A Linguistic Analysis of Verbo-nominal Formation Processes in German and Yoruba Languages

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Abstract

This paper undertakes a linguistic analysis of the various processes that are involved in the morphological configurations of certain composite verbal and nominal structures in both German and Yoruba languages. The lexical expansion capacities of the two languages in the domains of their verb and noun forms are critically analysed to expound on their morphological peculiarities. The data are decomposed to highlight the derivation history and the configuration mechanisms of the word forms that might have undergone structural changes during their morphological make-up over time. Among other morphological explanations, the issue of word boundary is highlighted, where an experimental approach is employed to identify morpheme boundaries of the corpus. Fleischer and Barz's Three Word-Formation Technique is adopted as a framework for articulating the formation processes involved in the corpus. The study found that the two languages are similar in certain respects. However, it was found that much premium is placed on the tonal nature of the Yoruba language in the processes, thereby placing emphasis and preference on the tonality of word forms in order to make them available for yielding copious morphological encodings contextually. Moreover, in German composition processes, repetition of segments and semantic emphasis are substantially attested. The paper, therefore, found that during the word formation processes in the two languages, placement of morpheme boundaries is idiosyncratic to the individual language students, and so it is less transparent and uniform. It also found that wobble knowledge, on the part of the language students, about word segmentations could distort word meaning. The paper, therefore, recommends that, since these linguistic parametric pieces of evidence are outstanding in the two languages at varying depths and degrees, they should be given sufficient attention in future studies.

Keywords: *composite verbal and norminal structures, German, Yoruba, morphological encodings, morpheme boundaries*

Introduction

Like what is found in German verbs and nouns, various morphological forms are employed in Yoruba to boost the internal structures of the word-forms and augment their semantic values. Observably, a wide range of

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methods are adopted in the process. For example, both morphologicallymono-and bi-typical verbs are found in the Yoruba vocabulary. These include verbs like *jí* (to wake or rouse), *pa* (to kill), *pè* (to call), *sùn* (to sleep), etc. In addition, bi- and tri-syllabic examples are also attested such as *túlé* (to cause domestic disarray), *kobè* (to make heaps), *jíire* (to wake up in good health) and *wáare* (to arrive well). A more interesting revelation is the formation of Yoruba name- words that are overtly verbal in nature, i.e. they are derived nouns but which are, in the real sense, verb phrases: *Májèékódùnmí* (that this would not end in sorrow for me)*, Mádàndólá* (don't leave me alone to my fortunes)*, Jógunómí* (let peace reign), *Rótoyè* (abide by the chieftains), *Folájìn* (release honour as gifts), etc. Whenever such phrasal verbs (which are originally clipped sentences), are formed, they invariably involve changes in the lexes and the structure of the original words and, sometimes, the free-morphemes and the bound-morphemes within their constituents are changed to fit certain purposes; in some cases, segments are completely removed. This paper seeks to determine what lexes and what morphemes are changed, into what form, which ones are retained and which ones are left unaffected in the ever-dynamic processes of the word forms in the two languages. Besides, the rules, which account for the innovations, are also articulated in this paper.

Moreover, it is also deemed very important to examine whether affixation (i.e. addition of prefixes, suffixes or infixes) play any significant role in Yoruba verbal and nominal formation as it does in German verbs and nouns. Also paramount to the study is the question of whether the Yoruba and German language students in reality apply just simple or specific tactical rules to the formation and expansion of these verbs and nouns, as opined by the generative and transformational linguists. Or do they unconsciously use them without any specified set of rules as cognitive linguists would have us believe?

Using Fleischer and Barz's (1995) three word-formation techniques, namely composition, derivation and conversion methods, this paper delves into a morphemic and morphological analysis of Yoruba and German noun and verb-formation processes, with a view to highlighting the intricacies involved in the configurations.

The above paradigm of analysis is deemed intriguing because it is observed that there have been only a few studies on the contrastive study and analysis based on German and Yoruba word-formation processes. The available studies, to the best of our knowledge, however, generally attempt to examine word-formation and word-expansion in either of the two languages without delving into a contrastive analysis. Such studies include

Okuseinde (2001), who discussed *Reduplikation*, i.e. word-duplication which submits that *Duplikation* is very productive in Yoruba but not so productive in German. Ogunwale (2012) also opines, as Okuseinde does, that the phenomenon of copying constituents could be employed to achieve lexical expansion by subsidizing or reinforcing certain aspects of derivational outputs in the Yoruba language. Here, he gave examples of derived words, which are useful as tokens in the lexicon, thereby making such tokens readily available as denotation for the required complex concepts or meanings. Olagunju (2010) also researched into noun-formation in German and Yoruba and concludes that not only are the addition of prefixes and suffixes responsible for the creation of some words in German especially, but also that noun-formation in both languages is generally culture-specific and has to do with the pragmatics of discourse. He shows this in his examination of a group of people, half of which consists of German native speakers and the other half Yoruba native speakers. *AssoziationenmitHund,* for instance, in this study there is a list of words associated with *Hund* (dog) compiled by German speakers which is replete with mostly friendly words, but with exactly the opposite in the case of Yoruba speakers.[1]

