Morphophonological Interaction in Igikuria Borrowed Nouns and Verbs from English

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ABSTRACT

This study examined the morphophonological structure of Igikuria borrowed nouns and verbs from English. The focus was on the derivational and inflectional processes observed in these nouns and verbs. Morphophonological processes play a crucial role in forming and modifying nouns and verbs in a language. Several studies only focus on either phonological or morphological aspects of lexical words in language. However, little research exists concerning morphophonological processes, particularly in the context of the Igikuria borrowed nouns and verbs from English. Therefore, this study analyzed the interaction between morphological structure and phonological rules in the Igikuria borrowed nouns and verbs. The analytical tool used was Lexical Phonology and Morphology (LPM) Theory by Kiparsky (1985). Data was collected and analyzed using qualitative descriptive research design. Unstructured interviews and focus group discussion techniques assisted the collection of data using an interview schedule and discussion guide with tape recorder as research instruments. The study was conducted at Kehancha Chini in Kuria West Sub County, Migori County by targeting native Igikuira speakers. A purposive sampling procedure was used to settle down on 24 informants who provided 24 borrowed nouns and verbs. From the data set, five borrowed nouns and five borrowed verbs were analyzed and used for discussion. The findings of this study were intended to contribute to the understanding of the intricate morphophonological structure of Igikuria borrowed nouns and verbs. The study therefore offers valuable insights into the broader fields of morphophonology in Bantu linguistics, while also providing practical implications for language preservation and documentation efforts in Igikuria-speaking communities.

Key words: Morphophonology, borrowing, nouns, verbs, derivation, and inflection

INTRODUCTION

Morphophonological adaptation represents one of the aspects of linguistic change in borrowing. In this case, borrowed nouns and verbs undergo adjustments to align with phonological as well as morphological structures of a recipient language (Tarigan & Sembiring, 2023). For Igikuria, a Bantu language spoken by the Kuria community in southwestern Kenya, these adaptations are evident due to its continuous contact with English, the dominant language in the region. According to Riro (2020), Igikuria is a North-East Bantu subgroup of larger Niger-Congo language family, which Koile, Greenhill, Blasi, Bouckaert and Gray (2022) estimate to be spoken by millions across Central, Eastern, and Southern Africa. The Kenyan 2019 census data shows that the Kuria population in Migori County stands at approximately 262,424. This underscores the linguistic significance of Igikuria as a medium of cultural and economic identity in a multilingual setting.

Previous studies have described the structural features of Igikuria. Guthrie (1967) categorizes Igikuria as E43 whereas Nurse and Philippson (1980) note that it belongs to the East Nyanza group within the Lacustrine cluster. Maroa (2012) further observes that this language has a well-developed noun class system. For instance, the nouns referring to people can take one class prefix, while objects or abstract ideas take the other to match markers appearing on verbs, adjectives, and pronouns to signal agreement. This can be illustrated by the borrowed nouns like umukiristo (Christian) and ichaacha (charger). Similarly, Charwi (2017) outlines the complexity of Igikuria verb morphology by indicating that verbs carry rich morphological markers, prefixes, infixes, and suffixes. These

are used to express tense, aspect, and subject agreement e.g. ugutikiaa (to tick or mark). However, it is evident that there is inadequate emphasis on how borrowed nouns and verbs from English get adopted within the igikuria morphophonological system.

LITERATURE REVIEW

Existing research shows that inflectional morphology is governed by phonological rules which shape how morphemes are realized in different contexts (Mukanda, 2022). This normally results into systematic variation (Ralli, 2006). These variations are majorly influenced by phonological conditioning, where the form of a morpheme adapts to surrounding sounds. Cross-linguistic studies reveal that languages differ in how they realize these processes. For example, Josiah and Udoudom (2012) find that English relies mainly on suffixation whereas other languages such as Ibibio, employ prefixation alongside tonal and vowel harmony processes. This reflects typological diversity.

