A Lexicostatistical Approach towards Reconstructing Proto-Khoisan

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I. Introduction.

I.1. *The current state of "Proto-Khoisan".* Despite all the obvious progress that comparative Khoisan linguistics has undergone over the last half century, no Khoisanologist would deny that crucial questions in this field still remain unanswered. (Basic answers to these questions actually serve as the starting point in any particular area of comparative linguistics.) Not only are we still deprived of a strict and fully credible set of phonological correspondences among the present-day Khoisan languages, we do not even seem sure about whether a genetically related "Khoisan" family actually exists, and whether the "Khoisan" family is any more than a fantasy of some people deluded by the peculiar phonological closeness of most of these languages.

The extreme point of view on this problem, propagated chiefly by the late Ernst Westphal in works such as [Westphal 1965] and [Westphal 1980], is not very popular today, for obvious reasons. While these and other works rightly emphasize the current lack of substantial evidence proving the existence of a genetic relationship between the several established groups of 'Bushman', this by no means gives Westphal a right to claim that such a relationship definitely does not exist. Furthermore, such an approach can hardly be called constructive when it comes to actually explaining what evidence there *is*. This is well understood by modern day scholars; therefore an approach of "moderate scepticism" rather than "decisive denial" is much more popular in Khoisanology today. The difference between the two approaches is summarized well in [Traill 1986], an article in which Anthony Traill both presents the reader with a good selection of comparative material and explains the problems related to its interpretation.

Indeed, if we assume that Khoisan languages are not related, we will be left with a great number of "similarities" between the lexicons of North, South, and Central Khoisan groups (and, to a lesser extent, of Hadza and Sandawe), all of which - including similarities in the basic lexicon and apparent similarities in the morphological inventory - will have to be explained as borrowings or chance resemblances. The number of these similarities may be overrated by some, and there is always a possibility that some of them are indeed the result of lexical diffusion through cultural exchange, but how would that explain, for instance, the use of the same unique form for the 2nd person singular pronoun (PNK *a*, PSK *a*, PCK *c-a* (masc.), *s-a* (fem.; *c-* and *s-* are gender markers)) in all the three major "subgroups" of Khoisan?

On the other hand, assuming there *is* a genetic relationship between these languages, we are faced with the responsibility of establishing the degree of this relationship for every individual subgroup, as well as (more importantly) a system of strict phonological correspondences between the languages supposed to be related. Here there is no consensus among researchers and, in fact, not much work has been done so far in either of these directions. The existence of the so-called "North Khoisan" (or "Žu"), "South Khoisan (or "Taa-!Wi"), and "Central Khoisan" (or "Khoe") language families is hardly debatable, considering the numerous isoglosses and grammatical similarities within each of the three; but the 'arboreal' connections between these three families are not easily defined, not to mention their ties with Khoisan "isolates" - Hadza, Sandawe, #Hoan, and Kwadi. Even assuming that all these branches go back to a common Proto-Khoisan

ancestor, are they all equally distant from PK or can they be first reduced to several larger families?

As for the problem of sound correspondences, what little work has so far been done on this problem should mostly be credited to Henry Honken. In several articles (see especially [Honken 1988] and [Honken 1998]) he has made quite a few interesting observations on the possible types of sound correspondences in Khoisan. His classification of these correspondences into "sporadic," "quirky," "conservative," and "classical" ([Honken 1998]), which might look like a joke in theory, should actually be taken very seriously. In fact, the main point of this classification - namely, that phonological correspondences between Khoisan languages are much more complicated than the overall similarity of the existing phonological systems suggests - turns out to be crucial in understanding the very essence of Khoisan historical phonetics. On the down side, Honken offers no stable system of correspondences for Khoisan, and the principles he uses for comparison are altogether unclear. As useful as his works are, they present no more than isolated snippets of what could possibly be called "reconstruction of Proto-Khoisan," and differing in quality at that. Thus, the compared material often drastically alternates between "basic" lexicon and "cultural" lexicon, meaning that quite a few comparisons could easily be discarded as potential borrowings, especially if they are not confirmed by similar correspondences in the basic vocabulary.

