



AFRIKA UND ÜBERSEE

Trilingual Journal of African Languages and Cultures
Revue trilingue des langues et cultures africaines
Dreisprachige Zeitschrift für afrikanische Sprachen und Kulturen
Volume 98

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DOI: 10.15460/auue.2025.98.1.368

Peer-reviewed article
Submitted: 14.11.2023
Accepted: 23.05.2024
Published: 05.09.2025

Recommended citation:
Mous, Maarten & Christian Rapold. 2025. Cushitic loans in
South Nilotic revisited: a deconstruction of Proto Baz. *Afrika und
Übersee* 98. 239–289.

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Cushitic loans in South Nilotic revisited: A deconstruction of Proto Baz

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Abstract

This article explores lexical contact between Cushitic and Nilotic taking the proposed Cushitic language Proto Baz as point of departure. Proto Baz is a putative East Cushitic language proposed by Heine, Rottland & Vossen (1979), on the basis of words borrowed into South Nilotic. Some of the loans were already pointed out by Ehret (1970, 1971, 1974). A critical assessment of the proposed loans shows that there is more diversity in their origin than formerly thought, and that it is in fact not necessary to assume the existence of a separate language (Proto Baz) to account for the loans. Instead, the loans came from various reconstructed stages of existing Cushitic languages. We discuss different contact situations between groups of East Cushitic and South Nilotic languages, as well as the recurring challenges in historical interpretation of the available evidence. The Appendix provides the reader with an overview of the discussed lexical items from earlier sources and new proposed analyses.

Keywords: Proto Baz, Cushitic, Proto South Nilotic, loan words, language contact, Kenya, Ethiopia

1 Introduction¹

This article is a re-assessment of the proposals by Heine, Rottland & Vossen (1979) (henceforth Heine et al. 1979) with additional proposals from Ehret (1970, 1971, 1974) that there once was an East

1 The data that the article is based on are from published sources referred to in the references to the discussion in the Appendix. The research was sponsored by a grant (406.18.TW.013) from the Dutch Research Council www.lheaf.org; there is no conflict of interests. We are grateful to the very useful comments from the anonymous reviewers and inspiring discussions with Maarten Kossmann and members of the LHEAf-team. We thank Nina van der Vlugt for extensive editorial assistance.

Cushitic language from which words were borrowed into Proto South Nilotic. The existence of this putative language, called Proto Baz by Heine et al. (1979), can only be inferred from these loans. Heine et al. (1979) identify 37 Proto Baz loanwords in South Nilotic, which amounts to almost one-fourth of the reconstructed Proto South Nilotic lexicon.

The Proto Baz hypothesis has received considerable attention in the literature (39 citations up to 2023 according to Google Scholar), mostly by linguists, but also by archaeologists and historians. This is not surprising given the scarcity of data on the prehistory of the region. Less expected may be that Proto Baz is not mentioned in overviews of Cushitic such as Sasse (1981), Tosco (2000), and Appleyard (2012), nor in the detailed overview of Afroasiatic by Hayward (2000) or the overview of East Cushitic by Tosco (2020); an overview of Cushitic that does mention it is Mous (2012). In spite of this, the Proto Baz hypothesis has never been discussed in detail, and the present article seeks to address this lacuna. Further, we discuss loans from Oromoid and Yaaku-Dullay that have been mentioned in the endnotes of Heine et al. (1979) and in Ehret (1970, 1971).

Heine et al. (1979) view Proto Baz as a separate branch of Omo-Tana within East Cushitic (Fig. 1). The language would have been part of a third major southward movement of Omo-Tana-speaking peoples from the Highlands of Ethiopia into the plains of northern Kenya, in addition to the movements linked to present-day East and West Omo-Tana (Heine et al. 1979: 81–82). Proto Baz speakers would have settled on the north-western side of Lake Turkana (hence the name of their language, from Proto Omo-Tana *baz ‘lake’), where they would have been in contact with Proto South Nilotic.

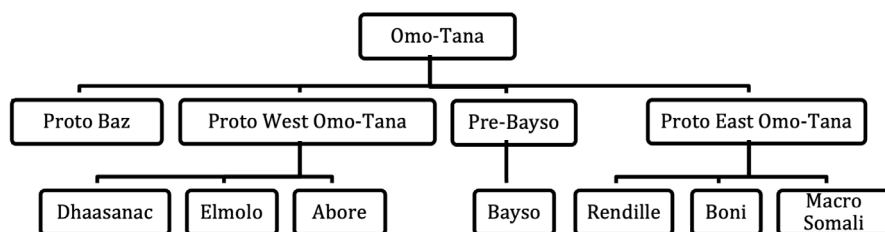


Figure 1: Omo-Tana subclassification (adapted from Heine et al. 1979: 80)

In order to propose a single putative language as the source of loans, it is necessary to identify a set of features that uniquely characterise

that language, possibly over some period of time. For a number of the proposed loan words this is problematic. Further, to postulate a separate language as the source of loans, the source items must be different from the known languages and their earlier forms. This is not argued for in detail in Ehret (1970, 1971, 1974) and Heine et al. (1979). The latter, however, does discuss the adaptations that Proto Southern Nilotic made to the loans in order to fit in its sound system, and it is this article that is at the centre of our discussion.

We discuss the two points:

- (i) Do all the putative loans from Proto Baz share the same origin?
- (ii) Are there sound changes that warrant a separate language, different from other known or reconstructed Cushitic languages?

Our conclusion is that both points have to be answered in the negative: All loans do not come from the same Cushitic language, and sound changes do not warrant a separate Cushitic language (section 2). Rather, we identify several Cushitic donor languages for the so-called Proto Baz loans in South Nilotic (section 3), and these loans are likely to have entered South Nilotic at different times (sections 5, 6, 7). The full discussion of each of the lexical transfers are presented in the Appendix which contains all lexical items proposed by Heine et al. (1979) including the ones from Ehret (1970, 1971) that they refer to in their endnotes. The items are alphabetically ordered and start out with the original proposal. We label these putative cognate sets with an approximation of borrowed item presented in CAPITALS. Language specimen are italicised but reconstructed items are not.

2 A separate language Proto Baz?

Heine et al. (1979) suggest the following loan adaptations of the Cushitic loan words:

- (i) All obstruents are interpreted as voiceless, in line with the absence of voice opposition in obstruents in Proto South Nilotic and Proto Kalenjin (Rottland 1982: 216, 231)
- (ii) The pharyngeals are deleted or replaced as they do not exist in Proto South Nilotic
- (iii) Long consonants are shortened in line with the absence of geminates in Proto South Nilotic

These adaptations are logical and straightforward. However, we consider the replacement of the voiced pharyngeal by *s* as phonetically too distinct and highly unlikely and we do not accept the three cognate sets that display it. The most common replacement for the voiced pharyngeal in Cushitic languages is the glottal stop (cf. Sasse 1979: 35).² The loss of the voiceless pharyngeal *ħ* is attested only word-finally in the loans, and we consider this plausible in that environment.

The sound inventory of Proto Baz is arrived at by taking into account these adaptations and is largely identical to Proto East Omo-Tana ('Proto Sam' in Heine et al. 1979). Differences lie in the following two rules from the perspective of Proto East Omo-Tana (for Proto East Omo-Tana, cf. Heine 1978, 1981; Lamberti 1986; for Proto South Nilotic, Rottland 1982):

1. Raising of Proto East Omo-Tana **a* > Proto Baz **ε*/*e* in the context of pharyngeal consonants.
2. Split of Proto East Omo-Tana **r* into two rhotics, Proto Baz **r* and **R*.

We do not accept the first change as one that warrants setting up a separate putative language, since all Cushitic languages that have these pharyngeals show allophonic raising of vowels in the context of pharyngeals. Heine et al. (1979) posit a separate phoneme /*ε*/ for Proto Baz (1979: 76, 77, 80), but this is not warranted as it occurs only in pharyngeal environments, to the exclusion of *a* and *e*. Moreover, no known Cushitic language has a six-vowel system of the type reconstructed for Proto Baz (*i*, *e*, *a*, *o*, *u*, plus *ε*). Rather, borrowing into South Nilotic simply seems to have followed the Cushitic phonetics and not the phonemic abstraction in the source language. Proto East Omo-Tana and Proto Omo-Tana, Proto Oromoid, Proto Yaaku-Dullay all must have had a voiced pharyngeal; only Proto West Omo-Tana has the glottal stop for the original voiced pharyngeal.

The Proto East Omo-Tana **r* to Proto Baz **R* correspondence is based on two cognate sets, **maR* 'calf' and **aR* 'male bovine'. The first one is possibly not part of the Proto Baz borrowing event because, as Heine et al. (1979) remark in their endnote 41, the root is attested

² Notably, Heine et al. (1979) do not propose a glottal stop in the phoneme inventory of Proto Baz, but most likely this is an omission resulting from the orthographic convention not to write a word-initial glottal stop even though it is phonemic in Cushitic languages.

wider in East Sudanic and is likely inherited from Eastern Sudanic in Proto Southern Nilotic. The root for ‘male bovine’, *aR, is linked to the Western Omo-Tana languages Arbore and Dhaasanac. This suggests an alternative scenario of a different borrowing event, not from Proto Baz. Hence the suggested split cannot be taken to differentiate Proto Baz from other Omo-Tana languages in our view. The correspondence Proto East Omo-Tana *r* to Proto Baz *r* is valid in our view but on evidence that differs from the proposed evidence in Heine et al. (1979). They based this correspondence on three cognate sets, AFARTAM ‘forty’, REEREE ‘bat’, and GORO ‘fur’. The last one we find unconvincing (see Appendix); the set for ‘bat’ lacks substantiation for Proto East Omo-Tana, and the set for ‘forty’ in Heine et al. (1979) is neither substantiated by the reconstructions of South Nilotic (Rotland 1982) nor of Proto East Omo-Tana by Heine (1978) and Lamberti (1986); we did find additional evidence to suggest South Nilotic borrowing this item from proto Omo Tana, see Appendix. However, the correspondence of Proto East Omo-Tana **r* and Proto Baz **r* is likely based on other evidence, as we argue in the Appendix for items such as DERI ‘clay pot’, BURI ‘red’, INSIR ‘louse’ and ROOB ‘rain’. Concluding, the unproblematic correspondence *r*=*r* is irrelevant for recognising a separate donor language. The existence of an extra consonant *R* in Proto Baz is not needed if we allow transfer from West Omo-Tana into Proto Kalenjin in the instance of aR ‘male bovine’.

3 A differentiation of sources

Heine et al. (1979) give both Proto South Nilotic and Proto Kalenjin as evidence for early South Nilotic contact with East Cushitic. They pose a now extinct East Cushitic language Proto Baz on the assumption of transfer into Proto South Nilotic. The essence of posing such a putative language is the hypothesis that the set of words that was transferred from Cushitic into South Nilotic belonged to one and the same language. Once we let the assumption go and allow for several donor sources, a more complex picture emerges that stays closer to the available evidence. In our discussion of the cognate evidence, we will entertain the less speculative hypothesis, namely that loans came from existing Cushitic languages including reconstructed stages, and that there is no need for setting up a separate language.

The available evidence for each item is discussed in the Appendix and the results summarised below in section 3.2. Before that, it is crucial to single out recurring challenges in the historical interpretation of the evidence.

3.1 Challenges for interpretation of the evidence

There are several recurring challenges in the historical interpretation of Cushitic loans in South Nilotic: formal ambiguity (i), direction of transfer (ii), conflicting reconstructions (iii), target language in South Nilotic (iv), formal distance between Proto Baz and South Nilotic (v), missing evidence in Cushitic (vi), and missing discussion (vii). These are discussed below.

(i) Formal ambiguity

For some of the lexemes, it is difficult to decide what the Cushitic source must have been. For ROOB ‘rain’, for example, this is due to its wide distribution in Cushitic with little variation in shape; the root QUUT ‘scratch’ could be equally well West Omo-Tana as East Omo-Tana, or even Oromoid; and TOR ‘spear’ may be from West Omo-Tana or from (Pre-)Yaaku.

(ii) Direction of transfer

A number of items are restricted in their distribution in Cushitic, which raises the question of the direction of borrowing. This is not addressed in Heine et al. (1979). It is conceivable that the word for ‘red’ BURI was transferred from South Nilotic into Proto West Omo-Tana as it is limited to West Omo-Tana within Cushitic. However, exactly where in the evolution of West Omo-Tana the borrowing would have occurred is hard to determine.

(iii) Conflicting reconstructions

A number of the proposals in Heine et al. (1979) are difficult to evaluate because a Proto South Nilotic, Proto Kalenjin or Common Datooga form is given for which we find no support in daughter languages, and these proposals eventually did not make it to Rottland (1982, 1989, 1997).³ This includes the three items AFARTAM ‘forty’, ILAAL ‘to look at’, KOR ‘bell’, and MAQAL ‘young goat/sheep’. We evaluate whatever additional evidence we could find for these items in the Appendix.

³ Rottland (1989) and (1997) contain minor extensions and corrections of Rottland (1982), but without presenting the evidence on which they are based. For this reason, Rottland (1982) is our main source for South Nilotic.

