

The Lexicon in Language Attrition: The Case of N|uu

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1. Introduction

N|uu is the sole remaining language of the !Ui branch of Tuu (Southern Khoesan) family of southern Africa. The only other extant Tuu language, !Xóð, is still being learned by children, but N|uu is spoken by just a few elders in the Northern Cape, South Africa and Botswana. All N|uu speakers have shifted to a primary mode of communication of Afrikaans. N|uu has distinct Eastern and Western dialects, and is the subject of ongoing work by the authors, Levi Namaseb, Chris Collins, Mats Exter and Tom Güldemann. Early documentation of the language is very sparse, with related lects typically referred to as #Khomani or N||ng (Bleek 1929, Güldemann 2000, Güldemann forthcoming, Doke 1936, Maingard 1937, Westphal 1953-1971, Traill 1999). A number of poorly-known Tuu lects (|nu-|len, N|uusaa, !Nusa, |Nusa, |Nusan, Nusan, |Nusa, N|ohan) are not discussed here.

The case of N|uu is an interesting one for investigating the effects of language shift on the lexicon. It has been argued that lexical items “dominate as the elements that are vulnerable to attrition” (Gross 2004), but such attrition is difficult to establish in underdescribed languages, many of which are in precisely the situations that make attrition most likely. In this study, we investigate whether there is evidence of attrition in the N|uu lexicon by looking at a corpus obtained through direct elicitation. We find relatively few signs of attrition in this corpus, which is consistent with our expectations for a language that has undergone abrupt rather than gradual shift.

2. Characteristics of lexical attrition

While language attrition in general has gained attention in recent years (e.g. Schmid 2002), lexical attrition has not, despite the importance of the lexicon in many communities for linguistic self identity (Hill 1993). In those cases where lexical attrition has been discussed, various seemingly contradictory claims have been made. For instance, it has been observed that vocabulary loss may be massive (cf. Schmidt 1985: 170) in an attriting language, resulting in a smaller overall vocabulary (Trudgill 1976/1977), but it has also been reported that vocabulary loss can be minimal (Hutz 2004: 191-192, Schmid 2002). We contend that such different outcomes result from different language shift scenarios, and that abrupt language shift affects the lexicon less than gradual language shift does. This position is supported by the observation that borrowings that serve to replace existing terms, rather than to enrich the vocabulary, are often found in cases where both language shift and attrition are underway (de Bot & Clyne 1994, Dressler 1991, Hagen & de Bot 1990).

Lexical attrition has been characterized in terms of loss of vocabulary, loss of semantic distinctions, and in reduced performance ability. Performance-related attrition may include difficulty in lexical recall (Olshtain 1989, Leyew 2003: 108, Sasse 1992) and increased unsureness of lexical judgments (Giacalone Ramat 1979). Semantic changes may include increased polysemy (Leyew 2003: 118) and increased generic usage of terms (Fabunmi & Salawu 2005, Leyew 2003) with changes occurring in the designation, connotation, and range of application of words. We concur with Schmid & de Bot (2003), who note that evidence for lexical attrition is difficult to find despite widespread claims for its existence, but we also maintain that an ability to identify lexical attrition or degrees of lexical attrition may be useful in predicting attrition in other parts of the grammar. Loss of content morphemes is argued to precede the loss of irregular forms (Ecke 2004), noun classes (Schmidt 1985), subcategorization patterns and case markers (Polinsky 1997), adpositions and relational words (Trudgill 1976/1977), and allomorphic variation (Schmid & de Bot 2003). Despite its appeal, the

hypothesis that content morphemes are lost before grammatical morphemes has little or no quantitative data to support it (Myers-Scotton 2002: 206-207).

Some trends in lexical attrition have been noted (Tsunoda 2005: 95-96, Schmidt 1985), but differences occur depending on the type of culture change accompanying the language loss/shift. Specific terms and less frequent forms (Schmid & de Bot 2003) may be especially prone to loss, as are special speech style or register variants (Holloway 1997: 149-153). Kinship terms (Tsunoda 2005), ethnozoological and ethnobotanical terms (Leyew 2003), and culture-specific inanimate items (Fabunmi & Salawu 2005) may be especially affected. Terms considered resistant to loss include those referring to well-known animates, the human body, and human classification (Tsunoda 2005: 95, Schmidt 1985). We draw a distinction between words that are replaced and words that are lost, with the former being more common in cases of gradual language shift. N|uu words have been lost, but there is little evidence that N|uu words have been replaced by Afrikaans words.

3. Profiles of N|uu speakers

The N|uu speakers who have shared their language with us as part of the N|uu dictionary project are listed in Table 1. N|uu speakers are a small part of the disparate group of people now known in South Africa as #Khomani. This term was not known to the N|uu speakers until it was introduced to them by representatives of the South African San Institute (SASI), who identified some of the modern-day descendants of the people studied by Maingard and Doke in the 1930s. All of the elders we worked with have used Afrikaans for most of their adult lives, and it is currently their dominant daily language. All of the N|uu speakers are in their late 60s to late 70s and all had parents who spoke N|uu and Afrikaans. None of the N|uu speakers has had any formal education and none are literate.

