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Prehistoric language contact in the Kavango-Zambezi transfrontier area: Khoisan influence on southwestern Bantu languages

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Abstract: In this article, we show that the influence of Khoisan languages on five southwestern Bantu click languages spoken in the Kavango-Zambezi transfrontier area is diverse and complex. These Bantu languages acquired clicks through contact with both Khwe and Ju languages. However, they did not simply copy these Khoisan clicks words. They adapted them phonologically, resulting in a reduction of the click inventory and also integrated them into Bantu morpho-syntax through the unusual process of paralexification. What is more, clicks do not only occur in words of Khoisan origin, but also spread to native vocabulary as a language-internal change, among other things through sound symbolism. Finally, calques and head-final nominal compounds in a number of these Bantu languages point to structural influence, most likely from Khwe. We argue that the contact-induced changes observed in the southwestern Bantu languages can be partly accounted for by the language shift of native Khoisan speakers who imposed certain features from their native language on the Bantu language they acquired. In addition, Bantu speakers may have used clicks and other Khoisan-derived elements as an emblem for marking a separate identity, as they were not only maintained, but extended to native structures as well.

Keywords: Bantu, Khoisan, language contact, identity, language shift

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1 Introduction

In the course of their dispersal that started some 5,000 years ago in what is today the Nigeria-Cameroon borderland, Bantu speech communities entered into contact with several peoples speaking unrelated languages, which in some cases led to detectable changes in the Bantu languages. This is especially the case in the southernmost part of the Bantu domain, where interactions with autochthonous language communities commenced relatively late. Various Bantu languages of southern Africa show clear signs of contact-induced influence from Khoisan[1] languages. The best-known belong to two distinct groups spoken in South Africa: the Nguni languages Xhosa, Zulu, Ndebele, Swati and Phuthi, and the Sotho language Southern Sotho. Their history of contact with Khoisan is evident by their use of clicks, phonemes which are not natively Bantu. A distinct cluster of Bantu languages with clicks is found further north in the Kavango-Zambezi transfrontier area. It consists of Fwe, Manyo, Mbukushu, Kwangali, and Yeyi, to which we refer here as the southwestern Bantu (SWB) languages. With the exception of Yeyi, clicks are rather marginal in these languages. In this article, we examine the impact which Khoisan languages have had on the phonology, lexicon and morphosyntax of the SWB languages. We will show that although clicks have a low functional load in most SWB languages, Khoisan influence on these languages was not merely superficial. We limit the scope of our study to those Bantu languages of southwestern Africa which manifest the most visible sign of Khoisan influence, i. e. clicks, but we do not want to exclude the possibility that Khoisan influence other than clicks might also be found in closely related non-click languages of that region.

In Section 2, we present the Bantu and Khoisan languages of the Kavango-Zambezi transfrontier area in more detail. In Section 3, we consider the phonological influence of Khoisan on Bantu in the shape of clicks and assess the functional load of clicks in the SWB languages. In Section 4 we discuss the lexical influence of Khoisan on Bantu, showing that only about a third of Bantu click words can be traced to a Khoisan source language, and that several others are of clear Bantu origin. In Section 5, we examine the morphosyntactic influence of Khoisan, especially with regard to the way Khoisan loanwords were incorporated into Bantu grammar and the internal morphosyntactic structure of

1 Khoisan is used in the sense of Güldemann and Fehn (2014) as shorthand for three language families: Kx'a (ǂ'Amkoe/ǂHoan plus Ju, the latter formerly known as Northern Khoisan), Khoe-Kwadi (Khoe, formerly known as Central Khoisan, plus Kwadi), and Tuu (Southern Khoisan).

certain plant names. In Section 6, we argue that the linguistic evidence discussed here does not substantiate a scenario of superficial Bantu-Khoisan language contact in the Kavango-Zambezi transfrontier area; rather, the data point towards a contact situation in which the expression of a separate identity played a large role.

2 The languages of the Kavango-Zambezi transfrontier area

Fwe, Manyo, Mbukushu, Kwangali, and Yeyi are spoken in the borderland between northern Namibia, southeast Angola, southwest Zambia and northern Botswana (Figure 1), also known as the Kavango-Zambezi transfrontier area (Ferguson and Hanks 2010). Given their geographical position within the Bantu domain, we refer to them as southwestern Bantu (SWB) languages, not to be confounded with the genealogical subgroup 'South-West Bantu' (Bastin et al. 1999; Vansina 1995). Only some of our SWB languages belong to this subgroup, namely Mbukushu, Manyo, and Kwangali. Genealogically speaking, the SWB languages are part of distinct subgroups, most of them also comprising languages without clicks (cf. Table 1, based on Bostoen 2009; Fortune 1970; Gowlett 1997; Lisimba 1982; Möhlig 1997; Seidel 2005). The closest relatives of both Fwe and Mbukushu have no click consonants. Yeyi is possibly also part of the Botatwe subgroup, but more distantly related to Fwe than Shanjo, Totela and Subiya (Gowlett 1997).

Figure 1: Map of the Kavango-Zambezi transfrontier area showing the approximate location of the languages discussed in this paper.

Table 1: SWB languages that have words with clicks and their closest linguistic relatives.

Bantu subgroup	Click words	No click words
Botatwe	Fwe (Yeyi)	Shanjo Totela Subiya
Luyana	Mbukushu	Kwamashi
Kavango	Manyo Kwangali	

The contemporary Khoisan languages spoken in the vicinity of the SWB languages belong to Khwe and Ju.[2] Khwe varieties, such as ||Xo and ||Ani, which belong to the West Kalahari Khoe branch of the Khoe-Kwadi family (the Khoe branch of which was formerly called Central Khoisan), are found in southeastern Angola, northwestern Botswana, and the Zambezi region (former Caprivi strip) in Namibia (Brenzinger 1998; Kilian-Hatz 2003). They were until recently also spoken in southwestern Zambia (Brenzinger 1998: 340–341). Khwe-speaking groups are or were located in the immediate neighbourhood of the Mbukushu, Fwe, and Yeyi. Ju varieties constitute a large dialect cluster of the Kx'a family (the Ju branch of which was formerly called Northern Khoisan) that stretches from southern Angola over Namibia into Botswana (König and Heine 2008: 2). They are spoken in the immediate neighbourhood of Kwangali and Manyo in northern Namibia and Angola, and Yeyi in Botswana (Figure 1). Table 2 lists the different sources of data used in our analyses.

3 Phonological influence: clicks

The functional importance of click consonants in any given language can be determined by two parameters: a) the number of distinct click phonemes and b) the rate at which they occur in the lexicon (Güldemann and Stoneking 2008: 95). There is a distinction between Yeyi and the other SWB languages both in

2 Throughout the paper, the spelling of Khoisan language/dialect names and their classification follows Güldemann (2014), even where it deviates from the sources used, unless we were unable to identify the corresponding entities.

Table 2: Sources of data.

SWB languages		Ju languages		Khoe languages	
Manyo	Möhlig and Shiyaka-Mberema (2005)	Jul'hoan	Dickens (1994), Snyman (1975, 1997)	Khwe	Kilian-Hatz (2003), Legère (1998) Brenzinger (1998)
Mbukushu	Wynne (1980), Fisch (1998), Legère and Munganda (2004)	Central !Xuun	Heikkinen (1986) and Doke (1925)	ǁAni	Sommer and Voßen (1992), Voßen (1997)
Kwangali	Dammann (1957), Kloppers *et al.* (1994)	North and North-central !Xuun	König and Heine (2008)	Glui	Nakagawa *et al.* (2013), Chebanne (2005)
Yeyi (Botswana)	Sommer and Voßen (1992)	Central and North-central !Xuun	Snyman (1997)	Gǁana	Chebanne (2005)
Yeyi (Namibia)	Lukusa (2009)	Dikundu !Xuun	Köhler (1971)	Shua	Chebanne (2005)
Fwe	field data (K. Bostoen 2007, H. Gunnink 2013/2014)			Naro	Visser (2001)
				Khoekhoe	Haacke and Eiseb (2002)

inventory size and in the number of words with clicks. While most of the Khoisan languages have large click inventories, with over 30 and up to 83 different phonemes (Güldemann and Stoneking 2008: 95–97), the inventories reported for Bantu languages are considerably smaller. Güldemann and Stoneking (2008: 97) report intermediate inventory sizes (comprising between 10 and 30 phonemes) in the Southeastern Nguni languages (e. g. 15 distinct click phonemes in Zulu, cf. Herbert 1990a: 122) as well as in Yeyi. This contrasts with only five distinct click phonemes in the other SWB languages, where the dental click [ǀ] is the only place of articulation consistently used in combination with the following accompaniments: voiceless, voiced, pre-nasalized voiceless, pre-nasalized voiced, and voiceless aspirated. Alveolar [ǃ] and palato-alveolar [ǂ] clicks do occur, but these are idiolectal and never contrastive (Bostoen and

Sands 2012: 130). Given the very small number of click words, it is hard to find true minimal pairs contrasting a click with an egressive consonant. However, some (near-)minimal pairs do exist, as the Mbukushu examples in (1) and the Fwe examples in (2) show.

(1) (Near-)minimal pairs in Mbukushu involving clicks
tu-ǀere 'first two ribs of the lower part of an animal'
vs. **tu-kere** 'stick for stirring'
ku-gǀúny-a 'to be sleepless' vs. **ku-kúny-a** 'to paint'
ru-ǀoma 'reed basket' vs. **ru-goma** 'musical bow'

(2) Minimal pairs in Fwe involving clicks
ku-gǀâz-a 'to be afraid, shiver' vs. **ku-hâz-a** 'to rescue'
-gǀênè 'thin' vs. **-nênè** 'big'
kù-nǀûr-à 'to offend someone by clicking' vs. **kù-fûr-à** 'to sharpen'

Minimal pairs contrasting different clicks, however, cannot be found in the SWB languages, with the exception of Yeyi (Seidel 2005: 41). This is in contrast with the southern Bantu click languages, where minimal pairs showing the contrast between different clicks do exist (cf. Ladefoged and Maddieson 1996: 260, for Xhosa).

The number of words with click consonants also differs considerably between Khoisan and Bantu languages, as well as between the Southeastern Bantu languages plus Yeyi and the SWB languages. Güldemann and Stoneking (2008: 97) roughly estimate the proportion of click words as being "well over 60%" in many Khoisan languages. In Zulu and Xhosa, the proportion of the lexicon containing clicks comprises about 15 to 17% (Herbert 1990a: 122). Similarly, in Yeyi estimates range from 10% (Donnelly 1991) to 15% (Sommer and Voßen 1992). This contrasts strikingly with the very low number of click words found in the other SWB languages. We were able to trace only 64 click words in the different Mbukushu sources, even though Fisch (1998: 11) claims there are over 100 words with clicks. For Kwangali, we found a similar number of click words, i. e. 67. In a comprehensive dictionary of Manyo comprising more than 10,000 items (Möhlig and Shiyaka-Mberema 2005), 128 words excluding toponyms have a click – i. e. only about 1% of the total lexicon. In addition, about 60 Manyo place names in the area south of the Kavango river have a click sound (Wilhelm Möhlig pers. comm.). For Fwe, a total number of 67 click words could be elicited during fieldwork by K. Bostoen and H. Gunnink. Although continued data collection may yield more items, click words in Fwe are probably as marginal as in Mbukushu or Kwangali.

