

## First Language Attrition in the Native Environment

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First language (L1) attrition is the disintegration of a first language as a result of second language domination. Even though L1 attrition literature on adult immigrants is abundant, little is known of people going through attrition in the native environment, particularly children. Similarly, though there is rich literature on other linguistic elements there is not much on phonetics and phonology. This paper argues for L1 attrition in the native environment by children who attend private English-medium schools for whom English is a dominant language, a language they acquired as a second language, like those in Botswana. The language situation in Botswana where English is afforded the high and prestigious status immensely contributes to the situation. In addition to reviewing literature on L1 attrition in phonetics, the paper offers an overview discussion of the language situation in Botswana as well as the Setswana penultimate syllable, a phonetic element from which L1 attrition can be researched. The paper could provide a base for in-depth research on L1 attrition in the length of the Setswana penultimate syllable.

### 1. Introduction

Quite often native speakers of a language who have migrated to a different country experience inability to perform in their native language, especially in the production and perception of the native language. Moving to a foreign country leaves the immigrant without a choice but to learn the foreign language as a means of survival in the new environment. As the immigrant becomes proficient in the second language (L2) and this language becomes dominant in usage, he or she loses fluency and/or proficiency in the first language (L1). This is referred to as first language attrition (Seliger & Vago 1991). Hence, L1 attrition is a result of a decrease in L1 use and, in most cases, L1 contact. It is worth noting that the same process of losing L1 or a portion of it, though rare, is noticed in the speech of native speakers (NSs) who have never lived outside their native environment. In view of this, De Bot and Hulsen (2002) divide language attrition into: L1 loss in an L1 environment, L1 loss in an L2 environment, L2 loss in an L1 environment and L2 loss in an L2 environment.

In spite of the acknowledgement that L1 can be lost in the L1 environment, little is known of L1 attrition in the native environment. Yet, literature on adults immersed in an L2 environment (immigrants) is abundant (e.g. Major 1992; Köpke 2004; Schmid et al. 2004; De Leeuw et al. 2011). It is also worth noting that, although there is a proliferation of L1 attrition research on other linguistic elements (see Schmid et al. 2004; Köpke et al. 2007), only a small proportion is on phonetics/phonology (Flege 1987; Major 1992; Flege 2000; Mennen 2004; De Leeuw et al. 2011). It is therefore necessary to bridge this gap by investigating L1 attrition in phonetics/phonology by children who have never lived outside their native country.

This paper argues for the investigation of L1 attrition by Botswana children who acquired English as an L2, attend private English-medium schools and have never lived outside their native environment. For this particular group English is the dominant language as it is the language they mostly use at school where they spend most of their daytime. The phonetic/phonological variable of investigation is the lengthening of the penultimate syllable

in Setswana because stress is manifested in it (University of Botswana 1999). This paper postulates a change in the length of the penultimate syllable in the speech of these children due to influence from English because English stress does not require the lengthening of the penultimate syllable. An investigation of this matter will not only enrich L1 attrition literature but will also provide insightful information of the L2 learning experiences on L1.

## 2. Status of English in Botswana

Botswana is a landlocked country situated in Southern Africa. She shares the border with Namibia, South Africa, Zimbabwe and Zambia. Botswana, formerly known as the Bechuanaland Protectorate is a former British colony. Upon the country's attainment of independence in 1966, English became the official language and Setswana the national language. It is worth noting that there are different Setswana varieties/dialects spoken in Botswana. As the official language, English permeates the social, economic and cultural lives of Botswana (Nyati-Ramahobo 2004). English is the medium of communication in all government correspondence and records. It is the language which is used in most official and formal transactions in government, business and the religious sector. For example, even though both Setswana and English are used in the media, the use of English outweighs that of Setswana. All the newspapers are in English, except the government *Daily News* and *Mmegi*, which have a small section in Setswana. The same applies to radio stations. Of all the five radio stations in the country, only one uses Setswana as its main medium of communication. The high prestige of English has resulted in negative attitudes towards Setswana and other local languages as people favour it over their native languages. One who speaks English well is regarded as intelligent and belonging to a high social class (Mathangwane 2008).

