between German and English as co-descendants from a common ancestor known as Common West Germanic (CWG), that between Ígálà and Yoruba is not as close, let alone referring to the two as dialects of the same language. So far, whereas the relationship between English and German is already very clear in the literature, what comes closer to a more tenable and or acceptable explanation, as noted earlier, are attempts by Akinkugbe (1976, 1978) at an internal linguistic classification and comparative study of the 'Yoruboid' where she argued that Ígálà is neither a dialect of Yoruba nor a language resulting from the fusion of Yoruba and Idoma as claimed by Silverstein (1973) but rather a language that shares with Yoruba a "common ancestor" that was neither Yoruba nor Ígálà but a Proto-Yoruba- Ígálà. This present study agrees with this position as it validates Akinkugbe's claim with authentic linguistic data from numeral systems of Igala and Yoruba in this regard. However, the question to ask is what the relationship was like before Akinkugbe (1976, 1978) and the subsequent internal classifications or attempts at reconstructions? (See section 2.3 above for detailed analysis).

Overall, taking the four languages at once, one would notice that whereas there is a greater linguistic affinity between English and German (Indo-European, Germanic) than between Ígálà and Yoruba (West Benue Congo, Yoruboid), there is however no such relationship between either of the two with either Ígálà or Yoruba. The same is also true of Ígálà and Yoruba (Yoruboid) in relation to either English or German. The only connection, one can rightly observe is the fact that the four (as paired into two groups) are living languages which form parts of the universal system. It is hoped that this awareness would help us to avoid certain overstatements and some misleading assertions and or assumptions on linguistic relationships among languages. Besides, this may be a wake-up call to African linguists and researchers on Niger-Congo or the Benue-Congo in particular for serious efforts at a full-scale reconstruction of the phylum which, according to Williamson (2000), is yet to be achieved.

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