4 Copied click words from Khwe and Ju

The incorporation of clicks in SWB languages is undoubtedly a contact-induced change, but not many click words can be traced back to Khoisan languages. The identification of Khoisan sources for SWB click words is complicated by several factors. There is regional variation in many Khoisan languages and it is uncertain which varieties were in contact with SWB languages. Furthermore, there is variation in the data sources, and Khoisan languages have possibly changed since the contact with SWB languages took place. Given these uncertainties, not all Khoisan etymologies for SWB click words are equally convincing.

4.1 Phonological adaptation of copied click words

Phonemes and phoneme sequences that do not occur in the SWB languages are often adapted in copies from Khwe or Ju. An important phonological difference between the SWB languages and Ju and Khwe languages is the size of their click inventory. Fwe, Manyo, Mbukushu and Kwangali have only four to five click phonemes. Though the click inventory of Yeyi is larger than that of the other SWB languages, it is smaller than those of Ju and Khwe languages. When a Khwe or Ju word that is copied into a SWB language contains a click that is not found in the recipient language, the click is adapted. Since the dental click is the only click type used in Fwe, Manyo, Mbukushu, and Kwangali, palatal, lateral, and alveolar clicks in Khwe or Ju copies are transformed to dental clicks. This is illustrated in (3), where a Ju source word with an alveolar click has a dental click in Manyo, and in (4), where a Khwe word with a palatal click corresponds to a dental click in Mbukushu.

(3)	Manyo	Ju
	li-g|ù	**g!ú**
	NP_5-belly.[3]	
	'belly of a fish'	'stomach'
(4)	Mbukushu	Khwe
	|ɔ	**ǂ'ű́**
	'very thick'	'be thick'

Diphthongs often occur in Khwe or Ju copies but are generally not allowed in the SWB languages, and are therefore integrated as monophthongs. This is

3 The abbreviation NP stands for nominal prefix of a certain noun class.

either done by changing one of the vowels of the diphthong into a glide, as seen in example (5), or by merging the vowels of the diphthong, as in (6).

(5)

Manyo	Khwe
n|wà	**n‡góá**
'walking stick'	'walking stick'

(6)

Manyo	Ju
mu-|è	**!ài**
NP_3-peeling plane	
'peeling plane *(Ochna pulchra)*'	'peeling plane (*Ochna pulchra*)'

Occasionally, however, copied diphthongs are maintained, as in (7).

(7)

Yeyi	Ju
shi-|háò	**|háó**
NP_7-basket	
'basket, bag'	'bag, sack, purse'

Voicing and nasality are distinguished on clicks in Fwe, Manyo, Mbukushu, and Kwangali and are therefore usually maintained in copied click words, as seen in example (8), where a nasal click in Ju corresponds to a nasal click in Kwangali, and in example (9), where a voiced click in Ju corresponds to a voiced click in Manyo.

(8)

Kwangali	Ju
n|amúse	**n!àmm**
'poor fellow'	'poor person'

(9)

Manyo	Ju
li-g|ù	**g!ú**
NP_5-belly	belly
'belly of a fish'	'belly'

When a Khwe or Ju click word has a click accompaniment that does not occur in Fwe, Manyo, Mbukushu or Kwangali, the accompaniment is deleted. This is the case with the glottal stop in the Khwe word possibly copied into Mbukushu, as in (10), or the velar fricative accompaniment in the Ju word in (11), possibly copied into Manyo and Mbukushu.

(10)

Mbukushu	Khwe
ǀɔ	**ǂ'ű́**
'very thick'	'be thick'

(11)

Mbukushu	Manyo	Ju
ha-ǀu	**mu-ǀù**	**!xūún**
NP2-!Xuun	NP1-!Xuun	
'!Xuun, San person'	'!Xuun, San person'	'!Xuun person'

Yeyi has a more extensive click inventory than the other SWB languages. The Yeyi click words discussed here all come from Botswana Yeyi, which has a more extensive, but also more unstable, click inventory than Namibian Yeyi. This is probably related to the moribund status of Botswana Yeyi, whereas Namibian Yeyi appears to have more vitality (Seidel 2008; Sommer and Voßen 1992). Botswana Yeyi distinguishes dental, alveolar, lateral and palatal click influxes, and voiced, nasal, uvular fricative, ejective, aspirated and glottal accompaniments. Not all combinations are attested. Due to the instability of the click inventory, it is unclear which clicks are phonemic (Sommer and Voßen 1992). In some cases, clicks in Khwe and Ju source words were copied in Yeyi without adaptation, but in many cases, clicks were adapted. For instance, a click with a uvular stop, which occurs in Khwe but not in Yeyi, corresponds to a click without a uvular stop in Yeyi, as in the possible Khwe cognate of the Yeyi click word seen in (12).

(12)

Yeyi	Khwe
ǂa	**ǂqávé**
'shallow'	'be shallow'

Clicks with a velar affricate or fricative in Khwe and Ju always correspond to aspirated clicks in Yeyi, as in (13) and (14).

(13)

Yeyi	Khwe
wu-ǀhuldi	**ǀxùrìí(-khòè)**
NP_{14}-clever	clever-person
'cleverness'	'clever person'

(14)

Yeyi	Ju
-ǀhum-a	**ǀxòmà**
'to sympathize'	'to feel sorry for'

As in the other SWB languages, the voicing and nasality of clicks in loanwords is usually not changed, as illustrated in (15), where a voiced click in Khwe corresponds to a voiced click in Yeyi.

(15) Yeyi **shì-gǁánà** NP_7-well 'well (noun)'
Khwe **ǁgaáná**[4] 'well (noun)'

The place of articulation of a click is often changed in Ju or Khwe copies, even when the source word has a click that is also part of the click inventory of Yeyi, as in (16), where a possible Ju source word with a dental click appears to correspond to a word with a palatal click in Yeyi, or in (17), where a possible Khwe source word with a palatal click corresponds to a Yeyi word with a lateral click.

(16) Yeyi **ù-nǂú** NP_{11}-plate 'wooden plate'
Ju **nǀuù** 'dish, plate; boat, ship'

(17) Yeyi **i-ǁhumu** 'power, strength, authority'
Khwe **ǂhoḿ** 'be strong, powerful, strength' etc

The irregularities in the way in which clicks are copied may indicate that the varieties of Ju and Khwe documented today are not the source language in all cases. Possibly some click words in modern SWB languages were copied from Khoisan languages which are now extinct, as we discuss in Section 4.2, in which case the exact phonological form of the source word is of course unknown. Another explanation for the irregularities in the adaptation of clicks may be that adaptations do not serve a phonological purpose. Rather, as discussed in detail in Section 6, they indicate that clicks in the SWB languages may have had an emblematic function of emphasising a separate sense of identity.

4 The voiced lateral click is written as <gǁ> in the Yeyi source and as <ǁg> in the Khwe source. Both orthographic realizations in fact represent the same phoneme.

4.2 Etymologies of copied click words

Source words for SWB click words can be found in languages of both the Khwe and the Ju cluster. However, not all SWB click words corresponding to Khoisan click words were necessarily directly copied from a Khoisan language, nor is the direction of transfer always from Khoisan to Bantu. An important indication for the direction of copying from Khoisan to Bantu is the occurrence of Bantu grammatical affixes, such as a noun class prefix or the verbal derivational suffix **-un-/-ur-**, on the SWB lexeme, while they are absent in the supposed Khoisan source, as in (18) and (19).

(18)

Manyo	Khwe
-n|én-un-a	**n‡góé**
ignore-SEP-FV	ignore
'to ignore, mistrust, doubt'	'to ignore'

(19)

Mbukushu	Ju
-n|amb-ur-a	**ǁ'ǎm, n‡aǜ'ḿ, n‡a'm**
smack-SEP-FV	
'to smack'	'to hit, slap, slam'

As shown in Table 3 of the appendix, we found, with varying degrees of plausibility, only 16 etymologies for Fwe, Manyo, Mbukushu, and/or Kwangali click words in Khwe. Some of these had already been identified by Legère (1998), but we were able to add several new ones. Of the Yeyi click words, 27 have a possible Khwe source. Most click words of presumed Khoe origin are from (West-Caprivi) Khwe, the Khwe language with the most comprehensive dictionary (Kilian-Hatz 2003). It is the most plausible source of these Bantu click words for geographical as well as linguistic reasons. Cognates from other Khoe languages are included to substantiate the claim that these are indeed native Khoe words. For Yeyi, there are a few cases of click words that are not copied from Khwe, but rather from Shua, Gǁana or Glui (Table 3, 21, 40, 42), Kalahari Khoe languages spoken in Eastern and Central Botswana.

The number of SWB click words of possible Ju origin is somewhat higher than those of possible Khwe origin, though not substantially so. As shown in Table 4 in the appendix, we found, with some degree of plausibility, 28 Ju etymologies for click words in Fwe, Manyo, Mbukushu, and Kwangali together, as well as 28 click words with a likely Ju origin in Yeyi.

There are a number of cases where a click word occurring in one or more SWB languages corresponds to a similar word in both Khwe and Ju languages,

which are listed in Table 5 in the appendix. These are no doubt lexemes of non-Bantu origin, but it is unclear whether a Ju or Khwe language is the source. The existence of numerous lexical correspondences between the Khoe and Ju languages due to contact is well established (Güldemann and Loughnane 2012).

Interestingly, a number of correspondences between SWB and Khwe click words (cf. (20) below) are probably the result of transfer not from Khwe to Bantu, but from Bantu to Khwe. The direction of transfer here is evidenced by the fact that the Bantu noun class prefix is maintained in Khwe, that the click in Khwe is always dental or replaced by a non-click consonant, and that there are no cognate words in Khoe languages that have not been in contact with the SWB languages. The click words that are copied by Khwe most strongly resemble the structure of the word in Mbukushu.

(20) Items copied from Bantu into Khwe

	Gloss	SWB	Khwe
a)	otter *(Anonyx capensis)*	**dí-ǀi** (Mb), **li-ǀì** (Ma), **ɛ-ǀí** (Kw)	**díǀgì**
b)	sardine (small fish)	**di-ngǀe** (Mb), **li-nǀhè** (Ma), **ɛ-nǀhɛ** (Kw)	**díngǀé**
c)	trap	**mú-ǀingo** (Mb)	**múcìngò**
d)	cold, frost	**ka-ǀi** (Mb), **ka-ǀí** (Ma), **ka-ǀi** (Kw)	**kàcì**

Note that (20d) also has a Ju cognate (see Table 4, 21), but in Ju this word occurs without the initial syllable **ka-** that is seen in SWB and Khwe. This is consistent with our hypothesis that -ǀ**i** was originally copied from Ju into the SWB languages, where it acquired a noun class prefix, and was subsequently copied into Khwe from a SWB language.