Since English plays a major role in almost all aspects of life in Botswana, knowledge of the language is necessary for one to become successful and function globally (Nyati-Ramahobo 2004). This therefore implies that a good system of learning all aspects of English language must be in place. For this reason the language education policy recommends English as the medium of instruction from primary level of education to tertiary level. Placing more emphasis on English would allow students to experience and acquire the language of technology, social mobility and globalisation, consequently enabling Botswana to be competitive internationally. Mathangwane (2008: 28) states that "Setswana is important for social mobility and English for economic advancement".

As a way of ensuring that competence in English is maintained, a pass in English becomes a prerequisite for admission to tertiary schools (Mathangwane 2008). Students who fail English even if they pass other subjects, do not get a tertiary admission. The effect of this is a large demand for private English-medium schools where parents pay money for their children to become fluent and proficient in English, the language of success and upper social class. The Botswana Telephone Directory (2013 edition) lists 74 private English-medium schools. This is a huge number for a population of just over two million (as per the 2012 census). The desire for the children to become fluent in English has resulted in an emerging trend where Setswana is the home language when children are young. However, when they start school parents prefer to communicate to their children mostly in English though at times characterised by code-switching with Setswana. The dominant use of English is seen as a way of enhancing the learning of the language. Due to this, competence in Setswana has deteriorated and English features are more noticeable in the production of Setswana. This is a clear case of first language attrition in the native environment. A number of studies have demonstrated that a foreign accent indicates that the speaker is different (White & Li 1991; Bresnahan & Kim 1993). This leads to negative attitude towards the speaker.

The linguistic situation in Botswana, with English as the language of power and prestige, may be seen as one of diglossia. Originally diglossia referred to two varieties of the same

language used in the society for different purposes (Romaine 1995), ranked as high value (H) or low value (L). The L variety is acquired at home and is reserved for informal domains, whereas the H is used in formal domains such as education, government, religious and business sectors. Romaine further states that H is a prerequisite for entry at institutions. Although English and Setswana are not related languages, their roles can be considered as that of the H variety and that of the L variety, respectively, of a typical diglossic context. It is arguable that the status of English will inevitably lead to language shift. According to Romaine (1995) the signs of looming language shift are when a once dominant language in society is replaced by another language and usage declines. In addition, fluency in the other language increases as the younger generation prefers to speak it. Though Setswana is still the dominant language for the majority of the population, language shift is evident in the young generation especially those who attend, or have attended, private English-medium schools. This group prefers speaking English as they are proficient in it compared to Setswana. This makes English their dominant language. Botswana's language situation is a clear sign of diglossia and so makes Botswana an ideal location to test theories of L1 attrition in phonology in privately English-medium educated children.

### **3. Defining first-language attrition**

First language attrition is defined differently by researchers depending on the context of their study. Pavlenko (2004: 47) defines first language attrition as the "loss of some L1 elements seen in the inability to produce, perceive, or recognise particular rules, lexical items, concepts or categorical distinctions due to L2 influence". Köpke (2004) takes it further and states that L1 attrition involves temporary or permanent changes to the first language as a result of overuse of the second language. It is perhaps for this reason that some scholars (e.g. Cook 2003) use phrases such as 'effects of L2 on L1' and 'changes of L1 due to L2'. Similarly, Seliger (1996: 606) refers to attrition as "the temporary or permanent loss of language ability as reflected in a speaker's performance or in his or her inability to make grammaticality judgements that would be consistent with native speaker monolinguals at the same age and stage of language development".

Unlike Pavlenko (2004) or Köpke (2004), who tie attrition to L2 influence, Seliger's (1996) definition is open to other causes of language loss other than L2. What is notable about this definition is that it points out the importance of comparing the attriter to monolinguals of the same age and stage of language development. However, this might prove difficult as almost everyone has some knowledge of L2. This is something that Cook (2003) acknowledges. He is of the view that the term 'pure monolinguals' should not be used in comparison to L2 users, and that the terms minimal and maximal bilinguals should be used instead. With this in mind, the comparison can be between the attriter and a native speaker whose proficiency in L2 is very low.