In Bantu languages, morphophonological processes mostly involve vowel modification, consonant insertion, and harmony to maintain well-formed structures as observed in Sepedi (Letsoalo, 2023). Similarly, Okoroji and Uchechukwu (2023) observe that the interaction between morphology and phonology in languages such as Igbo, reflects the complexity of these processes beyond segmental features. Studies on borrowed lexical items further indicate that non-native forms undergo phonological adaptation to fit the receiving language's sound system (Umar, 2020). This often happens through substitution of unfamiliar sounds (Mose, 2020). However, such research mainly tends to focus on phonological changes, with limited attention to how morphological processes influence borrowed forms.

Despite these insights, gaps still remain, particularly in the study of Bantu languages and the interaction between morphology and phonology in borrowed nouns. The current study addresses this gap by examining morphophonological processes in Igikuria borrowed nouns from English.

THEORETICAL FRAMEWORK.

The study employed Lexical Phonology and Morphology (LPM) Theory by Kiparsky (1985) as the analytical tool. This is a theoretical framework that explains the interaction between phonology and morphology within a stratified lexicon. It posits that word formation and phonological rules apply in a cyclic manner within different levels (strata) of the lexicon before being subjected to post-lexical phonological processes. The theory distinguishes between lexical rules which interact with morphology, and post-lexical rules, which apply after word formation. This theory also envisages morphophonemic alternations, providing insights into how phonological processes are conditioned by morphological structure.

Within the Lexical Phonology and Morphology (LPM) framework, this study adopted the tenet of the cyclic interaction of morphology and phonology tenet. This tenet envisages that morphological derivation triggers phonological modifications, in a cyclic manner at each lexical stratum before advancing to the next level. The lexicon is structured into hierarchical strata, where distinct morphological and phonological processes operate. In this framework, phonological rules do apply cyclically which affects only newly derived structures rather than reapplying to the entire word. This distinction was utilized to examine how borrowed nouns and verbs in Igikuria undergo morphological and phonological adaptation.

MATERIALS AND METHOD

A descriptive research design with a qualitative approach as suggested by Selinger and Shohamy (2013) was adopted. The qualitative approach of this descriptive research design was used to identify the morphophonological processes and patterns, in the formation of Igikuria borrowed nouns and verbs. This involved collecting, analyzing, and interpreting data. The dependent variable was the morphophonological processes observed in the formation of borrowed nouns. This variable was analyzed to explore the patterns and rules governing how borrowed noun and verb are adopted in Igikuria. The independent variables were borrowed nouns and verbs from English in Igikuria. They were used to assist examining morphophonological processes.

The study was conducted at Kehancha Chini in Kuria West Sub-County which is in Migori County. This site was ideal due to its proximity to kehancha town where official language is English. This can lead to interactions in various semantic fields where Igikuria can borrow from English. The study focused on native speakers of Igikuria as the target population. As per Kenya Population and Housing Census in 2019, Kehancha Chini has an estimated population of 22,194 people. The study recruited both male and female participants, all aged eighteen years and above to ensure a representative sample of adult speakers who actively use and contribute to morphophonological adaptation of borrowed nouns and verbs from English in Igikuria.

This study employed purposive sampling which allowed intentional selection of participants based on their relevance to the research. Participants who are native speakers of Igikuria were identified and recruited. These participants possess linguistic competence necessary for providing insightful data on the morphophonological adaptation of borrowed nouns and verbs. The sample size was 24 respondents. This number was considered to be adequate for data collection, to ensure that the study captured meaningful linguistic patterns without making unnecessary redundancy. Milroy and Gordon (2008) suggest that a sample size as small as 24 respondents is sufficient for generalization in linguistic research.

The adopted respondents generated 24 borrowed nouns and verbs in English, from which five borrowed nouns and five borrowed verbs were analyzed for discussion. The lexical items were drawn from semantic fields that exhibited linguistic dynamism such as: Religion, science and technology, clothing, administration, transport, business, household items, education, medicine, and food. The research instruments were unstructured interview schedule, focus group discussion and a tape recorder. The study involved 10 native Igikuria speakers from Ntimaru west in Kuria East Sub County for a pilot study. This allowed the feasibility of conducting a comprehensive study.