Consultants	Afrikaans	Khoekhoegowab	Setswana
Western N uu			
Anna Kassie	fluent	some	none
Hanna Koper	fluent	none	none
Griet Seekoei	fluent	none	none
Katrina Esau	fluent	none	none
Una Rooi	fluent	some	some
Kheis Brou (‡)	fluent	some	none
Eastern N uu			
Hannie Koerant	fluent	none	fluent
Andries Olyn	fluent	none	fluent

Table 1. Language Profiles of N|uu Speakers

It is difficult to reconstruct the language shift patterns that have affected N|uu because they change from one generation to the next and differ across dialect areas. Some of the Eastern and Western N|uu speakers had parents who spoke Khoekhoegowab fluently even though they themselves do not (Olyn, Esau, Seekoei, Koper). Like N|uu, Khoekhoegowab uses clicks, but it is a Khoe language (Central Khoesan), unrelated to Tuu. Khoekhoegowab seems to have been more commonly used in the area in the late 1800s/early 1900s (cf. Herbst 1908) when Baster influences were quite strong. Basters are of European and Khoekhoe descent and today speak Afrikaans, though they were formerly bilingual in both Khoekhoegowab and Afrikaans (cf. Beach 1938: 9), and possibly also in !Ora or Griqua. Setswana, an unrelated Niger-Congo language, is spoken fluently by the current generation of Eastern N|uu speakers, but was not known by all of the Eastern N|uu speakers' parents. Several of the Western N|uu speakers' parents are reported to have spoken Setswana, though none of the current generation of Western N|uu speakers speaks it fluently.

Three of the elders (Koerant, Kassie, Olyn) had spouses who also spoke N|uu, which undoubtedly helped them maintain the language. Since the deaths of their spouses, these elders have had little

contact with other N|uu speakers except during the course of linguistic fieldwork. The patterns of language contact have certainly changed over the lifetimes of the current N|uu speakers, and presumably did so in their parents' day as well.

Three of the elders are siblings (Koper, Seekoei, Esau) in one family and two are in another (Brou, Rooi). We are not able to explain why the language was maintained by some #Khomani families and not by others. The degree of attrition can be extremely variable across speakers (cf. Dorian 1982a, Søndergaard 1996) and is not simply predictable from factors such as the length of time since the language was used regularly or one's positive attitude toward the language. Koper, Seekoei and Esau reportedly have two younger brothers who speak well enough to be able to hold conversations in N|uu and one younger sister who cannot speak the language well enough to converse. Ouma Anna Kassie also has a sibling who is a marginal speaker of N|uu. Another semi-speaker known to us is Oupa Piet Rooi, the spouse of |Una Rooi, who has learned some N|uu as an adult. Ouma Hannie Koerant told us of a now-deceased Afrikaans farmer who had learned to speak N|uu fluently during her childhood when they were playmates. Clearly, social micro-environments favoring the acquisition of this small, marginalized language existed at least as late as the 1930s and 1940s. We have spent very little time working with the semi-speakers or with Ouma |Una Rooi and her sister Ouma Kheis Brou.

N|uu was thought to be an extinct language until 1996, after the end of Apartheid, when about 25 speakers were identified after Ouma Elsie Vaalbooi gave a radio address asking speakers to make themselves publicly known (Chamberlin & Namaseb 2001). There are probably a few N|uu speakers who did not come out and identify themselves at that time who are now embarrassed to identify themselves as N|uu speakers (Ouma Katrina Esau, pers. comm.). It may be that the early, self-identified speakers primarily included those who were most confident about their lexicon and language generally, and are not fully representative of the last generation to begin life in N|uu-speaking families.

4. Sociolinguistic characterization of N|uu

We predict that different types of language shift will have different effects on the lexicon. Campbell and Muntzel (1989: 182-186) distinguish four types of language loss: *sudden death*, *radical death*, *gradual death*, and *bottom-to-top death*. *Sudden death* is “the case where a language abruptly disappears because almost all of its speakers suddenly die or are killed” (ibid. pp. 182-183). *Radical death* is “rapid and usually due to severe political repression, often with genocide, to the extent that speakers stop speaking the language out of self defense, a survival strategy” (ibid. pp. 183-184). Sudden death is likely to be too quick to have any significant effect on the lexicon, but there may be an impact on the lexicon in a situation of radical death. *Bottom-to-top death* is when a “language is lost first in contexts of family intimacy and hangs on only in elevated ritual contexts” (Hill 1980, cited in Campbell & Muntzel 1989: 185). Bottom-to-top death would potentially have a drastically different effect on the lexicon than the more typical top-to-bottom shift scenario. Rather than experiencing the loss of infrequent, culture-specific terms, these might be the terms most likely to be retained in a language only used primarily in liturgical, educational, or juridical contexts. *Gradual death* differs from radical death in that it takes place over a longer period of time, with more generations of bilingual speakers and more opportunities for language contact. “Most cases in the literature on dying languages deal with gradual death” (Campbell & Muntzel 1989: 184-185). We predict that the lexicon will be more affected by gradual death than by sudden or radical death. This typology of language death makes more predictions for the lexicon than that proposed by Schilling-Estes & Wolfram (1999), which distinguishes only death by linguistic decay and death by population attrition.

N|uu seems to be in the process of radical death (Crawhall 2003) with shift to Afrikaans, a typologically dissimilar Germanic language. As defined by Campbell & Muntzel (1989), radical death is a rapid loss of language “usually due to severe political repression” which “can lack the age-gradation proficiency continuum more typical of gradual language death situations.” The N|uu language was a small language (with probably only a few hundred speakers) in 1931 when the #Khomani people were expelled from the area that became the Kalahari Gemsbok park in NW South Africa (Crawhall 2003). Only a few children acquired N|uu after 1931. The population dispersion following the expulsion resulted in very few people being married to other first-language N|uu speakers, and very few N|uu-speaking households. N|uu speakers would have been under considerable

economic and social pressures to shift to Afrikaans even if they had not been expelled from the park. It is possible that N|uu was facing a gradual shift to Afrikaans for some time before the 1930s, but we have little information about the sociolinguistics of that period.