It is noteworthy that in most cases L1 attrition is seen as a by-product of a speaker's contact with a second language where input and use of L1 diminishes to a critical point. In this case it is a phenomenon relevant to bilinguals where bilingualism is "knowledge and command of two or more languages, albeit to different degrees" (Montrul 2008: 17). In line with this, Ecke (2004) defines L1 attrition as the deterioration of any native language skill in a healthy bilingual. The use of the term 'healthy' implies that L1 loss maybe due to health reasons such as aphasia (damage to the brain). This type of language loss is referred to as pathological. For this reason, De Leeuw et al. (2011) state that L1 attrition is the non-pathological loss of a language which is not age related, where 'age related' refers to loss of language due to old age. Similarly, loss of a language can be due to extreme cases of isolation from human contact (Major 1992).

In light of this literature, the L1 attrition definition chosen for the proposed study of L1 attrition by children attending private English-medium schools in Botswana is non-pathological, with loss due neither to old age nor to lack of human contact. L1 attrition in this case is the temporary or permanent modifications that a first language undergoes when a second language is acquired, especially where L2 becomes the dominant language of use. This is in line with the focus on private English-medium children for whom English is a dominant language of use. Therefore the attrition may be temporary or permanent especially when this happens in the native environment.

#### **4. L1 attrition on phonetics/phonology**

As mentioned in Section 1, there is a small percentage of studies on phonetics/phonology in the L1 attrition literature (Flege 1987; Major 1992; Mennen 2004; De Leeuw et al. 2011). These studies have shown divergence in the phonetic elements of the L1 system due to acquisition of L2. Flege (1987) examined the voice onset time (VOT) of the voiceless plosive /t/ of NSs of French living in the United States and NSs of American English living in France. The participants were late consecutive bilinguals who acquired the L2 in adulthood. The findings indicated a bi-directional effect, as in both groups the VOT of their L1 was similar to that of L2. For the NSs of French it increased in the direction of the longer VOT values in American English. For the NSs of American English it was the opposite of the above. Flege (1987) concluded that the phonetic properties in L1 and L2 were merged. De Leeuw et al. (2011) question this conclusion. They are of the view that the merging of the L1 and L2 phonetic properties did not apply to all the participants. The researchers concluded that the high standard deviation in the results is symbolic of interpersonal variation in the bilinguals. Some participants experienced L1 attrition whereas for others there was no evidence of L1 attrition.

A similar study to Flege (1987) is Major (1992), which investigated the VOT of the voiceless stops /p, t, k/ in the speech of late consecutive bilingual migrants in Brazil who were NSs of American English. Consistent with Flege's findings, the study established a shorter VOT of the phonemes in the speech of these speakers due to the influence of Portuguese, which has a shorter VOT compared to English. This was more noticeable in the proficient speakers of Portuguese (L2). Thus Major (1992) concludes that there is a correlation between proficiency of L2 and attrition. The reason put forth is that as one gets more proficient in the L2, this interferes with the production of L1. Therefore elements of L2 are transferred to L1. However, the L2 influence is more prominent in the casual speech of the speakers than in the formal speech. This is because the casual speech is unmonitored and, as such, it is more susceptible to interference from the L2. Based on these results, De Leeuw et al. (2011: 102) argue that the participants display inter- and intrapersonal variation in L1 attrition in the domain of phonetics, and especially that L1 attrition is not due to L2 acquisition in all the bilingual participants.

Building upon previous studies on bi-directional effects in both L1 and L2, Mennen (2004) examines the prosodic elements in the speech of late consecutive bilinguals NS of Dutch who were proficient in Greek as an L2. Consistent with Flege (1987), results show a merging of the prosodic elements of the two languages. The majority of the speakers, with the exception of one, were unable to accurately realise Greek tonal alignment and they also displayed deviations in Dutch tonal alignment. Due to the influence of Greek, the alignment of pitch peaks in prenuclear rise was reduced in the Dutch speech of these participants. Similarly, De Leeuw et al. (2011) investigated changes within the prenuclear tonal alignment in the speech of late consecutive bilinguals NSs of German who were immigrants in Anglophone Canada. The researchers reached a similar conclusion to Mennen (2004), in that results show L1 attrition in the intonational alignment of the prenuclear rise. However