However, most of these studies are restricted to noun-formation and, sometimes, to adjective-formation and their expansion as well. Moreover, Yoruba verb-formation mechanisms are almost as multi-faceted as German verb-formation and expansion are. It is therefore our intention here to espouse how verbs (and phrasal verbs) are derived in the two languages as they manifest themselves using composition-derivation and conversion mechanisms. It is hoped that this study will contribute "something" not only to the existing knowledge on the contrast between the Yoruba and German morphology, but also to Yoruba word-formation and expansion in the German-speaking world.

Word Formation Mechanisms in German and Yoruba

There exist various theories as well as different standpoints and criteria relating to word-formation. For example, Fleischer and Barz (1995:136) and Olsen (1986) suggest formal and semantic criteria as basic considerations. Their theory consists of the use of prefixes and suffixes as well as the addition of some lexes to either add "something" to or change the meaning of the words formed. Essentially, they distinguished between the following:

    1.   Komposition, i.e. composition (combination, putting together) - here, each part of the composition can also stand as independent units, e.g. *Staats+mann*, *Versicherungs+karte* etc. (If we remove

the *–sFüge*, i.e. the 's' epenthetics, each part of the composition can also stand as an independent unit in both examples.)

2.   Derivation – under derivation, words are formed with the use of affixes. Here, we stress the use of suffixes. Examples are *Krank+heit, sinn+*los, etc.
3.   Präfixbildung, i.e. Prefixation **–** that is, word-formation by means of prefixes, e.g. *un+ge+sichert, ab+leiten*, etc.

Coseriu (1981) also based his word-formation and expansion on a semantic point of view and posits that what is important is whether there is a change in the part of speech, and the number of lexes, which are involved in the word-formation, or not. Like Fleischer, he also differentiates between the following three methods of word-formation:

1.   Komposition, i.e. composition – here, two or more lexes are involved, e.g. *Arbeits+tage*, *Kranken+schwester*.[2]
2.   Entwicklung, i.e. development – this has to do with a single lexis. A new word is created after a morpheme is introduced onto an otherwise independent word (though sometimes, lexis may not be introduced at all), thereby a new part of speech is formed. For example, a noun becomes an adjective or an adverb: mensch+lich: *menschlich*, verhalten+nis: *Verhältnis*.[3]
3.   Modifikation, i.e. modification – in this instance, lexis is modified with the addition of a morpheme. However, the part of speech does not change. Examples of this are Bett+chen: *Bettchen*, and Brot+chen: Brötchen.

Furthermore, Volmert (2000:87–98) made an extensive analysis of German words and their formation patterns. In the analysis, he analyzed German words using the following structures:

1.   MorphemischeStrukturen, i.e. morphemic structures – (Simplizia, Derivata, Komposita)
2.   MorphologischeKonstruktionen, i.e. morphological constructions – these are: Affigierung (i.e. affixation) including Präfigierung (prefixation), Suffigierung (suffixation), Infigierung (in-fixing), Zirkumfigierung (circumfixation))
3.   LexikalischeKonstruktionen, i.e. lexical constructions – i.e. wortfähige Morpheme (morphemes which can stand as independent words) – Kern-, Pronominal-, Partikelnominal i.e. nucleus-, pronominal- and nominal particles. (b.) nichtwortfähige Morpheme (morphemes which cannot stand as independent

words) – Unikale,4Derivations-, und Flexionsmorpheme, i.e. single-vowel-, derivational- and inflexional Morphemes5)

Ogunwale (2005:319), quoting Lucas (1964), attempts to categorise the varying sources of Yoruba composite words in the following praxis:
  i.   Roots and words formed from the language and its dialects;
  ii.   Words which cannot be traced to roots and the meanings which they code; and as a result, they cannot be derived by putting together the meaning of their component parts; and
  iii. Words acquired from foreign languages.

The body of Yoruba verb derivatives is found to reflect the three paradigms identified above. Our expositions in the present study, therefore, dwell on the notions advanced in the paradigms. This is particularly applicable in view of Mathews' (1997:64) and Talmy's (1985:59) submissions that "every lexeme that does not consist of a single morpheme has internal structures and relations therefore exist among its parts." It is, however, evident that although there are mono-morphemic verbs in the language, there exist other categories of verbs identified in Ogunwale (2005:328ff) which are itemised below:
  i.   bi-morphemic types
  ii.   syntatic units
  iii. morpho-syntatic units
  iv.   morphologically opaque types
  v.   pseudo-opaque units

Even when it is found that the Yoruba verbs manifest the above word-forms, we shall not go by the paradigm in this linguistic analysis for lack of convincing and sufficient data in the two languages. Those that seem to be appropriately relevant are the bi-morphemic and the morphologically opaque types, which shall be illustrated at the appropriate times in this paper.