Content validity as suggested by Sireci (1998), was used where the interview schedule and open-ended questions were designed based on the researcher's knowledge in the field of morphophonology and Igikuria language. Test-retest method as suggested by Berchtold (2016), was used to assess the reliability of these instruments. Semi-structured interviews and focus group discussions were conducted in four sessions lasting for ten minutes. The 6 informants in each session were interviewed separately. Additionally, focus group discussions were conducted with 5 participants to expand on ideas and engage in a productive exchange of viewpoints. Coding was made concerning the borrowed nouns and verbs before the analysis. Informed consent was sought when dealing with informants. The concerned respondents were assured that the information given was only used for research purposes.

RESULTS AND DISCUSSION

This section examines how morphological structures and phonological rules interact in Igikuria borrowed nouns and verbs from English. The discussion shows how each morphological derivation triggers phonological changes. The analysis was further based on exploring how morphology influences phonological processes.

5.1 Phonological Substitution & Morphological Epenthesis of Borrowed Nouns

In this study, morphophonological substitution involves replacing foreign phonemes with the closest equivalent ones in Igikuria's phonemic inventory. This is intended to maintain phonological compatibility. Epenthesis entails inserting vowels to break up impermissible consonant clusters to align the borrowed noun with Igikuria's preferred CV syllable structure. Example 33 is used for illustration.

(1) Igikuria English

Ebhaasiwati Passward

Example 33 indicates how the English noun password is realized in Igikuria as ebhaasiwati. This reflects sound replacement and vowel insertion to fit both phonological and morphological constraints. This is presented in table 5.1 to illustrate how the adaptations occur at the intersection of morphological integration and phonological restructuring.

Table 5. 1 Morphophonological Interaction in Igikuria Borrowed Noun: Ebhaasiwati from English: Passward

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
Password (English) /ˈpɑːs.wɜːd/	Ebhaasiwati (Igikuria)	/é.bàː.sí.wà.tì/	**Consonant substitution:** p → bh	The English consonant **/p/** changes to **bh**
			Vowel epenthesis: a, i	Vowels are inserted to break clusters and reshape the borrowed root
			Noun class prefix: e-	Prefix **e-** attaches to the adapted root to conforms to Igikuria phonological structure.

In table 5.1, the borrowing illustrates the cyclic interaction of morphology and phonology as postulated in the Lexical Phonology and Morphology (LPM) Theory. According to this framework, morphological and phonological processes operate in sequential cyclic stages within the lexicon. This enables phonological rules to apply at multiple levels of morphological derivation.

In Igikuria, the borrowed noun enters the lexicon in its root form without immediate structural alteration. At this point, the noun exists as a lexical loan pending integration into the Igikuria's morphophonological system. Thereafter, phonological substitution and epenthesis occur to resolve phonotactic violations. Specifically, the English voiceless bilabial /p/ is replaced using Igikuria voiced bilabial /b/ due to the absence of /p/ in native Igikuria phoneme inventory.

Additionally, the English consonant sequence /sw/ goes through vowel epenthesis by introducing an /i/ to yield /siwa/. This satisfies Igikuria's preference for open syllables and avoidance of complex consonant clusters. It also facilitates prosodic conformity to Igikuria's CV syllable structure.

Consequently, morphological integration occurs through the addition of the noun prefix e- to yield ebhaasiwati (/ébàːsíwàtì/). This morphological operation not only appends a prefix but also interacts with phonological rules to adjust vowel length, tone patterns, and syllable timing. The prefix triggers tone assignment which is consistent with Igikuria's morphological tone rules.

In line with LPM Theory, phonological substitution and epenthesis operate at the lexical phonology level then followed by morphological affixation, which in turn prompts a further phonological cycle for tone assignment and syllable adjustment. This finding is in agreement with Ralli (2006) who offers valuable insights on how morphophonological patterns operate within Indo-European languages, especially in inflectional morphology in which systematic phonological adjustments are triggered by morphological requirements. In the current study, ebhaasiwati underscores the theoretical claim that morphological and phonological rules are interdependent which are cyclically ordered in the integration of borrowed nouns. This is further illustrated with example 2.

(2) Igikuria English

Umuchibhu Chief

In example 2, it is evident that when the English noun Chief is borrowed into Igikuria, it changes to Umuchibhu. Phonological substitution replaces sounds which are not found in Igikuria with the closest available equivalents. This is presented in table 5.2 as shown.