Tables 3–5 in the appendix show that only a minority of the words with clicks identified in the SWB languages can be traced back to a known Khoisan language: 29 click words in Manyo have a probable Khwe or Ju source, as do 23 click words in Mbukushu, 13 click words in Kwangali, 11 in Fwe and 65 in Yeyi. In other words, a Khoisan source lexeme can be identified for at most one third of the click words in these languages (between ~16% in Fwe and 36% in Mbukushu). There are several explanations for why so few SWB click words have an assignable Khoisan etymology, one of which is that a number of click words in SWB languages may have their origin in one or more Khoisan languages that are extinct and/or undocumented.

It is striking that click words are not distributed evenly across the lexicon, but come from a rather restricted set of semantic domains. A large proportion of the click words in the SWB languages refer to animals, plants, or weather phenomena and/or belong to the domain of fishing, hunting or gathering (cf. Fisch 1994: 17): overall, 26 out of a total of 64 click words in Mbukushu

(41%), 45 out of 128 in Manyo (35%), 28 out of 67 in Kwangali (42%), 25 out of 67 in Fwe (37%) and 75 out of 236 in Yeyi (32%) belong to these semantic domains. If one considers only those SWB click words assignable to a Khoisan source, words belonging to these semantic fields account for an even larger proportion: 13 out of 23 in Mbukushu (57%), 19 out of 29 in Manyo (66%), 10 out of 13 in Kwangali (77%), 26 out of 65 in Yeyi (40%) and 6 out of 11 in Fwe (55%), see for example (1), (4), (8) in Table 3, or (1), (2) and (3) in Table 4. On the one hand, words designating local environmental phenomena are those that one might expect to be copied from the indigenous population by an immigrant group even in situations of rather casual contact. On the other hand, Ross (2013) suggests that the retention of specialized vocabulary might be the only discernible trace of a prehistoric language shift if the shifting group was small or the shift took place after an extended period of bilingualism.

5 Click insertion, paralexification, calquing and structural copying

Contact between SWB languages and Khwe and Ju varieties has not only resulted in the copying of clicks and click words, but has also resulted in structural changes in the SWB languages. In this section we discuss the insertion of clicks in native words, the process of paralexification, which played a role in integrating copied click words into the morphosyntax of SWB languages, and the acquisition of loan translations and head-final compounds based on Khwe or Ju lexemes.

5.1 Click insertion

As we have shown in the previous section, not more than about a third of SWB click words can be traced back to a Khoisan source language. A portion of the SWB click words that do not have an identifiable Khoisan source are in fact not Khoisan copies, but native Bantu words in which a click has been inserted. Table 6 in the appendix lists click words in SWB Bantu languages that are contrasted with click-less cognate words in related languages, such as Ila, Tonga, Lozi, and Kwamashi, as well as with Bantu reconstructions. The occurrence of clicks in native Bantu vocabulary is not the result of regular sound change: the clicks in the examples in Table 6 are substitutions for ten different consonant phonemes, which have not changed to a click in the vast majority of

words in which they are found in the SWB languages. Moreover, clicks are also found in loanwords of European origin, such as the Manyo noun **lumâte** 'tomato'. This form is not a copy from Khwe or Ju, as the Khwe and Ju words for tomato do not have a click. It clearly represents a case of click insertion in non-Khoisan vocabulary in the SWB languages themselves (Bostoen and Sands 2012: 133). For Yeyi, no clear cases of click insertion are found, which might – at least partly – be due to the fact that it is hard to compare non-Khoisan click words from Yeyi with Bantu cognates, as the closest Bantu relatives of Yeyi are not yet well established.

A number of factors might account for the irregular insertion of clicks in words that do not originate in Khoisan. First of all, clicks may be inserted for sound-symbolic reasons (Bostoen and Sands 2012). Verbs such as Fwe **-gǀônta** 'to drip' and **-ǀapura** 'to tear' describe actions that produce a certain noise, and the insertion of the click may be a mimicry of this noise. Secondly, it is notable that a number of Bantu click words for which cognates were found in other SWB languages refer to sexual or social taboos (21), so that the use of clicks might be linked to the cross-linguistically frequent affective use of clicks (Gil 2005). Finally, as discussed in Section 6, the extension of clicks to non-Khoisan words may also have played a role in using linguistic means to index a separate identity.

(21) SWB taboo click words

Fwe	**gǀôndo**	'devil's thorn, used as a sexual stimulant'
Fwe	**mu-ǀômbe**	'anus'
Manyo	**li-nǀâru**	'stain of egg white, discharge (from vagina)'
Manyo	**ru-nǀûru**	'foreskin'
Mbukushu	**ku-ma-rugǀa**	'ritual places exclusively for men'
Mbukushu	**kawuǀuri**	'exclusivity for men or women when eating food'

5.2 Paralexification

Paralexification is a process found in language intertwining (or mixing), where a language creates a second word form for an existing lexical entry, which copies the semantic and morphosyntactic properties of the existing word form (Mous 2001b). While Mous (2001a) describes paralexification in language intertwining, this is by no means limited to language mixing: "Paralexification is not another name for language intertwining" (Mous 2001b: 113). It can be viewed more generally as one of the processes or outcomes of languages in contact. In this section, we describe paralexification in the SWB languages. Although it did not lead to language intertwining in this case, paralexification has played a role in

the integration of Khoisan loanwords in the noun class system of SWB languages. When copying nouns from a non-Bantu language, the default strategy for Bantu languages is to assign all copied nouns to the same noun classes (Mous 2003: 215), most often those with a zero class prefix in the singular. In Mbukushu, Manyo, and Kwangali, copies are usually assigned to classes 9/10, whose noun prefix is phonologically the lightest, i. e. a homorganic nasal. This homorganic nasal is not added to copies (Dammann 1957: 11; Fisch 1998: 28; Möhlig 1967: 125; Seidel 2008: 102). In addition to class 9, Fwe assigns copies of European origin (mostly from English and Afrikaans, often via Lozi) to classes 5/6, e. g. **buka/ma-buka** 'book', **shereni/ma-shereni** 'shilling, money', **tafure/ma-tafure** 'table'. Copies are only assigned to another noun class if their first syllable is phonologically reanalysable as a noun class prefix, for example in the Fwe word **bu-rukwe/ma-rukwe** 'trousers' copied from Afrikaans **broek** (most likely via Lozi). After the vowel epenthesis that took place to break up the exogenous consonant cluster /br/, the initial syllable **bu-** was reanalysed as the singular class 14 prefix **bu-**, which commutes with the plural prefix of class 6, **ma-**. Otherwise, the addition of a noun class prefix to copied items is rather exceptional in Bantu languages (Mous 2001b).

In contrast to what would be expected, nouns of Khoisan origin in the SWB languages generally do not follow the default strategy of noun class assignment seen for European loanwords. Khwe and Ju loanwords are frequently integrated into a noun class other than class 9/10 through the addition of a noun class prefix, even if their first syllable is not homophonous with a Bantu noun class prefix, e. g. Mbukushu **di-n|ánu** from Khwe **n|ánú** (Table 3, 3) or Fwe **mu-|áwa** from Ju **Ju** **|áǫ̱** (Table 4, 14), or Yeyi **mu-g!uma** 'upper arm' from Ju **g!òmá** 'upper arm' (Table 4, 44). This uncommon morphological nativization of Khoisan copies might be a manifestation of paralexification.

A possible example of paralexification is the Fwe word **mú-ng|ulya**, which is a member of noun class 3. **Mú-ng|ulya** is the generic word for lizard, and it has a synonym **mu-shúndukire** or **mu-shúninikire**, also in class 3. The form **mú-ng|ulya** may be a copy from Ju (Table 4, 16). Some speakers claim that the distribution of the two lexemes is geographical, with **mu-shúndukire** as the Zambian variant and **mú-ng|ulya** as the Namibian variant of the word. The class 3 membership of **mú-ng|ulya** is unlikely to be the result of the application of general semantic principles of noun class assignment, since most Fwe words for animals are found in classes 9 and 1a, including the words for certain types of lizards, **shwashwashwa** and **sipu**, both in class 1a. Very few words for animals are found in class 3. It is much more likely that the class 3 membership of **mú-ng|ulya** is the result of paralexification based on the forms **mu-shúndukire** and **mu-shúninikire**.

Examples of paralexification are also found in Manyo, such as the doublet **mu-g|ûva** and **mu-góro**: here, both words refer to the same tree species, *Terminalia sericea* and have the same noun class prefix. If the dendronym **mu-g|ûva** is indeed of Khwe origin (Table 3, 4), it was probably paralexified to the already existing proper Manyo term **mu-góro**, whose class prefix was copied. Likewise, the Manyo word **li-g|ù** 'fish-belly', probably of Ju origin (Table 4, 7), was assigned to class 5 in analogy with the generic word for stomach **li-pûmba** belonging to the same class. Note that the putative source word in Ju is also generic, while it underwent semantic narrowing in Manyo to designate specifically the belly of a fish, suggesting that it was copied into Manyo in the well-defined context of fishing, a semantic domain which attracted many click words, as mentioned above.

Instances of paralexification accompanied by semantic narrowing also occur in Mbukushu. The click word **tu-|ɛrɛ** referring to the first two ribs of an animal, probably of Khwe origin (Table 3, 7) was assigned to class 13 and has its singular in class 12, i. e. **ka-|ɛrɛ**. Semantically, the expected noun class of 'rib' would have been class 11, as this class contains many nouns referring to elongated objects, and the generic word for rib belongs to class 11 in Fwe, Manyo, and Kwangali. The generic Mbukushu word for rib belongs to class 12/13, i. e. **ka-patjí/tu-patjí,** indicating that the assignment of the Khwe loanword **-|ɛrɛ** to class 12/13 was a paralexification of the generic word for rib. At the same time, as its transfer probably happened in the specific context of hunting/butchering, the word acquired a more specialized meaning. A further example of hunting-related paralexification in Mbukushu is the word **mu-g|ɛŋgu** 'zebras in a group', which was probably copied from a Ju language (Table 4, 10). This is a class 3 noun, as evidenced by its prefix **mu-.** Mbukushu animal names are usually found in class 9/10, but the class 3 prefix **mu-** or the class 14 prefix **ghu-** can be used to express 'the sense of a herd or other collective group of animals' (Fisch 1998: 27), e. g. **n-guya** 'baboon' > **ghu-guya** 'herd of baboons'; **hefu** 'eland' > **mu-hefu** 'herd of eland'. Fisch (1998: 28) presents the paralexeme of **mu-g|ɛŋgu**, i. e. **mu-mbi** 'herd of zebra', derived from **mbi** 'zebra'. All these examples are identifiable as paralexification, since the lexeme that served as a basis for paralexification is still in use in the language.