The German and Yoruba Verb Formations Compared
In doing a linguistic analysis of German and Yoruba word-formation, we shall restrict ourselves to four prominent word-formation and expansion processes, which are found to be very remarkable in the corpus being examined. These are Composition (Zusammensetzung), Derivation (Ableitung), i.e. the use of suffixes and prefixes.

According to Fleischer's (1976), and Coseriu and Geckeler's (1981) word-formation theory, composition places emphasis on two lexes, each of which is able to stand as an independent word. The same can be said of the set of Yoruba verb formation, which shall be discussed below. Concerning noun

elements in composition, Awobuluyi (2008:60) posits that, if the second noun within the configuration starts with a vowel sound, such a sound may experience a change in the composition and, at times, the change may occur in the sound ending the first noun. The following are a few examples of composition[6], where the verb is represented as V, the noun as N and the adjective as Adj.

    i. V + Adj = V, e.g. jí + rere (ire) = *jíire*[7] (to wake up hale and hearty or to be   well)

Given that *rere* and *ire* are allomorphs in Yoruba, *ire* is preferred to *rere* in this composition. Probably it is because of its pragmatic essence; this is more of a phonological process whereby *i* is introduced to allow for musicality in the sound of the resulting word *jíire*. We note that the morpheme *i* of *ire* retains its original tone and does not change. This further explains the interface of phonology and morphology in Yoruba word-formation processes.[8]

    ii. V + Adj = V, e.g. wá + rere (ire) = *wáare*[9] (to arrive well)

The operation here looks similar to that of the example above. However, the end-morpheme of *wá* naturally replaces *i* in *ire* (the phonological version of *rere*, similar to the explanation in footnote (10), albeit with a different *a* (with Yoruba middle tone –*re*, i.e. ~).

    iii. V + N = V, e.g. kan + ilèkùn = *kànkùn* or *kanlèkùn* (to knock on the door)

Here, the unit *ilè* is removed from *ilèkùn* in *kànkùn*. Note here that in this example and in the subsequent example (iv), the initial morphemes in *ilèkùn* and *ìgbé* are removed, but their original tones are retained in the resulting words.

For an analysis of verb composition in German, the verb is represented as V, the noun as N, the adjective as Adj, the adverb as Adv and the phrasal verb as VP.

    i.   V + V = V, e.g. kennen + lernen = *kennenlernen* (to get to know one another)
    ii. Adv + V = V, e.g. zusammen + setzen = *zusammensetzen* (to put together, to   assemble)
    iv. N + V = V, e.g. Ski + laufen = *Ski laufen* (to ski)
    v. iv.   Adj + V = V, e.g. fern + sehen = *fernsehen* (to watch television)

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Composition: The German and Yoruba Noun Formations Compared

Awobuluyi (2008) highlighted several mechanisms of word-formation, using composition illustrations. His examples include the following:

   (a.) *ikànpò pónbélé* (simple composition); one in which the initial sound of the second word is mostly swallowed then linked to the first word, e.g.

      i. N + N = N e.g. àlà +òfo = *àlàfo* (space)

   (b.) *ikànpò alápetúnpe* (reduplicative composition).This is a type of composition where only nouns are put one after the other; whereby the end-sound of the first word is the same as the end-sound of the other, e.g.

      i.   N + N = N e.g. èwù + ẹléwù *= èwù-ẹléwù* (clothing belonging to others)

      ii. N + N = N e.g. ẹja + ẹléja = *ẹja-ẹléja* (fish belonging to others)

In the first three examples above in which the original words which are later re-written into the products should have been *èwù* + (*o* + *ní* + *èwù*), but resulted in *èwù* + *ẹléwù*; and *ẹja* + (*o* + *ní* + *ẹja*) which also resulted in *ẹja* + *ẹléja.* This shows the role of the morpheme '*l*' in place of '*ní*' in this process of word-formation. The morpheme '*o ní*' performs a possessive function here, as we have seen in the examples. However, from a phonological point of view, and especially with this group of words, the tone on the original '*í*' is retained on the resulting syllable formed along with '*l*', which is usually the initial morpheme of the second word with which it is combined.