Christopher Ehret, who is currently working on a comparative dictionary of Khoisan, suggests a somewhat different approach. (An early sketch of his ideas on Proto-Khoisan can be found in [Ehret 1986], and a much more exact and detailed description of Proto-Khoisan phonetics is present in the current volume [Ehret 2003]). Unlike Honken, Ehret has a work-in-progress system of correspondences between North, South, and Central Khoisan, which is largely based on the "one-to-one" principle, i.e. a system where phonemes correspond to each other in a strict and simple way (dental clicks to dental clicks, alveolar clicks to alveolar clicks, etc.). Only where a feature or a set of features is distinctive of only one branch are "non-trivial" correspondences allowed, and even then the historical processes are more or less predictable (i.e., the development of uvular effluxes into regular velar effluxes in North and Central Khoisan - where uvular effluxes are not found - as opposed to their preservation in South Khoisan). As rigorous and formal as the ensuing results are, this inevitably means neglecting a lot of work conducted by Honken, for example, automatically discarding all of his "sporadic" and "quirky" correspondences as mere chance resemblances. Another problem is that the tighter the phonological limitations on possible correspondences, the looser we find the semantic criteria of data selection. Among Ehret's comparisons only a minor handful actually comprises "one-to-one" semantic matches among the basic lexicon, which inevitably raises the question of possible oversights in the compared material.

All in all, while both Honken and Ehret's contributions to comparative Khoisanology must necessarily be taken into account by anybody interested in reconstructing Proto-Khoisan, it cannot at the present time be said that either of these gives us a clear perspective on the nature of the former. One of the main reasons for that appears to be the lack of a proper "starting point" for delving into Proto-Khoisan. Before dealing with a language family as such (i.e., a group of languages historically descended from one common ancestral language), one needs to *prove* that such a language family actually exists. Traditionally, a language family is said to be proved if we have a regular set of phonological correspondences working on a large percentage of the basic vocabulary of all the languages in the said family, preferably supported by similarities in the languages' morphological systems as well. Nothing of the kind has been proposed so far either by Honken or Ehret; of the two, Ehret comes closer to fulfilling these demands, but given the extreme semantic fluctuation of a large part of his comparisons, one can have serious doubts about the validity of many of the suggested correspondences, or, at least, one may reasonably assume that there may be a large number of additional correspondences that have not been spotted by Ehret.

I. 2. *Lexicostatistical principles of analysing Khoisan data.* This article will try, in a way, to combine both the formal approach chosen by Ehret and the "observationist" approach of Honken by using both in a lexicostatistical analysis of available Khoisan data. It is normally assumed that lexicostatistics should be conducted after the establishment of the system of correspondences, not before, but occasionally it helps to reverse the procedure, since lexicostatistics can be an important tool in deciding upon the possible correspondences - that same "starting point" that we are looking for. Using the strict lexicostatistical approach, we can single out cases of possible correspondences with less risk of confusing them with results of borrowing, and then verify their status by trying to find data outside the Swadesh 100-wordlist that confirms them. It should be noted that although such an approach does not exclude the possibility of taking chance resemblances for regular correspondences, limiting ourselves to the 100-wordlist severely limits this possibility. And, of course, the lexicostatistical test will at the same time help us build a more detailed classification of Khoisan.

So far, a serious lexicostatistical analysis of Khoisan has only been conducted by Bonnie Sands in [Sands 1998], where it serves as one of the several methods of evaluating Khoisan lexical data on the subject of possible genetic relationship. Apart from the problem of Sands choosing an alternate 100-wordlist, specially "adjusted" for Khoisan realities (with words such as 'elephant' and 'giraffe' making the list among others), the main flaw of her approach is an exaggerated demand for similarity; thus, only words where click influxes in different languages coincide are counted among possible correspondences. Yet no one has ever proved that clicks cannot change from one branch of Khoisan to another; in particular, such an approach would be in direct opposition to whatever results Honken has achieved in his latest works. In fact, if it were to be found out that clicks *never* correspond directly to one another (i.e. North Khoisan dental clicks never correspond to South or Central Khoisan dental clicks, etc.), such an approach would be downright wrong.