Table 5.2 Morphophonological Interaction in Igikuria Borrowed Noun

Source Language	Target Language	IPA	Morphophonological Element	Morphophonological Interaction
Chief (English) /tʃiːf/	Umuchibhu (Igikuria)	/u.mu.tʃi.βu/	**Noun class prefix:** u-mu-	The prefix **u-mu-** places the borrowed noun within the Igikuria noun-class system.
			Consonant substitution: /f/ → /β/	The English fricative **/f/** shifts to the bilabial fricative **/β/**.
			Epenthetic vowels: u, i	Vowels are inserted to break the final consonant cluster.

In table 5.2, the English noun Chief is changed into the Igikuria form Umuchibhu. The prefix u-mu- is added to the root to align the word with the appropriate noun class. This morphological addition activates phonological adjustments to ensure that the entire word conforms to Igikuria's phonotactic rules. The phonological substitution replaces sounds not present in Igikuria. The English final /f/ which is not permitted in Igikuria in final position is replaced with /β/, a labial sound available in the Igikuria phonemic inventory. The initial affricate /tʃ/ ("ch") is retained because Igikuria has a close equivalent.

Consequently, vowels are inserted between consonants to avoid clusters and word-final consonants. This produces the four syllables u–mu–chi–bhu. Each of these syllables follows the CV pattern to ensure the phonological compatibility. The result, Umuchibhu, is a fully integrated Igikuria noun.

5.2 Consonant Cluster Simplification and Final Vowel Insertion of Borrowed Nouns

Igikuria adapts borrowed nouns by addressing disallowed consonant clusters and final consonants. This happens through cluster simplification and final vowel insertion. Since Igikuria favors an open syllable (CV) structure and prohibits clusters or word-final consonants, borrowed nouns from English undergo phonological adjustments. In this case, cluster simplification inserts vowels to separate consonants while final vowel insertion removes closed syllables. This ensures conformity with Igikuria's prosodic system. Example 3 illustrates these processes.

(3) Igikuria English

Iribhooti Report

Example 3 introduces the Igikuria borrowed noun Iribhooti and its source English noun report. For clarity and systematic comparison, the morphophonological pattern observed is presented in table 3.

Table 5.3 Consonant Cluster Simplification and Final Vowel Insertion in Igikuria Borrowed Nouns

Source Language	Target Language	IPA	Morphophonological Element	Morphophonological Interaction
Report (English) /rɪˈpɔːrt/	Iribhoti (Igikuria)	/i.ri.βoː.ti/	**Noun class prefix:** i-	The prefix **i-** assigns the borrowed noun to an Igikuria noun class.
			Consonant substitution: /p/ → /β/	Bilabial stop **/p/** surfaces as the bilabial fricative **/β/**.
			Cluster simplification: /rt/ → /ti/	The final cluster **/rt/** resolves through vowel epenthesis and consonant adjustment.

Table 5.3 shows that the English final cluster /rt/ poses two problems: it contains two consonants in succession, and it ends the word with a consonant. Igikuria borrows and resolves this through consonant cluster simplification. This involves breaking the sequence into separate syllables by inserting an epenthetic vowel between the consonants. This insertion opens the word-final syllable, bringing it into conformity with Igikuria phonotactic rules.

At the same time, the adaptation of the borrowed noun requires phonological substitution to replace sounds disfavored in Igikuria. The English voiceless bilabial stop /p/ is replaced with /β/ which is a phoneme more compatible with Igikuria's phonological system. This substitution occurs in tandem with the epenthetic adjustments to ensure that every resulting syllable is of the CV type. The transformation from /rɪˈpɔːrt/ to /i.ri.βo:.ti/ produces the four-syllable sequence i–ri-bhoo-ti, which is phonotactically well-formed.

These phonological processes do not occur in isolation. They get triggered by morphological integration such as the addition of the noun class prefix i-, to embed the borrowed form into Igikuria's grammatical system. The interaction between morphological and phonological rules exemplifies the cyclic principle in the Lexical Phonology and Morphology (LPM) Theory, which envisages that each morphological modification sets the stage for phonological adjustments. This is in agreement with Okoroji and Uchechukwu (2023) who observe that interaction between morphology and phonology in languages such as Igbo, reflects the complexity of these processes beyond segmental features. In the current study, the outcome is a fully naturalized Igikuria form that retains the meaning of the noun while fitting into the language's structure. Example 4 is used for further illustration.