(iv) Target language in South Nilotic

The item NUG ‘to suck’ is only linked to Datooga in Heine et al. (1979). There is no evidence (yet) for such a root in Kalenjin, which leaves two options: transfer from Cushitic into Datooga, or into Proto South Nilotic and subsequent loss in Kalenjin. Where Heine et al. (1979) seem to go for the second option, the later work by Rottland (1982) apparently opts for the first.

(v) Formal distance between Proto Baz and South Nilotic

We find a number of the Proto Baz proposals unconvincing on formal grounds. For example, the proposal for ‘grass’ requires the unlikely correspondence of voiced pharyngeal fricative to *s*, as in Proto Kalenjin **suus-* from an alleged Cushitic source related to Proto East Cushitic **ʕawʃ-/ʕayʃ-* ‘grass’ (Sasse 1979). The proposal for GORO ‘feathers, fur’ requires explanation of the extra final consonant in Nilotic but is otherwise promising. Details on our evaluation of these transfers are to be found in the Appendix.

(vi) Missing evidence in Cushitic

We still have to find evidence on the East Omo-Tana side for some items that are mentioned in Heine et al. (1979) but that are not present in Heine (1978) and Lamberti (1986): ZIG ‘mud, dung’, SAANI ‘lover’. We report on our unsuccessful search in the Appendix.

(vii) Missing discussion

One word mentioned in the final table in Heine et al. (1979), IRI ‘smoke’, is actually not discussed by them in their article and we failed to find cognates with Cushitic, as we report in the Appendix. Another word, WAAR ‘kid’, is mentioned as a tentative candidate in their endnote 41, and we discuss it in the Appendix.

3.2 Cushitic donor languages

As mentioned above, evidence suggests that the alleged Proto Baz loans in South Nilotic stem from a range of Cushitic languages rather than a single one, Proto Baz. The likely source languages include Proto Omo-Tana, Proto East Omo-Tana, Proto West Omo-Tana, Proto Yaaku-Dullay and Proto Oromoid, and their daughters. It will be noted that Proto Baz is not among them, as we do not find compelling evidence that it ever existed. At the receiving end, we distinguish between Proto Kalenjin and Proto South Nilotic and their daughters. In some instances, the Cushitic loan is apparent in Common Datooga. In those cases, we discuss the two logical options: transfer into Proto

Datooga and transfer into Proto South Nilotic but subsequent loss in Proto Kalenjin. The former option has the challenge of the geographical distance, in as far as the homeland of Proto Datooga can be established.

4 Loans from Proto Omo-Tana

In this section we discuss the loans that could have Proto Omo-Tana as source. In the next section we discuss those that are specifically from Proto East Omo-Tana. However, many of the items in this section on Proto Omo-Tana could also be postulated to have East Omo-Tana as source. On the Nilotic side, the transfers in this section are to Proto South Nilotic, or possibly to that level, while those in the next section are to a lower level, Proto Kalenjin. In this section, we also include the Cushitic-Nilotic transfers that may have happened at even earlier periods into Proto Nilotic.

Loans from Proto Omo-Tana predate the developments that characterise West Omo-Tana and East Omo-Tana respectively. In almost all cases the transfers were into Proto South Nilotic. In rare cases the item reconstructs only to Proto Kalenjin in South Nilotic; for reasons of patterning, it can be surmised that a subsequent innovation happened in Datooga (cf. the uneven decimals, such as SOZZOM in the Appendix).

This set of Proto Omo-Tana loans is further conspicuous for consisting almost exclusively of numerals (six to ten, and most decimals, 100). It is remarkable that South Nilotic basic numbers from six to ten are Cushitic in origin. It is reasonable to assume that this constitutes transfer from a single source. The transfer of these numbers differs from the transfer from East Omo-Tana into Proto Kalenjin. One reason is that the Cushitic numbers are not restricted to Kalenjin but all are also present in Datooga. Yet Rottland (1982) does not reconstruct them to Proto South Nilotic level; presumably irregularities prevent him from doing so.

Another aspect of the transfer of these numerals to consider is the source. The source does not point uniquely to East Omo-Tana but could just as well be at the higher Omo-Tana level and if we assume it is East Omo-Tana, we need to assume that it predates the inner East Omo-Tana sound changes that affect *z ('seven' and 'eight') and *m. The shapes of the loans in South Nilotic must have predated the

$z > d$ sound change of Northern Somali and $z > y$ in Rendille and Southern Somali which points to an early loan, either at Proto East Omo-Tana level or earlier.

In addition to these basic numbers, the expressions for ‘30’, ‘40’, and ‘50’, ‘60’, ‘80’ are from a Cushitic source. Somali has single expressions for these numbers, some of which can be shown to derive from a construction numeral + ‘ten’ but amalgamated and reduced to one unit, as we also see in Agaw, Sidamo (Highland East Cushitic), Afar, Bayso (Zealealem 2003). These are retentions in Somali from (East) Omo-Tana while Rendille has innovated a syntactic formation using an expression in which the unit for ‘ten’ is followed by the word for ‘three’, ‘four’, etc.

Blažek (2018: 53) shows that these basic numbers, two, three, five to ten were also transferred into Southeast Surmic and proposes that Southeast Surmic is the source for the presence of these ultimately Cushitic roots in East Nilotic Maa, arguing on the basis of phonetic similarity and linguistic geography. He argues that the Cushitic source for this transfer into Southeast Surmic is (late) West Omo-Tana.

Other early transfers from Cushitic to Nilotic are in our view QUUT ‘scratch’ which has cognates in East Nilotic, ROOB ‘rain’, which can be from any level of East Cushitic into Proto South Nilotic, MUR ‘cut, circumcise, marry’, which is reconstructable to the Proto Nilotic level, AM ‘eat’ from Proto (East) Omo-Tana to Proto South Nilotic. The item PATAI ‘back’ is likely to be a transfer in the other direction, from Proto South Nilotic to Proto Omo-Tana.

The transfer of this large set of numerals from Proto Omo-Tana to Proto South Nilotic begs for historical cultural interpretations. It is clear the Cushitic language was dominant in the area as the transfers are from Cushitic to Nilotic. Borrowing (higher) numbers is a common phenomenon cross-linguistically but nevertheless it is hard to guess why the Nilotic speakers would use the Cushitic numerals: Assuming that there was no money economy, is the necessity for higher numbers related to larger herds of domestic animals, or to the Cushitic age-set system? Many of the non-numeral transfers are verbs: ROOB ‘to rain’ is borrowed as a verb in Proto South Nilotic, AM ‘eat’, MUR ‘cut’ QUUT ‘scratch’ are all verbs and quite basic verbs hence replacive rather than additive borrowings; these are facts that suggest intense contact, as verbs are less prone to borrowing.

5 Loans from East Omo-Tana

In our re-assessment of the proposed loans in Proto Baz, we have identified only three that are likely to be transfers from Proto East Omo-Tana to South Nilotic, and actually specifically to Proto Kalenjin: INSIR ‘louse’, dERI ‘claypot’, and SUBEEN ‘ewe’ (see Appendix). For KAS ‘to understand’ we propose transfer in the other direction, from Proto Kalenjin to Proto East Omo-Tana. If the transfers are restricted to these, not much can be concluded other than there was contact between Proto East Omo-Tana and Proto Kalenjin involving two cultural items, ‘clay pot’ and ‘ewe’. However, keep in mind that some of the transfers that were included in the preceding section, could also be considered to belong here.

The transfer of MAQAL ‘young goat/sheep’ was in our view later and at a lower level, from Rendille into Pokot. In the case of SAANI ‘lover’ we propose the other direction, also later and at a lower level, from a yet to be specified Kalenjin language into Somali.

6 Loans from West-Omo-Tana

There are a number of items that seem to be transferred from West Omo-Tana (previously known as Galaboid) containing Dhaasanac, Arbore and Elmolo. For these items the Proto West Omo-Tana form is closer to the South Nilotic form compared to the East Omo-Tana form.

Map 1 in Heine et al. (1979) posits Proto West-Omo-Tana closer to Proto South Nilotic and Proto East Omo-Tana further to the east. Tosco (2015: 105) argues why Elmolo is an unlikely source for transfer into Nilotic: “While the presence of Cushitic words in Southern (and Eastern) Nilotic is a fact, there is scarcely any specific evidence (other than geographic proximity) linking these loans to any fishing community in the Lake Turkana area and to the Elmolo in particular.” Interestingly, this contact with Proto West Omo-Tana may have been earlier than the contact of Proto East Omo-Tana with Proto Kalenjin because the Proto West Omo-Tana items can be proposed to have entered Proto South Nilotic rather than Proto Kalenjin. This is the case for AR ‘male bovine’, QUAR ‘male goat’, METEH ‘head’, and possibly TOR ‘spear’. MALAB ‘honey’ is only attested in Datooga; however, in order to suggest a plausible contact scenario

in terms of time depth and geographical proximity, we suggest an additional lexical replacive borrowing for ‘honey’ in Proto Kalenjin to account for the absence of this root in Kalenjin, see SEKEM in the Appendix. The root MAR ‘calf’ is likely to be a transfer from Nilotic or Surmic into Proto West Omo-Tana.

Although these items are few in number, they require that Proto West Omo-Tana and Proto South Nilotic were contemporary and in geographical proximity. The proposed transfers with two of them referring to male domestic animals suggests that certain aspects of animal husbandry (possibly breeding) were innovated among the South Nilotes from contact with Proto West Omo-Tana. The third concept ‘head’ must have been replacive rather than additive, suggesting more than superficial contact. The cultural dominance of Proto West Omo-Tana is also evident from their influence on Southeast Surmic. Blažek (2018: 53, 41) shows that Southeast Surmic borrowed the numerals 2–10 (except 4) from East Cushitic and he compares it in particular to Proto West Omo-Tana.

7 Loans from Yaaku-Dullay

Two to four items are linked to Yaaku-Dullay, a branch of East Cushitic also known as Peripheral-East-Cushitic (Tosco 2020) and referred to as Yaaku-Qawko in Heine et al. (1979) following Hayward (1978). One item, SEKEM ‘bee/honey’ is found in Proto Kalenjin, the other, EU ‘night’, in Datooga. The data is too limited to allow for anything more than speculation as to whether they entered at the Proto South Nilotic level and subsequently got lost in one of the primary branches of South Nilotic, or whether Proto Kalenjin and Proto-Datooga were the receiving languages. Possibly TOR ‘spear’ belongs here too, although it could also be a transfer from Proto West Omo-Tana. And BOD ‘get lost’ appears to be a loan into Pokot from Dullay.

The history of Yaaku-Dullay and its speakers is still little known but discussed in Sasse (1979: 54), Tosco & Sands (2022), Hayward (1978), and Ehret (2008). This is one of the areas where progress could significantly alter our understanding of the history of the region. South Nilotic, however, does not seem to have had intensive contact with this Cushitic subgroup.

8 Loans from Oromo(id)

Heine et al. (1997: 88) report that Ehret suggested to them some correspondences between Southern Nilotic and Oromoid and that he proposed transfer from Oromoid through Proto Baz to the Southern Nilotes. Four etymologies are mentioned, and we discuss them in the Appendix. We confirm RAARO ‘leather container’, KOLKOC ‘tortoise’ as likely transfers from an Oromoid source to Proto Kalenjin. For TWAAL ‘cowbell’ the situation is unclear. Finally, we are not convinced that the roots for ‘black ant’ under RIRIM are actually cognate.

The transfers seem to be into Proto Kalenjin; we found no attestations in other branches of South Nilotic for these items. This suggests that the Oromoid source was roughly contemporary with Proto Kalenjin, and, if Proto East Omo-Tana was indeed in contact with Proto Kalenjin, also contemporary with Proto East Omo-Tana. It is difficult however to establish the level of the “Oromoid” source. For Oromo RAARO we have no other cognates within Oromoid, and for KOLKOC various levels within Oromoid are possible as source.

9 Summary and conclusion

Our revision of the evidence presented in Heine et al. (1979) in the light of new data and insights results in the following picture of Cushitic - Nilotic contacts in Northern Kenya.

There was transfer from Proto **Omo-Tana** into Proto South Nilotic, showing cultural dominance of Proto Omo-Tana in particular because of the paradigm of decimal numbers that Proto South Nilotic borrowed from Proto Omo-Tana but also other numbers, 6–10. In addition, at least four relatively basic verbs in Proto South Nilotic are of Proto Omo-Tana provenance and both aspects, verb and basicness, point to intense contact.

There was some transfer from Proto **West Omo-Tana** into Proto South Nilotic. Although the number of borrowed words is low, the fact that two of them refer to male domestic animals may be a significant indication for the nature of the West Omo-Tana cultural influence on Proto South Nilotic.

There was some transfer from Proto **East Omo-Tana** into Proto Kalenjin. This is partly a consequence of our decision to take those items that could have been transferred at earlier stages at donor

and receiving side to be evidence of that earlier contact event with the advantage of regularising Omo-Tana – South Nilotic versus East Omo-Tana – Kalenjin contact events.

There was very little transfer from an **Oromoid** source into Proto Kalenjin; too little to draw any conclusions from as yet and the same is true for scarcity of evidence for **Yaaku/Dullay** transfer into any of the Southern Nilotic languages.