There are additional factors that may influence attrition. Some researchers have suggested that attrition is more likely to occur when L1 and L2 are similar (cf. Schmid 2002). N|uu is an interesting case study because it is typologically dissimilar to the L2 that is being shifted to, Afrikaans. Schmid (2002) and Jaspaert & Kroon (1992) found minimal attrition of the lexicon in the speech of people who had not used their mother tongue regularly in decades. It is likely that situational bilingualism affects a language more than disuse does.

In the following sections, we attempt to identify lexical attrition in N|uu in the same areas of language predicted in the literature to show attrition, e.g. vocabulary size, rate and type of borrowings, semantic distinctions, and in performance ability. The directly-elicited lexicon of N|uu shows very little evidence of such attrition. Though this may be due in part to the nature of data collected, we argue that it is at least consistent with the fact that the shift away from N|uu has been very abrupt.

5. Size of the lexicon

The idea that a language that is used less and less frequently by ever fewer speakers has a smaller lexicon than one that is used often by many, many speakers is intuitively appealing, but extremely difficult to test. The documented lexicon of a single language may vary by an order of magnitude depending on the nature of the documentation, as seen in Table 2. A published dictionary is an inadequate representation of the mental lexicon of a given individual speaker who may not know many of the words listed, yet who may also know many words (especially slang words) that are not listed.

	Approximate number of entries
medium dictionary (Zgusta 1971: 219-220)	> 40,000
popular dictionary (Fyle 1989)	10-12,000
small dictionary (Zgusta 1971: 219-220)	> 10,000
dictionary for new literates (Fyle 1989)	3,000-6,000

Table 2. Types of Dictionaries Found across Languages

A similar range of dictionary sizes can be seen in Table 3 which shows a sampling of dictionaries for unrelated Khoesan languages. With the exception of N|uu, all of these languages are currently learned by children and are used daily by speakers. All are endangered languages, but only N|uu is severely endangered. The correlation between linguist-hours in the field and lexicon size is so close that no conclusions about lexical attrition can be drawn. The relatively small N|uu lexicon is not inconsistent with attrition, however.

	Approximate number of entries	Family
Khoekhoegowab (Haacke & Eiseb 2002)	24,500	Khoe
Khwe (Kilian-Hatz 2003)	< 6,000	Khoe
Naro (Visser 2001)	5,500	Khoe
Ju 'hoansi (Dickens 1994)	4,600	Juu
!Xóǀ (Traill 1994)	3,200	Tuu (Taa)
Hadza (Sands 1992-5)	2,000	Isolate
N uu (Sands et al. 2006)	1,400	Tuu (!Ui)

Table 3. Khoesan Dictionaries

Only one Khoesan language has surpassed what Zgusta's 1971 manual would term a small dictionary, and it was the result of twenty years of collaboration by a linguist and a mother-tongue speaker. Most severely endangered languages will never receive this level of attention. Given that 2,000 - 5,000 word forms (in English) may cover 90-97% of the vocabulary used in spoken discourse

(Adolphs & Schmitt 2004), it is unreasonable to maintain that a small dictionary must have more than 10,000 entries. Vocabulary should be an important part of endangered language documentation because it is often so important to the speakers themselves. Hill (2001) noted that the loss of vocabulary knowledge eroded the confidence of speakers in their own language, and we have noticed one N|uu semi-speaker who is very proud of her ability to name several animal terms.

In the case of immigrant languages, it is possible to compare the lexicons of attrited vs. non-attrited varieties. When there is just one population of a language, overall vocabulary size cannot be used as evidence of attrition. For one, some languages may simply have smaller vocabularies than others; Gravelle (2001) reports finding only 2,300 dictionary entries in Meyah (Papuan) after 16 years of study. Foraging societies have certain cultural characteristics which might result in smaller vocabularies. For instance, they tend to have relatively little social stratification and therefore may have fewer register variants. One would also expect little in the way of job-related jargon, because most economic pursuits are shared widely. A smaller lexicon may also relate to geographic and biocultural characteristics such as a lower density of flora/fauna. The small number of tree terms in N|uu, for instance, is directly related to the small number of tree species in the southern Kalahari.

6. Loss and Replacement of Lexical Items

6.1. Rate of Borrowing

The rate of borrowing is likely to be a good indicator of lexical attrition if it can be quantified, and if the borrowing entails the loss or decreased use of another term. Heavy borrowing is defined differently by different authors and may range from 15% (Nahuatl from Spanish) to 90% borrowing found in intertwined languages such as Ma'a and Media Lengua (Bakker 1999). Borrowings from Afrikaans (and from English, through Afrikaans) into N|uu are readily identifiable. We considered forms to be borrowings even when they showed no phonological or morphological assimilation, e.g. /snef/ 'snuff' (< Afrikaans *snuif*). Most loans did show signs of being incorporated into N|uu, either through the addition of the *-si* nominal suffix, as in /tafelsi/ 'table' (< Afrikaans *tafel*) and/or through the addition of an epenthetic vowel, e.g. /rokasi/ 'dress' (< Afrikaans *rok*). When borrowings do not replace original terms, we cannot assume that loss has occurred.

