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Deletion, Coalescence and Denasalization in Yoruba Personal Names: A Lexical Phonology Analysis

HASSAN, S. O[1]

Department of Languages and Linguistics, Fountain University, Osogbo, Osun State

Correspondence Email:
shakirat.hassan@fuo.edu.ng

Abstract

Yoruba personal names (YPNs) have long been discussed in linguistic literature. Many of these works focus on the sociolinguistic and pragmatic essence of YPNs, with little attention paid to the interaction of sounds when they appear together in words or across morphemes. This study investigates the interaction of phonology and morphology and analyzes the morphophonemic alternation in YPNs. It examines vowel deletion, coalescence, and denasalization as morphophonological processes in YPNs. The data for this study was gathered from previous research and through random selection of names.

The theoretical framework underpinning the analysis of this work is Lexical Phonology (LP). LP was propounded by Paul Kiparsky in the early 1980s to account for the roles of lexicon in the word formation process. Findings from the research show that vowel deletion occurs in YPNs when two vowels appear at word boundary. One of the vowels becomes deleted and assimilates the features of the deleted sound. Also, an alveolar nasal losses its nasality when it occurs in between two vowels, while coalescence by polarization is discovered when two different vowels /ẹ/ and /ọ/ merge together to form a new sound /i/.

In conclusion, it was observed that morphophonemic processes play a crucial role in the derivation of personal names in Yoruba as it helps language learners to understand the intricacies of sounds joined together to form words in the language. The study recommends that morphophonology should be modeled computationally in Natural Language Processing to promote Yoruba language in education, technology and artificial intelligence.

Keywords

Yoruba Personal Names, Deletion, Coalescence, Denasalization, Morphophonology

Introduction

According to tradition, naming is a distinctive feature of human being which might have begun in remote or local prehistoric antiquity together with the capability for complex language (Davies, 2012). In actual sense, personal name is just an imaginary linguistic concept used to identify an individual. Before the advent of written language, personal names were rendered in spoken form mainly for sound quality which may serve purposes relating to some form of blessings for the child, to identify the newborn with his or her forefathers or for the celebration of important events. Initially, history had it that everyone is entitled to one name but due to population which brought about people bearing the same name, surnames and middle names become added to individual identification (Blount, 2015). According to Evans (2015), the Roman was seen to be one of the originators of personal and family names in the history of names. They came up with the idea of three names called 'trial nomina' which started in the early 7th century B.C. through the 7th century A.D. These three names are surname or family name, personal name (first name) and second name (middle name). The focus of this research is on personal name, which is referred to as '*orúkọ àbísọ*' in Yoruba language.

Personal name is a social aspect of assigning a social status and identity to an individual based on certain features inherent in the individual, their family or the society (Baba, 2019). In the work of Blount (2015, p. 618), a personal name is a unique name which distinguishes one individual from another member of the family. Such names are held in high esteem as they belong to the bearer. According to Orie (2006), the choice of a Yoruba name is considered a sacred undertaking because the Yoruba believes that the name of a child has a major impact in a child's behaviour or life in general. Yoruba personal names are known as '*Orúkọ*', which means a name given because of factors surrounding a child's birth, the day of the child's birth, parents' profession, religion, family history or the parent's position in the society. According to Orie (2006), Yoruba names are assigned based on the following:

(1) Names given as a result of profession, religion, or status of a child's family,

(2) Names given as a result of circumstances surrounding the child's birth, and

(3) Names given as a reflection of the parents' wishes.

Akinnaso (1980, pp. 279-283) submits that Yoruba personal names 'are drawn from the home context (HC) principle based on the Yoruba proverb: '*Ile ni a n wo ki a to so omo ni oruko'* the condition/status of the home determines a child's name.. Akinnaso (1980) further expressed that 'only socially acceptable and valued information in personal names is encouraged and used, as it is believed that a person's name directs his or her actions and behaviour –*oruko ni n roni*'. He identifies two rules which guided the choice of Yoruba personal names; and they are:

Rule 1: A personal name is derived from one or more domestic events that satisfy the home context requirement.