We do not accept the evidence for a separate Omo-Tana language Baz on the basis of the presented Cushitic loans in South Nilotic. Not assuming one source for these loans made it possible for us to suggest a number of different contact scenarios. These scenarios need further substantiation and would ideally be linked to results from other disciplines. We present Heine et al.'s (1979) map 1 here as Figure 2. We refrain from presenting a map situating the proto-languages and their contact zones because that would already involve bringing in non-linguistic considerations. Instead, we offer a schematic “map”, Figure 3, representing our main conclusions on language contact in earlier times between Cushitic and South Nilotic.

We envisage that this revision of earlier research on Cushitic – Nilotic contacts marks the beginning of re-appraisal of such work. Many more lexical similarities between the two families need to be uncovered and analysed. We are currently working on the intense South Cushitic South Nilotic contact. We hope that this work inspires research on contact beyond the lexicon and thinking on the socio-historical scenarios for these contact events.

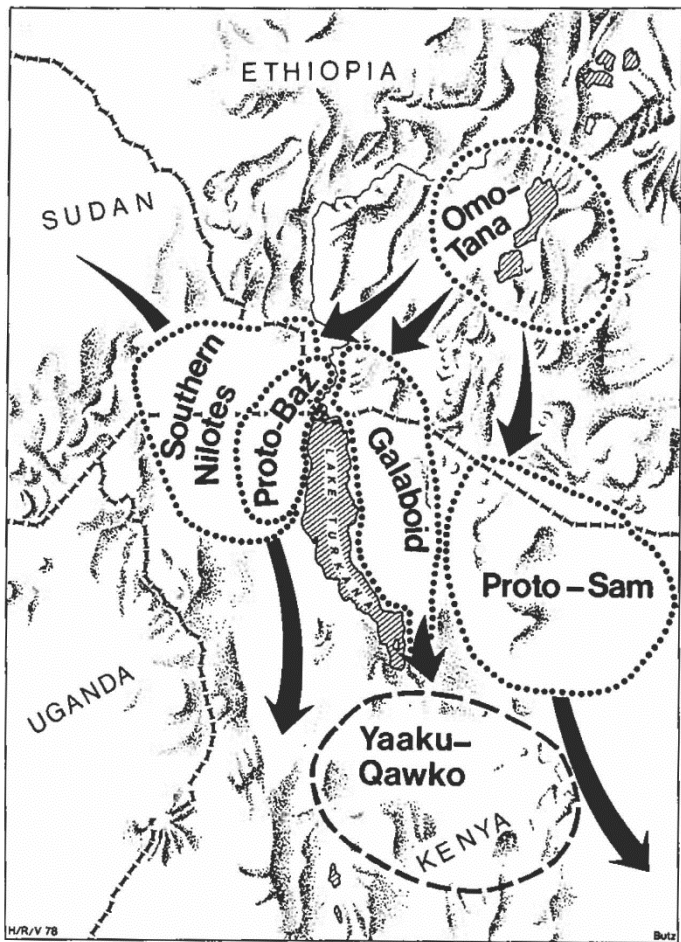


Figure 2: Nilotic-Cushitic contacts between 1000 B.C. and 100 A.D. (Heine et al. 1979: 84).

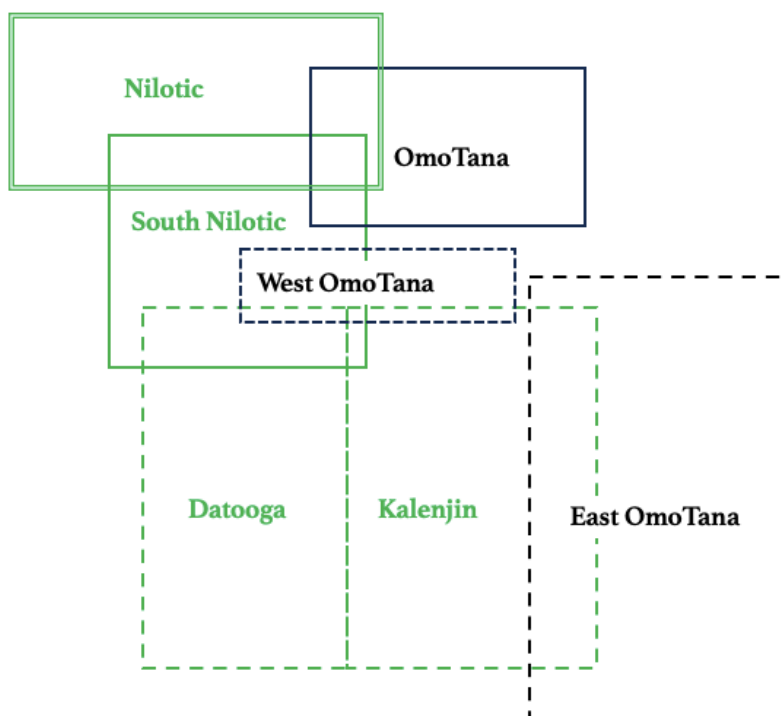


Figure 3: Schematic map of the Cushitic and South Nilotic contacts based on the reassessed lexical evidence

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Appendix: Assessment of the proposed cognate sets

The following overview discusses the thirty-seven lexical items that Heine et al. (1979) set up for Proto Baz as the source for Cushitic loans in South Nilotic. After the proposed word/stem as heading, we provide their proposal, consisting of a correspondence set of Proto Baz, Proto South Nilotic/Proto Kalenjin/Common Datooga and Proto East Omo-Tana. A second etymon is provided from later reconstructions (Rottland (1982) for South Nilotic, Heine (1978, 1981) or Lamberti (1986) for East Omo-Tana) if it differs from the one in Heine et al. (1979). Next, cognates (or related items) in relevant Cushitic and other languages are provided. Each item is concluded with a brief discussion and our verdict. We also include the proposals that Heine et al. (1979) present in endnotes as suggestions from Christopher Ehret in personal communication; here indicated as endnote 29 (for loans from Oromoid), 32 (for loans from Yaaku-Dullay) and 41 (for loans from East Cushitic). Some other Cushitic loans in Nilotic that Ehret proposed in his PhD (Ehret 1970, 1971) are added and marked as B1 for Table 1 (East Cushitic) in Ehret (1970 or 1971).

For ease of reference, we have ordered all items alphabetically on the abstract title of the items in capital letters. Please also note that Heine et al. (1979) use “PS” for Proto Sam, which we instead refer to as Proto East Omo-Tana; this means it is abbreviated with “PS” in the proposed Proto Baz lexical item line but referred to in text as “Proto East Omo-Tana”.

Abbreviations

CD Common Datooga
PB Proto Baz
PEC Proto East Cushitic
PK Proto Kalenjin
PS Proto Sam
PSN Proto South Nilotic

AFARTAM ‘forty’ and other even decimals

Heine et al. (1979) include *afartam ‘forty’ in their inventory of Proto Baz words, but do not discuss it in the body of the article, nor do they include *f* in their inventory of Proto Baz phonemes. On the basis of the fact that Nandi has *artam* ‘40’ (Creider & Creider 2001) and Datooga-Asimjeega *ardam* ‘40’ (Griscom ed. 2018: 9), we can assume a transfer into Proto South Nilotic *artam from East Omo-Tana *afartam (extrapolated from Somali *afartan*) with loss of intervocalic *f*, from a higher Cushitic level.

Ehret (1970: 146; 1971: 112) proposes Proto South Nilotic *tíktem ‘20’ to be from Cushitic, e.g. Oromo *digdama* (confirmed in Gragg 1982) with *tēm* from Cushitic *tomon* ‘ten’. Rottland (1982: 563) does not reconstruct it at Proto South Nilotic level but has Proto Kalenjin *tiptem and Common Datooga *digdam*. Oromo is the only Cushitic language that has such a word for ‘20’.⁴ Other Oromoid languages have constructions which are likely to be lexical innovations. Highland East Cushitic languages have a word for 20 based on *lam-* ‘two’ such as Burji *lamat(t)an*, as do the Agaw languages *länätätən* with gloss /two:ten/ (Appleyard 2006: 140).

Ehret (1980: 147–8; 1981: 112) adds Datooga *la:dám* ‘60’, *ladám* in Griscom (ed. 2018: 28) and *se:dám* ‘80’, *sedám* in Griscom (ed. 2018: 43), as tokens of transfer from Cushitic. Somali has *lixdan* ‘60’. We support these proposals of transfer of ‘20’, ‘40’, ‘60’, and ‘80’ from a Cushitic source to proto South Nilotic.

AM

- PB *am ‘to eat’ : PK *Λm : Proto-East-Cushitic *kom (Sasse 1979: 25)

Rottland (1982: 296) reconstructs this item to Proto South Nilotic as *am-it ‘food, sustenance’ on the basis of Proto Kalenjin and Datooga *ham* (n) ‘food’; we propose to adjust the reconstruction to *ham-it to accommodate for Datooga *ham* and in line with the Omo-Tana attestations. Lamberti (1986: 298) reconstructs *aham for Proto East Omo-Tana. The Proto East Cushitic form *k’om ‘chew, bite, eat’ presented in Heine et al. (1979) is not cognate with Proto East Omo-Tana *aham, because its regular cognate in Somali is *qoom* ‘to wound’ (Sasse 1979: 25). Within Cushitic the relevant root is present in West

4 Also Gedeo *diddama*, but Gedeo has borrowed higher numerals from Oromo.

Omo-Tana: Arbore *ʔəhəm* ‘eat’ (Hayward 1984: 417), Elmolo: *aam* ‘eat!’ (Tosco 2015: 117) and is reconstructable for Omo-Tana. This item then could represent transfer from East Omo-Tana or Omo-Tana to Proto South Nilotic.

Alternatively, the similarity of these words can easily be due to their sound-symbolic value. For example, Somali has the ideophone *ham* to indicate an action of eating greedily, wolf down (Dhoorre & Tosco 1998: 135, 144).

APIYE ‘animal’ (B1)

Ehret (1971: 111) has *apiye* ‘large carnivore’ as Proto South Nilotic reconstruction and mentions *apirie* as Pre-Proto South Nilotic form. No evidence is presented but note that Pre-Proto South Nilotic *R indeed continues as y in most Kalenjin varieties in Rottland’s reconstruction. Ehret links the root to Oromo *arba* ‘elephant’ and Yaaku *arape* ‘large feline’. The root is cognate to Turkana *epiri/ngipiryo* ‘hippopotamus’ (Ohta 1989: 33) and has spread to Ik *népírà* ‘hippo’ (Schrock 2017: 195).

However, Rottland (1982: 465) has only Datooga CD *(h)abiy* ‘hyena’ and no reconstruction for Proto South Nilotic. The semantic link between the Cushitic root for ‘elephant’ and the Datooga word for ‘hyena’ is problematic. We cannot imagine a scenario in which a word meaning ‘elephant’ is interpreted as meaning ‘hyena’. In our view this is not solved by proposing a general meaning such as ‘large carnivore’ as we are unaware of this being an attested lexical semantic unit in the languages of the wider area, nor is the elephant a carnivore.

The root may be related to Proto East Cushitic *ʕarab- ‘elephant’ based on: “Somali *arb-e* (Andrzejewski), Rendille *arab*, Elmolo *arap*, Arbore *arb-a*, Dasenech *ʕarab, pl. *ʕarb-u; Galla *arb-a*, Konso *arb-a*, Gidole *arp(-a)*; Burji *arb-a*; Harso and Gollango *arap-ko*; Yaaku *arap-e* ‘large feline’ (Ehret), *arap-a* ‘carnivorous animal’ (Heine).” (Sasse 1979: 14).

The presence of the root meaning ‘hippo’ in Teso-Turkana (East Nilotic) indicates that the Nilotic distribution of a possible reconstruction is wider or higher than Datooga though. It is not reconstructed for Proto Nilotic in Dimmendaal (1988). The semantic link between elephant and hippo is easier to understand than from those meanings to ‘hyena’. We are not yet convinced of transfer from a

Cushitic source to South Nilotic because of the lack of evidence in Kalenjin and the semantic distance between ‘elephant’ and ‘hyena’ but we consider the link between an East Cushitic word for ‘elephant’ and the words for hippo in East Nilotic Turkana (and Ik) promising.

AR

- PB *aR ‘male bovine’ : PK *e:y : Dhaasanac *ar*, Arbore *ar*, Bayso *are*

Rottland (1986: 297, 556) reconstructs *e:R to Proto South Nilotic, as well as to Proto Kalenjin. Lamberti (1986: 215) mentions an item similar in form and meaning for Central-North Somali, Rendille, Jiiddu and Boni, with Central-North Somali *awr* ‘male camel’ being the most archaic form in that it preserves the diphthong; Lamberti does not, however, reconstruct this item to Proto East Omo-Tana for unknown reasons. Rendille *oor* ‘bull of cattle or camels’ is supposedly related but differs in having a round vowel.

The closeness of Arbore *ʕáar* ‘bull’ and Dhaasanac *ar* ‘bull’ in form and meaning to the Proto Kalenjin form *e:R suggests the possibility of a transfer from West Omo-Tana (Dhaasanac) to Nilotic. This is likely to be a transfer from Proto West Omo-Tana into Proto South Nilotic assuming centralisation raising due to the R sound and no need to explain the loss of roundness if it had been borrowed from East Omo-Tana.