(c.)   *ìkànpọ̀ alátọ́kùn* (prepositional composition), in which a linking morpheme is usually employed to link the first word with the second, e.g.
    i.   N + Linking morpheme = N e.g. ìyá + ní + òde = *iyalóde* (an important chieftaincy title for a woman)
    ii.   N + Linking morpheme + N = N e.g. ojú + ní + owó= *ojúlówó* (authentic), etc.

Here, the mechanism involved in the word-formation is related to the examples in *ìkànpọ̀ alápetúnpè* (reduplicative composition) above. The difference is only that the morpheme '*ní*' is playing prepositional functions here as opposed to possessive function '*o ní*' it plays in *ìkànpọ̀ alápetúnpè*. We can, therefore, conclude from the examples above that '*ní*' and '*l*' are allomorphs in Yoruba in the sense that they perform the same function, even though their usage may involve some phonological considerations determined by usage.

Like Yoruba nouns, German nouns in this group share the same property, i.e. the part of making sure that speech does not change; rather, it remains the same. After the composition, the new word-formation may entail the addition of a few morphemes, e.g. an instance of a noun being added to another noun to form a new noun. Sometimes, this may be achieved by the use of a linking word, but sometimes without the use of any.

i.   N + N = N, e.g. Heim + Weg = *Heimweg* (the way home)
ii.   N + N = N, e.g. Lauf + Bahn = *Laufbahn* (race course)
iii. N + L[10] + N = N, e.g. Humanität +-s + Krise = *Humanitätskrise* (a humanitarian   crisis)
iv. N + L+ N = N, e.g. Leben +-s + Lauf = *Lebenslauf* (Curriculum Vitae)

Derivation: The German and Yoruba Verb Formations Compared (Prefixation)

According to Awobuluyi (2008), Yoruba verbs can be formed through *derivation* by way of prefixation process where a *verb is* added to a *noun* so that it becomes a more complex verb. This situation appears the most productive in the language. Examples are:

i.   V + N = V, e.g. bu + àbùjá = *bàbùjá* (to take a short cut)

Here, no phoneme is removed from *àbùjá*, whereas *u* is deleted from the verb or from the prefix *bu* to accommodate the formation of *bàbùjá*. Note that from a phonological point of view, it is observed that the tone of the initial sound *à* in *àbùjá* and not that of *u* in *bu* takes pre-eminence here. We would note that this occurs when the final sound of the morpheme

serving as a prefix has the Yoruba mid-tone and the initial sound of the free morpheme has the Yoruba middle tone.

ii.   V + N = V e.g. dá + ọgbọ́n = *dọ́gbọ́n* or *dágbọ́n* (to scheme a plan)

That is, the sound of the initial morpheme may not always be preferred over that of the morpheme it links with, but the tone always takes pre-eminence in these cases. Example (ii) further buttresses this illustration.

iii.   V + N = V, e.g. bu + ata = buta (to eat)
iv.   V + N = V, e.g. gba + ipò = *gbapò* (to come to power)
v.   V + N = V, e.g. kọ + ebè = *kọbè* (make heaps)

In the examples above, we see a shift in the morphological formation, that is, not only the end-morphemes *u, a* and *ọ* in *bu, gba* and *kọ* are preferred over the initial morphemes *a, ì* and *e* in *ata, ipò* and *ebè* in the resulting forms, but also their tones have taken over the first syllables in the new words. Compare also gba + ipò = *gbapò* (to take position). The above phonological features corroborate the three tiers principles of Autosegmental Phonology advocated for the African Languages by Goldsmith (1990).

Further illustrations of verb + verb configurations are attested in Yoruba by the following examples:

viii.   V + N = V, e.g. dá + gbére = *dágbére* (to bid farewell)
ix.   V + N = V, e.g. gbà + gbọ́ = *gbàgbọ́* (to believe)

The above examples do not exhaust the complexity of Yoruba word forms. There are samples of verbs formed by adding a *verb* with a *noun* plus another morpheme (which may invariably be a *verb* or an *adverb* as the case may be).

In German, the word, which a prefix combines with, does not always determine the part of speech of the word formed or expanded. The opposite is mostly the case, because under derivation, the prefix sometimes changes the part of speech of the word. The following examples illustrate this: (Here the prefixes appear first, followed by V representing Verb.).
i.   -ent + V = V: ent + nehmen = *entnehmen* (to remove)
ii.   -ver + V = V: ver + achten = *verachten* (to despise)
iii.   unter + V = V: unter + laufen = *unterlaufen* (to occur)
iv.   -auf + V = V: auf + stehen = *aufstehen* (to stand up or get up from the bed)
v.   -miss + V= V: miss + brauchen = *missbrauchen* (to maltreat)

Derivation: The German and Yoruba Noun Formations Compared (Prefixation)