Rule 2: All negatively valued home contexts are raised to positively valued status for the purpose of personal name construction.

However, since the focus of this study is on the theoretical aspect of linguistics which involves the alignment of phonology and morphology, it is pertinent that the objectives of the study are clearly stated. Therefore, the objectives of the study are to:

(i) investigate the interaction of phonology and morphology in YPNs
(ii) examine vowel deletion, coalescence and denasalization in YPNs
(iii) analyse morphophonemic alternations in YPNs

The above-stated objectives give rise to the research questions, as follows:

(i) How does phonology and morphology interact in YPNs?
(ii) How is vowel deletion, coalescence and denasalization examined in YPNs?
(iii) How are morphophonemic alternations analysed in YPNs?

It is important to mention that the branch of linguistics which studies name in general is called onomastics. Onomastics is the study of etymology, history and use of proper names in a language. Bright (2003 p. 673) defines onomastics as the study of names. He says that the use of personal names, having different degrees of descriptiveness represents a sociolinguistic universal of the human species. Algeo and Algeo (2000 p.

265) affirm that 'to name something, as far as human attention goes, is to make it. This means that giving names makes things happen. The unnamed is the unnoticed, and the unnoticed is for cognitive and communicative purposes nonexistent'. According to Algeo and Algeo (2000 p. 265), giving name is an act of poetry, which, etymologically, is an act of making object named'. Therefore, onomastics encompasses the study of personal names which are known as anthroponymy, and place names, called toponymy. Anthroponymy is the study of the proper names of human being, both individual and collective names. It is the study of names of persons in a language. Boamfa (2017, p. 858) defines it as that which investigates the names of persons. He said further that the theoretical study of personal names is called anthroponymy.

Morphophonology

Morphophonology is a branch of linguistics that studies the morphological use of phonological means. In the narrow sense, the field of 'phonology' is concerned with the sound structure of a morpheme and the changes that a morpheme undergoes when it combines with other morphemes. Morpho-phonemics emerged as a separate discipline in the late 1920s, but its origins are associated with J.A. Baudouin de Courtenay, who demonstrated the interaction of phonetics and grammar in sound alternations and advanced the hypothesis that the phoneme was the mobile component of a morpheme and the sign of a particular morphological theory. Morphophonology is the study of the relationship that exists between morphology and phonology (BasbØll, 2015). It is the interface of morphology and phonology in the study of language. Another name for morphophonology is morpho-phonemics.

Morphophonemics involves an investigation of the phonological variations within morphemes, usually marking different grammatical functions (Britannica, 1998). The term is not to be misunderstood as a single field of inquiry in linguistics, but it is to be treated as the joining together of instances of morphology and phonology and how they affect each other when they appear in a string of words or across morphemes in a language. The need to carry out a morphophonological analysis arose because of the structural changes that sounds go through when they are used in sentences, and this forms the basis of this paper.

There have been several works on morphophonological analysis of different languages. Some of them are: "A

morphophonological analysis of nouns borrowed by Kiswahili and Hausa from Arabic" (Jika, 2017), "Topics in the morphophonology of standard spoken Tamil (SST): An Optimality Theoretic study (Ramasamy, 2010)". This is just to mention a few that have contributed to scholarship in the field. This work will serve as an addition to knowledge in morphophonology.