The following limitations will be imposed on the lexicostatistical analysis data below to make it more reliable:

1) For smaller language groups whose existence is usually not contested (namely, North Khoisan, the two subgroups of South Khoisan and the two subgroups of Central Khoisan) I will try to give the proto-form instead of concentrating on one or two languages. This is practical in that for many individual languages, especially extinct Southern Khoisan ones, the 100-wordlist is far from available, yet collective analysis of available data can still yield a possible intermediate proto-form. Sometimes such an approach can lead to excessive synonymity (more than one possible proto-form for one word), but a limited amount of synonymity can actually be permitted in lexicostatistical/glottochronological calculations. On the other hand, it helps avoid such "uncomfortable" synonymity as, for instance, met in Žu|'hoan designations of body parts, where we often meet two terms for one part - one an original North Khoisan root (*!kxá* "heart", *cʔí* "mouth") and the other most probably a Khoekhoe borrowing (*ǂáó* "heart", *kxám* "mouth"), confirmed by the fact that while the former roots yield numerous parallels in other North Khoisan dialects, the latter are rather a peculiarity of Žu|'hoan and are, for instance, totally absent among North Khoisan forms in Dorothea Bleek's comparative vocabulary. Thus, even if based exclusively on Žu|'hoan lexical data we cannot state with certainty what the main Žu|'hoan words for "heart" or "mouth" are, we can definitely assert that the Proto-North-Khoisan roots were **!kxa* and **cʔi.*

2) The most important thing, of course, is to determine what exactly constitutes a match in the 100-wordlist and what does not, i.e., a proper method of setting up possible phonetic correspondences between languages. Here the following rules will be proposed:

(a) word A in language X will be considered a match with word A_1 in language Y if their segment structures (apart from possible minor vocalic differences) coincide, unless it can be *proved* that at least one of the direct correspondences between A and A_1 does not really exist, or it can be *proved*, at least in an indirect way, that word A is a borrowing from Y or *vice versa*. *Example*: Proto-North-Khoisan *∫am "sun" will be considered as a match with Proto-Central-Khoisan *∫am id., since the two words match in consonant structure; it has not been proved that the two cannot correspond; and finally, there is no significant evidence that the North Khoisan proto-form was borrowed from Central Khoisan, or *vice versa*;

(b) if the segment structures of A and A_1 do not coincide, they will still be considered a match if there is at least *some* significant evidence that they might possibly correspond to each other. This evidence has to consist of a certain number of additional examples (B/B_1, C/C_1, etc.) containing the same correspondences as found between A and A_1. (This number may range from one to several, depending on the relative frequency of the involved phonemes and the supposed level of proximity between the languages in question.) In order to drastically reduce the possibility of chance similarities, this evidence has to belong to the basic lexicon section and boast strong semantic correlations between the compared forms (preferably cases where the meanings of B and B_1, etc., fully coincide); one or two strong supportive examples of that kind can often be more convincing than a dozen weak examples with dubious semantic shifts. *Example*: Proto-North-Khoisan *#àʔú "cold" corresponds to Proto-Taa *∕∕àʔu id., because of the existence of such other examples as PNK *#nạ̀m "frog" - PT *ʔ∕∕nạ̄ʰm id., etc. (for more of these, see II.15);

(c) considering the huge number of clicks in many of the compared languages, it is wiser to treat click effluxes and influxes separately when dealing with possible correspondences. A particularly rare click, like the ones with effluxes -*Gh*- or -*ṇ̊*- in !Xóõ, might not yield any obvious correspondences in other languages when taken all by itself; yet separating it into the efflux and influx part and trying to determine separate correspondences for each will most certainly produce better results, as this effectively provides us with more possible comparative evidence for every type of sound. Thus, word A with the structure IEV (where I = click influx, E = click efflux, V = the rest of the stem) in language X is a match for word A_1 with the structure I_1E_1V (where I_1 and E_1 are a click influx and a click efflux *different* from I and E) in language Y, if it can be shown, on the basis of supporting evidence, that I is a possible match for I_1 and E is a possible match for E_1, even if there is no other convincing example of the correspondence IE/I_1E_1. *Example*: Proto-North-Khoisan *!ụ̀ʔúru "claw, nail" corresponds to Proto-Taa *∕∕qúrV id., even if there are no other examples of the correspondence "PNK *! - PT *∕∕q". There are, however, examples of the correspondence "PNK *! - PT *∕∕" and the correspondence "PNK zero efflux - PT *-q-" (see II.13);