Datooga æ:nog ‘milk’ from East Cushitic (B1)

This is proposed in Ehret (1981: 110) as an East Cushitic loan in South Nilotic providing Oromo: *ana:n*, Somali *ʕaano*, Saho *hān-* as support. Rottland (1982: 547) has POD *a:n; and Common Datooga: *a:n* and these are closer in form to the East Cushitic forms: (-g is a number suffix). Black (1974: 219) reconstructs Proto Lowland East Cushitic *ʕaan-* on the basis of Afar *han* and Proto South Lowland East Cushitic *ʕaan-. Heine (1978: 77) has Proto East Omo-Tana *ʕaanu, Sasse (1979, 1982) does not reconstruct it. Transfer from a Cushitic source (Lowland East Cushitic, Omo-Tana or East Omo-Tana) into Datooga is likely but it is strange that the transfer is to Datooga and not to Proto Kalenjin or Proto South Nilotic.

BAZ ‘lake’

- PB *baz ‘lake, sea’ : Datooga *bas-* (< *pas-) : PS *be
Common Datooga has a slightly different vowel in Rottland (1982: 554): *bas* ‘lake, sea’. Beyond South Nilotic, this item is reconstructed to Proto Nilotic *bas ‘lake, wide river’ (Dimmendaal 1988: 46), cf. Asimjeeg Datooga *bàsò:d* (Griscom 2019: 288), Turkana *em-baso* (Beech 1911: 137), Maa *básu* (*m-*) ‘lake’, *pásô* (*ém-*) ‘lake, large pool’, and Proto-West Nilotic *bar ‘river, lake’. There is no evidence for this root in Kalenjin (Nandi, Pokot, Marakwet, Sabaot), not even as a name for Lake Turkana (Pokot).

The word is wide-spread in Cushitic with reflexes found in various branches: Proto East Omo-Tana: *bez (*f*) from Rendille *bey*, pl. *bey’ay* (*f/m*), Somali *bad* (*f*). But also at the higher Proto East Cushitic level, it has been reconstructed by Sasse (1979: 20) as *baz- ‘lake, sea’, based on Saho-Afar *bad* ‘sea’; Somali *bad* ‘sea’, Rendille *bey* ‘lake’, Dhaasanac *baz* ‘Lake Rudolf’, Elmolo *paw* ‘Lake Rudolf’; Gollango and Dobase *pas-o* [*baz-o*] ‘lake’. The reverse direction, Proto Nilotic into Proto East Cushitic would leave *z in Cushitic unexplained (Proto Nilotic has *s); hence Proto East Cushitic into Proto Nilotic is more likely.

Dhaasanac is the closest formal and geographical source among the attested or reconstructed Cushitic candidates. The Proto Nilotic item however necessitates a source at a deeper time-depth, unless the word was a later transfer that spread within Nilotic in a fashion of etymological nativisation, with the result that the reconstruction is an ahistorical mirage. At this point, however, there is nothing to suggest this. We propose that this is an early loan from Cushitic to Nilotic.

BOD ‘get lost’

- PB *bod ‘to get lost’ : Pokot *pot* : Proto-East-Cushitic *bad
There is no Proto East Omo-Tana reconstruction for this item, but the root is widely attested in East Cushitic: Proto East Cushitic: *bad- ‘be lost, extinguished’: Saho-Afar *ba(a)d-* ‘perish, be extinguished’; Dhaasanac *bad-*, Elmolo *pəd-*; Oromo *bad-* ‘be lost’; Konso *pat-* ‘be ruined’; Dirayta *pat-* ‘disappear, be lost, die’; Burji *bas-s-* (caus.) ‘extinguish’ (< *bad-s-); Gawwada and Harso *pot-* ‘disappear’, Gollango *pot-* ‘get lost’. Probably Somali *bad-* ‘involve in trouble’ and *bad-baad-* ‘escape’ also belong here.

The Dullay form is closest to the Pokot form and one can suggest a Dullay to Pokot transfer; not excluding other Cushitic sources as options because both Dullay and Kalenjin do not distinguish between voiced and voiceless stops and the realisation of *a* and *o* is close; hence the similarity between Dullay and Pokot may be not markedly closer than with other possible sources.

Datooga has *bàd-éeda* ‘trouble’ which suggests PSN **bad* ‘get lost’ from PEC as pointed out to us by an anonymous reviewer. The direction of transfer can easily be the other way given presence of this root in Majang *bàdèér* ‘disappear, get lost’ and Ik (Kuliak) *bàd-* ‘die’.

BOQOL ‘hundred’

- PB **boqol* ‘hundred’ : PK **pOkOl* , Datooga *boqal* : PS **boqol*

Rottland (1982) reconstructed Proto Kalenjin **pəkɔl* and Common Datooga *boqal*. It was not reconstructed by Rottland for Proto South Nilotic but this may be possible. There is the issue of Proto South Nilotic **q*; Dimmendaal (1988: 7, 10) tentatively reconstructs this phoneme for Proto Nilotic, at least before low back vowels. In this view, we would tentatively reconstruct Proto South Nilotic **poqol* with a development *q* > *k* in the transition to Proto Kalenjin. This opens the scenario for a transfer from Proto East Omo-Tana to Proto South Nilotic. The root is absent in Cushitic outside of East Omo-Tana and the other direction of transfer cannot be excluded. We propose the direction into Proto South Nilotic mainly to let it be in line with the transfer of the other higher numerals from Cushitic into Proto South Nilotic.

BURI red

- PB **buri-* ‘red’ : PK **pirir* : Dasenech *bur*
- Rottland (1982: 308) PSN *piriir* ‘red’

This item is only attested in West Omo-Tana within Cushitic so far, with Elmolo *poor* ‘red’, Arbore *burrí* (*rr* is a trill – while *r* is a flap in Arbore), Dhaasanac *bur* ‘red’ (Tosco 2001). Proto West Omo-Tana **buri* is proposed.

Obstruents in South Nilotic became devoiced as there was no voice opposition in obstruents in South Nilotic while in Proto West Omo-Tana initial bilabial stops were voiced (Hayward 1984: 33). Proto South Nilotic has three consonants in this root. If Proto South Nilotic

borrowed from Proto West Omo-Tana it either reduplicated the final consonant, or it inserted a vowel in the geminate final *r*. If Proto West Omo-Tana borrowed from Proto South Nilotic, it lost the vowel of the second syllable and changed the vowel *i* to *u* under influence of the initial labial consonant. The direction Proto South Nilotic to West Omo-Tana is easier to explain. Moreover, the root seems to be isolated within Cushitic.

dERI ‘clay pot’

- PB *d’eri ‘clay pot’ : PK *ter(et) : PS *d’eri (= Heine 1978) Rottland (1982: 441) reconstructs Proto Kalenjin *ter ‘clay pot, pot’. This item seems to have a restricted distribution both in South Nilotic (only Kalenjin) and East Cushitic (not in Highland East Cushitic, Proto Lowland East Cushitic, Oromo). *d* adapted as *t* is more easily explained than *t* > *d*. This suggests transfer from East Omo-Tana to Proto Kalenjin.

PK *eu(n) ‘night’

Heine et al. (1979: endnote 32) report that Ehret claims this root to be among the Kalenjin words from Yaaku-Dullay. Ehret (1970, 1971) does not mention this root for ‘night’. Rottland (1982: 548) has Common Datooga *ɛw ‘night’ and does not reconstruct it for Kalenjin, nor the higher South Nilotic level. Nandi has no potential cognate for ‘night’ and ‘evening’ (Creider & Creider 2001); and nothing has been found in Pokot, so it cannot be shown to be a transfer at Proto South Nilotic level rather than to Datooga.

The Datooga root is likely to be a reflex of a Cushitic transfer into South Nilotic. Proto Yaaku-Dullay is the most likely source: Gawwada ?awn-e, Tsamakko ?awne, Yaaku *aun*; Ehret (2008) suggests *?awn ‘night’ for Proto Yaaku-Dullay. Other cognates in Cushitic such as Oromo ?uo and Rendille *iben* differ more in form. The receiving language lost the final *-n*. If the receiving language was (Proto) Datooga, there is the option that Datooga speakers interpreted the final *-n* as their singulative suffix *-an*. There is enough evidence to suggest a Yaaku-Dullay borrowing into Proto Datooga.

GID ‘jigger’ (B1)

Ehret (1970: 148, 1971: 111) links Datooga *gidgidood* ‘jigger’ to Somali *kudkude* and Saho: *kudkud* ‘tick’ (not in Banti & Vergari 2005

or Vergari & Vergari 2007). Similar items can be found in Proto Highland East Cushtic: *kora ‘flea’ (Hudson 1989) and Oromo *tuffee-kurup’p’ee* ‘flea’ (cf. *kurup’p’isa* ‘grasshopper’) (Gragg 1982: 379, 256, 457: *tuffee-* ‘any thing or anyone that makes a sudden appearance, penis, anus’). Rottland (1982: 537) has Proto Kalenjin *kĩmut* ‘flea’. The evidence is not strong enough to propose a transfer. See INSIR ‘louse’ below.

GORO ‘feathers, fur’

- PB *goro ‘fur’ : PK *kara:r : Bayso *ogoro*

This item is not reconstructed to Proto East Omo-Tana by Heine (1978, 1981) nor Lamberti (1986). It may be compared to Tsamakko *koolo* ‘wing’, Gawwada: *hool-o* (m) ‘wing, feather’, and Konso: *xool-a* (m) ‘feather (including down), wing’.

Rottland (1982: 334) reconstructs indeed Proto Kalenjin *kara:r ‘feather, hairs (on the fur)’.

In conclusion, there is no clearly related item in Cushitic. The best source candidate presumably is Dullay *koolo ‘feather, wing’ (assuming Dullay to Konso transfer in this instance). If it is related, the final *r* in Proto Kalenjin is unexplained. Pending further evidence, this item does not provide strong support for transfer from Cushitic into Proto Kalenjin.

HAB

- PB *hab ‘curse’ : Datooga *(h)abe : PS *hàbààr

The Datooga form is not found in Rottland (1982) nor in Griscom (2019). There is no other evidence in South Nilotic. In Cushitic, beyond East Omo-Tana, this item is also found in Oromo *abbaara* ‘curse, scold’. We cannot draw any conclusions given the lack of evidence for the item in Datooga, or in South Nilotic.

Swahili *-apa* ‘swear’ is unrelated despite its similarity in form and meaning. It is in some dialects still *-lapa* (Sacleux 1939) and it is a regular reflex of Proto Bantu *dap ‘swear’ (see BLR3 #872).

INSIR ‘louse’

- PB *insir ‘louse’ : PK *(k)insir : PS : *ingir-

Rottland (1982: 545, 348) presents a finer-grained picture of Proto Kalenjin: *(k)I(n)sir, with *-n-* being found only in Pokot. The loss of

n in nearly all languages is irregular within Kalenjin. We suggest that Pokot borrowed *msɪrya:n* from Oromo *injiraan*; Pokot adjusted the *j* sound to their phonological system. We adjust the Proto Kalenjin reconstruction to **(k)ɪsr* without *n*. Lamberti (1986: 364) reconstructs Proto East Omo-Tana **ingir-*, presumably with an eye on the velar in the reflexes in Elmolo and Arbore but this would fit a higher level reconstruction, Proto Omo-Tana, but not at the lower East-Omo-Tana level since none of the reflexes in East Omo-Tana have *g*. A reconstruction **injir* for East Omo-Tana better fits the East Omo-Tana evidence and is a more likely source for Proto Kalenjin: **(k)ɪsr*.

The other Nilotic branches have different roots for ‘louse’. Dimmendaal (1988) reconstructs Proto Nilotic **jok*. On this basis we can assume that Proto Kalenjin borrowed the item and was not the source. Rottland (1982: 347–8) compares the addition of an initial *k-* in Keyo, Tuken and Sapiny to the addition of *k* in *kitook* ‘place to sleep’ but cannot explain it. Possibly the shape of the word of ‘flea’ *kmit* played a role. If we suppose a transfer from Cushitic to Kalenjin *ɪsr*, the closest source in shape would be East Omo-Tana *injir*. We still need to explain the interpretation of *nj* as *s*. The devoicing of *j* can be explained by the absence of phonological opposition in voice in obstruents in Kalenjin. The loss of *n* suggests a source that realised the initial *in* as a nasal vowel.

Dhaasanac has a deviant shape for this root within Cushitic, *iðír-ri* ‘louse, lice’ (Tosco 2001: 482)⁵ (different from related Arbore *íngir-a* and Elmolo *ínkir*) and the Dhaasanac form may have been a transfer from a Kalenjin source with *ɪsr*, assuming adaptation of intervocalic *s* to *ð*.

It appears that Kalenjin languages added an initial *k-* in this root; this is difficult to explain. Rottland (1982) does notice a parallel case with an unstable initial *k-* but also remarks that he cannot explain it. Transfer from East Omo-Tana into Proto Kalenjin is conceivable.

ILAAL ‘look’

- PB **(i)laal* ‘to look’ : PK **(i)la:l* : PS **ilaal*

Rottland (1982: 552, 554) does not reconstruct this item for Proto Kalenjin, and this means that at present there is no evidence of transfer from Cushitic into Proto Kalenjin for this item. Ehret (1971:

5 *izid-di* in Black (1974: 230, 299) is the singulative.