Any language's linguistic analysis starts with phonology, whereas morphology provides the building blocks for syntax and the other linguistic components. While morphology deals with how words are formed in a language after rules, phonology deals with the sounds of a given language and the processes that adhere to the linguistic sound pattern in question. Additionally, the two branches of linguistics are essential to understanding any language's grammar. Understanding these two sides of a language show that competence in grammar is in the form of rules. Thus, the knowledge of a language is a crucial component of a native speaker's competence (Clark et al., 2007). This native speaker's competence reflects in the way the language is used in communication by joining several sounds together to form meaningful words. The joining together of these sounds brought about the idea of morphophonology. This is due to the discrepancies that exist in phonemes when they are joined together to produce morphemes in a language. For example:

(1) /ɔlá kū ilé/ 'The house is full of wealth'

wealth fill.PRES house'

/ɔlákún _lé/ V_2 Deletion

V_1 V_2

[ɔlákūlé] Surface Form

(2) /a bá ọ̀sẹ̀ dé/ 'Achild born on the day of Ọsẹ festival'

one follow.PRES week arrive

/ab ọ̀sẹ̀ dé/ V_1 Deletion

V_1 V_2

/abọ́ sẹ̀ dé/ Tone Realignment

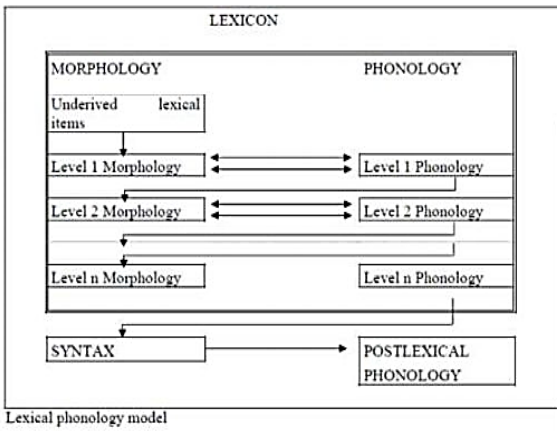
[abọ́sẹ̀dé] Surface Form

In example (1) above, there is a deletion of V_2 in the noun *ilé* to derive the surface form. Example 2 has both a V_1 deletion and a tone shift regressively from the deleted segment to the proceeding vowel in the third syllable. These show the structural changes that sounds undergo at morpheme boundaries. Morphophonological study

arises because of these noticeable changes in sounds when they appear together in morphemes to form words in languages. The study of these changes is what linguists refer to as morphophonology.

Theoretical Framework: Lexical Phonology

Lexical Phonology (LP) is a generative, derivational model: at its core lies a set of underlying representations of morphemes, which are converted to their surface forms by passing through a series of phonological rules (McMahon, 2000 p. 5). Lexical Phonology is an approach to phonology that accounts for the interactions of morphology and phonology in the word building process. Udema (2004) sees the theory of LP as a major contemporary theory of phonology developed in the early 1930s by K.P. Mohanan, Paul Kiparsky and Steven Strauss. It emerged within the broader framework of Noam Chomsky and Morris Halle's generative phonology (especially the Sound Pattern of English (SPE), 1968) which refined the architecture of the theory by introducing lexical stratification. Lexical Phonology emphasizes morphophonology in that the theory brought together morphological and phonological rules within a single framework (Udema, 2004). In the theory of LP, lexicon plays a major role in the production of words. The theory of LP contains rule ordering levels which are the central theme in phonological and morphological process. It is a theory about the organization of grammar. It deals with relationships among phonology, morphology and lexicon (Kaisse and Shaw 1985). Wafaa (2018) describes Lexical Phonology as the interface between phonology and morphology. The diagram below gives the overall structure of LP.



Lexical phonology model

Diagram 1: The Structure of Lexical Phonology (LP) (adopted from Kiparsky, 1982, p. 132)

This diagram can be exemplified using the following examples:

Yorùbá:

(3) Ṣadé jẹ iṣu (morphology)

Ṣadé eat.PST yam

'Sade ate yam'

/ṣadé ʤẹ iṣu/ (phonology)

Underlying Representation

/ṣadé ʤẹ _ṣu/ Vowel Deletion

V_1 V_2

[ṣadé ʤẹṣu] Surface Form

From the above, it can be inferred that there is a phonological rule (deletion) which omits the high vowel /i/ in '*iṣu'* to form the verb phrase *j'ẹṣu.* The above explanation can be schematized as:

/i/ ⟶ Ø / _V

This means that the sound /i/ becomes deleted when it occurs before a vowel at the word boundary.