(4) Igikuria English

EIfaeli file

In example 4, the English noun file is borrowed into Igikuria as Efaeli The change reflects the same morphophonological adaptation processes described in table 5.4.

Table 5.4 Morphophonological Adaptation of the English Noun File into Igikuria

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
File (English) /faɪl/	Efaeli (Igikuria)	/e.fa.e.li/	**Noun class prefix:** e-	The prefix **e-** incorporates the borrowed noun into the Igikuria
			Final vowel insertion: -i	Epenthetic vowel **/i/** follows the final **/l/** to produce an open CV syllable pattern.

The data in table 5.4 reveals how Igikuria adapts an English noun through morphological and phonological operations. The English noun file (/faɪl/) surfaces in Igikuria as Efaeli (/e.fa.e.li/). This change aligns with the expectations of Lexical Phonology and Morphology (LPM) Theory.

Igikuria assigns the English noun file to the prefix e- in order to integrate the borrowed noun into its grammatical framework. This initiates a new phonological cycle, consistent with the cyclic interaction between morphology and phonology proposed in LPM. Once prefixation has applied, phonological restructuring then follows. The English form ends with the consonant /l/ which creates a closed syllable (CVC) impermissible in Igikuria. To resolve this violation, the language inserts an epenthetic vowel /i/ after /l/. This process opens the syllable to ensure conformity with the dominant CV syllable pattern.

Consequently, the English diphthong /aɪ/ is not retained as a single syllabic unit. This is because Igikuria phonotactics do not allow vowel glides within one syllable. This is in agreement with Mose (2020) who notices that that non-native forms undergo phonological adaptation to fit the receiving language's sound system. In the

current study, the diphthong is separated into two vowels, /a.e/, each forming an independent syllable. This adjustment results in the sequence fa–e which maintains syllable simplicity. The final form Efaeli conforms fully to Igikuria phonological constraints, exhibiting the syllable structure e–fa–e–li.

5.3 Prefixation + Compound Noun Formation

In this study, prefixation combined with compound noun formation was analyzed as a strategy through which Igikuria incorporates borrowed nouns. In this case, a noun class prefix is attached to situate the borrowed nouns within the Igikuria nominal classification framework. Thereafter, two or more lexical elements are fused to form a compound noun. This produces a single unified nominal unit. Example 5 indicates how prefixation and compounding operate together in the adaptation of borrowed nouns.

(5) Igikuria Gloss

Omohedimasita Headmaster

Example 5 shows that the internal structure of Omohedimasita demonstrates both prefixal and suffixal modifications. This contributes to the grammatical shift from a more basic form to a fully specified noun as outlined in table 5.5.

Table 5.5 Cyclic Interaction of Morphology and Phonology in Omohedimasita from English: Headmaster

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
Headmaster (English) /hɛd.mɑː.stə/	Omohedimasita (Igikuria)	/ɔmɔ.hɛ.di.ma.si.ta/	**Prefixation:** o- + mo-	Prefixes **o-** and **mo-** attached to incorporate the borrowed compound
			Compound formation: hedi + masita	Two adapted stems combine to form a single compound noun.
			Epenthetic vowels and resyllabification	Vowel insertion. Resyllabification, and a final vowel **-a** for stabilization.

In table 5.5, the borrowing of the English compound noun headmaster into Igikuria as omohedimasita indicates the cyclic interaction of morphology and phonology as proposed in Lexical Phonology and Morphology (LPM) Theory. The derivation begins with prefixation. The prefix mo- is connected to borrowed root, accompanied by the initial vowel o-. This produces the full prefix omo-. Morphologically, this step assigns the noun to the human class which ensures agreement with animate referents in Igikuria. This is in line with Maroa (2012) who observes that the nouns referring to people can take one class prefix, while objects or abstract ideas take the other to match markers appearing on verbs, adjectives, and pronouns to signal agreement. Phonologically, the addition of the initial vowel is meant to prevent the noun from starting with a consonant cluster, which would violate the CV syllable structure preferred in Igikuria. The vowel o acts as a morphophonological support element rather than a semantically loaded morpheme.