There are also cases where the lexeme on the basis of which paralexification took place was lost. For instance, two Fwe click words for types of reed, i. e. **ru-|óma** and **ru-n|an|a**, both in class 11 and both of Khwe origin (Table 3, 9 & 10), might be cases of paralexification, even though no clickless synonyms exist in the language. The assignment of these Khwe loanwords to class 11 is not demonstrably based on the paralexification of specific words; it might be due to the application of general semantic rules that govern noun class membership in Bantu, or the original Bantu paralexeme may have subsequently been lost. Class

11 in Fwe includes various terms for types of reed, such as the generic word for reed, **ru-shâsha**, and a reed species called **ru-taka**. As discussed above, loanwords in Bantu are not commonly assigned to a noun class based on semantic principles, showing that the class 11 membership of copied terms for reed species is related to paralexification.

Another example of probable paralexification is the Manyo word **shi-ǀúma** 'basket', likely to be of Khwe origin and also attested in Mbukushu (Table 3, 2). As in the Fwe example above, there is no noun with the exact same semantics as **shi-ǀúma** in Manyo, but a number of lexemes with similar semantics are found, which are all in noun class 7, as shown in (22).

(22) Manyo basket terms (Möhlig and Shiyaka-Mberema 2005)

shi-didí	'basket used as frog-trap or fish-trap, fishing keel'
shi-kûku	'large fish-basket used as a trap'
shi-kûmba	'wicker basket'
shi-mbândi	'basket (e. g. for harvesting); mousetrap'

Eight of the click words found in SWB languages refer to types of trees. In Manyo, Mbukushu, and Kwangali tree names are most commonly classified in class 14 (**bu-/ghu-/u-**), but some occur in class 3 (**mu**-) (Dammann 1957; Fisch 1998; Legère and Munganda 2004; Möhlig 2005; Wynne 1980). Only one of the Mbukushu dendronyms with a click is in class 14, the other seven are in class 3/4 in all the languages in which they occur. The copied click words for trees must have thus received their class 3 **mu**- prefix not so much by analogy with the class membership of trees in general, but rather in analogy with the class membership of specific trees, or the copying must have happened before class 14 became the default class for tree names. In most Bantu languages, the default class for plant names is class 3 (Katamba 2003: 115), suggesting that the use of class 14 as a default for tree names is an innovation in SWB languages.

Paralexemes are also observed in semantic fields other than animal and plant names. Manyo and Fwe, for instance, share the noun stem **-ǀo** 'tastelessness' (Table 5, 6), which in both languages belongs to class 14 – the usual noun class for abstract concepts in Bantu (Katamba 2003: 115). Apart from the fact that this noun was not integrated into the default noun class for copied items, but into the semantically 'correct' noun class, there is additional evidence for paralexification in that both Fwe and Manyo have an apparent native synonym: **βu-shâmu** and **u-hâmu**, respectively. In Fwe, speakers claimed **-ǀo** and **shâmu** to have exactly the same and rather limited meaning, that is to describe the lack of salt in a relish. This strongly suggests that **-ǀo** was added to the lexicon while taking over the morphosyntactic and semantic properties of **shâmu**.

Click words copied into Yeyi are also often integrated into the Yeyi noun class system through paralexification. The Yeyi word **mu-ǀhamu** 'urine', copied from either Khwe or Ju (Table 5, 15), has two synonyms in Yeyi, **mu-su** and **mu-wumba**. As evidenced by their noun class prefix **mu-**, all three words meaning 'urine' are in class 3. This suggests that the class 3 membership of the copy **mu-ǀhamu** was based on the class 3 membership of its native synonyms **mu-su** and **mu-wumba**. Another example of paralexification in Yeyi is **ldi-nǁee** 'story' (Table 3, 33), which is in class 5 as evidenced by its prefix **ldi-**. There is no paralexeme for **ldi-nǁee** 'story', but there are a number of words with a similar meaning that are also found in class 5, such as **ldi-rumbo** 'poem, praise, eulogy', **ldi-tembo** 'poem, praise, eulogy', or **ldi-yi** 'voice, word'. Either **ldi-nǁee** was integrated in noun class 5 on the basis of a native lexeme that was later lost, or its class 5 membership was due to the general semantics of noun class 5.

Paralexification also occurs in SWB verbs of Khoisan origin, which may acquire non-productive derivational affixes. The base form of a Bantu verb root is CVC which can be extended by adding derivational suffixes. Some derivational suffixes are productive, changing the verb's valency and semantics, such as the applicative, the causative and the passive, whereas other suffixes are more lexicalized, but still semantically distinctive, such as the separative or the contactive (Schadeberg 2003). The separative suffix **-ur-**, and its allomorphs **-un-** and **-on-** determined by vowel and/or nasal harmony, are for instance observed with verbs of Khwe provenance, such as **-nǀén-un-a** 'to ignore, mistrust, distrust, doubt' (Table 3, 11) and **-nǀak-ur-a** 'to click' (Table 3, 12), as well as with verbs of Ju provenance, such as **-ngǀom-on-a** 'to click as an expression of contempt' (Table 4, 23) and **-nǀamb-ur-a** 'to smack' (Table 4, 24). Certain verb extensions are not only lexicalized, but also no longer have a clearly identifiable semantic import, as observed in the extended Mbukushu verb **-ngǀangǀ-ar-a** 'to chatter', possibly copied from a simple Ju verb **nǂoahn** (Table 4, 25), and the extended Fwe verb **-gǀak-amin-a** 'to scoop fish', likely copied from a simple Ju verb **gǃxà** or **gǃxǎ̀** (Table 4, 27). None of these verb extensions were added for phonotactic reasons. They are not productive in the grammar of the recipient language and they also do not add a transparent semantic value to the verb. The suffix of these copied verbs was simply assigned on the model of an existing verb form with an identical or similar meaning, which can be considered an instance of verbal paralexification. For instance, the addition of the non-productive derivational suffix **-ur-** on the Mbukushu verb of Ju origin **-nǀamb-ur-a** 'to smack', may be the result of paralexification of a similar Mbukushu verb **-púm-ur-a**, 'to hit, give a blow, stroke', which has the same derivational suffix **-ur**-. The addition of the derivational suffix **-ur-**, in its allomorph **-un-**, seen in the Manyo verb

-n|én-un-a, 'to ignore, mistrust, distrust, doubt', may be the result of paralexification of a similar Manyo verb **-yév-ur-a**, 'to neglect, disregard, ignore', in which the same derivational suffix is used.

Paralexification explains why Khwe and Ju copies in SWB languages are assigned to different noun classes, and not to one or two default classes as is more common in Bantu. However, paralexification in SWB languages is not identical to paralexification described for Ma'a/Mbugu (Mous 2001a), as we do not see two lexical entries with identical semantic and morphosyntactic properties for each instance of a copied noun in modern SWB languages. Nevertheless, this does not rule out that paralexification may have taken place at some point in the history of these languages, since the outcome of paralexification may be difficult to identify or to distinguish from simple copying if the original form gets lost in time (Mous 2001b). "However, when the words replaced show formal morphological properties, such as noun class membership, which are identical to another language for every individual lexeme, that in itself is a sign of prior paralexification." (Mous 2001b: 114)

5.3 Calquing

Structural influence of Khoisan on SWB languages is further evident in calqued noun phrases found in the domain of plant names. These calques appear to be based on lexical compounds in Khwe. So far we have only found Khwe-based calques in Mbukushu, Manyo and Fwe, as data on plant names in Yeyi and Kwangali are not available.

(23) Khwe calques in Manyo, Mbukushu and Fwe

a.	Fwe	Khwe
	mi-cira yo-ba-ndavu	**xàḿ-tcao-dòà**
	NP_4-tail $CONN_4$-NP_2-lion[5]	lion-tail-grass
	'*Aristida meridionalis*'	'*Aristida meridionalis*'
b.	Manyo	Khwe
	u-ngándu	**|xúni-yi**
	NP_{14}-crocodile	crocodile-tree
	'knobthorn (*Acacia nigrescens*)'	'sand acacia (*Acacia arenaria*)'

5 Noun class 14 (example 23b) is used in Manyo for tree names. Noun class 9 (example 23c) is a noun class containing many nouns referring to animals.

c.	Mbukushu	Khwe
	m-bwáwa	**pò-dòá**
	NP_9-jackal	jackal-grass
	'Natal grass (*Melinis repens*)	'Natal grass (*Melinis repens*)'
d.	Mbukushu	Khwe
	ñunde-nyami	**khyàní-cúdjèrè**
	bean-god	god-peanut
	'lablab bean (*Lablab purpureus*), lentil (*Lens culinaris*)'	'plant sp.'

In these calques, the semantics of the Khwe term are rendered with Bantu lexemes and in a Bantu morphosyntactic structure. For instance, in (23a), the Khwe word **xàḿ-tcao-dòà**, a compound noun with the literal meaning 'lion's tail grass', is rendered in Fwe with the native Fwe word for tails, **mi-cira**, and the native Fwe word for lions, **ba-ndávu**. The structure of the expression in Fwe is that of two nouns which are conjoined by a connective prefix, which is the most common way of juxtaposing two nouns in Bantu, and not as a nominal compound, which is the more common way of juxtaposing two nouns in Khwe, as shown in the following section. Another grammatical structure on which Bantu languages typically rely for the creation of these calques is noun class alternations to derive new meanings. While Khwe derives plant names by compounding generic terms, such as 'tree' or 'grass', to specifiers, Bantu languages achieve this goal by changing the noun class. For instance, the Manyo word **u-ngandu** (23b) consists of the lexical stem **ngandu**, 'crocodile', which has been shifted to noun class 14 to create the name of a tree. This is the noun class in which words for trees are usually found in Manyo. In this way, Manyo renders the meaning of the Khwe word **ǀxúni-yi**, literally 'crocodile tree', with a native Manyo noun stem and a native Manyo process of derivation. Similarly, the Mbukushu term for 'Natal grass' (23c) is calqued from the Khwe source item through such noun class alternation.

5.4 Structural copying

In a number of cases, Manyo, Mbukushu and Fwe have not only taken over the semantics of the Khwe term, but also its structural properties. In the following example, the Mbukushu term copies the lexical semantics of the Khwe term, that is, the use of the word with the meaning 'crocodile'. It also copies the morphosyntactic properties of the Khwe term, namely the use of the right-headed nominal compound.

(24) Khwe calque in Mbukushu with Khwe morphosyntactic structure

Mbukushu	Khwe
ghu-ghandu-tji	**ǀxúni-yi**
NP_{14}-crocodile-tree	crocodile-tree
'knobthorn (*Acacia nigrescens*)'	'sand acacia (*Acacia arenaria*)'

There are a number of other plant names in SWB languages where the morphosyntactic structure is copied from Khwe. The following examples show right-headed nominal compounds with either **-tji** or **-buna** as their head. **-tji** is a reflex of the Proto-Bantu ***-tí** 'tree, stick'. As an independent noun stem and generic tree term, ***-tí** was substituted by ***-tóndò** in Manyo and Mbukushu, whose original meaning is 'ridgepole' (Bastin et al. 2002). The Fwe noun **-bûna** means 'leaf'. No source word for these plant names is found in Khwe, suggesting either that these nominal compounds were language-internal creations, or that they were calqued from another, currently extinct Khoisan language with head-final nominal compounds.