Rules of Lexical Phonology

(1) Cyclic Rules: This rule maintains that the result of every morphological process is passed back through phonological rules on that level (Wafaa, 2018 p. 87). Katamba (1989) asserts that the rules of morphology and phonology apply in a cycle, first to the root, then outward to the affixes nearest to the root and then again outward to the outer layer of affixes. In the cyclic component, phonological rules interact with the processes of morphology in such a way that after each morphological operation, the output string is checked against all phonological rules (Giegerich, 1988 p. 125). Rubach (1984 p. 234) asserts that phonological rules apply cyclically, i.e. they reapply after every single affixation application. Rubach (2008 p. 461) claims that this rule assumes that phonology follows morphology in the sense that phonological rules apply after relevant Word Formation Rules (WFRs). The way the cyclicity rule applies can be illustrated using the diagram below:

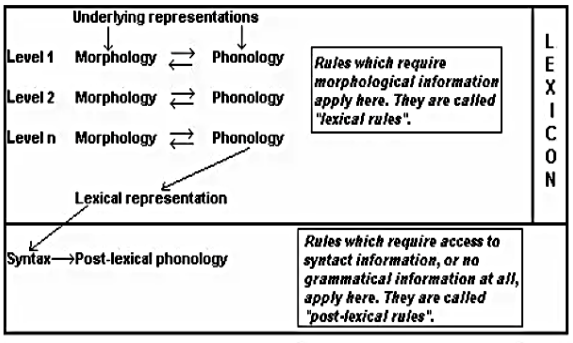


Diagram 2: Cyclicity of Lexical Rules (adapted from Wafaa, 2018)

(2) Post-cyclic Rules: With this rule, the morphological operations is applied first, then followed by a single check through the phonological rules. These rules apply across the board to fully derived words and they are subjected to the Strict Cyclicity Constraints (SCC).

(3) Post-lexical Rules: These rules take place in the sentence because they apply to strings derived by syntactic operations. It can also be said that post-lexical rules apply across word boundaries. That is, they apply to phrases and sentences. The table below shows the differences between lexical and post-lexical rules.

Lexical rules	Post-lexical rules
They are applied only within words.	They are applied across word boundaries.
They are prone to exceptions.	They do not have exceptions.
They require morphological information.	They require syntactic information, or no grammatical information at all.
They must be structure-preserving.	They are not necessarily structure-preserving.
They apply to only lexical categories.	They are applied to all categories
They precede all postlexical rules	They follow all lexical rules
They are cyclic.	They apply only once.

Table 1: Lexical and post-lexical rules (adapted from Hargus and Kaisse (1993, p. 16))

Constraints of Lexical Phonology

Strict Cyclicity Constraints: This condition states that it is not possible for a cyclic rule to apply in non-derived environment (Rubach, 1984 p. 235). This constraint ensures that rules only apply to one layer at a time. That is, phonological rules can only affect those strings of sounds that are put together by a word formation rule applying at the same level (Salman, 2008, p. 35). The idea of LP falls under the strict cyclicity restriction in the study of linguistics. It specifically has to do with how phonological rules are applied to the sounds that constitute a language.

The way that phonological rules are applied to sounds within a word is strictly constrained by the concept of cyclicity in LP. According to this restriction, specific rules must first apply to all sounds inside a specific cyclic domain before they may be applied to sounds outside of it. For instance, the stress rule in English applies cyclically from left to right to each syllable within a word. This means that the rule must apply to the first syllable before moving on to the second syllable, and so on. Following the rule, the cycle can be repeated for the remaining syllables once the rule has been applied to every syllable in the domain. The cyclicity requirement makes sure that no sounds are

skipped or have the wrong amount of stress applied to them. It also makes it possible for the phonological rules to operate in a predictable and systematic way, which aids in explaining the sonic patterns that exist inside a language. In order to ensure that all sounds inside a word are taken into account, the rigorous cyclicity requirement of LP mandates that specific phonological rules must be applied cyclically and in strict order.