The elicited N|uu lexicon is not heavily affected by Afrikaans except in certain semantic domains. Fewer than 10% of nouns are borrowed from Afrikaans (78/792, or 9.8%) and the majority of these loans coincides with the borrowing of a new object or cultural concept and therefore do not indicate the loss or replacement of an earlier N|uu word. The semantic domains with the largest percentages of Afrikaans borrowings are: human artifacts (57/130, or 44%), and domesticated animals (5/24, or 21%). Only one verb in our sample /hoo/ 'find, get' is a possible Afrikaans loan, and this is equally likely a Khoe loan, or an inherited form. Only one body part term, /piisi/ 'pimple' (out of almost 200) in N|uu comes from Afrikaans. Khoekhoegowab loans have not been fully identified at this point, but they appear to occur in more semantic domains than the Afrikaans loans. Setswana loans are relatively few, and are slightly more frequent in Eastern N|uu than in Western N|uu. The rate of borrowing from Afrikaans into N|uu is not a good indicator of the role Afrikaans has played in the shift of speakers away from N|uu, except perhaps in the semantic domain of human artifacts.

6.2. Loss and Replacement of Pre-existing Concepts

Differences in vocabulary in the N|uu of today vs. that of the sparsely documented #Khomani of the 1930s are few, but the limitations of these earlier materials make it difficult to draw firm conclusions. There is at least one cultural term which has been lost, i.e. /llkaŋ/ 'arrow' (Doke 1936), and one borrowing (possibly a nonce borrowing from Khoekhoegowab) which has been lost /nerasi/ 'baboon' (Maingard 1937). At least one Afrikaans borrowing was once more integrated into N|uu phonology than it is currently, i.e. /hemsil/ 'shirt' (Maingard 1937) vs. /hempesil/ 'shirt' < Afrikaans *hemp*.

There are few N|uu borrowings for pre-existing items, and most of these exist alongside inherited vocabulary rather than replacing terms, e.g. /iβil/ and /torldev/ 'dove' (the latter term is from Afrikaans). N|uu follows the pattern that nouns seem to be more readily borrowed into N|uu than other

word classes (Myers-Scotton 2002: 240), but this is characteristic of borrowing generally, and is not specific to attrition.

One wild animal term, /ŋ!^haa/ ‘caracal cat’ is a probable borrowed item (from Khoekhoegowab) with no co-existing inherited term. Rather than being a sign of attrition due to shift towards Khoekhoegowab, this replacement seems to reflect a change in the social importance of caracal cat pelts which were once a heavily traded item in the southern Kalahari (Herbst 1908).

There are a few terms that have been borrowed from Afrikaans, e.g. /bosisi/ ‘(a) bush’ < Afrikaans (note N|uu suffix *-si*) and /blaarsi/ ‘leaf’ < Afrikaans *blaar*, which refer to taxonomic categories. These categories may not have existed in N|uu prior to contact, or, they may have been labelled with a term that was replaced by an Afrikaans word. Overall, then, we find little evidence that words for pre-existing concepts have been lost in N|uu.

6.3. Cultural borrowings

Most N|uu borrowings are for new concepts. For example, terms for domesticated animals have been borrowed from Afrikaans, (e.g. /donkisi/ ‘donkey’, /kapatirsi/ ‘castrated goat’, /hamalsi/ ‘castrated sheep’), but also from Khoekhoegowab (/l^hao/ ‘lamb’) and Setswana (/p^helau/ ‘ram’, /piri/ Western N|uu, /miri/ Eastern N|uu ‘goat’). Yet, even in this semantic area, we find evidence of N|uu vitality and creativity. When mounted camel patrols appeared in the southern Kalahari, a term meaning ‘camelthorn acacia seed’ was extended to refer to the animal (possibly under the influence of Afrikaans). We have also heard a term /l^hao ŋ|aa/ or ‘antler head’ used in reference to the exotic white-tailed deer held on a single farm in the area. The word /p^ho^soke/ ‘billy goat’ is best explained as a phonological adaptation of Afrikaans *bok* ‘goat’, but interestingly, the epiglottalization of the vowel makes the word sound characteristically N|uu. At the same time, the initial bilabial stop and final [ke] in a singular form are very uncharacteristic of N|uu. Many terms for inanimate objects which are new cultural items come from Afrikaans, e.g. /rokasi/ ‘dress’, /rangsi/ ‘ring’, /dromsi/ ‘drum’, but similar borrowings (from various source languages) occur in all Khoesan languages, regardless of the language’s vitality.

6.4. Loss of terms related to traditional ways of life

N|uu shows some signs of loss of terms related to traditional ways of life, as has been seen in other studies (e.g. Fabunmi & Salawu 2005, Hill 2001, Maffi 2001). The N|uu speakers who had not grown up in the bush had difficulty remembering some plant and animal terms until prompted by those who had grown up foraging. For instance, the only speaker who could initially remember the term for ‘ostrich chick’, /!x’oa/ was male and had hunted in his youth. No speaker recognized the term for ‘arrow’ cited by Doke (1936); but rather used the term /lau/, which Doke translated as ‘bow’, to mean ‘bow and arrow’.

It is possible that there has been a significant loss of plant-related vocabulary in N|uu. We found only 44 named plants out of 150 species and subspecies used traditionally (cf. McGregor 2001), but, it is doubtful there were ever 150 distinct plant terms in N|uu. Many subspecies and species would likely have been grouped under generic terms at any stage in the history of the language.