110) reconstructs Proto Kalenjin **(i)laal* ‘to watch, to look’ and links it to Oromo *ilaal*- ‘to look at’, Somali *ilaali* and Saho *ilal*- ‘to look’ and suggests a Cushitic internal derivation from **ila* ‘eye’. On this basis he proposes a transfer from East Cushitic into South Nilotic. He does not provide evidence for his Kalenjin reconstruction.

IRI ‘smoke’

- PB: no evidence.

Heine et al. (1979) do not provide a Proto Baz or Proto East Omo-Tana form for this item, which only figures in their Appendix (Heine et al. 1979: 86). As they note in endnote 41: “Some roots like ‘calf MAR and ‘smoke’ IRI occur also in East Sudanic groups and may therefore not constitute borrowings from Proto Baz. They do, however, fit into the regular sound pattern of borrowing established here and therefore have been tentatively included.” Rottland (1982: 550) reconstructs **i:R* ‘smoke’ for Proto Kalenjin. Potentially related forms have not been found in Cushitic; thus we see no evidence for transfer into Proto Kalenjin for this item.

KAS ‘see’

- PB **kas* ‘to see’ : PK **kʌs* : PS **kas* ‘to understand, know’
- PS: Somali: *kas*-; Boni: *kâs/kása*.

Proto Kalenjin *kas* ‘to hear, understand’ (in Sapiny and Bong’om: ‘to hear, see, understand’) (Rottland 1982: 340). Note that ‘to see’ is *da*- in Common Datooga) (Rottland 1982: 554). In Somali, *kas*- means ‘to understand, comprehend; know, have knowledge of’ (Said 2013: 212). While it is attested in Boni, Lamberti (1986) does not reconstruct this item to Proto East Omo-Tana. Semantically, the shift from ‘see’ to ‘know, understand’ is more likely than the other way round, as argued by Sweetser (2019: 38) for the body to mind metaphor sight to knowledge, mental vision. Our conclusion is that if the Proto Kalenjin and East Omo-Tana items are related, it was transferred into East Omo-Tana from Proto Kalenjin.

PK **kolkoc*, **kockoc* ‘tortoise’ : Oromo *qoca*

Heine et al. (1979: endnote 29) mention this as a proposal by Ehret for Oromoid influence on Proto Kalenjin on the basis of Oromo *qoca*, which is *qoc’aa* ‘turtle’ in Gragg (1982). It is not attested in the other Oromoid languages: The root is not attested in Dirayta, while Mosiye

has a different root, but the root is reconstructed for Proto Highland East Cushitic as *k'oc'a 'turtle, tortoise' (Hudson 1989: 157). There are no attestations in West- nor East Omo-Tana.⁶ The Proto Kalenjin reconstruction cannot be confirmed so far, as it is not included in Rottland (1982) for Proto South Nilotic, Proto Kalenjin, or Common Datooga. Compare, however, Nandi *cep-koykóc-êt* 'tortoise' (Creider & Creider 2001: 64), Päkot *kokech* (Beech 1911: 145), as well as Samburu (East Nilotic) *loi[guiguy]ari* 'tortoise' (Webonary 2019) that are close to Heine et al.'s (1979) Proto Kalenjin reconstruction. Once the Proto Kalenjin reconstruction can be confirmed, this item can be proposed to be a transfer from Proto Oromoid to Proto Kalenjin and the latter must have applied reduplication. We can postulate a Proto Oromoid form *qoc'a given the cognate in Proto Highland East Cushitic and this transferred into Kalenjin, possibly Proto Kalenjin, pending the Proto Kalenjin reconstruction.

KONOM 'fifty' and other uneven decimals

• PB *konom 'fifty' : PK *kənəm : PS *kontom, Somali *konton* Rottland (1982: 538) reconstructs Proto Kalenjin *kanam with *a~ɔ* in Pokot (Rottland 1982: 334). There is no East Omo-Tana reconstruction for '50' in Heine (1978); the reconstruction in Heine et al. (1979) is probably extrapolated on the basis of Somali. This is a likely transfer from Proto East Omo-Tana or higher into Proto Kalenjin or Proto South Nilotic. Datooga utilises a construction for the decimals which is why there is no higher reconstruction at Proto South Nilotic level for the uneven decimals. All uneven decimals in Datooga are constructions rather than single roots: 90 = 80 + 10, 50 = 40 + 10, 30 = 20 + 10. This construction is an innovation at least in that it uses borrowed roots for '80', '40' etc., but it is very well possible that the twenty-base system is old in (South) Nilotic and that the construction as such in Datooga is a remnant of that. In that scenario the even decimals were borrowed in South Nilotic but the uneven decimals only in Kalenjin.⁷

6 Somali *qubo* 'turtle, tortoise' (Zorc & Osman 1993: 334) and Konso *kup-aata* 'tortoise, turtle; short person' (Black & Otto 1973: 78) are different roots.

7 We thank Thilo Schadeberg for pointing this out to us.

KOR ‘bell’

- Heine et al. (1979): PB *kor ‘bell’ : PK *kur : PS *kor-

The reconstruction for Proto Kalenjin in Heine et al. (1979) is apparently no longer considered viable in Rottland (1982). Rottland (1982: 450) has a different root, *twai:l* ‘(cow) bell’, for Proto Kalenjin (cf. TUAALIO below in the Appendix). Oromo and Konso have *korkor* as an ideophone for the hollow sound of something like a camel bell. This word may have circulated widely with the cultural artefact of bells/rattles, and/or it may be sound-symbolic. Cf. also Ik: *coor* ‘leg bangle’, Elgon: *cor* ‘dance (v)’, Nandi-Markweta: *kurkur* ‘bells on leg’, Mursi-Suri: *joré* ‘decorative bell’, Dholuo: *gara* ‘ankle bells’, Hamar: *c’onc’oro* ‘rattle’. In the absence of any evidence for this root in Kalenjin and assuming that **twai:l* is a different root, there is no indication for transfer from Cushitic into Nilotic.

LVh ‘six’

- PB *lVh ‘six’ : PK *ila : PS *lih

Rottland (1982) has reconstructions with slightly different vowels: Proto Kalenjin *lɔ, Proto Kalenjin-Omotik *la, and Common Datooga la. The word is not reconstructed for Proto South Nilotic but the words in the two branches are related, showing irregularities. Sasse (1979: 22, 63) reconstructs *lih for Proto East Cushitic, as in East Omo-Tana. Proto West Omo-Tana has probably the same proto form, probably with a change of final *h* to *ɸ*, even if the individual languages developed different shapes: Dhaasanac *li*, Arbore *ɕih* (Hayward 1984: 439), Elmolo: *yii?* (Heine 1980, regular reflex according to Sasse 1979: 22). The same is valid for Proto Oromoid: Oromo *jah-a*, *jaa* ‘six’ (regular reflex of *lih), Konso *leh*, Dirayta *leh(-e)*. The Dullay languages have a different root for ‘six’, Gawwada *tappi*; Tsamakko *tabben*, and Yaaku borrowed the item from East Nilotic. The most likely Cushitic source is Proto East Omo-Tana or higher levels such as Proto Omo-Tana or Proto Lowland East Cushitic. Lowland East Cushitic *e* > *i* / _ pharyngeal that is not followed by C (Black 1974: 111). So, unless the pharyngeal was followed by a C in ‘six’, then this item is irregular in Black’s system. Sasse (1979: 22) solves it by positing a variant form at a higher level: Oromo, Baiso, Konso, Gidole developed from “a variant *leɸ”.

Proto Highland East Cushitic has *leho* (Hudson 1989: 135). Proto-Agaw has a different root **walta* (Appleyard 2006: 124) and Beja has *asagwir* (Wedekind et al. 2021). But Tanzanian Cushitic has a cognate root closest to Proto Highland East Cushitic, **lahooʔu* (Kießling & Mous 2003: 190), suggesting Pre-East Cushitic **laho* [leho] > Proto Highland East Cushitic **leho*; parallel > Lowland East Cushitic [leho] (as it is in Oromoid, see Sasse (1979: 22) > Proto East Omo-Tana **liḥ* (no explanation for this raising); and parallel (or earlier) > Proto West Rift **laho-ʔu*. The indication **laho* [leho] refers to the situation that a phonological /a/ is pronounced as [e] before a pharyngeal.

The receiving South Nilotic languages lost the final pharyngeal fricative which is absent in their inventory and interpreted the vowel which was allophonically centralised [ɐ] before the pharyngeal in the Cushitic source as a lower centralised vowel. The reconstructed rounding of the vowel in Kalenjin (Rottland 1982: 366) is difficult to explain but all Kalenjin lects have a round vowel. Datooga has a low vowel in all lects and the *l* is often long. The extra initial vowel *i* as it appears in Heine et al. (1979) is not retained in Rottland (1982), but it is present in the East Nilotic languages that borrowed this root: Proto-Teso-Masaian has **ille* (Vossen 1982: 99 going back to Ehret 1974: 40). Blažek (2018: 50) also includes a syllable before *liḥ*: Proto East Cushitic **(ʔ/ha)liḥ*. It is difficult to determine how many transfers happened and between which proto languages.

MALAB ‘honey’

- PB **malab* ‘honey’ : Datooga *mal* : PS **málàb*

This item is widely attested in East Cushitic and is reconstructed to Proto East Cushitic: **malab-* ‘honey’: Saho-Afar *mala(a)b-*; Somali *malab*, Rendille *malab*, Boni *malub*; Sidamo and Kambata *malab-o*, Hadiyya *marab-o* (Sasse 1979: 14). Arbore *múul* fits Datooga in terms of syllable structure, but not the vowel. Transfer into Datooga is possible, maybe from a language that lost the rhyme of the second syllable, like Arbore. In that case it would have taken place before the change of *a* > *u*. The best-supported scenario is transfer from West Omo-Tana into Datooga.

MAQAL ‘young goat/sheep’

- PB **maqal* ‘young goat, sheep’ : PK **mākāl* ‘male sheep’ : PS **maqal* ‘young goat, sheep’

Rottland (1982: 369) does not contain this item, but it is found in Pokot *màkál* ‘ram’ (Crazzolara 1978: 239). Ehret (1970: 138) has Proto Kalenjin **makal* ‘male sheep’ but does not propose Cushitic influence. Within Cushitic, the root seems to be restricted to East Omo-Tana. The most likely scenario is transfer from East Omo-Tana into Pokot.

MAR ‘calf’

- PB **maR* ‘calf’ : PK **mɔ:y* : Rendille *mar*

Rottland (1982) reconstructs *mɔ:R* at the higher Proto South Nilotic level (Rottland 1982: 304, 377, 543). Pillinger & Galboran (1999) have for Rendille *maár* ‘female calf’, *máar* ‘male calf’, and this long vowel is a better fit with Proto Kalenjin than Proto Baz **mar*. The item is not present in Proto East Omo-Tana (Lamberti 1986), but in the West Omo-Tana languages Elmolo (*maar* ‘calf’), Arbore (*máar* ‘calf’) and Dhaasanac (*modo* ‘calf’).

The item is found in East Sudanic beyond South Nilotic, e.g. Mursi-Suri *mòr* ‘female calf’. It cannot be excluded that the direction of borrowing was from South Nilotic to West Omo-Tana. In fact, given that the item is limited to West Omo-Tana in Cushitic, the possibly irregular *d* in Dhaasanac, and the occurrence in Mursi-Suri, it is more likely that the item passed into Cushitic from South Nilotic/Surmic. It is also widely attested in Bantu languages of the region. Ehret (1970: 60) “One piece of evidence does suggest an area for possible further investigation: the word *moori*, “calf” or “heifer”, related to Proto Southern Nilotic **mɔɔi* < Pre-Southern Nilotic **mɔɔri*, “calf”, is found not only in all East Victoria Bantu dialects and in Thagicu languages, but also in Shambala, Zigula, and Swahili. But if Southern Nilotes did indeed directly influence the ancestors of these three Bantu peoples or others among the far northeastern Bantu, that influence is not easily detectable in their languages.” If Cushitic did not borrow it from East Sudanic, South Nilotic may have taken it from Rendille or West Omo-Tana.

MEE ‘die’

Heine et al. (1979: 88 endnote 32) report that Ehret proposed to them that Kalenjin **me:* is from Yaaku-Dullay origin. Rottland (1982: 556) has Proto South Nilotic/Proto Kalenjin *mɛ:R* ‘to die’. The root can possibly be related to Yaaku *mɛʔɛ* ‘to get lost (of animals)’ but no

other potential cognate was found in Dullay, in Gawwada nor Tsamai. Given the weakness of the semantic fit and the lack of additional support, we consider this not to be a Cushitic transfer into South Nilotic.

METEH ‘head’

- PB *meteh ‘head’ : PK *meh : PS *matah

This item has been reconstructed to Proto East Cushitic: *math- ‘head’ and is widely attested: Somali *madaḥ* Baiso *mete*, Rendille *mataḥ*, Boni *madaʔ*, Arbore *mete*, Dhaasanac *mé* (irregular loss of *t*; cf. pl. *mett-u*) (Tosco 2001: 517), Elmolo *meteʔ*; Oromo *mataa*, Konso *matta*, Dirasha *mašš(a)*; Yaaku *miteh* (Sasse 1979: 10). The closest match to Proto Kalenjin is Dhaasanac. If the Proto Kalenjin item is a loan, its likely source is Dhaasanac. But Rottland (1982: 302) has Proto South Nilotic *met ‘head’. Hence the source can be any level of Cushitic and the receiving language lost the final *h* or *h*. West Omo-Tana fits best for the vowel *e*.