Structure Preservation Constraint: The structure preservation constraint proposed by Kiparsky (1985) asserts that a subset of lexical filters constraints the effect of rule application in the lexical component. In the field of Linguistics, the concept of Structure Preservation Constraint is an important principle that applies to the theory of LP. This constraint specifies that the underlying structures of words should be preserved as much as possible during the application of phonological rules. Underlying structure refers to the abstract representation of a word's sounds before they are pronounced. In LP, this underlying structure is thought to be stored in the mental lexicon of speakers, along with the meaning of words. The Structure Preservation Constraint states that when phonological rules are applied to a word, the underlying structures of that word should be preserved and not lost or changed in the process. This means that any changes that occur to the sounds of a word should be motivated by a desire to maintain the consistency and integrity of the underlying structure.

For example, consider the word "dogs." The underlying structure of this word includes the fact that it has one syllable and ends with the sound "z." If a phonological rule were to apply to this word, such as the pluralization rule that adds the sound /s/ to the end of the word, the Structure Preservation Constraint would require that the underlying structure be preserved. In this case, the "z" sound would change to "s" to reflect the addition of the plural marker, but the syllable structure of the word would remain intact. The Structure Preservation Constraint is a significant principle in LP because it helps to explain the patterns of sound change that occurs within a language while still maintaining the fundamental structure of words. By adhering to this constraint, speakers can produce and understand words in a consistent and reliable manner.

Bracket Erasure Condition: This condition states that internal brackets are erased at the end of the level as a result of which no morphological information is available to

non-cyclic process (Wafaa, 2018, p. 10). The Bracket Erasure Condition is a linguistic premise that governs the notion of LP. This principle states that all bracketed content must be removed at the conclusion of the phonological derivation procedure, leaving only the word's surface form. In phonological analysis, the term "bracketed material" refers to the underlying, abstract structure of a word that is represented by brackets. The grouping of sounds into syllables or morphemes is indicated by this bracket. This condition guarantees that the ultimate product of the phonological derivation process is a surface form that can be pronounced by the speaker and recognized by the listener.

For instance, considering the word "happiness" in English, this word can be transcribed as [hæpinəs] in its base form, with the brackets denoting the existence of three syllables and the stress distribution. The word's surface form, [‘hæpinəs], is created throughout the phonological derivation process by applying a variety of rules that change the underlying form. Following the application of these criteria, the Bracket Erasure Condition demands that the brackets be removed, leaving only the word's surface form. The reason for this is that further phonological rules, if applicable, should be applied on the derived surface form. Another example is the various derivations of the root word ‘nation’.

Level 1:

[nation]-al] → national

Level 2:

[national]-ize] → nationalize

Level 3:

[nationalize] -ation] → nationalization

From the examples above, it is obvious that after each level, internal brackets are erased. Therefore, higher-level rules treat the word as a single unit. The Bracket Erasure Condition is particularly significant since it contributes to the understanding of why particular sound patterns appear in languages. Linguists might discover patterns that are unique to a certain language or family of languages by observing the changes that take place to bracketed material during the phonological derivation procedure.

In all, the analysis of this work is based on the ideology of LP and its tenets because Lexical Phonology and Morphology provide a fundamental component of the field of morphophonology. They provide a

framework for analyzing the interaction between morphology and phonology, allowing for a better comprehension of phonological alternations, morphological processes, lexical exceptions and the diachronic and synchronic aspects of language.