In Yoruba, it is remarkably found that noun-derivation is very elastic since the language is tonal in nature, i.e. it employs the tones in a vowel (now known as morpheme in morphological context) for lexical distinctions. As illustrated in Awobuluyi (2008:4) *móffìmù afarahẹ* (affixes) when used with verb forms, the resultant effects become highly productive as new words are produced through the mechanism. Look at the following examples:

(i)   a - (prefix) + v = N: a - gẹsin (VP) = agẹsin (a horse rider)
(ii)   à - (prefix) + v = N: à - bùlà (VP) = àbùlà (dilution)
(iii)   e - (prefix) + v = N: e - gbé (VP) = egbé (a lift)
(iv)   è - (prefix) + v = N: è - gbè (VP) = ègbè (a chorus)
(v)   ẹ - (/ɛ/) (prefix) + v = N: ẹ -yọ (VP) = ẹyọ (a unit)
(vi)   ẹ̀ - (/ɛ/) (prefix) + v = N: ẹ̀ - mú (VP) = ẹ̀mú (forceps)
(vii)   i - (prefix) + v = N: i - jó (VP) = ijó (a dance)

Since all the above are prefixes found at the initial positions of lexical words /u/, they do not participate in the configuration of the standard Yoruba word as found in (i) - (xii) above, except in the u-fronting dialects of Ondo, Ekiti, Ijesa, etc. of Yoruba speaking regions. For this reason, u-fronting derivates are not illustrated in our examples here.

In German, however, the tonality is not as significant in noun-derivation as in Yoruba, even though prefixation also plays an important role here.

i.   un- + Adj = N: un + recht = *Unrecht* (injustice)
ii.   ver- + V = N: ver + mögen = *Vermögen* (fortune)
iii.   voll- + N = N: -voll + Blut = *Vollblut* (thoroughbred)
iv.   ent- + N = N: -ent + Deckung = *Entdeckung* (discovery)
v.   unter- + N =N: -unter + Suchung = *Untersuchung* (med. examination)

Derivation: The German and Yoruba Noun Formations Compared (Suffixation)

It is worthy of note that when certain noun forms are derived in Yoruba, they yield idiomatic meanings or denote a special word in the vocabulary. An example of such words is when the word *Iresa* (noun) is combined with *dúdú* (black) in the subsequent example:

i.   N + (an additional morpheme) = N: Ìrẹsà + dúdú = *Ìrẹsàadú-* (lit. dark Ìrẹsà, a town in Nigeria). It is significant to note that the combination may yield further different combinations, as in:
ii.   N + (an additional morpheme) = N: Ìrẹsà + pupa = *Ìrẹsàapa* (fair or light-skinned Ìrẹsà; also a town in Nigeria).

In the configurations presented above, the colours or complexions *pupa* and *dúdú* are no more seen as free morphemes in those contexts; rather, their allomorphs become represented as *adú* and *apa*. They, therefore, become important additional morphemes to *Ìrẹsà*. In addition, the last phoneme *à* in *Ìrẹsà* plays an important role here.

iii.   N + (an additional morpheme) = N: Ìgbàrà + odò = *Ìgbàrà-odò* (the name of a town). Except for *odò* which has another meaning as a noun, i.e. a river in the penultimate set of examples. Other examples in this category are words with N + N constructions, as exemplified in Ogunwale (2007), in which the second nouns are juxtaposed with the first to yield idiomatic meanings. Such examples include:

iv.   ọmọ (child) + ọwọ́ (hand) = *ọmọọwọ́* (baby)

From the different meanings of ọmọ, it will be noted that the contexts in which each of them appears makes it yield various meanings. These examples can be cited almost in every language. The usage and the meaning of such juxtaposed derivatives will be determined by which of them counts as the head-word (Ogunwale, 2007:76ff).

This word construction is rather more simple in German, as simple suffixes are involved to form derived nouns. Examples are -nis, -ung, -schaft, -er, -heit, etc.

i.   N + -nis (Suffix) = N: Verhalten + nis = *Verhältnis* (attitude, relationship)

ii.   V + -ung (Suffix) = N: betreuen + ung = *Betreuung* (supervison)

iii.   N + -schaft (Suffix) = N: Freund + schaft = *Freundschaft* (friendship)

vi.   V + -er (Suffix) = N: Logik + er = *Logiker* (logician)

vii.   Adj + -heit (Suffix) = N: dumm + heit = *Dummheit* (stupidity)

An Empirical Study

The preceding descriptions in both German and Yoruba languages draw our attention to the fact that when speakers, and especially students of a particular language construct the grammar of the language, they often make some assumptions and generalisations. These include generalisations about the identification of where to place morpheme boundaries between stems and the word final, thereby making the meaning of the formatives less transparent. It is also noted that it is not always obvious where the affixes/suffixes are located within the structure. The problem, therefore, is the manifestation of disparate knowledge of the individual speaker and student on the word boundaries and semantic loads. We, therefore, undertake an empirical study in an attempt to carry out survey on German and Yoruba language students' construal of word boundaries in the languages' derivation to obviate the problems.