Further, compounding takes place as the two roots hedi (from head) and masita (from master) are fused into a single stem, hedimasita. Morphologically, this operation creates a new lexical unit to capture the meaning of the English source noun. Phonologically, the fusion triggers re-syllabification to ensure that the resulting stem aligns with the CV template that dominates Igikuria syllable structure.

Finally, the suffix -a is introduced which morphologically satisfies the requirement that all Igikuria nouns end in a vowel. Phonologically, it ensures prosodic conformity and stabilizes the noun's syllable structure. The

interaction between morphology and phonology is rule-governed where morphology creates new structures and phonology adjusts them in turn.

5.4 Morphophonological Interaction in Igikuria Borrowed Verbs from English

Verbs borrowed from English are adapted into Igikuria through the interplay of morphological and phonological processes. English verbs do not inherently conform to the morphotactic requirements of Igikuria verb systems. Therefore, their integration into Igikuria necessitates structural modifications. Example 6 is used for illustration.

(6) Igikuria Gloss

Ogotaipuu type

In example 6, the borrowing of the English noun type (/taɪp/) into Igikuria as ogotaipu (/ogotaipu/) shows a transformation that takes place when borrowed verbs are integrated into Igikuria. This highlights how morphological modification triggers corresponding phonological adjustments which is consistent with the principles of Lexical Phonology and Morphology (LPM) Theory. The progression of these changes is outlined in table 5.6.

Table 5.6 Adaptation of English Verb Type into Igikuria

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
Type (English) /taɪp/	Ogotaipuu (Igikuria)	/o.go.ta.i.pu:/	**Infinitive prefix**: ogo-	The verbal marker **ogo-** attaches to the borrowed root, while vowels are inserted to eliminate final consonant codas
			Root adaptation: taip	Inserted vowels reshape the English consonant-final root.

As illustrated in table 5.6, the adaptation of the English verb type into ogotaipuu in Igikuria demonstrates a structured interaction between morphology and phonology. To integrate borrowed verbs into the Igikuria, a verbal prefix ogo- is attached, signaling infinitival verbal status of Igikuria. This morphological operation sets the stage for phonological modification.

The introduction of ogo- reshapes the prosodic template of the borrowed verb where phonological rules apply to repair illicit structures. The final consonant in type is resolved through vowel insertion which yields the sequence taipuu. This adjustment results in a string of open syllables which is consistent with the consonant–vowel alternation characteristic of Igikuria. The resulting form, ogotaipuu, is therefore compliant with both the morphological and phonological constraints of the language.

Morphology and phonology do not function independently in this process. Morphology initiates the adaptation by introducing the verbal prefix, while phonology responds by resolving segmental and syllabic violations which are introduced by the borrowed root. This ensures that each level of representation is optimized before proceeding to the next, a core assumption of Lexical Phonology and Morphology Theory.

This analysis supports Letsoalo (2023), who notices in Bantu languages that, the attachment of verbal morphology triggers vowel alternations and epenthesis which maintains phonological harmony. The same principle applies in Igikuria where morphological structure determines the shape of the word, while phonology fine-tunes it to ensure surface well-formedness. This is further illustrated with example 7.

(7) Igikuria English

Ogosebuu save

Example 7 illustrates the interaction between morphology and phonology in the adaptation of foreign verbs. Verbs are marked for the infinitive using the prefix o-. Consequently, phonological repair strategies are applied to reshape the borrowed verb as shown in table 5.7.

Table 5.7 Adaptation of the English Verb Save into Igikuria

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
Save (English) /seɪv/	Ogosebuu (Igikuria)	/o.go.se.bu:/	Infinitive prefix: **o-**	The infinitive marker **o-** attaches to the borrowed root.
			Root adaptation: **seb**	The English diphthong **/eɪ/** undergoes monophthongization → **/e/** and a final vowel **-u**: is inserted.

As shown in table 5.7, the morphologically, the prefix o- is obligatorily attached to the borrowed stem. This marks the verb as an infinitive verb within the Igikuria verbal system. Phonologically, this morphological integration triggers repair strategies to ensure conformity with Igikuria phonotactics. English diphthong /eɪ/ is simplified to the monophthong /e/ which reflects the absence of complex diphthongs in Igikuria vowel inventory. The final consonant /v/, which violates the open-syllable constraint of Igikuria, is adapted to /b/ then followed by an epenthetic vowel /u/, yielding the sequence -buu. This restructuring ensures that all syllables in the borrowed end in vowel to conform to the preferred CV pattern of the language.