MIE ‘good’ (B1)

Rottland (1982: 540) has Common Datooga *miyy* ‘good’ but does not reconstruct it to Proto South Nilotic level. Ehret (1970: 148; 1981: 110) links Proto South Nilotic *miie* ‘good’ to Saho *mafa* ‘good’, Oromo *mia* and Somali *mafaan* ‘sweet’. The Oromo word has different semantics referring to things rather than quality, and is not linked; Gragg (1982) has *miʔa* (subj. *miini*) (n) ‘goods, possessions, things’. The Saho word is confirmed by Banti & Vergari (2005: 16) as *mafaani* (f) ‘goodness, kindness, righteousness’.

The vowels in the Cushitic root can be considered to be centralised due to the presence of the pharyngeal; raising to *i* is more difficult to explain. All in all, the evidence is limited, but an etymological link cannot be ruled out. It is not clear from which Cushitic group to which Nilotic group the transfer would have occurred.

MOOSOONG ‘sorghum’

Ehret (1970: 146; 1971: 111) links the Kalenjin root *mo:so:ŋ to Sidamo *meshinga* (Rottland (1982: 542) has the same Proto Kalenjin reconstruction *mo:so:ŋ). However, Proto Highland East Cushitic is *bashink’a (Hudson 1989) and Yri & Pepper (2019) have *bashaank’a* ‘millet’ for Sidaama (= Sidamo). Ehret mentions Oromo *missinga*, which matches Orma *missingaa* ‘millet’ (Stroemer 2001: 121), cf. Wel-

legga Oromo *bisinga* ‘sorghum’ (Gragg 1982). There are known cases of alternations between *b* and *m* in East Cushitic and Ethio-Semitic, but the dissimilar vowels *o* and *i* in Proto Kalenjin and Orma do not suggest a direct link between Proto Kalenjin and Orma here. However, the Proto Kalenjin item may well be an instantiation of a *Wanderwort* in the area (cf. Amharic *mashilla* ‘sorghum’), without necessarily being a transfer from Cushitic.

MUR ‘cut, circumcise’ (B1)

Ehret (1971: 146) has Proto Kalenjin **muraataan* ‘circumcise’ (similarly, Proto Kalenjin **mura:tan* ‘circumcise’ in Rottland (1982)), *muren* ‘warrior’; and he links this to Oromo and Sidamo, East Cushitic, *mur-* ‘to cut’. Rottland (1982) has Proto Kalenjin **muren* for ‘man, circumcised man’. The Kalenjin root for circumcised man may very well be related to Proto East Cushitic **mur-* ‘cut, judge’ as reconstructed by Sasse (1979) on the basis of Dhaasanac *mur-*, Elmolo and Arbore *mur-i-* ‘short’; Galla *mur-*, Gidole *mur-* ‘cut person’s genitals to take trophy’, Konso *mur-*; Highland East Cushitic (Sidamo, Haddiya) *mur-*; Burji *mur-*. Perhaps Dullay *murr-* ‘pay’ is also cognate. There are no attestations in East Omo-Tana. The root is absent in South Cushitic.

Given the data at the Cushitic side, the Cushitic source can be at any historical level of East Cushitic. Ehret (1970) suggests an earlier form in the East Victoria branch of South Nilotic: **mura* ‘cut’ (no evidence provided). This would suggest an early transfer and a higher level of Nilotic than Proto Kalenjin. This is confirmed by two reconstructions at Proto Nilotic level by Dimmendaal (1988), i.e. his number 28 **mur* ‘circumcise, cut’ and number 108 **mur* ‘marry’ based on *a-muran* ‘relation through marriage’ in Teso and *muren* ‘husband’ in Kipsikiis, and additional evidence from Turkana and Pokot with the possibility of a meaning like ‘pass from one stage/age-set to another’. In conclusion, there is early Cushitic influence on Proto-Nilotic and a complex semantic development due to two similar roots with relatable meanings.

There is a similar but probably unrelated root in Proto Kalenjin, **murt* ‘to cut, break’ (Rottland 1982: 553, 382). However, all his Kalenjin attestations have a final *t* rather than *r*. He does not reconstruct it up to Proto South Nilotic level due to its absence in Datooga.

In order to reach consistency, we should assume that the Proto Kalenjin item *mɔ:t ‘cut, break’ is unrelated.

NUG ‘suck’

- PB *nug ‘to suck’ : Datooga nuq : PS *nuug

Besides in East Omo-Tana, this item is also found in Konso *luuk*- ‘suck’ and other Konsoid varieties (Black 1976: 303). Given the wider distribution in Cushitic, we assume transfer from East Omo-Tana into Datooga, or Proto South Nilotic and later loss in Kalenjin and Omotik. In West-Rift South Cushitic, Iraqw and Gorwaa have a root *nuu-nuu*? ‘suck breast’ which Kießling & Mous (2003) relate to Datooga *nuq*. Two scenarios can be proposed for this link. One is that Pre-Proto-West-Rift South Cushitic had a form *nuq* and this was transferred into Datooga and Datooga does not fit in this cognate set with East-Omo-Tana; or the predecessor of Iraqw and Gorwaa borrowed the word from Datooga in a slightly more specific meaning.

PATAI ‘back’

Ehret (1971: 146) relates his Proto South Nilotic *patai to Somali *baḍi* ‘buttock’ and Sidamo *bade* ‘back’ (*bad’e* in Hudson 1989: 23; not attested in the rest of Highland East Cushitic). Rottland (1982: 551) has Proto South Nilotic/Proto Kalenjin *pataR* ‘back’. Rottland’s *R* is a voiced velar fricative in Pokot, *r* in North Markweta, elsewhere in Kalenjin it is *y*, and in Datooga it is *w/y*. There is no source for this “consonant” on the Cushitic side. The root seems to be restricted to South Nilotic. Somali has indeed *baḍi* ‘buttock’ and Rendille *beḍéy* ‘buttock’. The root is not reconstructed in Heine (1978), but Sosal (in prep.) has Proto East Omo-Tana *baḍey. Potentially, Proto South Nilotic *pataR transfers to the common ancestor of Oromoid and Omo-Tana (Black’s South East Cushitic), assuming the isolated occurrence in Sidamo is a loan.

QUAR ‘male goat’

- PB: *quar- ‘male goat’ : Datooga *qwaray* : Elmolo *kórat*

Rottland (1982: 357, 362) reconstructs Proto Kalenjin *kweR* ‘goat’ with a question mark. In spite of Datooga *qwaray* ‘goat’ (Rottland), Asimjeeg *qwarayd* ‘male goat’ (Griscom 2019: 328), the item is not reconstructed to Proto South Nilotic due to formal incongruencies. This item is found in several branches of East Cushitic, besides

numerous Bantu languages (zones F, G) as well as Kuliak: Burji/Sidamo *kola* ‘castrated ram’, Elmolo *kor-at* ‘goat’ (Heine 1980: 207), Dhaasanac *kole* ‘male goat’, possibly Arbore *k’oll* ‘cattle, wealth’ (Hayward 1984: 379), Rendille *kelex* ‘castrated he-goat’, Yaaku *kolleh* ‘castrated he-goat’, Dirasha *k’ol-d’a* ‘goats, general’, Ik *kola* ‘castrated he-goat’, So *kol* ‘he-goat’.

Rottland states that it is not certain that the forms within Kalenjin are ‘direct cognates’; this may point to borrowing after Proto Kalenjin had disintegrated. Breaking of *o* into *wɛ/wa* is not common in Kalenjin; hence it is more likely that this change took place in the donor language. Apart from this vowel, West Omo-Tana, and especially Elmolo, are the closest in form and geography. Proto West Omo-Tana may have been close to **kol-* and closest in form (and geography). In line with other transfers from Proto West Omo-Tana to Proto South Nilotic, we can suggest the same for this item leaving the second syllable *-ay* in Datooga to be explained.

QUUT ‘scratch’

- PB **quut* ‘to scratch’ : PK **ku:t* : PS **qut*
- PK **ku:t* ‘to scrape, to smooth’ with meaning ‘to weed’ for Sapiny (Rottland 1982: 353)
- PS: **qut/quta* ‘to dig, cultivate’. Rendille *xút; xût/xúta*, Somali *qod; qood* B *od/óda*.

In terms of form, this could be a transfer from either East Omo-Tana, West Omo-Tana, Proto Omo-Tana or Proto East Cushitic, although the vowel length in Proto Kalenjin needs explanation. Sasse (1979: 10) reconstructs Proto East Cushitic **k’ot-* ‘dig’ adding Arbore *kot-* ‘plow’, Dhaasanac *g’ot/z-* ‘dig, bury’; Oromo *k’ot-*, Konso *qot-*, Dirayta *k’oš-*; and Gawwada/Ale *qot-*. A second obstacle is the semantics, and the presumed direction of the semantic change: ‘scratch’ to ‘dig’ is conceivable, while the opposite direction assumed by Heine et al. (1979) is less obvious. In terms of semantics, for most of the (proto-) languages concerned the meaning is both ‘to scratch’ and ‘to “scratch the land”’. The differences in meaning in the proto-languages are only apparent; the polysemy is present in both source and target.

The receiving language is here claimed to be Proto Kalenjin, but (East-)Datooga has *qur-qur* ‘dig’ (Rottland 1982: 499) which seems cognate. Rottland (1982) does not discuss the development of Datooga *q*, *t*; and *r* is stable. Yet, his PSN **kuut* ‘blow’ is based on

PK *kuut and CD *quur* (Rottland 1982: 300), apparently an irregular series. Moreover, a similar root is reconstructed by Vossen (1982: 417, 236) for East Nilotic at the Proto Teso-Lotuxo-Maa level (= all but the Bari-group) *k₂oɟ- ‘scratch’, a virtual reconstruction for Eastern Nilotic would be *kodʷ. In the absence of regular correspondences, both within South Nilotic and with East Nilotic, Dimmendaal (1988) does not reconstruct this root for proto Nilotic. We can add East-Nilotic Turkana *kut-* ‘to dig’, *kuta* ‘hoe’ (Barrett 1988) to the complexity. This root must have been transferred several times. In addition, Taita Bantu has *-kota* ‘dig’ from Cushitic (Ehret & Nurse 1981: 158).

RAARO ‘piece of hide used as container’

Heine et al. (1979: 88, endnote 29) report that Ehret suggests that Proto Kalenjin *ra:ro ‘piece of hide used as container’ is borrowed from Cushitic on the basis of the cognancy with Oromo *raro* ‘skin of small animal’. Rottland (1982: 546) has Proto Kalenjin: *la:l ‘leather bag’. The Oromo form is confirmed by Gragg (1982: 441) as *raroo* ‘skin for sleeping on’. No cognate root was found in Konso, Mosiye, Dirayta. The forms may be cognate, but more evidence would be needed to propose transfer.

REEREE ‘bat’

- PB *rɛɛrɛɛʃ ‘bat’ : PK *rɛ:rɛ:s : PS *raaraʃ

The PS form is solely based on Rendille (*raaráhhanyóy*). The origin of the Rendille word is unknown. While it is possible that Proto Kalenjin borrowed the item from a predecessor of Rendille, transfer in the opposite direction is phonetically more likely, with Proto Kalenjin *s* > Rendille *h* > *ħ* (cf. Lamberti 1986: 300 on *h > ħ). We see no evidence for transfer from Cushitic.

RIRIM ‘kind of ant’

Heine et al. (1979: 88, endnote 29) reports that Ehret claims that this Proto Kalenjin root *ririm is related to Oromo *riirma* ‘termite’. The root is not present in Ehret (1971), nor in Rottland (1982) for Proto Kalenjin. He has other roots for ants and termite, Proto Kalenjin/Proto South Nilotic *ta:R ‘termite’ (Rottland 1982: 557) and Common Datooga *malil* ‘black ant’ (Rottland 1982: 487), cf. Nandi *cɛ:lil-*

yat ‘small black ant with curled, sometimes yellow, tail’ (Creider & Creider 2001: 57).

Gragg (1982) has *rimma* ‘ant, termite’ for Oromo and Konso has a related root *irm-att-a* (m) ‘termite’ (Black & Otto 1973: 48) and Dirayta has *irimaff* ‘termites; large family’ (Black 1973); Mosiye *ʔirimafa* ‘termite’ (Yibeltal 2018). The Proto Oromoid root is probably close to **irim-*. Black (1974) does not reconstruct this root for Lowland East Cushitic.

The root is clearly Cushitic but we consider it too much of a stretch to relate a root like **irim-* to the Nandi root element *lɪl*, or to Datooga *malil*, as it involves too many changes: addition of initial *r* through reduplication, deletion of final *m* in Kalenjin, metathesis in Datooga, adaptation of *r* as *l*.