Methodology

This research adopts the qualitative methodological framework to carry out the analysis of this work. A qualitative research methodology is carried out using participant observation, interviews, data collection, and it focuses on trends rather than on figure. Qualitative methods are used to answer questions about experience, meaning and perspective, most often from the standpoint of the participant (Hammarberg, Kirkman & de Lacey (2016, p. 499)). The goal of qualitative research is to better understand people's experiences, behaviors, attitudes, and social phenomena. It is primarily concerned with examining and interpreting non-numerical data, such as narratives, interviews, observations, and textual resources. Researchers can explore the nuanced, subjective aspects of human behavior using qualitative research methodologies, and the results can be rich and informative.

This research elicits data from previous works in Yoruba. Past research was consulted to get diverse names in the language. There are about two hundred names obtained, out of which twenty-four were selected for the analysis. The names were carefully selected to reflect the interaction of morphology and phonology. Also, the intuitive knowledge of the researcher came to play in the analysis of the names.

Data Presentation and Analysis

The major focus of this work is to determine the morpho-phonological operations of vowel deletion, coalescence and denasalization in YPNs using LP. YPNs are sentential in nature and to find the relationship between morphology and phonology in their construction, each of the names must be de-sententialised based on the tenets of LP. The processes involved and different stages of desententialization are presented in the following paragraphs.

Vowel Deletion

This is the omission of a vowel sound segment in a morpheme or across morphemes. Pulleyblank (1988, p. 234)

submits that 'in a wide variety of configurations, the juxtaposition of two vowels create the deletion of one of the vowels.' He asserts that such deletion can take place within words, at the phrasal level or it can take place in contexts such as between a verb and its object, between a preposition and its object, between the focus marker *ni* and a following subject clitic, and between the conjunction *ati* and the following conjunct'. Orie and Pulleyblank (2002, pp. 102-103) affirm that deletion in Yoruba is attributed to the vowel sequence occurring with an affix, with a verb or preposition, while the assimilation occurs because the vowel sequence involves a sequence of nouns. Considering the sentential nature of YPNs, the deletion of vowel is experienced between a verb and the noun that follows it (see Bamgbose, 1986, Orie & Pulleyblank, 2002). Vowel deletion is observed in the underlisted YPNs:

(3) / adé bí èyìí/→[adébìyìí]
Crown born.PST this
'Crown gave birth to this'

(4) /a bá ọ̀sẹ̀ dé/→[abọ̀sèdé]
Someone follow.PST festival come
'A child born on a day of Ọsẹ festival'

(5) /bí olúwa ti fẹ́/→[bólúwatifẹ́]
like God PERF want
'A child born the way God wants it'

(6)) /a bí sí ọlá/→[abísọ́lá]
Someone born.PST into wealth
'A child born into wealth'

(7) /ọpé yẹ èmi/→ [ɔpẹ́yẹmí]
Gratitude fit.PST myself
'I deserve to be thankful'

(8) /olúwa bù kū ọlá mi/→[olúwabūkọ́lámi]
God add.PST more wealth me
'God has increased me in wealth'

(9) /adé fi ara sin/→[adéfarasin]
Crown use.PST body rest
'The crown has rested its body'

(10) /adé kū ilé/→[adékūlé]
Crown fill.PST house
'The house is full of crown'

(11) /ògún ya ilé/→[ògúnyalé]
iron come.PST house
'The God of iron has come home'

(12) /olúwa ṣe ọlá/→[olúwaṣọlá]
God do.PST wealth
'God has given us a child with wealth'

(13) /ti èmi to ọpé/→[tèmítọ́pẹ́]
Own myself worth.PST thanks
'My own is worth thanks'

(14) /adé tó ọlá/
Underlying Representation
Crown equal.PRES wealth

'Crown is worth wealth'

/adét ´ ọlá/

Vowel Deletion

V_1 V_2

/adétólá/

Tone Realignment

[adétọ́lá]

Surface Form

(15) /adé gũ orí oyè/

Crown climb.PST top throne

'The crown has climbed the throne'