(25) Right-headed nominal compounds

1) Manyo

mu-kôngo-tji
NP_3-hunter-tree
'poison-pod albizia (*Albizia versicolor*)'

m-púmu-tji
NP_9-?-tree
'magic guarri (*Euclea divinorum*)'

2) Mbukushu

mu-tjima-tji
NP_3-heart-tree
'hairy corkwood (*Commiphora africana*)'

ñunde-tji
bean-tree
'common bean (*Phaesolus vulgaris*)'

rungu-tji
lime-tree
'black vetivergrass (*Vetiveria nigritana*)'

ghu-gondo-tji
NP_{14}-corner-tree
'poison-pod albizia (*Albizia versicolor*)'

3) Fwe
ngwe-buna
NP_{1a}-leopard-leaf
'plant sp.'

The use of a compound noun with the word for 'tree' or 'leaf' as the head of the compound is not a surprising construction for plant names, but the fact that the compound is head-final is atypical for Bantu languages, which are prototypically head-initial (Güldemann 1999: 61–62; Schadeberg 2003: 86). In SWB languages, nominal compounds are very rare, and the common strategy to combine two nouns is in a connective construction. The head of the connective construction takes the initial position, followed by a connective morpheme and the dependent, as seen in the Fwe example in (23a). Although the development of nominal compounds out of connective constructions is a possible grammaticalization path, it would result in head-initial nominal compounds, and not in head-final compounds.

In Khwe, nominal compounds are very common, and are always head-final (Kilian-Hatz 2008: 90). Botanical terms are often compounds taking generic terms as final element, such as **-yi** 'tree', **-doa** 'grass', as illustrated in the previous examples (see 23a and 23b), **-ǀga** 'leaf', and **-tco** 'medicine', as shown in (26).

(26) Khwe (Schladt 2000)
a) **ǀxúni-ǀgǎ̋**
crocodile-leaf
'*Aeschynomene nilotica*'
b) **píní-tcò**
fever-medicine
'*Corallocarpus bainesii*'

As the development of head-final compounds is an unlikely internal development for Bantu languages, it is probable that the head-final compounds in SWB languages are the result of contact with Khwe. The acquisition of right-headed phytonym compounds may also be the result of contact with Ju, which also has head-final nominal compounds and possessive constructions (König and Heine 2013: 314), even though calques from Ju are not observed in SWB languages. Right-headed compounds are most frequent in Mbukushu, less so in Manyo, and very rare in Fwe.

6 Prehistoric language contact in the Kavango-Zambezi transfrontier area

Historical information necessary to reconstruct what Mufwene (2001) calls the 'ecology' of language contact in the Kavango-Zambezi transfrontier area is largely missing. Instead we need to closely study the contact-induced changes observed in the SWB languages in order to determine the past social circumstances which triggered them. From this we can draw tentative conclusions about the different Bantu-Khoisan contact events that took place, the order in which they took place, and the social cirumstances under which they took place.

One major new insight that clearly results from our study is that Khoisan-Bantu contact in the Kavango-Zambezi transfrontier region was not a single historical event, but consisted of several contact events which took place between different communities. It has been suggested that not all SWB languages were in direct contact with Khoisan languages, but that click words were only indirectly copied from Khoisan languages via contact with Yeyi, the one SWB language with a high proportion of click words in its lexicon (Maddieson 2003: 32). However, comparison of the click words in the different SWB languages rules out this hypothesis and demonstrates that all five SWB languages were in direct contact with both Ju and Khwe lects, as there are few correspondences between click words in Yeyi and click words in other SWB languages: Fwe shares seven click words with Yeyi, Mbukushu and Kwangali each share two, and Manyo shares only one click word with Yeyi. Furthermore, these correspondences are often only partial or can be accounted for by independent copies from different Khoisan sources (Bostoen and Sands 2012: 131). Thus, Yeyi cannot plausibly have been the source of the bulk of the click words found in Fwe, Mbukushu, Kwangali, and Manyo.

Even though there is no ground to assume that click words entered the SWB languages via Yeyi, there is good reason to believe that click words were transferred between Kwangali, Manyo, and Mbukushu. For instance, Mbukushu shares ~34% of its click words with Kwangali and Manyo, Manyo shares ~34% of its click words with one or both of the other languages, while Kwangali shares nearly 50% of its click words with Manyo and Mbukushu. It is notable that Mbukushu and Kwangali do not share any words that are not also found in Manyo. These data indicate that click words may well have been transferred among these Bantu languages rather than being independently copied from Khoisan languages, with Manyo playing a central role in the process

(Bostoen and Sands 2012: 131–132). This accords well with its geographical location in between Kwangali and Mbukushu (cf. Figure 1). Such a process of internal transfer is not surprising, given the close historical ties between these languages (Möhlig 1997; Seidel 2005). Nevertheless, since Manyo, Mbukushu, and Kwangali each also have a significant number of click words that are not shared with any of the other SWB languages, it is likely that in addition to Bantu-internal transfer they also acquired click words directly from the Khwe and Ju source languages. An alternative, but less likely explanation is that all click loans were originally shared between the SWB languages, but that most of these were lost, resulting in differential retention of individual items in the different languages. If all click words in SWB languages were once shared, this would mean that Fwe and Yeyi would have lost close to 90% of their original complement of click words, since they share very few click words with each other or with the other SWB languages. The more likely scenario is that all SWB languages acquired most of their click words directly from Khwe and Ju lects, rather than from each other.

Although it is clear that all SWB languages have been in contact with both Khwe and Ju lects, the Bantu-Khwe and the Bantu-Ju contact situations were quite distinct. First, there are some indications that an early period of contact between SWB languages and Ju was followed by later contact between the SWB languages and Khwe. As illustrated in (20), a number of Bantu click words have been copied into Khwe, including (20d) **ka-ǀi**, an original copy into Manyo, Mbukushu, and Kwangali from Ju. The transfer from Ju to Bantu and then to Khwe is also seen in plant names. For example, Ju **tamah** 'tsamma melon' is copied into Mbukushu as **ka-tjama**, adding a nominal prefix **ka-** of class 12, which is subsequently copied into Khwe as **kátcamà**. The maintenance of the Bantu prefix shows that this word was not transferred directly from Ju to Khwe, but was mediated by a Bantu language; this indicates that the Ju-Bantu contact must have preceded the Khwe-Bantu contact.

Aside from this temporal layering of the contact situations, the outcome of Ju-Bantu contact also differs from the outcome of Khwe-Bantu contact, indicating that the contact situations differed. Fwe, Manyo, Mbukushu and Kwangali all have more Ju loanwords than Khwe loanwords, while in Yeyi Khwe loanwords and Ju loanwords are found in equal measure. Structural influence in the SWB languages, on the other hand, mainly comes from Khwe. While head-final compound plant names could be the result of contact with either Khwe or Ju, as nominal compounds are head-final in both these languages (Kilian-Hatz 2008: 90; König and Heine 2013: 314), the calques seen in Manyo, Mbukushu and Fwe come from Khwe, but not from Ju. The fact that most head-final compounds in SWB languages cannot be shown to be direct calques from Khwe suggests that

they may have been created independently; alternatively, they could have been calqued from a now-extinct language, or they could be calques from either Khwe or Ju for which the model construction has not yet been identified. If the head-final structure of nominal compounds is indeed related to calquing, this, too, is likely to be Khwe influence. This indicates that the contact between the SWB languages and Khwe was more intense, leading to structural rather than lexical copying, while the contact involving Ju languages was more superficial and resulted mainly in loanwords.

A third major new insight from our study is that clicks did not make their way into the SWB speech communities through superficial contact with their Khoisan neighbors. The acquisition of new phonemes, such as clicks, rarely happens in situations of superficial contact (Winford 2003: 55), but is typical of situations of language shift (Van Coetsem 1988; Winford 2003: 377). In the model of Van Coetsem (1988; 2000), the process of change involved in language shift is Source Language Agentivity, whereby speakers impose phonological and syntactic features of their dominant native language on a second language they acquire. Furthermore, as discussed by Ross (2013: 28–31), constructional calques as well as specialist vocabulary carried over from the heritage language of the shifting group are further indications of prehistoric language shift. In the SWB languages we find both calques as well as copied lexemes pertaining to hunting and fishing, the predominant subsistence strategies of the Ju and Khwe, thus strengthening our conclusion that the contact situation in the Kavango-Zambezi transfrontier region involved some language shift. Native Khoisan speakers thus appear to have acquired a Bantu language as their second language, imposing certain features from their native language, such as clicks, calques and head-final compounds, in addition to transferring some items of specialist vocabulary from the domain of hunting and fishing. These features of the L2-variety spoken by the native Khoisan speakers would subsequently have been adopted by new generations of native Bantu speakers, who would have simplified the complex click consonants to the least marked one, namely the dental click. The hypothesis of language shift from Khoisan to Bantu is also supported by genetic evidence, which shows that it was Khoisan-speaking women who intermarried with Bantu-speaking men (Barbieri et al. 2013; Barbieri et al. 2014b); for a more detailed interdisciplinary review of genetic and linguistic evidence on Bantu-Khoisan contact, see Pakendorf et al. (in preparation).

Furthermore, the occurrence of Khwe-based calques in Mbukushu, Manyo, and Fwe, albeit a small number, suggests that the process of shift may have included some bilingualism, as calquing is a strategy applied unconsciously by learners of a second language (Matras 2009: 310). In order to render the meaning of a Khwe compound with Bantu lexemes in a Bantu structure, the speaker

needs to know both Khwe and the Bantu language. For such calques to be maintained in the language that was the target of the shift, however, the resulting speech community needs to remain separate from other communities speaking the target language (Ross 2013: 31). This implies that the speech communities that resulted from the shift of Khoisan groups to Bantu languages might well have had a distinct identity.

Intriguingly, a number of the contact-induced changes in the SWB languages are typical not so much of language shift as of marking a separate identity. The most striking of these is the insertion of clicks in native vocabulary. In the Southeastern Bantu languages, the insertion of clicks in native vocabulary has been linked to the taboo practice of *hlonipha* (Herbert 1990b), but the practice of *hlonipha* does not exist among speakers of SWB languages. Instead, the insertion of clicks may have functioned as an index of a separate identity, a function associated with conscious language manipulation (Mous 2003: 223, 226–227); in addition, it has also been linked to sound symbolism (Bostoen and Sands 2012).