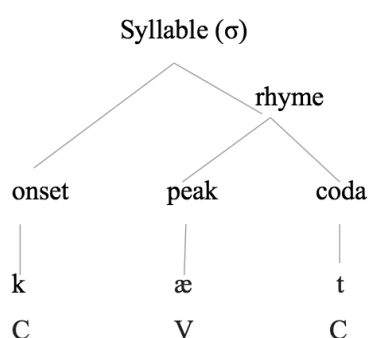
interpersonal and intrapersonal variations were also reported, as not all the participants showed L1 attrition.

It is remarkable that most of the prominent research on L1 attrition in phonetics is on adult immigrants. Could this imply that L1 attrition on non-immigrant children is impossible? It will be interesting to investigate L1 attrition by children in the native environment as this will not only broaden the scope of L1 attrition research but will also provide a platform for more vigorous research in this area. On this note this paper argues for an investigation on the possible extent of attrition in the Setswana penultimate syllable length in the speech of children who attend private English-medium schools in Botswana. In order to put this into perspective an elaborate discussion of the Setswana penultimate syllable length is given in the following section.

## 5. Penultimate syllable length in Setswana

To provide a full context for the syllabic focus of the research design, it is useful to summarise here current assumptions on syllable structure. A syllable comprises of a peak/nucleus which has little or no airflow obstruction and is the place in the syllable where sonority is greatest (Roach 2009). It is the core or central part of the syllable (Katamba 1989; Roach 2009). The peak/nucleus may be a vowel sound, such as (ɪ, e, æ, ʌ, ɒ, ʊ, i:, ɜ:, ɑ:, ɔ:, u:) in RP English or (i, i, ε, a, ɔ, ʊ, u) in Setswana. A sonorous consonant – e.g. nasal sounds (n, m, ŋ) and liquid sounds (l, r) – can also be the peak/nucleus; sonorous sounds are evaluated as such in terms of their loudness (Roach 2009). Vowels have the greatest sonority, while plosive consonants having the least (Katamba 1989). It is for this reason that vowels are often the peak/nucleus of the syllable. Since nasal and liquid sounds are close to the vowel in the sonority hierarchy, they can take the position of a vowel and become the peak/nucleus of the syllable in the absence of a vowel. Consonants that have this ability are referred to as syllabic consonants (Roach 2009).

In addition to the peak/nucleus, it is possible to have one or more consonants at the start and end of the syllable; these constitute the onset and the coda, or margin (Roach 2009; Katamba 1989). The onset precedes the peak/nucleus and the coda follows the peak/nucleus. The onset and coda are optional, unlike the peak/nucleus which is obligatory. The peak/nucleus and the coda together are often analysed as constituting the rhyme/rime. This is illustrated below by the English word /kæt/ (*cat*):



Like most Bantu languages, Setswana has an open CV-CV syllable structure, which ends in a vowel. The Setswana syllable can also follow other structures, underlined in the examples below (Setswana and Swahili examples adapted from University of Botswana 1999):

- CV go rata [=to love]
- V oa rata [=you/he/she loves]
- C sentle [=well/nicely]

The word *sentle* is made up of three syllables: *se-n-tle* /sentle/. The second syllable consists of the sonorous syllabic consonant /n/.