It is difficult to assess how well N|uu speakers have maintained traditional ethnozoological and ethnobotanical knowledge. In a study of Tohono O’odham (Uto-Aztecan, spoken in Arizona, USA) by Jane Hill, the majority of speakers showed significant attrition of vocabulary related to flora and fauna, even of large and easily recognizable animals (Hill 2001). Had we tested N|uu speakers individually, we may have seen similar attrition, but in a group situation, speakers were able to recall words more easily. The first author worked with middle-aged speakers of Hadza (isolate, spoken in Tanzania) in the 1990s. Even though the Hadzabe males were active hunters in the early 1990s, they were comparable to the N|uu speakers in terms of their speed of recall and ability to identify plants and animals from photographs. We have worked with speakers of other Khoesan languages who have faster recall and greater confidence in their identifications, but it is difficult to determine which effects may be attributable to language loss and which are due to other factors, such as age, education, experience working with linguists, eyesight, and interest in the project.

7. Stylistic variation in the lexicon

As may be expected of a language with few speakers that is not in daily use, we have little evidence of stylistic variants in N|uu. Whether N|uu has experienced attrition in this area of the lexicon or whether we were simply unable to elicit these forms is unclear. All of the N|uu speakers are competent storytellers but we have not gleaned any ideophones from the few existing transcribed stories, or from direct elicitation. The existence of a large number of ideophones in !Xóǝ leads us to expect that N|uu would have had ideophones as well. We elicited very few euphemisms or avoidance forms, and very few hyponyms, or subordinate forms with a common sound-symbolic element (cf. English *wiggle, jiggle*). We only have one example of a reduplicated form in N|uu, i.e. /ŋ!'uniŋ!'u/ ‘turn around, turn back’ (cf. /ŋ!'uni/ ‘turn around, turn back’), which is less than we expected to find. A lexicon obtained through naturally produced texts would very likely contain ideophones and stylistic variants that we have been able to elicit directly.

8. Suppletives

We expect that a language undergoing attrition might show a loss of irregular forms or suppletives, as sometimes happens in cases of language shift or imperfect acquisition. N|uu maintains a small number of suppletive noun pairs, as shown in Table 4. In addition to the forms given in Table 4 are a small number of plurals that involve a change in the stem as well as the suffix, e.g. /loβa, laβa/ ‘child’ and /loeke/ ‘children’; /leeki/ ‘woman’ and /laake/ ‘women’.

Singular	Plural
/#oo/ ‘man’	/cuuke/ ‘men’
/ŋ ŋ, !ui/ ‘person’	/ŋ ŋ, #ee/ ‘people’
/g#aru/ ‘sheep’ (singular)	/loaxu/ ‘herd of sheep’, ‘sheep’ (plural)

Table 4. N|uu Suppletives (Nouns)

Several of the other languages of the Kalahari Basin linguistic area (as defined by Güldemann 1997) have more suppletive verbs than are found in N|uu. We have only been able to identify a single suppletive pair involving verbs in N|uu, i.e. /suiⁿ/ ‘sit, sit down’ (singular), /ŋ!^hau/ ‘sit, sit down’ (plural), but !Xóǝ (Tuu), Ju|’hoansi (Juu) and #Hoan all have singular/plural suppletive pairs associated with several verbs, e.g. ‘stand’, ‘lie (down)’, and ‘fall’. N|uu has a single term for both singular and plurals of ‘stand’ (/#hu/), ‘lie (down)’ (/caa/), and ‘fall’ (/#qau kiⁿ/).

It is not possible to say with certainty that some suppletive verbs were lost in N|uu. Earlier sources documenting N|uu and other !Ui languages lack suppletive forms. This may be due to inadequate documentation, or because such forms never occurred in the language. Or, it may be that suppletives were lost in N|uu or Proto-!Ui at a time that predates the relatively recent language shift to Afrikaans.

9. Semantic change

9.1. Polysemy

Comparison of N|uu and Kemantney (Central Cushitic, spoken in Ethiopia), a language undergoing gradual death (Leyew 2003: 3), suggests that N|uu has undergone relatively little semantic shift. While semantic shift in even the basic vocabulary has occurred for at least some speakers of Kemantney, we can only confirm two such shifts in N|uu: /ka ŋ||^hurike/ ‘mirage’ is extended to mean ‘heatwave’, and /lau/ ‘bow’ is extended to mean ‘bow and arrow’. Kemantney speakers, on the other hand, made replacements such as ‘weak, naughty’ for ‘bad’, ‘pot’ for ‘basket’, and ‘caused to move’ for ‘chew’ (Leyew 2003: 109). Unlike Kemantney speakers, N|uu speakers have maintained sets of semantically similar lexical items, as evidenced by this set: /ʔaⁿ/ ‘eat’, /ʔaiⁿ/ ‘chew’, /ts’ii/ ‘bite’, /ts’ii cχa/ ‘bite into pieces’, /ts’ii ||^hu/ ‘bite off’, /ts’in/ ‘taste’. N|uu speakers have also maintained lexical

items for very specific concepts, e.g. /su^si^{sn}/ ‘sit with legs straight out’, /ʔχ'anusi/ ‘floating ribs and xiphisternum’, /laukesi/ ‘anal gland’, and /ŋ^hau/ ‘stomach fat’.

Leyew (2003: 118) argues that some polysemous forms in Kemantney are indications of decay, but similarly occurring polysemy in N|uu cannot automatically be assumed to be the result of attrition, because they may reflect inherited or areal lexical semantic traits. For instance, N|uu and !Xóð (Traill 1994) each have a root meaning ‘fat/marrow’, and ‘hair/feather’. While !Xóð does have distinct terms such as ‘white ostrich plume’, and ‘tuft of hair’, it lacks a distinct generic term for ‘feather’ that is distinct from ‘hair’. Similarly, the meaning ‘nest’ in N|uu is expressed by the root which also means ‘house’, though there is also a distinct term for ‘weaverbird nests’, /||unsike/, and the meaning ‘nest’ in !Xóð is expressed by a form meaning ‘hut/village/nest/burrow’ (Traill 1994). In contrast to the picture presented for Kemantney, N|uu can be seen to maintain semantic distinctions typical of Kalahari Khoesan languages, e.g. /cooke/ ‘bleed from the nose’ vs. /||^hauke/ ‘bleed’; /||^huru/ ‘desire, thirst for tobacco’ vs. /ŋ^huiⁿ/ ‘thirst’; and /glla g!o^se/ ‘Milky Way’ (lit. ‘night’ + ‘tortoise’).