The identity-marking function of clicks and other Khoisan-derived elements may have been responsible for their maintenance in the SWB languages. For the impact of a substrate language to be detectable in the language that was the target of the shift, the number of shifting speakers relative to native speakers of the target language has to be large (Ross 2013: 30; Thomason and Kaufman 1988: 119–121). Given the much larger numbers of agriculturalist vs. forager populations such as the Ju-speaking groups or Khwe (Barbieri et al. 2014a), it is rather unrealistic to assume that the impact of Khoisan on the language of the Bantu agriculturalists was due to the larger number of shifters. Furthermore, the loanwords come from several different languages, not just from one, implying that the shift would have involved several different Khoisan speech communities – in which case the impact of each individual Khoisan language would have been even smaller. As the size of the shifting community would have been too small to be solely responsible for the maintenance of Khoisan derived elements, it is likely that special functions or prestige have played a role.

The process of paralexification that governed the integration of click copies in SWB languages is also linked to the function of expressing a separate identity. Paralexification is not the default strategy applied by Bantu languages to incorporate foreign words into their morphosyntax, nor is it a normal stage of every case of language shift; rather, it most frequently occurs in the creation of secret codes, various registers of taboo and respect, or registers with ritual functions (Mous 2003: 217), and as such has functions of secrecy or the expression of a separate ethnic identity (Mous 2001b: 121). Paralexification can also occur in

cases of language loss, when "the meaning and use of words of the language on the verge of extinction are often adjusted to the newly adopted dominant language resulting in a structure of paired lexical items with the same meaning and the same morphological characteristics" (Mous 2001b: 116).

The presence of lexical manipulation, i. e. the insertion of click consonants into native Bantu vocabulary, and paralexification resembles the case of Ma'a/Mbugu, a mixed language spoken in Tanzania. Here, speakers of a Cushitic language who were in the process of shifting to the Bantu language Mbugu, but who had maintained strong feelings of a separate sociocultural identity, created a separate ingroup register (Inner Mbugu or Ma'a) using the remnants of their original Cushitic vocabulary augmented by copies from various neighbouring languages as well as by distortions of Mbugu lexemes (Mous 2001a). Although the linguistic outcome of this process of identity creation/maintenance is far stronger in the case of Ma'a than in the SWB languages, the similarities are still sufficiently large for us to propose that the contact in the Kavango-Zambezi transfrontier area involved communities of speakers of Khoisan languages who shifted to Bantu languages and probably in the process transferred some of the specialist lexicon related to a foraging way of life. The resulting mixed Khoisan-Bantu speech community must have maintained a sufficiently strong feeling of separate identity that they felt the need to use linguistic means as an index of this identity – even those who were not initially native speakers of Khoisan. As such they extended the click consonants found in the specialist vocabulary to words of Bantu origin and copied further words from other Khoisan languages.

That this process also involved non-native speakers of Khoisan languages is demonstrated by the fact that click words of Khoisan origin are in general phonologically integrated into the SWB languages, which indicates a lack of full competence of the agents of change in the Khoisan language(s) involved. However, this phonological integration did not take place via the replacement of clicks with corresponding egressive stop consonants, as would be expected if the agents of change were speakers of Bantu languages unfamiliar with Khoisan languages. Rather, non-dental clicks in Fwe, Manyo, Mbukushu, and Kwangali are replaced with the dental click. As demonstrated by Herbert (1990a), this is one of the least marked clicks that often replaces other clicks, and as such it can be assumed to be fairly easy to produce even by non-native speakers while retaining the saliency of click consonants. In Yeyi, occasionally even clicks that occur in the Yeyi inventory are replaced by a different click, as illustrated in (16) above. This illustrates that the phonological integration did not take place primarily for phonological reasons, but served emblematic purposes.

7 Conclusions

The linguistic data analysed in this article shed new light on the prehistoric contact between Khoisan and Bantu speech communities in the Kavango-Zambezi frontier area. They show that there have been a number of different contact situations between speakers of different Khoisan and SWB languages. These were more intensive interactions than simply common exchanges between neighbouring groups, such as trade in goods and services, accompanied by the unidirectional or mutual transfer of lexical items. These interactions led not only to lexical copying, but also to calquing and morphosyntactic changes. These effects can most plausibly be accounted for by language shift of Khoisan speakers to Bantu languages, which may have resulted in the death of some local Khoisan lects that have structurally influenced SWB languages. This might explain why the sources of certain copied elements are difficult to identify. Language shift must have taken place in two phases; during the first phase, Khoisan speakers acquired a Bantu language as their second language, introducing Khoisan elements into the target of shift. During the second phase, native Bantu speakers took over these Khoisan elements, especially clicks, and even extended these to native words. The sound symbolic value with which clicks were charged in certain copied Khoisan source words or the social role they played in terms of identity-marking may have favoured their further spread in the vocabulary of the SWB languages, either through the insertion of clicks in existing Bantu words or through click-bearing neologisms. It is known from studies in sociophonetics that even the most minute phonetic differences may be used to express social meaning (Hay and Drager 2007). Though this contrasts with many modern-day interactions between Bantu speakers and Khoisan speakers, the embracing of foreign linguistic features could suggest that speakers of SWB languages once valued Khoisan origins and positively identified with these. This is in good accordance with the results of a molecular anthropological study (Barbieri et al. 2013), which provides some evidence that Fwe women with Khoisan maternal ancestry were preferred marriage partners for their Shanjo neighbours. As we discuss in detail in a separate paper (Pakendorf et al. in preparation), this indicates that the Khoisan women who married into the Fwe community may have had a relatively high social standing, so that Khoisan ancestry was valued and expressed linguistically. While we cannot with certainty establish the reasons for this formerly higher level of prestige of the Khoisan groups, it may have been linked to their greater knowledge of the area, their prowess as hunters, or their skills as healers and rain-makers (Pakendorf et al. in preparation).

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Appendix

Table 3: Click words of potential Khoe origin.[6]

	Gloss	SWB	Khoe
1)	quiver	**n-gǀúnu** (Mb), **n-ǀhunú** (Ma), **n-ǀhunu** (Kw)	**ǀhuúnú** 'quiver' (Khwe)[7]
2)	basket (in reed)	**thi-ǀumá** (Mb), **shi-ǀúma** (Ma)	**ǀóámà** 'small coiled basket with neck and lid' (Khwe)
3)	button (jewellery)	**di-nǀánu** (Mb), **li-nǀênu** (Ma)	**nǀánú** 'button' (Khwe)
4)	*Terminalia sericea*	**mu-gǀûva** (Ma)	**ǀoává** 'silver terminalia' *(Terminalia sericea)* (Khwe)
5)	pipe (water, tobacco)	**n-gǀéve** (Ma)	**gǀɛ́vɛ́** 'small tobacco pipe' (Khwe)
6)	nasal mucus, snot	**vi-gǀéve** (Ma)	**ǁgùú-ǂx'èvɛ̀** 'slime, mucus' (Khwe); **ǂxɛbɛ** 'snot' (ǁXo)

(*continued*)

6 The following abbreviations are used: Ma for Manyo, Mb for Mbukushu, Kw for Kwangali, Fw for Fwe, Ye for Yeyi, Ju for Jul'hoan, C-!Xuun for Central !Xũũ, N-/NC-!Xuun for North and North-Central !Xuun, Di-!Xuun for Dikundu !Xuun, Ju-/C-/NC-!Xuun for Jul'hoan + Central and North-central !Xuun.

7 Throughout the article, we maintain the spelling of Khoisan words as found in the original sources.

Table 3: (*continued*)

	Gloss	SWB	Khoe
7)	first two ribs of lower part of an animal	**tu-lɛrɛ** (Mb)	**lérè** 'four lowest ribs' (Khwe), **lǎr̆ǎb** 'rib' (Khoekhoe)
8)	'*Vangueria esculenta*'	**wu-lore** (Mb)	**tc'oɛ́rɛ́**, **tc'uɛ́rɛ́** '*Vangueriopsis lanciflora*' (Khwe)
9)	reed, sedge	**ru-nlanla** (Fw)	**ǂ'áãⁿ-lgɜ̀ɜ̃́ⁿ** '*Ipomoea rubens; Ipomoea dichora* (sedge-leaf)' (Khwe)
10)	papyrus (*Cyperus papyrus)*	**ru-lóma** (Fw)	**ǂóá** 'papyrus, mat made of papyrus' (Khwe)
11)	to ignore, mistrust, distrust, doubt	**-nlén-un-a** (Ma)	**nǂgóɛ́** 'to ignore' (Khwe), **ŋǂóē** 'not to admit, to deny, not to accept, not to trust' (Glui)
12)	to click; click sound	**-nlak-ur-a, thi-nlak-ur-a** (Mb)	**ll'á(ń)-!'oro** 'to pronounce one lateral click as a sign of annoyance' (Khwe)
13)	thin	**-glɛ́ne** (Fw)	**líní** 'to be thin' (Khwe)
14)	very clean	**lushulushu** (Mb)	**nllɜ̃ɜ̃́ci** 'be very clean' (Khwe)
15)	very thick	**lɔ** (Mb)	**ǂ'ɜ̃́** 'be thick' (Khwe), **!'oo** 'thick (of beard)' (Naro)
16)	walking stick	**n-lwà** (Ma)	**nǂgóá** 'walking stick' (Khwe), **!gàò-!gàò-hīī** 'walking stick' (Naro)
17)	hunting spider	**nàmúglúpásì** (Ye)	**lgoává** 'spider' (Khwe)
18)	hiccup	**kà-l̲úrí** (Ye)	**l'uúrí** 'have hiccups' (Khwe)
19)	Kigelia pinnata	**ù-nl'óròò** (Ye)	**l'óòrò** sausage tree (*Kigelia pinnata, Kigelia africana*) (Khwe)
20)	to continue, pursue	**-í-!ám-à** (Ye)	**kyámà** 'follow trail' (Khwe), **!ama** (llAni) 'to throw'
21)	big, fat	**bù-g!úrì** (Ye)	**llgúíí** 'fat' (Shua)
22)	to throw	**-ì-g!ámánì** (Ye)	**gyaḿ** (Khwe), **g!aḿ̀** (llAni)
23)	blunt, stupid	**bù-!húrù** (Ye)	**llxùrùú** 'be blunt' (Khwe)
24)	joint in hand or foot	**kà-!ˈámì** (Ye)	**kyaáre-kx'am** 'ankle' (Khwe)
25)	to wring	**-íǂn-à** (Ye)	**l'ǂ́** 'wring out' (Khwe)
26)	to slap	**-íǂhò-à, -ilw-a** (Ye)	**ǂqá** 'slap (sb.'s face)' (Khwe)
27)	well	**shì-gllánà** (Ye)	**llgaáná** 'well' (Khwe)
28)	shield (of a warrior)	**shì-gllárákàù** (Ye)	**llgàràá-can-kà-xò** 'shield, sth. to hide behind' (Khwe)
29)	arrow	**mù-gllàwà** (Ye)	**llgàvá** 'pointed bird arrow, arrow with broad iron head' (Khwe)
30)	woman, female person	**mú-gllèkwá** (Ye)	**llgɛ̀ɛ-khòè** 'woman' (Khwe)
31)	dry leafless tree	**yìl̲lnárá** (Ye)	**ngyárá** 'upright tree stump' (Khwe), **!ǐádá** 'dry, leafless tree' (**ll**Ani)
32)	razor	**í-l̲lnàù** (Ye)	**llèu** 'razor blade' (Khwe)
33)	story	**ldi-nllee** (Ye)	**nllgɛ́** 'count, create, start singing' (Khwe)
34)	cleverness	**wu-lhuldi** (Ye)	**lxùrìí(-khòè)** 'clever person' (Khwe)