ROOB ‘rain’

- PB **roob* ‘rain’ : PK **ro:p-* : PS **roob*

This item is widely attested in East Cushitic, with Proto East Cushitic **roob-* ‘rain’ on the basis of Saho-Afar *rob*; Somali *roob*, Rendille *roob* ‘green country’, Boni *roob*; Oromo *roob-a*, Konso *roop-a*, Dirasha *roop(-a)* (Sasse 1979: 22), also Dullay Gawwada *ʔirraw*, Tsamakko *ʔerr-o*; Dhaasanac *ʔir* ‘rain’, Elmolo *ʔirri* ‘rain’. Rottland (1982: 310) reconstructs **rɔɔp* for Proto South Nilotic; the root seems absent in East Nilotic.

Given the near-identical forms across the Cushitic languages, transfer from various East Cushitic sources to Proto South Nilotic is conceivable, Proto East Omo-Tana **roob*, Proto Oromoid **roob*, although less readily from Dullay or West Omo-Tana due to differences in the shape.

SAANI ‘lover’

- PB **saani* ‘lover’ : PK **sa:n* : Somali *saani*

Rottland (1982: 546) reconstructs this item to Proto South Nilotic **sa:n* with the more specific meaning of accepted male marriage candidate. The semantics of the item lends itself to borrowing. Given the restricted attestation in Cushitic (only Somali), the direction of borrowing must have been from Kalenjin to Somali.

SAAC ‘to butcher’

Heine et al. (1979: 88, endnote 32) report that Ehret proposes that Proto Kalenjin **sa:c* is borrowed from Yaaku-Dullay. This root does not feature in Rottland (1982) under ‘to butcher’. We have not found evidence for its reconstruction in Proto Kalenjin nor candidate cognates in Cushitic.

SAGAAL ‘nine’

- PB **sagaal* ‘nine’ ; PK **saka:l* : PS **saagal*

Rottland (1982: 423, 548) reconstructs Proto Kalenjin: **saka:l* and Common Datooga: *ʃage:f* but does not reconstruct a Proto South Nilotic form because the correspondences are not regular. Black reconstructs Proto Lowland East Cushitic **sagal-* before C ~ **sagl-* before V. Highland East Cushitic has a different root, **honso* (Hudson 1989: 105). Also, the Agaw languages have a different root, Proto Agaw **sä3-ta* built on the number ‘four’ (Appleyard 2006: 105); and the word in Beja is yet different again (Wedekind et al. 2021). The South Cushitic root **gwaleeli* (Kießling & Mous 2003) is not obviously related.

Even though the root is restricted to Lowland East Cushitic within Cushitic, it is even more restricted in Nilotic. Most of East and West Nilotic and many other branches of Nilo Saharan construct 9 as 5 + 4. In East Nilotic, only Samburu has *sâ:l*, probably from Dhaasanac *saal* or a similar Cushitic form. In Surmic, Suri and Mursi have *sakkal* and Kwegu and Me'en have *sa(a)l*, presumably also due to local contacts with Cushitic. According to Blažek (2018: 53) the East Nilotic (especially Maa) numerals of Cushitic origin were not transmitted via South Nilotic (as Heine et al. (1979) posit), but via Southeast Surmic, which is “more probable from the point of view of both phonetics and linguistic geography.”

The irregular differences between Kalenjin and Datooga are either due to two different transfer events or because of an irregular sound change in the numeral system. For both options it is difficult to build a scenario. There is no Cushitic language (group) that has/had *sh* in this root to accommodate for that initial consonant in Datooga. Moreover, there is no evidence for direct East Cushitic contact with Datooga. The Datooga numeral paradigm does not contain other forms that start in *sh* that could explain the *s* > *sh* change as paradigmatic levelling. Possibly the final *sh*, which is a Datooga reflex

of final Proto South Nilotic *L influenced the initial *s* to become *sh* too as an instance of palatal harmony. Proto South Nilotic *L derives from Proto Nilotic *li or *ly (Dimmendaal 1988). Proto Kalenjin has *saka:l; its final *l* can derive from Proto Nilotic *L as well. While there is no evidence for final *i* in East Cushitic, Proto West Rift has *gwaleeli*. This could be the source of both the Datooga and the Proto Kalenjin forms, if we assume palatal harmony, subsequent metathesis, and loss of labialisation (which is attested in Teso-Turkana (Dimmendaal 1984: 71), and possibly played a role in South Nilotic too).

A bold suggestion would be to reconstruct Proto Cushitic **sagweeli* > **gwaseeli* > Proto West Rift **gwaleeli*, parallel to Proto Cushitic **sagweeli* > **sageeli* > Proto East Cushitic **sagal* and transfer of **sageeli* > *sageesh* (*sh* in Datooga < Proto South Nilotic before -i).⁸

The South Nilotic words for ‘nine’ originate in Lowland East Cushitic but the details of the transfer cannot be determined. The vowel length in the second syllable is shared in South Nilotic with Somali and Rendille only. This suggests East Omo Tana as a source.

SEKEM ‘honey’ ‘bee’

Heine et al. (1979: endnote 32) mention this as a proposal by Ehret (p.c.) to be a transfer from Yaaku-Dullay, but Ehret (1970: 153; 1971: 116) claims a South Cushitic origin. No source is given but Ehret (1970: 153; 1971: 116) considers it a South Cushitic loan assuming an -em South Cushitic suffix; it is unclear which suffix he has in mind. Transfer from South Cushitic cannot be shown. The root is not mentioned in Ehret’s (2008) article on Yaakuan.

Heine et al. (1979: endnote 32) link the root to Proto East Cushitic **zgm-* ‘honey’. Sasse (1979: 20) reconstructs this on the basis of Oromo *damm-a*, Konso *takm-a*, Gidole *tonk-(a)* (by metathesis); Gawwada, Harso, and Gollango *takm-o*; and Yaaku *siká?*, pl. *sakm-ay*. There is no cognate in East Omo-Tana. The words for ‘bee’ in Dullay are different: Gawwada *t’oonaq-o* and Tsamakko *ts’onaq’o*. Rottland (1982: 426, 532) reconstructs this root for Proto Kalenjin as **sekem*

⁸ Bianjida Datooga has *shigeeshi* with a final *i* but it would entail transfer of a form (**sageeli*) that is too old for a Proto West Rift source; alternatively, it could have been transferred from East Omo-Tana. The problem with the latter is that there is no (other) evidence for contact between East Omo-Tana and Common Datooga so far. Another unexplained *sh* in Datooga may be *inaf* ‘python’, cf. POD **inaL* (Rottland 1982: 458) – lower case *l* in *inaL* in the index on p. 550 must be a typo.

‘bee’. It is hard to imagine how one can mistake honey for a bee and borrow a word for ‘bee’ in the meaning of ‘honey’. Yet that is what seems to have happened here. A scenario how this can happen was provided to us by Sara Petrollino (p.c. October 6, 2023). She noticed that the Arbore people, while speaking Hamar, did exactly this, using the Hamar word ‘bee’ for ‘honey’. Some Hamar speakers explained it to her as that these people were speaking *angúde aafó*, the label for an in-group speech register veiling messages specifically used by high status Hamar elders. While in a similar fashion, initiated boys during their seclusion in the wilderness would visit homes and demand milk, meat and honey using *maaz aafó*, a register in which they invert meaning and ask: “Don’t give me bees” to mean “Give me honey”. Moreover, in Datooga, the plural of ‘bee’ is polysemous in that it could also mean ‘honey’.

Proto Kalenjin for ‘honey’ is different, *kuum (Rottland 1982: 354) which cannot be shown to be inherited from Proto South Nilotic as Datooga has *mal* for ‘honey’, and that as well is borrowed from a Cushitic source, probably West Omo-Tana, see MALAB. Tosco & Sands (2022) suggest that this root is transferred into Proto-Yaaku-Dullay from a source genetically related to Hadza which has *sok’omo* ‘to eat honey’ and they propose that an earlier Hadza form would have been close to *sakx’omo with subsequent vowel harmony and merger of *kx’* and *k’* in the development of Hadza and on the Cushitic side the common Cushitic rule of vowel reduction in a syllable flanked by light syllables. They argue that this fits with the limited distribution within Cushitic (Yaaku-Dullay and Oromoid). Presence of this root in Oromoid would then be due to borrowing from Dullay.

Yaaku is a likely source provided the transfer is from the plural form for ‘honey’ into Proto Kalenjin because the Dullay languages have an initial *t* in the root. Alternatively, the *s > t* change occurred in Dullay after the transfer from Proto Yaaku-Dullay into Kalenjin due to late Konsoid influence, but this scenario is ruled out if we accept the proposal by Sands and Tosco for Pre-Hadza transfer into Proto Yaaku-Dullay. In conclusion, this is a good candidate for a transfer from Yaaku into Kalenjin. Note that quite a few of the Kalenjin languages have *k* as last consonant. Rottland (1982: 426) links it to words referring to ‘area where wild honey can be collected’.

SIZIET ‘eight’

- Heine et al. (1979): PB *siziet ‘eight’ : PK *sisi:t : PS *sizyeet

Rottland (1982: 431) reconstructs indeed *sisi:t for Proto Kalenjin, *sis(it) for Proto South Nilotic, and *sis for Common Datooga. And Heine (1978: 73) has *sízyéèt ‘eight’ for Proto East Omo-Tana, while Lamberti (1986: 239) posits *fizzet- (though without East Omo-Tana internal evidence for *f* instead of *s*). If this is a transfer from Proto East Omo-Tana to Proto Kalenjin, this must have happened before *z* > *d* in Somali and *z* > *y* in Rendille, when Proto East Omo-Tana still had *z*. The root is also found in West Omo-Tana (Dhaasanac *síet* (Tosco 2001: 543), Arbore *suyé* (Hayward 1984: 417). Given the Proto South Nilotic reconstruction, Kalenjin inherited this word from Proto South Nilotic, and given the wider distribution in Cushitic the transfer was probably from Cushitic into Proto South Nilotic. The precise source in Cushitic was later than Proto East Cushitic, based on Proto East Cushitic *fiz[h]ent- ‘eight’ in Blažek (2018: 51). The item is not reconstructed to Proto East Cushitic (Sasse 1979) or Proto Cushitic (Ehret 1987), nor is any other root reconstructed for that concept; the same holds for Proto Nilotic in Dimmendaal (1988). This points to transfer from Proto Omo-Tana or Proto East Omo-Tana to Proto South Nilotic.

SOZZOM ‘thirty’

- PB sozzom ‘thirty’ : PK *sosom : PS: *sozzom*, Somali *soddon*

Rottland (1982: 424) reconstructs Proto Kalenjin *sasam. The reconstructed form *sozzom in Heine et al. (1979) is probably projected on the basis of Somali *soddon*; it is not in Heine (1978).

The East Omo-Tana form is from an earlier contraction: *sízzàhh* ‘three’ + *tomman* ‘ten’. Rendille has a non-contracted and more recent compound in the reverse order *tomón séyahh*. This order of head-modifier is dominant in the Lowland East Cushitic languages and this order is apparent in all new compounds for these decimals, as in Konso *kunda sessaa* /ten three/ (Orkaydo 2013: 103), Dirayta, and Mosiye *hunda halbata* /ten three/ (Yibeltal 2018). Within Oromoid, only Oromo kept the original contracted form, *soddoma* ‘thirty’. Most Lowland East Cushitic languages innovated with a transparent head-modifier construction of decimal followed by the digit:

The Dullay languages⁹, the West Omo-Tana languages Dhaasanac, Arbore and Elmolo innovated. Within Lowland East Cushitic, apart from Somali and Oromo, Bayso, Boni and Saho-Afar kept the old, contracted forms of digit-decimal while displaying a general head-modifier order within the noun phrase (Tosco 1994). Tosco (1994: 436) remarks on Proto East Cushitic nominal syntax that the numeral preceded the counted item which followed as a genitive, and Lowland East Cushitic languages mostly kept their postmodifying syntax, except that numeral was reanalysed in all languages except Somali as a typical modifier and was therefore shifted after its head.

Hence, these contracted forms on the basis of the modifier-head order are older and in common with Highland East Cushitic where the dominant noun phrase order is modifier head. Burji innovated the word for ‘three’, *fadi*; its expression for thirty is *fadiy-ttan*, the same construction as in the rest of Highland East Cushitic (Hudson 1989). Sasse (1982: 69) reports that the Burji form *fadii-ttánna* ‘thirty’ /3-10/ from *fadiya* ‘three’ which he reports is probably connected to Proto East Cushitic *sazh ‘three’ but warning that *s* > *f* in Burji is not regular. This is despite the fact that Proto East Cushitic had head modifier order (Tosco 1994: 436). The same is valid for the Agaw languages: Proto Agaw *säywä-/səywä- ‘three’ + *-täjən, ‘tens’ (Appleyard 2006: 135, 60). In Awngi, the new form for ten, *cká*, has replaced the old one in the expression of the decimals, hence *śúyácká* ‘thirty’, while Conti-Rossini (1904) still reports forms with the old ending *-reŋ* for tens (Appleyard 2006: 135, 72).

The numeral cannot be reconstructed up to Proto South Nilotic level. Datooga has a construction 20 + 10 for thirty, *digdam aa daman* (Griscom ed. 2018: 17). The Kalenjin languages have an unexplained vowel length in V1 in three varieties (Rottland 1982: 424), and must have borrowed the numeral before Somali *zz* > *dd* and *m* > *n*.