9.2. Loan shifts and loan translations

The Afrikaans influence on the N|uu lexicon has likely resulted in several cases of loan shift and loan translation. Loan shifts occur when the phonological form of a word remains N|uu but the meaning seems to have potentially shifted to match the range of meanings in Afrikaans. A possible loan shift is /!^haeka/ ‘morning, tomorrow’, which is directly comparable to Afrikaans *môre* ‘morning, tomorrow’. There is no direct evidence, however, that the N|uu form has shifted. Loan translations are when the structure of the word seems to have been remodeled on Afrikaans. For instance, /laβa ʔuⁿ/ ‘grandchild’ (literally child + diminutive) is more similarly structured to Afrikaans *klein kind* ‘grandchild’ than it is to the form in |Xam, /ʔpwaʔpwaidi/ (Bleek 1929: 43) which appears to be a reduplicated form (cf. ʔpwa ‘child’ in the Tuu lects S4 and S5 (Bleek 1929: 28)). The form /!^haeka ||x'o^sesi/ ‘morning star (Venus)’ appears to be modelled on Afrikaans *môre stê* ‘morning star (Venus)’. However, it is impossible to confirm the influence of Afrikaans in these cases given the lack of documentation on N|uu prior to Afrikaans contact.

There are several cases in which the meaning of a N|uu word matches that of Orange River Afrikaans but not Standard Afrikaans. Orange River Afrikaans has been influenced by both !Ui (N|uu, |Xam) and Khoe (Khoekhoegowab, !Ora) languages. Sparse documentation makes it difficult to determine the source and direction influencing the semantic structure of a N|uu word such as ‘diaphragm’, /ŋ^hlan ʔoe/ (‘liver’ + ‘flesh’). This corresponds to Orange River Afrikaans *lewer vleis*, but not to the Standard Afrikaans terms *mantelvleis* and *diafragma*. Similarly, /ka ||o^sneke/ means ‘lungs’ and ‘bird wattle’ in N|uu, as does *longe* in Orange River Afrikaans, while Standard Afrikaans has the separate terms *longe* and *latwerk*.

10. Lexical recall and lexical judgments

We noticed some difficulty in lexical recall and unsureness of lexical judgments among the six N|uu consultants who have worked with us to create a N|uu dictionary. However, their overall ability to recall and define words and to make lexical judgments was similar to the ability of Hadza speakers who have had little formal education but who use their language daily. That is to say, they do not appear to have particularly slow recall when compared to others of similar age, health, background, and willingness or ability to concentrate. There are a few terms that we attempted repeatedly to elicit (e.g. ‘twin’, ‘scar’) that were finally remembered only when an exemplar was present.

Because of time constraints, we used direct elicitation and field guides in order to get terms for plants and animals. Lexical items such as /||x'o^sesi/ ‘hedgehog’, /||q^hooke/ ‘porcupine’ were probably recalled more slowly than they would have been if we could have pointed to actual animals. The speakers tended to colloquially use Afrikaans *ystervark* for both animals, and the size differences between them were not immediately apparent to people relatively unused to interpreting photographs. The term for ‘jewel beetle’, /n^hu^siⁿcuru/, was not remembered despite viewing photos, but was remembered after eating a meal of vegetables cooked with soy sauce and sesame oil which was reminiscent of the flavor of roasted jewel beetles.

The fluent N|uu speakers could usually recall a forgotten term with a few minutes of thought or discussion. A few concepts (e.g. ‘heatwave’ and ‘arrow’) were agreed to once have had N|uu words that no speaker could remember. Thus, there is evidence that some intragenerational loss (forgetting) has occurred. However, these speakers also differed significantly from the one N|uu semi-speaker we have interviewed. Unlike the speakers who worked with us on the dictionary, this semi-speaker knew a list of animal terms but was frustrated when it came to words outside of her limited performance repertoire, and forgotten words remained forgotten.

11. Conclusions

We have shown that there is little positive evidence of lexical attrition in our directly-elicited N|uu corpus, despite the fact that attrition is widely thought to be most evident in the lexicon. We attribute this to the nature of the shift from N|uu to Afrikaans, and our data support Dorian’s (1982b) argument that a dying language need not evidence attrition. We take the most likely indications of attrition in the type of lexicon we elicited to be a dearth of ideophones, stylistic variants and suppletives, as well as a large number of loanwords in certain semantic domains. On the whole, we found that Afrikaans loanwords in N|uu have augmented the vocabulary rather than replaced existing terms, but we also found fewer suppletives than we might have expected. We also found few stylistic variants and ideophones, but this may be due to the nature of our corpus. We expect that lexical data obtained from naturally produced N|uu texts would show more evidence of these elements, but it would probably also show greater infiltration by Afrikaans. While the low level of attrition we found may be due in part to the methodology and data used in this study, we believe it also reflects the fact that the transition to Afrikaans is one of “sudden death” rather than “gradual death”. The case of N|uu provides evidence that language shift and language attrition are distinct processes, despite the fact that they often go hand in hand.