(*continued*)

Table 3: (*continued*)

	Gloss	SWB	Khoe
35)	shallow	**ǂa** (Ye)	**ǂqávé** 'be shallow' (Khwe)
36)	to tuck oneself in a blanket	**-ǁin-is-a** (Ye)	**ǁání** 'catch (sb.) by his neck and press him/her to the ground' (Khwe)
37)	reed	**mu-ǁhaa** (Ye)	**ǁx'á** 'high grass sp.' (sp. not determined) [grows near Kavango river; used to cover grass huts] (Khwe)
38)	to help one another	**-ra-gǁakunu** (Ye)	**nǁgáé** 'help (sb.), stand by, protect, shelter' (Khwe)
39)	power, strength, authority	**i-ǁhumu** (Ye)	**ǂhoḿ** 'be strong, powerful, strength', etc. (Khwe)
40)	bundle of biltong	**ka-ǂha** (Ye)	**ǁhá́á** 'meat' (Gǁana) (Glui)
41)	thick bush	**mu-gǀa** (Ye)	**ǀgã̀ã́** 'leaf' (Khwe)
42)	small bird (lives close to water)	**ǀijira** (Ye)	**dzìráá** 'bird' (Shua), **dzìràā** 'bird' (Gǁana) (Glui), **dzérá** 'bird' (Glui)
43)	bone, leg	**mu-ǀ̱nu** (Ye)	**nǀgúu** 'lower leg' (Khwe)

Table 4: Click words of potential Ju origin.

	Gloss	SWB	Ju
1)	kambro plant (*Fockea angustifolia*)	**di-ǀáva** (Mb), **li-ǀâva** (Ma), **ɛ-ǀáva** (Kw)	**ǂ'hábá** (Ju), **ǃ'àbá** (C-!Xuun), **ǃ'àbā** (N-/NC-!Xuun) 'plant sp, (onion-like bulb)'
2)	blue thorn (*Acacia erubescens*)	**mu-gǀaúnga** (Ma), **mu-gǀaunga** (Kw)	**g!ã̋u** '*Acacia mellifera*' (Ju)
3)	water lily (*Dipcadi sp.*)	**mu-nǀúngu** (Mb), **mu-nǀúngu** (Ma), **mu-nǀuŋgu** (Kw)	**!uùgú** 'water-lily species' (C-!Xuun)
4)	!Xuun, San person	**ha-ǀu** (Mb), **mu-ǀù** (Ma)	**!xūún** '!Xuun person' (N-/NC-!Xuun)
5)	sweet grass (edible)	**mu-ngǀidi** (Mb), **mu-gǀíri** (Ma)	**g!xùlì** 'grass sp.' (N-/NC-!Xuun)
6)	shallow water	**li-ǀwà** (Ma)	**!wâ**: **'vlei'** (C-!Xuun), **sáű** 'shallow place in the river' (C-!Xuun), **cāú** 'shallow place in water' (N-/NC-!Xuun)
7)	belly of a fish / underbelly of a hippopotamus	**li-gǀù / u-gǀûli** (Ma)	**g!ú 'stomach, belly'** (Ju), **g!ű́** 'belly' (C-!Xuun), **g!ú** 'stomach' (N-/NC-!Xuun)
8)	species of long reed growing in deep parts of a river	**ma-nǀé** (Ma)	**!ò̍m̀'m̀nǀái** '*Cyperus longus ssp. tenuiflorus* (grass-like)' (Ju)
9)	peeling plane (*Ochna pulchra*)	**mu-ǀè** (Ma)	**!ài** '*Ochna pulchra*' (Ju)

(*continued*)

Table 4: (*continued*)

	Gloss	SWB	Ju
10)	zebras in a group	**mu-gǀɛŋgu** (Mb)	**gǀoí** 'zebra, horse' (C-!Xuun), **ǀgoé** 'zebra' (SE-!Xuun), **ǀoeh!'haù!'haù** 'zebra' (Ju)
11)	sandpaper raisin bush (*Grewia flavescens*) / *Vangueria esculenta*	**di-ǀɔrɛ / wu-ǀɔrɛ** (Mb)	**ǀòǀòre** '*Grewia flavescens*', **gǀùrì** '*Vangueria infausta*' (C-!Xuun), **ǀorè** '*Grewia flavescens*' (Ju)[8]
12)	small poisoned arrow	**si-nǀha** (Kw)	**tchìnǁhán** 'shoot, hit' (Ju), **tsìnǁ'há** 'shoot' (Ju-/C-/NC-!Xuun), **tšhìnǁ'hã́** 'shoot' (Ju)
13)	horn grasshopper	**ci-nǀuna** (Fw)	**n‡aqnùn** [n‡ãˢ̰ũ̀] 'corn-cricket'[9] (Ju)
14)	Kalahari Currant (*Rhus tenuinervis*)	**mu-ǀáwa** (Fw)	**ǁáu** '*Rhus tenuinervis*' (Ju)
15)	anus	**mu-ǀômbe** (Fw), **mu-ǀombe** (Ye)	**n!hòm** 'anus, large intestine' (Ju)
16)	lizard	**mú-ngǀulya** (Fw)	**ǀòlà**, 'monitor lizard' (N-/NC-!Xuun)
17)	virgin forest, unspoilt woodland	**ǀó** (Ma)	**!'ó** 'forest' (C-!Xuun), **!'ō** 'forest, bush' (N-/NC-!Xuun)
18)	thorn bush	**n-ǀhó** (Ma)	**nǀhòó** 'thorny-stemmed shrub, bearing red berries' (Ju)
19)	poor fellow	**nǀamúse** (Kw)	**n!àmm** 'poor person' (Ju)
20)	white edible substance on the lower part of a reed	**gǀúmu** (Fw)	**g‡kò'm** 'milky sap' (Ju)
21)	cold, coldness; winter	**ka-ǀi** (Mb), **ka-ǀí** (Ma), **ka-ǀi** (Kw)	**nǀə̀ì,** **ǀhə̀ǹ** 'coldness' (N-/NC-!Xuun), **ǀhə̀ə̃́,** **ǀhī̀** 'coldness' (C-!Xuun)
22)	smell of fish	**gǀɔ** (Mb), **gǀó** (Ma), **ɛ-gǀɔ** (Kw)	**g!òró** 'fish', **ǁx'ù** 'smell' (C-!Xuun), **ǁǀkú** 'to smell' (Ju)
23)	click as an expression of contempt	**-ngǀom-on-a** (Mb), **-nǀôm-on-a** (Ma), **-nǀompy-a** (Kw)	**ǀ'hòm̋** 'dislike' (C-!Xuun)

(*continued*)

8 Similar words have been observed in Khoe, i. e. Khwe **ǀoéré** and **pò-ǂgúrì** '*Grewia flavescens*' and Khoekhoe **ǀgòré.s** '*Grewia flavescens*', but the correspondences with Ju are more straightforward.

9 The Jul'hoan word is pronounced as one syllable, with a nasalized pharyngealized vowel followed by a nasalized vowel. Since /au/ vowel sequences are not allowed in this context in Fwe, it could have been copied as /u/.

Table 4: (*continued*)

	Gloss	SWB	Ju
24)	to smack	**-nlamb-ur-a** (Mb)	ǁ**’ǎ́m** ‘hit, slap, slam’ (C-!Xuun), **n‡àm̀’ḿ** ‘hit or cane’ (Ju-/C-/NC-!Xuun), ǁ**’ám** ‘slap, clap (hands), stamp’, **n‡à’m** ‘hit, strike, play (a stringed musical instrument)’ (Ju)
25)	to chatter	**-nglangl-ar-a** (Mb)	**n‡oahn,** ǁ**àm** ‘to chat’ (Ju)
26)	to chop	**-lanlhan-es-a** (Kw)	**g**ǀ**xana** ‘cut into pieces’, **!’ana** ‘split, break’ (C-!Xuun), **!hárá** ‘crack’ (Ju-/C-/NC-!Xuun)
27)	to scoop fish	**-glak-amin-a** (Fw)	**g!xà̀** ‘take out singular’ (C-!Xuun_He), **g!xà** ‘take out’ (Ju-/C-/NC-!Xuun), **g!xà** ‘take out’ (Ju)
28)	to be sleepless; be unable to sleep; to watch over	**-glúny-a** (Mb), **-glúny-a** (Ma)	**g**ǁ**ùù** ‘sleeplessness’ (N-/NC-!Xuun), **g!ó”ǔ** ‘look’ (C-!Xuun), **g!ù’ún** ‘look at, watch’ (Ju)
29)	land overgrown with small plants	**shì-glá** (Ye)	**!ò’á** ‘thicket’ (Ju)
30)	foundation of a camp	**ì-glínì** (Ye)	**g**ǀ**ání** ‘(food) area which belongs to one; one’s own back yard’ (Ju)
31)	basket, bag	**shì-lháò** (Ye)	ǀ**háó** ‘bag, sack, purse’ (Ju)
32)	to sympathize	**-lhum-a** (Ye)	ǀ**xòmà** ‘feel sorry for’ (Ju)
33)	at the back	**kú-rì!ó** (Ye)	**!’ó-n!áng** ‘behind, at the back of’ (Ju), **!’ó** ‘foot, base, back’ (C-!Xuun)
34)	calabash	**kà-g!áwà** (Ye)	**!’hòàn** ‘calabash, gourd’ (Ju), **g**ǁ**ho^{n}na** ‘wild melon species’ (C-!Xuun)
35)	lizard sp.	**hà-g!úrù** (Ye)	**g!kàrú** ‘monitor lizard, leguaan’ (Ju)
36)	to light	**-!̱ónj-ìk-à** (Ye)	**g‡ùn** ‘set alight (by holding something over a flame)’ (Ju)
37)	fruit of *Phoenix reclinata*	**mù-!̱’únì** (Ye)	**!’unu** ‘palm-fruit’ (C-!Xuun)
38)	bat-eared fox (*Otocyon megalotis*)	**ù-!’ósírè** (Ye)	**!’ù** ‘bat-eared fox’ (Ju), ǁ**’ù** ‘Delalande’s fox’ (C-!Xuun)
39)	wooden plate	**ù-n‡ú** (Ye)	**n**ǀ**uù** ‘dish, plate; boat, ship’ (Ju)
40)	to prepare, put in order	**-i-**ǁ**au**ǁ**au, -ra-**ǁ**au**ǁ**au** (Ye)	ǁ**áú** ‘well, properly, throroughly’ (Ju)
41)	old person	**mu-!ong!orokhwe** (Ye)	**!oq’òrù** (*usually second element in a compound*) ‘old worn-out thing, decrepit person, animal’ (Ju)
42)	small bottle for keeping tobacco	**in-**ǀ**hana** (Ye)	ǀ**xànà** ‘small traditional medicine container’ (Ju)
43)	tree sp (used for making kraals)	**ka-‡oa** (Ye)	**g‡óa** ‘*Combretum mechowianum* (tree with gum)’ (Ju)