Proto Kalenjin borrowed the word for thirty from a Cushitic source. This source is possibly Proto East Omo-Tana. A higher level cannot be excluded but is difficult to argue for because many Lowland East Cushitic languages innovated a construction for the decimals. Moreover, whether the transfer was to Proto Kalenjin, or to Proto South Nilotic is difficult to determine because ‘thirty’ is constructed as

9 Tsamakko, like Datooga, has a transparent construction 20 + 10 for ‘thirty’.

20 + 10 in Datooga. If this is a later Datooga innovation, the Proto South Nilotic form would have been lost.

SUBEEN ‘ewe’

- PB *subeen ‘virgin ewe’ : PK *supe:n : PS *saben, Rendille *subén*

Heine (1978: 94) reconstructs this item to Proto East Omo-Tana on the basis of Somali and Rendille; Lamberti (1986) does not contain it. The reconstruction of the first vowel as *a* is based on Somali. Most attestations of this root have *u*, in Cushitic and in Nilotic and Bantu. The item is also found in Maasai *e-súpèn* ‘ewe’ (Payne & Kotikash 2008), Samburu (East Nilotic) *súpen*, with somewhat wider semantics such as ‘young female sheep, goat, or donkey’. It is also found in Gawwada: *supun-t-e* ‘young female sheep’, Yaaku *supin* ‘female goat which has not yet given birth’ and a similar form is Konso *sukeen-ta* ‘female sheep which hasn’t given birth’ belongs here too, though the velar place of articulation of the second consonant in Konso is unexplained so far, if it is cognate or related at all. This item is also widely attested in Northeast Bantu.

If the transfer into Proto Kalenjin was from Cushitic, the first vowel (*u*) suggests Rendille as the source. However, the reconstruction of the vowel *a* in Proto East Omo-Tana might have to be reconsidered. Sosal (in prep.) reconstructs *sVben for Proto East Omo-Tana in which the inserted vowel V can be either [a] (as it is in Somali) or [u] and assimilated to the labial consonant. Also, the various Kalenjin varieties pose problems concerning the vowel of the initial syllable. Various lects (Sapiny, Kony, Bong’om, Pok and Päkot) have *i* instead of *u* Rottland (1982: 435) possibly due to some front vowel harmony, or under influence of Turkana *sipaanit* ‘drove, flock, herd’ (Barrett 1990), whether cognate or not. The most likely scenario is a transfer from Pre-Rendille into Proto Kalenjin. The vowel *a* in Somali is problematic in this scenario. An alternative scenario or pattern of transfers would be from Rendille to Samburu to Maasai to Chaga, from Rendille to Kalenjin; from Maasai to Yaaku. This would leave open how Gawwada and Konso got the root with *u* as the first vowel. Alternatively, this root travelled from Maasai to Rendille, Samburu, Chaga, Kalenjin, and Yaaku.

TEEKEEU ‘elbow’

Heine et al. (1979: 88 endnote 32) give this as Ehret’s proposal for Proto Kalenjin **te:ke:u* being a loan from Yaaku-Dullay. We do not accept this to be a Cushitic loan in South Nilotic. Rottland (1982: 535) has Proto South Nilotic and Proto Kalenjin **ku(:)tuŋ*. The more solid and recent reconstruction by Rottland (1982) is different from the one proposed by Ehret and quoted in Heine et al. (1979) and can only be related to the Yaaku word *t’ekε* ‘arm’ (Baader nd.) if metathesis applied. Metathesis is unlikely to occur in a situation of transfer and must then be assumed to be a later development in the receiving language, but this again is unlikely given the fact the root is reconstructed at Proto South Nilotic level.

The Dullay words for elbow, Gawwada *t’ihil-e* and Tsamakko *ts’ekile*, are to be linked to Yaaku *t’okl-e?* ‘forearm’. There is an additional competing root for ‘armpit’ which is likely to be sound symbolically related to tickling: Gawwada *toloqoloq-itt-e*, Ma’a/Mbugu *ki-dóghólosá* ‘armpit’, and Hadza: *tl’ok’oto-ko*.

TIZZABA ‘seven’

- PB **tizzaba* ‘seven’ : PK **tisAp* : PS **tVzzoba*

Rottland (1982: 443) reconstructs indeed **tisap* for Proto Kalenjin and **isub* for Common Datooga. The differences are irregular and therefore he does not reconstruct at Proto South Nilotic level, but it is evident that the reconstructed words in these branches are related. The Kalenjin languages show different ATR values of *i* which could be indicative for later loans, as is the difference *a/u*.

Transfer must again be at least early at Proto East Omo-Tana level before *zz* developed into *dd* in Somali or *y* in Rendille. The vowel of the first syllable is *i* in South Nilotic, while it is *o* in most Cushitic sources; the *e* in Rendille is presumably due to the *y* from *zz*. Dhaasanac and Elmolo have *i* but have lost the *z*; the development within West Omo-Tana is unclear; Arbore has *u*, *tuzba*, while Elmolo *tiipa* and Dhaasanac *tiya* have *i*; West Omo-Tana is an equally plausible and problematic source. Yaaku *tisibo?* is the closest in form to the Datooga shape. It is impossible, however, to know what the shape of this word was in Proto Dullay/Yaaku because the Dullay languages innovated: Gawwada *tahan*; Tsamai *taħħan*. The root is not found within Cushitic outside of Lowland East Cushitic. Highland

East Cushitic has *lamala (Hudson 1989: 131); South Cushitic has *faanqu, Proto Agaw has PA *länjä-tta/lanjä-tta- formed by means of the suffix *-tta on the base of *länjä/lanjä ‘two’ (Appleyard 2006: 120). Beja has *asarama* (Wedekind et al. 2021: 20).

Nilotic and Nilo-Saharan numerals between 6 and 10 tend to be based on 5; the South Nilotic languages have innovated in this respect and taken the number seven from a Lowland East Cushitic source. It is difficult to determine which one and to explain the deviant form in Datooga. The loss of the initial t in Datooga cannot be explained by a transfer from a different source since all Lowland East Cushitic cognates have an initial t.

TOMON ‘ten’

- PB *tamman ‘ten’ ; PK *taman : PS *tomman

Rottland (1982: 438) reconstructs Proto Kalenjin/Proto South Nilotic *taman; *daman; and Common Datooga: *damam. This is a transfer into Proto South Nilotic from East Omo-Tana or an earlier source, Proto Omo-Tana. Sasse (1982: 176) reconstructs *tom(m)an-/*tomn- ‘ten’ for Proto East Cushitic. Proto East Omo-Tana is reconstructed as *tomman with final stress by Heine (1978). Somali has undergone denasalisation of the middle consonant, *toban*; hence if the transfer is from Proto East Omo-Tana, this must have happened before that change. However, the West Omo-Tana forms are virtually identical: Arbore *tomon*, Dhaasanac *tommon*, Elmolo *tomon*. The transfer could easily have been from Proto Omo-Tana. The Oromoid languages have *kudan* for ‘ten’ (Oromo, Konso) but they had a *-tama~ *-toma form earlier as this is still discernible in the decimal compound numerals, as in Oromo *afur-tama* ‘40’ and *dig-dama* ‘20’, cf. AFARTAM, the first entry of this Appendix.

TOR ‘spear’

- PB *tor ‘spear’: PK *tɔr ‘to pierce, spear’ : Rendille *tor* ‘spear’

While not reconstructed to Proto East Omo-Tana (Lamberti 1986), this root is widely attested in East Cushitic: Somali: *teeri* ‘spear’ (Said 2013: 349), Konso: *tor-a* ‘spear’, Yaaku: *tɔr* ‘spear’, Elmolo: *tɔr* ‘harpoon’, Inner Mbugu *i-torú* ‘spear’ and also Amharic *t’or*.

Rottland (182: 447) reconstructs it with a long vowel, Proto Kalenjin: *tɔ:r ‘to pierce with spear’. As in the case of ‘rain’, this item is a noun in the presumed donor and a verb in Kalenjin. We suggest

transfer from Rendille or Elmolo or Yaaku. If Yaaku was the source, then it must have been lost in Dullay (while Konso has it). Elmolo has specialised its meaning to ‘harpoon’ which is not surprising given their occupation as fishermen. Elmolo is an unlikely source for Proto Kalenjin on cultural social grounds (presently), but Proto West Omo-Tana must have had this item.

TUAALIO ‘cow bell’

Heine et al. (1979: 88 endnote 29) present Proto Kalenjin *tua:lio ‘cow bell’ as suggested by Ehret to be cognate with Oromo *dauweli* ‘bell’. Likewise, Rottland (1982: 450) has Proto Kalenjin *twa:l* ‘Glocke eines Rindes’; this is different from the root *kor that is presented in the main text of Heine et al. (1979: 78) and has a separate entry in this list. The Oromo form is not yet confirmed (absent in Gragg 1982, Stroomer 2001) but Konso has *tawn-a* (*m*) ‘a bell (used for boasting)’ (Black & Otto 1973: 53); not attested in Dirayta, nor in Mosiye. The initial stop is phonetically voiced in Konso. We need more attestations to reconstruct a Proto Oromoid form. In the absence of those, a transfer from Proto Oromoid to Proto Kalenjin cannot yet be proposed. Transfer from East Omo-Tana is also possible: The item is also attested in Saho and Somali *dawan* ‘bell’, Sidamo *dāwāla* and Bilin *dawalä*, as well as in Ethioposemitic (Ge’ez *dawal* ‘bell’, Tigre, Tigrinya, Amharic, Gurage *dāwāl*; Ge’ez *dawwala* ‘to ring a bell’, Tigre *dāwwāla*, *dāwwāna*, Tigrinya, Gurage *dāwwälä*, Harari *dāwwäl* (Leslau 1991: 145). Leslau is of the opinion that there is not enough evidence to determine the direction of borrowing (Semitic to Cushitic or vice versa) or whether it is a common inheritance. Rendille *ḍāam* ‘metal cattle bell’ (Pillinger & Galboran 1999: 99) might be a loan from Somali (with *m* stemming from etymological nativisation of Somali word-final *n*, cf. Rendille *sam* ‘nose’, Proto East Cushitic **san* (Sasse 1979: 24)). It is unlikely that Proto Kalenjin got the item from East Omo-Tana.

WAAR ‘kid’

While Rottland (1982: 453) does not reconstruct this item to Proto Kalenjin, he lists it as a potential Proto Kalenjin-Omotik candidate with the meaning ‘young goat’ (1982: 464); it is attested in Omotik *war*, Akie *war*, Pokot *wāwà*, pl. *wárá* ‘kid (in general)’ (Crazzolara 1978: 360) is similar but not necessarily related. Proto East Omo-

Tana *wāhar ‘kid’ to Proto Kalenjin has been excluded in Heine et al. (1979) since the Kalenjin reflex does not show the otherwise regular sound change *a > *e/ɛ in pharyngeal environment (Heine et al. 1979: 88 endnote 41). However, we could imagine Proto East Omo-Tana *wāhar < *wāhr which would be perceived as *wēhr* in Kalenjin ears, adapted to *wēr* and due to assimilation realised as *wōr* or *wōr*.

(Y)EEL ‘male bovine’

Heine et al. (1979: 88, endnote 32) report on Proto Kalenjin *(y) e:l being from Yaaku-Dullay according to Ehret. The root is not discussed in Ehret (1971); Rottland (1982: 556) has *e:R ‘bull’ for Proto South Nilotic. No cognate was found in Gawwada, Tsamakko, nor Yaaku. The reported claim in Heine et al. (1979) cannot be verified nor supported.

ZIG ‘cow dung, mud’

- PB *zig ‘cow dung, mud’ : PK *sik : PS *zig

The motivation for PS *zig is unclear. Lamberti posits *d’iik’- > North Somali *dhiiqo* ‘mud’, Benadir *dhiiqo/dhiikho*, Garre *dheeqa*, Tunni *dhiigə*, from Proto East Omo-Tana *d’yook’- (Lamberti 1986: 348), cf. also Oromo: *dikee* ‘manure’ (the semantics of “dung” + “mud” combined in one lexeme is common in East Africa and also present in Tanzanian Cushitic, e.g., *tluumfuqāa (f) ‘mixture of mud and wet dung’). A shift from *d’* or *d* > *z* is however not attested in East Cushitic. Formally close to the Proto Kalenjin form and semantically not too distant is Elmolo *sək* ‘salty soil from the lake which animal feed on’ (Omondi & Otieno 2008: 16). This does not seem to be cognate with Somali *dhiiqo*, as *k’* > *k* does not seem to be attested (Sasse 1979: 54). As to the initial consonant, the fate of Proto East Cushitic *d’, *d₁ in Elmolo is not yet known (Sasse 1979: 29). The Elmolo word looks promising as a source, but the opposite direction is equally possible. In sum, this item does not present evidence for a Cushitic origin of the South Nilotic form so far.

ƳIDD ‘claw, fingernail’

- PB *Ƴidd ‘claw, fingernail’ : PK *sɾ:y : PS *Ƴiddi

Lamberti (1986: 261) mentions the item for Tunni, North Somali and May, but does not reconstruct it to Proto East Omo-Tana for unknown reasons. If it were reconstructed, the second consonant would have

been *zz in Proto East Omo-Tana according to Lamberti (1986: 260). This item is problematic on two accounts: ʃ being borrowed as s is improbable, and the same holds for dd or zz being borrowed as ɣ/R. In our view the Cushitic and Proto Kalenjin items are not related.