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References

- Adolphs, Svenja and Norbert Schmitt. 2004. Vocabulary coverage according to spoken discourse context. *Vocabulary in a Second Language: Selection, acquisition, and testing.*, ed. by Paul Bogaards and Batia Laufer, 39-49. *Language Learning & Language Teaching* 10. Amsterdam: John Benjamins.
- Beach, D. M. 1938. *The Phonetics of the Hottentot Language*. Cambridge: W. Heffer & Sons Ltd.
- Bleek, Dorothea F. 1929. *Comparative Vocabularies of Bushman Languages*. Cape Town: University of Cape Town, School of African Studies Publications.
- Bakker, Peter. 1999. Review of *Linguistic borrowing in bilingual contexts*, by Fredric W. Field. *Language* 81.501-504.
- Campbell, Lyle and Martha Muntzel. 1989. The structural consequences of language death. *Investigating Obsolence: Studies in Language Contraction and Death*, ed. by Nancy Dorian, 181-196. Cambridge: Cambridge University Press.
- Chamberlin, J. Edward and Levi Namaseb. 2001. Stories and songs across cultures: Perspective from Africa and the Americas. *Modern Languages Association of America: Profession 2001*, ed. by Phyllis Franklin, 24-38. New York: Modern Languages Association of America.
- Crawhall, Nigel. 2003. The rediscovery of N|u and the #Khomani Land Claim Process, South Africa. *Maintaining the Links: Language Identity and the Land: Proceedings of the Seventh Foundation for Endangered Languages Conference*, Broome, Western Australia, 22-24 September 2003, ed. by Joe Blythe and R. McKenna Brown, 13-19. Bristol: Foundation for Endangered Languages.

- de Bot, Kees and Michael Clyne. 1994. A 16 year longitudinal study of language attrition in Dutch immigrants in Australia. *Journal of Multilingual and Multicultural Development* 15.17-28.
- Dickens, Patrick. 1994. Ju|'hoasi/English, English Ju|'hoasi Dictionary, ed. by Rainer Vossen. *Research in Khoisan Studies* 8. Köln: Rüdiger Köppe.
- Doke, Clement. 1936. An outline of #Khomani Bushman phonetics. *Bantu Studies* 10.433-461.
- Dorian, Nancy C. 1982a. Language loss and language maintenance in contact situations, ed. by Richard D. Lambert and Barbara F. Freed, 44-59. *The Loss of Language Skills*. Rowey, Mass.: Newbury House Publishers.
- Dorian, Nancy. 1982b. Linguistic models and language death evidence. *Exceptional Language and Linguistics*, ed. by L. Obler and L. Menn, 31-48. New York: Academic Press.
- Dressler, Wolfgang U. 1991. The sociolinguistic and patholinguistic attrition of Breton phonology, morphology, and morphophonology. *First Language Attrition*, ed. by H.W. Seliger and R.M. Vago, 99-112. Cambridge: Cambridge University Press.
- Ecke, Peter. 2004. Language attrition and theories of forgetting: A cross-disciplinary review. *International Journal of Bilingualism* 8.321-354.
- Fabunmi, Felix A. and Akeem Segun Salawu. 2005. Is Yorùbá an Endangered Language? *Nordic Journal of African Studies* 14.391-408.
- Fyle, Clifford. 1989. Working document. Problems in the lexicology of African languages: Proceedings of a Unesco regional seminar on problems of African lexicology, compiled by Abba Rufa'i, 1-31. Kano: Centre for the Study of Nigerian Languages, Bayero University.
- Giacalone Ramat, Anna. 1979. Language function and language change in minority languages. *Journal of Italian Linguistics* 4.141-162.
- Gravelle, Gilles. 2001. Review of *Modern Lexicography*, by Henri Béjoint. *Notes on Linguistics* 4.185-188.
- Gross, Steven. 2004. A modest proposal: Explaining language attrition in the context of contact linguistics. *First Language Attrition: Interdisciplinary Perspectives on Methodological Issues*, ed. by Monika S. Schmid, Barbara Köpke, Merel Keijzer and Lina Weilemar, 281-297. *Studies in Bilingualism* 28. Amsterdam: John Benjamins.
- Güldemann, Tom. 1997. The Kalahari Basin as an object of areal typology: a first approach. *Khoisan forum, working papers*, no 3. *Arid Climate, Adaptation and Cultural Innovation in Africa (ACACIA)*, University of Cologne. Cologne.
- Güldemann, Tom. 2000. The //ŋ!ke or Bushmen of Griqualand West, Notes on the language of the //ŋ!ke or Bushmen of Griqualand West: Editor's Introduction. *Khoisan Forum Working Paper* 15, ed. by Tom Güldemann, 7-13. Köln: University of Köln.
- Güldemann, Tom. Forthcoming. Westphal's field notes on N|huki with a linguistic analysis. *Research in Khoisan Studies*. Köln: Rüdiger Köppe.
- Haacke, Wilfrid H. G. & Eliphaz Eiseb. 2002. *A Khoekhoegowab Dictionary, with an English-Khoekhoegowab Index*. Windhoek: Gamsberg Macmillan.
- Hagen, Anton M. & Kees De Bot. 1990. Structural loss and levelling in minority languages and dialects. *Sociolinguistica* 4.136-149.
- Herbst, J. F. 1908. Note on Rietfontein Area. *Cape Parliamentary Press* 6: 53-1908. *Colonial Reports - Miscellaneous* 55.1-13. London.
- Hill, Jane H. 1980. Language death in Uto-Aztec. Paper for the Conference on Uto-Aztec Linguistics, Albuquerque. Manuscript. [Cited in Campbell and Muntzel 1989]
- Hill, Jane H. 1993. Structure and practice in language shift. *Progression and Regression in Language: Sociocultural, neuropsychological and linguistic perspectives*, ed. by K. Hyltenstam and A. Viberg, 68-93. Cambridge: Cambridge University Press.
- Hill, Jane H. 2001. Dimensions of attrition in language death. *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*, ed. by Luisa Maffi, 175-189. Washington, DC: Smithsonian Institution Press.
- Holloway, Charles E. 1997. *Dialect Death: The Case of Brule Spanish*. Amsterdam: John Benjamins.
- Hutz, Matthias. 2004. Is there a natural process of decay? A longitudinal study of language attrition. *First Language Attrition: Interdisciplinary Perspectives on Methodological Issues*, ed. by Monika S. Schmid, Barbara Köpke, Merel Keijzer and Lina Weilemar, 189-206. Amsterdam: John Benjamins.
- Jaspaert, Koen and Sjaak Kroon. 1992. From the typewriter of A.L.: A case study in language loss. *Maintenance and Loss of Minority Languages*, ed. by Willem Fase, Koen Jaspaert and Sjaak Kroon, 137-147. *Studies in Bilingualism* 1. Amsterdam: John Benjamins.
- Kilian-Hatz, Christa. 2003. *Khwe Dictionary. With a supplement on Khwe place names of West Caprivi*. *Namibian African Studies* vol. 6. Köln: Rüdiger Köppe.