The interaction between morphology and phonology in this case is sequential. This supports Mukanda (2022) who posits that morphology is governed by phonological rules which shape how morphemes are realized in different contexts. Morphology initiates the adaptation through prefixation, thereafter, phonology applies a series of adjustments to repair illicit structures. This ordering reflects the cyclic interaction envisaged in Lexical Phonology and Morphology (LPM) Theory, in which each morphological operation feeds phonological rules that apply at the same stratum and do not reapply at higher levels.

5.5 Morphophonological Integration (Final Vowel Insertion)

Igikuria incorporates borrowed verbs by adding a final vowel to align with its preference for vowel-final verb structures. Since many borrowed verbs don't fit this native pattern, they undergo morphophonological changes in order to conform. The analysis, framed within the Lexical Phonology and Morphology (LPM) Theory, explored how final vowel insertion interacts with other phonological adjustments, using example 8 for illustration.

(8) Igikuria English

Ugukopii Copy

In example 8, the borrowing of the English noun copy /kɔpi/ into Igikuria as Ugukopii illustrates the interaction between morphology and phonology in the adaptation of borrowed verb. This interaction is summarized in table 5.8.

Table 5.8 Cyclic Morphophonological Interaction in Ugukopii (from English: Copy)

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
	Ugukopii (Igikuria)	/u.gu.kɔ.pi:/	**Nominal prefix**: ugu-	The prefix **ugu-** attaches to the borrowed noun.

Copy (English) /kɔpi/			**Root adaptation:** kopi	The final vowel is lengthened and syllables restructured.

In table 5.8, the English verb copy ends in a vowel making it superficially compatible with Igikuria phonotactics. It lacks the obligatory noun class prefix required for all Igikuria verbs. This morphological deficiency necessitates the insertion of a class-marking prefix. Accordingly, the prefix ugu- is attached, producing the form Ugukopii. This morphological operation situates the borrowed verb within the Igikuria verb class system. In this case, verbs must be overtly marked for class membership. Prefix insertion is therefore a grammatically motivated process rather than a phonological repair strategy.

The morphological modification subsequently triggers phonological adjustments. The addition of ugu- increases the syllable count and ensures conformity with Igikuria's preferred consonant-vowel (CV) syllable structure. In addition, the final vowel is lengthened to -ii, which yields the phonetic form /ugukopii/. This is in agreement with Umar (2020) who supports the fact that non-native forms undergo phonological adaptation to fit the receiving language's sound system. This vowel lengthening enhances phonological harmony and aligns the borrowed verb with native Igikuria verb patterns.

This adaptation pattern exemplifies the cyclic interaction proposed by the Lexical Phonology and Morphology (LPM) Theory. This theory postulates that morphological operations precede and condition phonological processes.

Ultimately, Ugukopii illustrates how prefix insertion, vowel lengthening, and syllable restructuring function as productive strategies in Igikuria's verb adaptation system. This highlights the explanatory power of the LPM framework, by indicating that borrowed verbs undergo ordered rule-governed transformations. Through this cyclic interaction, Ugukopii therefore emerges as a fully integrated lexical item, both morphologically licensed and phonologically natural within the Igikuria lexicon.

5.6 Epenthesis and Syllable Restructuring

Igikuria adapts borrowed verbs that contain consonant clusters not permitted in its phonological system. Igikuria favors a consonant-vowel (CV) syllable structure. These clusters are resolved through vowel insertion (epenthesis) and subsequent syllable restructuring as shown in example 9.

(9) Igikuria Gloss

Ogosikanii Scan

In example 9, the adaptation of the English verb scan /skæn/ into Igikuria as Ogosikanii illustrates how consonant clusters are modified to conform to Igikuria phonotactics. This interaction is summarized in table 5.9.