/adég orí oyè/ V1 Deletion

V_1 V_2

/adégori óyè/ Tone Realignment

V_3 V_4

/adégor óyè/ V_3 Deletion

[adégoróyè] Surface Form

Observation: The above examples indicate a case of vowel deletion in YPNs. As can be seen in example 14, V_1 is deleted, and the proceeding vowel moves towards the tone of the deleted vowel for the tone to shift towards it. This means that the vowel *ó* on the third syllable which is attached to the verb *tó* is deleted while the vowel *ọ* (the first vowel of the following noun) is retained and therefore, joined with the verbal consonant to derive a complete sentence. The tone of the deleted first vowel realigns with the *ọ*. This Tone Realignment is supported by Akinlabi and Liberman (2001) who report that when an object follows a verb in Yoruba, the two words are combined phonologically by deleting either the final vowel of the verb or the initial vowel of the object, and that any High or Low tones of the deleted vowel are retained in the result. The above analogy applies to the remaining examples in this section The above analysis shows that for vowel deletion to take place in YPN, another process, called Tone Shift/Realignment, must take place before finally arriving at the surface form as indicated in the analysis. More so, in example 15, the nasal vowel ($V_{1)}$ - /ũ/ - is deleted at V_1 while the proceeding vowel V_2 attracts the tone feature of the deleted vowel. After that, the V_3 is deleted to derive the complete meaning of the sentence.

Denasalization

Denasalization is a process which occurs in Yoruba when a segment with nasal feature losses its nasality in the environment of an oral vowel. Oyelaran (1971), Awobuluyi (1984) and Oyebade (1995) observe that denasalization can occur under assimilation and deletion. The example

below is a depiction of denasalization in YPNs.

(16) /ọmọ ni ará/ [ɔmɔlará]
child is companion
PRES
'Child is one's companion'

(17) /ọmọ ni ɔlá/ [ɔmɔlɔlá]
Child is wealth
'Child is one's wealth'

(18) /olúwa rẹ̀ mí ní ɛkū/[olúwarɛmílẹ̀kū]
God calm me from cry
PST
'God has stopped my cry

(19) /olúwa dá mi ní ọlá/ [olúwadámilọ́lá]
God bestow me with wealth
PST
'God has bestowed me with wealth(20)
/ògún ní ɛyɛ/ [ògúnlɛyɛ]
iron has prestige
PRES
'The God of iron has prestige'

(21)/olúwa dá mi ní àre/ Underlying Rep.
God grant me with right
PST
/olúwa dá mi n àre/ V_1 Deletion
V_1 V_2
/olúwadámlàre/ Consonant Denasalization
/olúwadámiláre/ Tone Realignment
[olúwadámiláre] Surface Form
'God adjudged me aright'

Observation: In above examples, there is an alternation of *n* for *l* which shows that the [n], which is an alveolar nasal is changed to alveolar lateral (oral) because it occurs in the environment of oral vowels (sound). Then, the High tone on the deleted vowels realigned with the segment. This is in agreement with the findings of Oyebade (1988), Maduagwu & Dare (2016) and Pulleyblank (1988) who report that the phoneme /n/ changes to [l] when it occurs intervocalically and especially when the alveolar nasal /n/ occurs before a back vowel. Oyinloye (2021) uses the *oni*-agentive marker in Yoruba to exemplify this type of changes but I have used the same method to derive the analysis in this section. It is evident that different morphophonemic alternations in sounds occur in the derivation of denasalization in YPNs. This means that for denasalization to take place, other processes like vowel deletion, consonant denasalization, and tone realignment must come to play. Therefore, in example (21), the V_1 is deleted in the sixth syllable, while /n/ is alternated for /l/ on the same syllable. After which, the tone on the deleted V_1 is transferred to the proceeding vowel.

Coalescence

Here, two or more sounds are combined together to form a new sound. Awobuluyi (1986) observes coalescence as a situation whereby two linguistic units which may or may not be distinct end up being replaced in specific contexts by a third distinct of the same general kind. He identifies three (3) kinds of coalescence:

coalescence by assimilation, coalescence by merger and coalescence by polarization.