- Leyew, Zelealem. 2003. The Kemantney language. A sociolinguistic and grammatical study of language replacement. *Kuschitische Sprachstudien* 20. Köln: Rüdiger Köppe.
- Maingard, L. F. 1937. The †Khomani dialect of Bushman. *Bushmen of the Southern Kalahari*, ed. by J.Rheinallt Jones and C. Doke, 237-275. Johannesburg: Witswatersrand University Press.
- Maffi, Luisa. 2001. Linking language and the environment: A co-evolutionary perspective. *New Directions in Anthropology and Environment: Intersections*, ed. by Carole L. Crumley, 24-48. Walnut Creek: AltaMira Press.
- McGregor, Eleanor. ca. 2001. Plants used by the =Komani San. Unpublished list regarding ethnobotanical uses of plant species. Available on request from the lead author.
- Myers-Scotton, Carol. 2002. *Contact Linguistics: Bilingual Encounters and Grammatical Outcomes*. Oxford: Oxford University Press.
- Olshtain, Élite. 1989. Is second language attrition the reversal of second language acquisition? *Studies in Second Language Acquisition* 11.151-165.
- Polinsky, Maria. 1997. American Russian: Language loss meets language acquisition. Annual workshop on Formal Approaches to Slavic Linguistics: The Cornell Meeting 1995, ed. by Wayles Browne, Ewa Wornisch, Natasha Kondrashova and Draga Zec, 370-406. Ann Arbor: Michigan Slavic.
- Sands, Bonny. 1992-1995. Unpublished fieldwork notes on Hadza.
- Sands, Bonny, Amanda Miller, Johanna Brugman, Levi Namaseb, Chris Collins & Mats Exter. 2006. 1400 item N|uu Dictionary. Manuscript.
- Sasse, Hans-Jürgen. 1992. Language decay and contact-induced change: Similarities and differences. *Language Death: Factual and Theoretical Explorations with Special Reference to East Africa*, ed. by Matthias Brenzinger, 59-80. Berlin: Mouton de Gruyter.
- Schilling-Estes, Natalie and Walt Wolfram. 1999. Alternative models of dialect death: Dissipation vs. concentration. *Language* 75.486-521.
- Schmid, Monika S. 2002. *First Language Attrition, Use and Maintenance: The Case of German Jews in Anglophone Countries*. Amsterdam: John Benjamins.
- Schmid, Monika S. and Kees de Bot. 2003. Language Attrition. *The Handbook of Applied Linguistics*, ed. by Alan Davies and Catherine Elder, 210-234. Oxford: Blackwell.
- Schmidt, Annette. 1985. *Young People's Dyrirbal: An Example of Language Death from Australia*. Cambridge: Cambridge University Press.
- Søndergaard, Bent. 1996. Language maintenance, code mixing, and language attrition: Some observations. *Nowele: North-Western European Language Evolution* 28/29.535-555.
- Traill, Anthony. 1994. *!Xóǀ Dictionary*, ed. by Rainer Vossen. *Research in Khoisan Studies* 9. Köln: Rüdiger Köppe.
- Traill, Anthony. 1999. *Extinct: South African Khoisan languages*. Compact disc. Johannesburg: Department of Linguistics, University of the Witwatersrand.
- Trudgill, Peter. 1976/1977. Creolization in reverse: Reduction and simplification in the Albanian dialects of Greece. *Transactions of the Philological Society* 7.32-50.
- Tsunoda, Tasaku. 2005. *Language Endangerment and Language Revitalization*. Berlin: Mouton de Gruyter.
- Visser, Hessel. 2001. *Naro Dictionary: Naro-English, English-Naro*. 4th edition. Ghanzi, Botswana: Naro Language Project and SIL International.
- Westphal, E. O. J. 1953-1971. *Ng|huki*. (BC 1143 (C12), E O J Westphal Papers). Unpublished notes housed at the Rare Documents and Manuscripts Department, University of Cape Town.
- Zgusta, Ladislav. 1971. *Manual of Lexicography*. The Hague: Mouton.

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