(d) "tentative" matches can be established if the suggested correspondence is not confirmed by additional data, yet is not contradicted by any other correspondence. Thus, click efflux E in language X can be said to correspond to click efflux E_1 in language Y even if there is only one word with click efflux E in language X corresponding to one word in language Y, provided that no other efflux of language Y, besides E_1, can correspond to efflux E. Note, however, that in order to have a relatively high probability of relationship, efflux/phoneme E must not be too phonetically divergent from efflux/phoneme E_1. Considering the hugeness of the phonological inventory of Khoisan languages, this is a very important addition, which can certainly mean having several erroneous comparisons, but also allows us to track down multiple isoglosses that would be "lost" otherwise. *Example*: Proto-Taa *∫qʔan "heart" can be matched with Proto-North-Khoisan *!kxá id., because no other correspondences in North Khoisan to PT *-qʔ- have been established (at least, no other correspondences with strong semantic resemblance), and the two effluxes are quite close phonetically (both are ejective, and in addition, North Khoisan possesses no uvular effluxes whatsoever);

(e) if neither of the four rules above can be shown to apply to the word pair A vs. A₁, they do not constitute a match, no matter how close their phonetic likelihood may be. Example: PCK *//ʔo "to die" cannot be matched with Sandawe ⅃a-si id. despite the presence of a lateral consonant in both words, because no other convincing examples with the same correspondence have been found. This is a very important addendum, since, for instance, the presence of the same click influx in two roots of different subgroups often gives a potentially misleading impression of genetic relationship - even if the efflux and the rest of the stem cannot be proven to match at all.

This means that the important thing for us in this procedure is not so much *likelihood* as it is *correspondence* confirmed by supporting material. (As I am going to show, quite often the compared forms are not going to look similar at all.) Note, however, that "correspondence" does not necessarily presuppose "one-to-one correspondence"; such a presumption would obviously be biased, and might prevent us from recognizing many important matches within the 100-wordlist. This work, then, is being done based on a presumption of *probable non-simplicity* - i.e. that we are by no means forced to limit ourselves to comparing material of the rule (a) variety when looking for potential correspondences. It should be emphasized once again here that the main goal of this work is *not* to establish a self-sufficient system of regular correspondences, which is at the present time a near-impossible task; the main goal is to use a more or less formalized method to track down and fix *as many types of potential correspondences as possible*, which will be systematized and categorized later on the basis of additional data.

I. 3. *Data sources.* For space reasons, I will refrain from indicating the exact data source for every Khoisan form quoted below; the absolute majority of the data actually comes from a list of predictable sources quoted in this section. To avoid any confusion, I have also chosen, where possible, to unify the transcription, which sometimes means significantly changing the graphic inventory of certain sources; a list of transcription signs used in this article can be found at the end. The only language with "non-unified" transcription is Nama, since it is the only Khoisan language that currently has something at least remotely resembling a commonly accepted orthographic norm. Abbreviations listed below will be used throughout the work, with the preceding P standing for Proto (e.g. NK = North Khoisan, PNK = Proto-North-Khoisan).

North Khoisan (NK). The Žu|'hoan form is quoted according to [Dickens 1994], with unified transcription (Dickens' designation of the Žu|'hoan affricate system can be particularly baffling, even for those familiar with the field). The major source for other dialects, such as //Au//en and !O!Kung, is [Bleek 1956]; of more recent publications, [Snyman 1997] is of exceptional interest, but, unfortunately, it only provides a very limited amount of data.