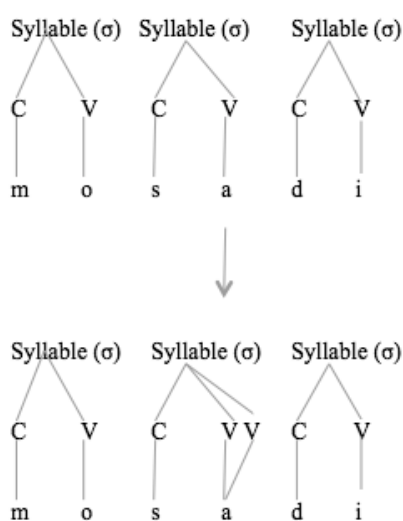
It is worth noting that most Setswana syllables are a single mora (that is, a unit of length associated with syllabic quantity), except in the penultimate position where stress tends to lengthen them to two moras/morae (University of Botswana 1999). Similarly, Odden (2005: 325) defines mora as “a unit of prosodic weight related to length: a long vowel has two moras and a short vowel has one”. To give an example using Setswana, short vowels are (i, i, ε, a, ə, ʊ, u) and have one mora. Examples of long vowels with two moras are (ii, ii, εε, aa, ɔɔ, ʊʊ, uu). A syllable with two moras is considered to be bimoraic (University of Botswana 1999). In light of this, it is argued that a mora is a unit of timing (Cohn 2003), i.e. the length of time it takes to pronounce a syllable is dependent on the number of moras it contains.

Stress in Setswana is achieved through the lengthening of the penultimate syllable and so stress is fixed to the penultimate syllable. Similarly, Hyman (2009) is of the view that penultimate prominence often called ‘accent’ or ‘stress’ is usually manifested in the penultimate lengthening of the vowel. Stress is a complex concept to define; however most linguists are of the view that stressed syllables have higher pitch and longer duration than unstressed syllables (Katamba 1989). Unlike Setswana, stress in English does not require the lengthening of the penultimate syllable. English stress can be at the beginning, middle or final syllable (Roach 2009). It is on the basis of this that the study hypothesises a change in the length of the Setswana penultimate syllable due to influence from English.

In the phonemic transcription of Setswana, the addition of a mora is represented by doubling the vowel of the penultimate syllable as in the above example of long vowels with two moras or by using the syllabic length diacritic mark [ː] (University of Botswana 1999). It is important to note that full length of the penultimate syllable is achieved when the word is pronounced in isolation or when the word is in sentence final position (Cole 1955, cited in Hyman 2009: 198). When the word is in non-sentence final it still maintains the stress but the penultimate lengthening is not as prominent as in sentence final position. The following example (University of Botswana 1999) illustrates the penultimate syllable lengthening:

/musali/ [mòsá:di] *mosadi* [=woman]

The acute accent (´) on the vowel indicates high (H) tone; grave accent (̀) a low (L) tone; see below for further details.



The lower part of the diagram shows the addition of a mora required to lengthen the penultimate syllable. For this reason the vowel of the penultimate syllable is doubled,

indicated by two V's (VV) meaning two of the same vowel. The same applies to syllabic consonants in the event that they take up the position of a vowel where there is no vowel.

It is worth noting that the penultimate syllable length rule discourages monosyllabic words (University of Botswana 1999). However, this account fails to explain the existence of monosyllabic words such as:

*Ja* /dʒa/ [=eat]  
*fa* /fa/ [=here]

It could be argued that the use of the word 'discourages' acknowledges the existence of monosyllabic words. Nonetheless, an elaborate discussion of their presence in a language where disyllabic (or more) words are central to the phonology is essential.

## 6. Conclusion

This paper investigated L1 attrition in the native environment. Even though L1 attrition literature on adult immigrants is abundant, little is known of people going through attrition in the native environment. Yet the definition of L1 attrition as the loss or weakening of a first language due to knowledge and dominant use of a second language clearly demonstrates the possibility of L1 attrition in the native environment for speakers whose L2 is the dominant language (Köpke 2004). It is worth noting that L1 attrition is defined differently by researchers depending on the context of their study, although the common denominator in all the definitions discussed is the dominant use of L2. This paper argued for the investigation of L1 attrition in the Setswana penultimate syllable length in the speech of children who attend private English-medium schools. Since the children spend most of their time in school, English, a language they acquired as an L2 is the language they mostly use. Therefore English becomes their dominant language.

An anticipated consequence of the dominant use of English is variation of the Setswana penultimate syllable. In Setswana stress is achieved by lengthening the penultimate syllable, unlike English. Therefore the influence of English might cause changes to the length of the penultimate syllable. An investigation of this phenomenon will provide invaluable information to L1 attrition research, especially in the field of phonetics/phonology.

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