The first type of coalescence deletes one segment while the other segment is retained. E.g. a+e = [e]. Coalescence by merger is formed by joining features of corresponding segments. E.g. *kolob + yane = kolojwane* (piglet). This means that b+y = jw. The third type of coalescence, which is coalescence by polarization occurs as a result of vowel height and constituent polarity. In Yoruba, we have *pa+irọ́= purọ́*. This means that a+i = u. Based on the explanation above, YPNs attest two types of coalescence which are: coalescence by assimilation and coalescence by polarization. For example:

(22) /tọ́. ayé wò/
Taste life first
PST
'The first child as a twin'
/t ayéwò/ V1 Deletion
V1 V2
/ táyéwò/ Tone Realignment
/tá é wò/ Consonant Deletion
/tá é wò/ Height Feature Assimilation
á+ é = a+Ø=[a] Coalescence by Assimilation
/tá wò/ Vowel Insertion
[táiwò] Surface Form

(23) /mo dá ọpẹ́/ 'I give thanks to God'
I give thanks
PST
/mo d pẹ́/
V1 V2
á+o= u Coalescence by polarization
/modúpẹ́/ Tone Realignment
[modúpẹ́] Surface Form

(24) /fi ọlá wẹ ọwọ́/'A child born into a wealthy family'
Use wealth wash hand
PST
/f ọlá wẹ ọwọ́/ V_1 Deletion
V_1 V_2
/fọláwẹọwọ́/ Tone Realignment
/fọlá w wọ́/
V_3 V_2
ẹ+ọ = i Coalescence by polarization
/fọláwi_ọ́/ Consonant Deletion
/fọláwiyọ́/ Consonant Insertion
[fọláwiyọ́] Surface Form

Summary of findings

Considering the morphophonological operations of vowel deletion, denasalization and coalescence in the construction of YPNs, the following processes are observed to be present in the analysis:

(1) **Vowel Deletion**: this is the loss of a vowel sound in the realization of personal names in Yorùbá. The deletion of vowels occurs when there are two vowels at morpheme boundary in the production of names.

(2) **Consonant Deletion**: this occurs in the coalescence of sounds in YPNs where the semi-vowel /w/ and /j/ got deleted in the derivation of these names in examples 25 and 27.

(3) **Tone Realignment/Shift**: this happens when one of the vowels at morpheme boundary is deleted without the tone. This

tone, therefore, shifts to the second vowel for adequate realignment. This was seen under the analysis of vowel deletion.

(4) **Consonant Denasalization**: here, a nasal consonant which appears in the environment of oral sounds become denasalized for it to conform with the features of its surrounding speech sounds.

(5) **Coalescence**: this phonological process binds two distinct segments together to create another segment. Two dominant coalescences in YPNs are coalescence by assimilation and coalescence by polarization.

(6) **Insertion**: this occurs only in coalescence where the consonant deleted is replaced with another consonant sound. There is a case of vowel and consonant insertion in the coalescence of YPNs. This is found in example 27 where the omitted consonant /j/ sound is being replaced with sound /w/.

Conclusion

It has been observed so far that morphophonology exposes the varying degrees of changes that speech sounds undergo when they are used in words, phrases or sentences. This study on YPNs using LP has revealed a series of processes which sounds undergo in their realization as either a single lexical item or post-lexical entities. Some of these processes include vowel deletion, consonant deletion, tone realignment/shift, consonant denasalization, coalescence and insertion. More so, the study has established that the knowledge of a language as used by the speaker is intuitive and that there are some attributes of the language which the speakers do not know exist in their language. It is therefore, concluded that morphophonemic alternation plays a crucial role in the derivation of personal names in Yoruba language as it contributes to the understanding of the language's grammar.

Recommendations

There are many areas of Yoruba language that are yet to be explored morphophonologically. Future researchers could work on the dialectal variation of morphophonological operations in Yoruba. Also, computational modeling of Yoruba morphophonological analysis is yet to be investigated.

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