(*continued*)

Table 4: (*continued*)

	Gloss	SWB	Ju
44)	upper arm	**mu-g!uma** (Ye)	**g!òmá** 'upper arm' (Ju-/C-/NC-!Xuun); **g‖kóm** 'upper arm' (Ju)
45)	in the morning	**ma-khwen‖umu** (Ye)	**n!ómà** 'in the morning, the next morning' (Ju)
46)	plant sp. (edible roots)	**shi-!homa** (Ye)	**ǂkò'm** 'tuber similar to that of *Fockea angustifolia*' (Ju)
47)	small well, small borehole	**ka-g!ana** (Ye)	**!'hàn** 'pit, well' (Ju)
48)	blood clot	**ldi-‖ha** (Ye)	**‖'áng** 'blood, money' (Ju)
49)	to wipe (off) oneself	**-ldii-ǂe** (Ye)	**gǂhàìn** 'wipe (the mouth) with the back of one's hand' (Ju)
50)	nonsense, garbage, baloney	**ma-‖hambura** (Ye)	**g‖x'ǎm** 'rubbish' (C-!Xuun)
51)	to totter, walk very slowly	**-nǂ'aw-a** (Ye)	**n‖àn‖àrà** 'totter' (C-!Xuun)
52)	to hatch	**-nǂ'un-uz-a** (Ye)	**ǂ'úí** 'burst, crack (of a container)' (Ju)
53)	to stick onto	**-ǂang-at-ir-a** (Ye)	**!'ǎng** 'pierce, prick, inject, hit (with a spear etc.), stick something thin into' (Ju)
54)	to shave, cut hair	**-ra-gǂumu** (Ye)	**g!óm̋** 'shave' (C-!Xuun), **kǂʌ́m** 'to shave, to scrape off' (C-!Xuun)

Table 5: SWB click words with correspondences in both Khoe and Ju languages.

	Gloss	SWB	Khoe/Ju
1)	to sink, go down; splash into a liquid	**-g‖ubuk-ɛr-a** (Mb), **-g‖úbuk-ir-a** (Ma), **-g‖ubuk-ir-a** (Kw)	**g!òhbú** (ideo) 'splash' (Ju), **‖ubu** 'bubble, foam, heavy rain' (Naro), **‖quúvi‖quvi** 'splash over' (Khwe)
2)	cluster of trees	**di-g‖u** (Mb), **ɛ-g‖u** (Ma), **e-g‖u** (Kw)	**g‖úí** 'wood, area with big trees' (Ju), **g‖úí** 'thicket' (N-/NC-!Xuun), **g‖ǘi** 'thicket' (C-!Xuun), **‖ùi** '(timber) forest, bush(land)' (Khwe), Proto-North-Khoe/Proto-West-Khoe/Proto-East-Khoe ***g‖ui** 'bush' (Voßen 1997: 427)
3)	equal, compeer (males only) / be one's equal (among males)	**g‖ára** / **-g‖ár-a** (Ma)	**ǂàrà** 'friend' (Ju), **ǂgárà** 'friend, agemate' (Di-!Xuun), **ǂgárà** 'contemporary, friend of same age group' (Khwe), Proto-West-Khoe ***ǂádà** 'friend of the same age' (Voßen 1997: 454)

(*continued*)

Table 5: (*continued*)

	Gloss	SWB	Khoe/Ju
4)	narrow(ness)	**u-nlò (Ma), βù-ǂ'ó** (Ye)	**!!'õ** 'narrow' (N-/NC-!Xuun), **ǂ'ó** 'be narrow' (C-!Xuun), **ǂ'ǒ** 'narrow' (llAni), **ǂ'ó** 'narrow' (Khwe), Proto-Khoe ***ǂ'o**, 'narrow' (Voßen 1997: 431)
5)	to kiss	**-nlum-it-a** (Mb), **-nlûm-it-a** (Ma), **-nlum-it-a** (Kw), **-nlàm-ìs-á** 'suck', **-nlúm-ent-a** (Fw), **-l̰'íp-ìt-á** 'kiss' (Ye)	**lṍḿ** 'suck (a fruit)' (N-/NC-!Xuun), **lò̰ḿ́** 'kiss' (NJu-/C-/NC-!Xuun), **n!o'm** 'suck', **ǂ'ómá** 'kiss' (Ju), **nll̀óm** 'suck', **nlóm** 'suck (of animal)' (Khwe), **ll'obè** 'suck through straw or pips; kiss' (Naro) ; Proto-East-Khoe ***lnuma** 'kiss', Proto-West-Khoe ***ll$^{?}$obe** 'kiss', Proto-Khoe ***lom** 'suck' (Voßen 1997: 482)
6)	tastelessness	**u-ló** (Ma), **bu-lo** (Fw); > **-ló-pa** 'to be insipid' (Ma), **-lo-ha** (Fw) 'to be tasteless'	**dcò** 'be blunt, be insipid, be tasteless' (Ju), **tʃx'òò/tʃ'ò** 'tasteless' (Ju-/C-/NC-!Xuun), **tcx'òò̰** 'be tasteless' (N-/NC-!Xuun), **ǂhòá** 'be tasteless, taste stale, be tired' (Khwe)
7)	oryx	**ù-nlhó** (Ye)	**nlgú** 'gemsbok' (Khwe), **l'χóó** 'gemsbok' (Gllana)(Glui); **lnō** 'gemsbok' (SE-!Xuun), **nlò** 'roan antelope' (C-!Xuun) **nlò** 'roan antelope' (Ju)
8)	shoulder	**rì-!áwà** (Ye)	**k!!ava** 'shoulder' (C-!Xuun), **ll'ámíí** 'shoulder' (Shua)
9)	papyrus	**rù-!ómà, shì-!óámà, mu-!wama** (Ye)	**!o'mnlái** '*Cyperus longus tenuiflorus*' (Ju), **nllò^{n}a** 'reed' (C-!Xuun), **koámá** '*Cyperus papyrus*' (Khwe)
10)	fork of a branch	**í-ng'g!à** (Ye)	**g**ll**á^{n}** 'forked pole pitched in the ground' (C-!Xuun); ll**gàá** 'forked branch' (Khwe)
11)	to knock	**-l̰'úl̰'-ùn-à** (Ye)	**!oó!o** 'knock on (door)' (Khwe), **!ò̰^{ʕ}!ò̰^{ʕ}** 'knock' (C-!Xuun)
12)	to order, decide, choose	**-ìl̰'ɛ́** (Ye)	ll**ɛ̀ɛ** 'decide on' (Khwe) ll'**àè** 'decide, control, notice, have the right, care about' (Ju)

(*continued*)

Table 5: (*continued*)

	Gloss	SWB	Khoe/Ju
13)	to have bad luck in hunting	**-ìǁhó** (Ye)	ǁ**xóo** 'be out of luck during the hunt' (Khwe); ǁ**xò** 'bad luck' (C-!Xuun), **!xò** 'be unsuccessful, etc.' (Ju)
14)	to put more wood on fire	**-i-gǁuu** (Ye)	**gǁùú** 'stoke (a fire)' (Ju); ǁ**guú** 'light (fire), set on fire, put into fire, burn' (Khwe)
15)	urine	**mu-ǀhamu** (Ye)	ǀ**xam** 'urine' (Khwe), **gǀxám** 'urine' (Ju)

Table 6: SWB click words with Bantu cognates.

1)	Gloss	SWB languages	Elsewhere[10]	BLR
2)	to tear	**-ǀap-ur-a** (Fw), **-ǂap-ur-a** (Ye)	**-zap-ula** 'to tear' (Il), **-zap-ula** 'to tear' (To)	***-jápʊd-** 'to tear'
3)	to drip	**-gǀônt-a** (Fw)	**-londa-uka** 'to drip' (Il)	***-tont-** 'to drip'
4)	fish sp.	**shímungǀopwe** (Fw)	**mulopwe** 'fish sp.' (Il), **namulompwi,** 'fish sp.' (To)	
5)	to run fast	**-ǀop-or-a** (Fw)	**-lob-ok-a** 'to run away in fear when one's fault is found out' (Il), **-lob-ok-a** 'to run secretly' (To)	
6)	to pull out, uproot	**-ngǀum-un-a** (Fw)	**-fum-un-a** 'to pull out as grass from thatch' (To), **-som-on-a** 'to pull sticks out from the fire' (Il)	
7)	to write	**-ngǀôr-a** (Fw)	**-ŋor-a** 'to write' (Lo)	
8)	to milk	-ǀâm-a (Fw)	**-kam-a** 'to squeeze, milk' (Il), **-kam-a** 'to milk' (To)	***-kám-** 'to squeeze, wring'

(*continued*)

10 Data from the following languages and sources are used: Ila (Il) (Smith 1964), Tonga (To) (Torrend 1931), Lozi (Lo) (Burger 1960), Kwamashi (Kwam) (Bostoen fieldnotes), Bantu Lexical Reconstructions (BLR) (Bastin et al. 2002).

Table 6: SWB (*continued*)

9)	pumpkin seed	**ru-langa** (Fw)	**tyanga** 'pumpkin', **in-tanga** pumpkin seeds (To)	***tàngà** 'pumpkin, melon'
10)	slender mongoose	**ka-mungɪɔnɔ** (Mb)	**ka-munkondo** (Ma, Kw), **ka-mungono** (Kwam), **kàmgóndò** (Khwe) 'slender mongoose'	
11)	papyrus	**ru-ǃóma** (Ye), **ru-lóma** (Fw)	**di-koma** 'papyrus' (Mb), **li-koma** '*Cyperus papyrus*' (Ma), **koáma/koómá** 'papyrus sp.' (Khwe)	
12)	row downstream	**-gɪ̂l-ik-a** (Ma)	**-lîl-ik-a** 'move upstream' (Ma), **-díd-ik-a** 'paddle canoe against current' (Mb), **-lil-ik-a** 'row upstream' (Kw)	
13)	explode, crackle	**-lûk-a** 'to explode (with a cracking noise), bang', **-lûk-auk-a** 'crackle' (Ma), **-luk-a** 'explode, burst open' (Kw)	**-túka-ghuk-a** 'make slight cracking noise, as boiling fat' (Mb)	
14)	split (firewood)	**-lóva-ur-a** (Ma)	**-koghagh-ur-a twaghara** 'gather small firewood to start fire' (Mb)	
15)	melt, dissolve	**-glúgh-ur-uk-a** (Mb)	**-hughuruk-a** 'to melt, dissolve' (Kw)	***-cʊngʊdʊk-** 'melt'
16)	to turn sth. on its back	**-lánd-a** (Ma)		***-càndʊd-** 'to turn over, tr.'