The main purposes of the study were to:

- determine how deep speakers'/language users' knowledge of morpheme boundaries is;

- investigate the underlying factors that are responsible for the varying knowledge of people, i.e. speakers and language learners; and

- compare and contrast the phenomenon in the two languages.

Rationale for the Study

It is hoped that the students and teachers will be able to know where emphasis should be placed in the morphology of derivates in the two languages. It is also hoped that teachers will discover the best and most effective methods to be adopted in the teaching-learning activities involving morphological encodings, phonological placements and segmentations in general. In addition, students and teachers will be able to discover new insights into morphology of word-derivates using language comparison, especially in multilingual teaching learning conditions.

Methodology

In the survey, a total of 50 participants from Obafemi Awolowo University, Nigeria, were involved. The participants were divided into two groups, each group having 25 participants (students). Group A comprised parts three (300 Level) and four (400 Level) students studying the German language, while Group B consisted of part four (400 Level) students of the Yoruba language. In Group A, the 300 Level students of German have studied the course for two sessions of four semesters and were on their fifth semester at the time of this study. In the course of their study, they were mostly introduced into the German language in their first semester of university, using an average of 12 units or hours per week on language courses. Their 400 Level counterparts were only two semesters ahead of them. In Group B, the students of Yoruba had similar units or hours of language courses per week. However, they have all their courses in the university, unlike the students of German who had a compulsory session, i.e. two semesters in Goethe Institute, Lagos, where they took less hours of language courses.

In all, participants in both groups were adjudged to be the best in their respective classes based on their Grade Point Average (GPA). The aim of the survey was to determine whether the participants could identify the morpheme boundaries when derivates were involved and compare how the participants fare in the analysis of verbo-nominal derivates. It was also important to determine the level of elasticity of word-formation on the part of language students at both intermediate and advanced levels, with a

view to accounting for the Chomskyan principles of productivity in language. Furthermore, it was important to test whether the students could easily determine how each given or generated word was segmented and what methods were employed to determine this.

The questionnaires were designed to elicit the following key issues:

i.   What are the linguistic problems of the participants in determining morphological segmentations? This would afford teachers good opportunity to determine the specific areas that need addressing in linguistic classes, particularly in phonology and morphology classes.

ii. To what degree can the problems be linked to phonological problems or to semantic identification? (As seen in the copious theoretical analyses above, even the minutest phonological change in words, particularly in Yoruba words, can result in varying semantic connotations.)

iii. What is the effects of structural changes that have emanated from the configurations over the years? What informs the changes? What implications do they have on the final configurations, compared to the roots or initial phones, phonemes, morphemes or words?

The Response-Questionnaire
The responses/results of our findings from the two groups are given below:

		Group A	Group B
1.	I do not see any boundaries	8	5
2.	I am not sure whether the formatives have boundares or not	7	4
3.	I am sure there are no boundaries at all	4	3
4.	I cannot determine word boundaries in the language	3	3
5.	The word boundaries are untraceable	7	2
6.	Maybe the structural changes occur either through time or depending on the individual	4	2

The Response-Segmentations of Derivatives
The following derivates were given to the participants to decompose. Their varying responses are presented below:

> ### Group A
> | *Derivates* | *Segmentations* |
> |---|---|
> | *Substantive (examples representing nouns)* | |
> | i.   Ungleichheit | Un-gleich-heit |
> | ii.   Studentenausweis | Student-en-ausweis |
>
> | *(examples representing verbs)* | |
> |---|---|
> | iii.   einschulen | ein-schul-en |
> | iv.   aussehen | aus-sehe-n |
>
> ### Group B
> | *Derivates* | *Segmentations* |
> |---|---|
> | *òrò orúkọ (examples representing nouns)* | |
> | i. *àìbusése* (not completing the job) | = *àì-bu-sé-se* |
> | ii. *amòòkùnjalè* (clandestinely stealing) | =*a-mu-òòkùn-ja-olè* |
>
> | *òròìṣe (examples representing verbs, nouns, i.e. conversion)* | |
> |---|---|
> | iii. *paríọlá (finish(er)/(the peak)of affluence)* | =*parí-íọlá* |
> | iv. *kányinsólá (drop honey onto the affluence)* | =*kán-oyin-sí–ọlá* |

Discussion of the Findings
From the responses supplied by the subjects, it is found that the morphological segmentation supplied by the subjects is in different shades and colours. It is also found to be idiosyncratic based on a number of factors ranging from the people's language performance and the subjects' level of knowledge of morphology. While some of the subjects based their segmentation on syllabic consideration, others based theirs on morphemic considerations, and yet others did not quite notice any or much segmentation. This, nevertheless, does not essentially determine their mastery of the languages, at least in speaking.