Table 5.9: Morphophonological Adaptation in Ogosikanii (from English: Scan)

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
Scan (English) /skæn/	Ogosikanii (Igikuria)	/o.go.si.ka.ni:/	Prefixation: ogo-	The prefix is attached to integrate the borrowed form
			Epenthesis: /i/	Vowel is inserted to break consonant cluster /sk/ → sikani
			Final vowel lengthening	Final vowel is extended to -ii for phonological conformity
			Syllable restructuring	Cluster is resolved into CV syllables (o-go-si-ka-nii)

As presented in table 5.9, the English verb scan begins with a consonant cluster /sk/, not permissible in Igikuria phonotactics. Igikuria therefore employs epenthesis by inserting a vowel /i/ between the consonants, resulting in sikani. This process ensures conformity with the preferred CV syllable structure. Prefixation occurs through the attachment of ogo-, to integrate the borrowed form into the Igikuria class system. This is a morphologically driven process, as borrowed verbs must conform to the grammatical requirements of the language.

Consequently, the borrowed form undergoes final vowel insertion and lengthening to produce suffix -ii. This modification ensures that the word ends in a vowel which aligns with native phonological patterns. The end result is a fully restructured form (o-go-si-ka-nii) which conforms to Igikuria syllable constraints. This adaptation of Ogosikanii demonstrates the systematic interaction between morphology and phonology. This is in line with Tarigan and Sembiring, (2023) who agree that borrowed nouns and verbs undergo adjustments to align with phonological as well as morphological structures of a recipient language. From an LPM perspective, morphological processes such as prefixation occur first to create the structural base upon which phonological processes operate. Epenthesis is meant to resolve phonotactic violations, while vowel lengthening and syllable restructuring are intended to ensure phonological well-formedness.

5.7 Morphophonological Adaptation through Vowel Substitution and Syllable Restructuring

Igikuria adapts borrowed verbs that contain vowel and syllable patterns which are not compatible with its phonological system. This happens through vowel substitution and syllable restructuring to conform to the preferred consonant-vowel (CV) syllable structure as shown in example 10

(10) Igikuria English

Okorejesita To register

In example 10, the adaptation of the English verb register /ˈrɛdʒɪstə/ into Igikuria as Okorejesita illustrates morphophonological adjustments as summarized in table 5.10.

Table 10: Vowel Substitution and Syllable Restructuring in Okorejesita (from English: Register)

Source Language	**Target Language**	**IPA**	**Morphophonological Element**	**Morphophonological Interaction**
Register (English) /ˈrɛdʒɪstə/	Okorejesita (Igikuria)	/o.ko.re.je.si.ta/	Prefixation: oko-	Class-marking prefix attaches to integrate the verb
			Vowel substitution	/ɛ/ → /e/, /ɪ/ → /i/ to match Igikuria vowel system
			Epenthesis	Vowels inserted to break consonant clusters
			Consonant adaptation	/dʒ/ realized as /j/ or /s/ for phonological compatibility
			Syllable restructuring	Word reorganized into CV syllables
			Final vowel insertion	Word ends in vowel -a to meet phonotactic constraints

As indicated in table 10, the English verb register contains complex consonant clusters and vowel qualities which are not fully compatible with Igikuria phonology. To accommodate this, prefixation occurs first through the addition of oko-, to integrate the borrowed form into the Igikuria verb class system. This is a grammatically

motivated process, since verbs must carry appropriate class marking. Additionally, vowel substitution takes place for English vowels such as /ɛ/ and /ɪ/ to be

Finally, the verb undergoes syllable restructuring to conform to a sequence of open syllables (o-ko-re-je-si-ta), and final vowel insertion to ensure that the verb ends in a vowel as required in Igikuria. As envisaged in the LPM framework, this example reveals that borrowing involves systematic modification to meet both grammatical and phonological constraints of the receiving language.

CONCLUSIONS

This study has examined how Igikuria incorporates borrowed nouns and verbs into its structure. The analysis focused on the way morphological and phonological components interact. The findings show that processes such as affixation allow borrowed nouns and verbs to adopt Igikuria prefixes and suffixes. These processes bring the borrowed items in line with the language's grammatical system. It also emerged that the addition of morphological affixes often prompts phonological changes. This underscores a strong and consistent relationship between the morphological and phonological processes in the adaptation of borrowed nouns and verbs in Igikuria from English.

Ethical Consideration: Permission was granted to conduct this research from the main project at Kenyatta University graduate studies

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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