In addition, it was discovered during the discussion with the subjects that morphological elasticity was evident in the data, as some were able to generate more words, which were similar to the derivates given to them. Many were able to expand the existing words and form longer words with different morphological and semantic connotations. They did this impulsively, without much retort to given or tacit rules, thus suggesting agreement with the Chomskyan principles of productivity in language and main suppositions of cognitive linguistics.

However, the subjects from Group B, whose primary language is Yoruba, are more apt in the segmentation of words found in their native language than the subjects in Group A, who were second language learners of German. This agrees with our initial assumption of a more limited knowledge of the German language by non-native speakers of the language than that of the native speakers. It would be interesting to carry out a parallel study in an area where people speak German as their native language; the subjects would be students of the language who are also native speakers. Nevertheless, this observation does not absolve the Group B subjects from the weakness of sweeping generalisations and interference.

Moreover, it was discovered in the study that a good number of the subjects in the Yoruba students group (Group B) could easily apply simple rules in the formation and expansion of more verbs, nouns and adjectives.

Summary
We have examined composition as a mechanism in word formation and expansion processes as they occur in Yoruba and German languages. In the composition processes, it has been found that each of the constituents in German is initially capable of standing on its own; indeed, that is the fundamental criterion for composition in any language. Concerning verb formation in Yoruba, however, a great number of verb forms are formed and expanded through the processes of verb + noun, and in some other cases, verb + adjectives mechanisms. In the Yoruba language, however, nouns are mostly formed by placing together a noun + a noun as well as placing a phrasal noun + a linking morpheme. The process used includes *ìkànpò̩ pónbélé* (simple composition) – one in which the initial sound of the second word is mostly swallowed and then linked to the first word. Another one is *ìkànpò̩ alápetúnpe* (reduplicative composition), whereby a linking word is usually employed to link the first word with the second.The morpheme '*o ní*' and its allomorph '*l*' play not only a linking role in the formation of nouns, but also a possessive function. From a phonological point of view, and especially with this group of words, the tone on the original '*í*' is retained on the resulting syllable that is formed along with '*l*', which is usually the initial morpheme of the second word. However, another school of thought does not agree that "*o ní*" is composed.

Another process in the Yoruba noun formation and expansion through composition also includes *ìkànpò̩ alátó̩kùn* (prepositional composition), whereby a grammatical/function word is employed to link the first word with the second. This method shares some similarities with the examples illustrated in *ìkànpò̩ alápetúnpe* above where 'l' is used to represent 'ní' and performs prepositional functions as opposed to the prepositional function it performs in *ìkànpò̩ alápetúnpe* (reduplicative composion).

However, their usage involves some phonological considerations, which are slightly different from the latter. German nouns in this group generally involve a rather straightforward process, which involves a noun + a noun and sometimes a noun + an infix(es) + a noun.

We have also looked at derivation in which Yoruba and German words are formed and expanded by adding prefixes and infixes. Also, additional morphemes are added to represent end-morphemes, especially in Yoruba. "Prefixation" is an important word-formation and expansion method in Yoruba, and through the addition of one or more sounds as prefixes to otherwise independent words or morphemes, words can be expanded in form and meaning. While some Yoruba verbs can stand on their own, some must be combined with certain morphemes. Also, "prefixation" is a very productive mechanism employed in forming German verbs and a large number of prefixes abound in the language, some as prepositions and others as morphemes, and with different functions in German orthography. In many cases, the part of speech as well as the meaning(s) of the original word changes after the addition of the prefixes. For example, in order to achieve a noun-prefix form, we employ a prefix + a noun, a prefix + an adjective or a prefix + a verb. In Yoruba, a great number of nouns are formed by the addition of prefixes to them; in any case, even a single vowel (a letter) is enough to be a prefix. In both German and Yoruba, the word, which a prefix combines with, does not always determine the part of speech of the word formed or expanded. The opposite is mostly the case in both languages, because under derivation the prefix sometimes changes the part of speech of the word.

An important morpho-phonological impact known as *assimilation* comes into play in the process of composition in the German language. This is when the tone of the initial sound of the word combined is superimposed on the tone of the final sound segment of the initial word that was used as a constituent. Furthermore, another phonological process entails the use of an allomorph of the same morpheme being employed in the resulting composition to allow for the musicality in the sound of the verb-noun derivatives. Also remarkable in German morphology is the fact that the process of composition is productively remarkable because a large number of words are formed and expanded through the mechanism. It is evident, therefore, that the composition mechanisms are highly productive in the configurations of several verb derivatives in both German and Yoruba languages.

In the Yoruba language, suffixes are not usually used to form verbs, unlike in German where the process is very productive in forming nouns, adverbs and adjectives. However, we stated in the examples drawn from the

Yoruba language that nouns may be formed by introducing additional morphemes. The additional morphemes are sometimes not fully written; rather, some lexemes are removed, i.e. their allomorphs are used. In this case, the last sound of the free morpheme plays a very important role.

Conclusion

From the foregoing, the paper posits that the preceding pieces of linguistic parametric evidence are remarkable in both German and Yoruba at varying depths and to varying degrees, following Chomskyan generative theories on the productivity of words. Evidently, both languages are similar in certain respects. For example, they are both morphologically elastic as they display concatenative morphology, i.e. a large number of verbs and nouns can be generated, given the pre-existing knowledge of composition, derivation and conversion. However, concerning Yoruba word-formation and expansion, much premium is placed on the tonal nature of the language's sounds, thereby emphasizing tonality in order to yield copious different morphological encodings, which give room for the allomorphs of some morphemes to be preferred in the composition process. This shows that Yoruba, more than German, reflects an interface of phonology and morphology in its verbo-nominal derivatives.

End Notes

[1]   In this work, "dog" is associated with words like *Traumpartner* (a dream (future) partner)*, Liebling* (a favourite)*, Job* (a job)*, Urlaub* (holiday)*, Menschenersatz* (a substitute for a human being)*, Futter* (feed)*, Sicherheit* (security)*,Wettbewerb* (a competition), etc. while the following noun-composits are derived under the same stem-word *Hündesteuer* (a dog tax), *Hündemarke* (a dog licence), *Hundekuchen* (dog biscuits)*, Hunderennen* (greyhound or dog racing), *Hündehütte* (a kennel)*, Hundefütter* (dog food), etc. Whereas, the noun-composita derived in Yoruba are not so much and (in our view) not so endearing, as compared to those in German, e.g. *ajá ọdẹ* (a hunter's dog or a hunting dog), *ajá òyìnbó* (a healthy or beautiful dog), *ajá ìgboro* (a stray dog or a promiscuous person, especially a lady), *ajá dìgbòlugi (*a mad or rabid dog), *ajá ògún* (a dog for sacrifice to ogun), etc. The products of these show clearly the different functions that dogs play in both cultures and the importance placed on them by each society. Olagunju, E. (2011). *Eine vergleichende Analyse der Deutschen und Yoruba Substantivbildung*. Göttingen: Cuvillier, 123–125.

[2]   Comp. Fleischer and Barz's *Komposition* discussed earlier.

[3]   Comp. Fleischer and Barz's *Derivation*

[4]   Unikale Morphem, according to Vollmert, represents morphemes, which cannot stand on their own in German word-formation, e.g. *Him-* in *Himbeere*, *Schorn-* in *Schornstein*, etc. They also have no

meaning on their own; rather, they depend on other morphemes such as inflectional or derivativational morphemes, which are capable of being used by way of composition in order to form another nucleus, and thus have a meaning.

⁵   An inflectional morpheme never changes the <u>grammatical category</u> of a word. For example, both *old* and *older* are adjectives. The *-er* inflection here (from <u>Old English</u> *-ra*) simply creates a different version of the adjective.

⁶   One can also regard these verbs as prefixes of other words. However, within the ambit of word-formation, they can also stay as independent words, i.e. as verbs.

⁷   Assimilation, an important aspect in phonology comes into play here and in all other examples in Yoruba in this section, whereby the tone of the initial sound of the word we combine with is superimposed on the tone of the end-sound of the initial word used to combine with it. See the following examples: ya + ìgbé = *yàgbé* (the tone ì in ìgbé influencing the tone àin *yà*): kan + ilèkùn= *kànkùn* or *kanlèkùn* (the tone *è* in *ilèkùn* influencing the tone *àn* in *kànkùn)*, di + arúgbó = *darúgbó* (*a* tone in *arúg bó*influencing the tone *i* in *di*, etc.)

⁸   Such phonological considerations play a great role in many Yoruba word-formation and expansion methods. The example is *èédè-* in place of *aárùn-dín-* or *ogórùn-dín*, i.e. less 5 or less 100.

⁹   Other examples, albeit nouns, include *omo + rere (ire)* = *omoore*, *isé + rere (ire)* = *iséére*, etc.

¹⁰   L here indicates "Fügenelement", i.e. a 'linking' element, i.e. "s" in this case.

¹¹   Derivation is different from inflection, which adds additional letters, not morphemes, to a word so as to change its grammatical function. In this sense, changing '*local*' to '*localize*' is derivation, but turning '*localize*' into '*localizing*' is inflection, and not derivation.

¹²   Such examples also abound in English, e.g. *in*decent, *im*possible and *ir*regular.

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