South Khoisan (SK). This subgroup is traditionally assumed to be subdivided into two relatively distant branches, Taa (T) and !Wi (Kw), and since there are some really interesting (and complex) lexical differentiations between the two even within the 100-wordlist, I have preferred to deal with them separately. For Taa, the main source is Anthony Traill's near-exhaustive dictionary of !Xóõ [Traill 1994], as well as additional Masarwa and |Nu//en data from [Bleek 1956]. For !Wi, a supposedly extinct language branch, the only major source is [Bleek 1956], with a few additional forms from [Bleek 1929].

Central Khoisan (CK). Again, this large group shows a clear split into a "Khoekhoe" (KK) branch (Nama and !Ora) and a "Non-Khoekhoe" (NKK) branch (everything else), with big lexical differentiations between the two. They are thus treated separately. Central Khoisan is the only division of Khoisan for which we have an "official" reconstruction of the phonological system, published in [Vossen 1997] (the older reconstruction by Kenneth Baucom [Baucom 1974] has to be considered obsolete); thus, where possible, I cite Rainer Vossen's reconstructions for both Proto-Khoekhoe and Proto-Non-Khoekhoe forms.

In several cases where Vossen does not provide a reconstruction, I offer one myself based on other data sources, such as [Haacke 1998] for Nama, [Meinhof 1930] for !Ora (Korana), [Barnard 1985] for Naro, [Tanaka 1978] for |Gwi and //Ganakwe, and [Dornan 1917] for Hietšware.

#Hoan. The data on this supposedly isolated Khoisan language still remains largely unpublished; however, unlike the other "isolate", Kwadi, #Hoan has at least been seriously studied by several researchers, and some #Hoan data, enough to fill in about three quarters of the 100-wordlist, can be found in works such as [Bell-Collins 2001], [Collins 2001], [Collins 2001a], [Collins 2001b], [Gruber 1975], [Traill 1973], and others; large chunks of #Hoan lexical data, collected by Chris Collins and others, can also be found at the site maintained by Cornell University at http://instruct1.cit.cornell.edu/courses/ling700/.

Sandawe. The main source is [Kagaya 1993]; for additional safety, most of Kagaya's data have been checked by me against Otto Dempwolff's earlier vocabulary of Sandawe [Dempwolff 1916].

Hadza. No major Hadza vocabulary is yet available, unless one counts Dorothea Bleek's data in [Bleek 1956] (which is usable, but has always to be checked against newer, more phonetically exact sources for safety). For lexicostatistical comparison, of crucial importance is the Hadza 100-wordlist provided by Bonnie Sands in [Sands 1998]; some of the words that are not present in her version I have managed to discover browsing through unpublished field materials collected by Archibald Tucker and Derek Elderkin (courtesy of H. Fleming).

I. 4. *Notes on intermediate reconstructions.* As I have already mentioned above, the present work uses intermediate reconstructions rather than separate languages for lexicostatistical analysis. This does not, of course, apply to "isolates" like #Hoan, Hadza, and Sandawe, and in a couple of cases the "reconstruction" in question is little more than a possibly slightly modified - or not modified at all - form of one major representative of the group, depending on the number of languages and on the degree of their proximity. Speaking in individual terms, this is what must be mentioned specifically:

a) North Khoisan. This is obviously a very young language branch, with a high level of mutual intelligibility between all of its speakers. The dialect data presented in [Snyman 1997] clearly shows that there are few phonetic differences between the actual dialects (at least on the segment level; Khoisan tonology and prosodics are so complex and vary so seriously between even closely related languages that we do not have the time, nor the ability to raise that issue here). The main differences are to be found in the affricate/fricative system, which is very large in NK (apart from Hadza, it is the only branch of Khoisan that differentiates between the hissing and the hushing series), and apparently rather unstable, judging by the extremely non-systematic and numerous correspondences. The exact number of affricates in PNK, and their reflexation in daughter dialects, is yet to be established; Snyman's examples are too few to base any decisive conclusions upon them. For the moment, we are taking the Žu|'hoan system as described by Patrick Dickens as a hypothetic "substitute" for the Proto North Khoisan one.

One extremely important thing about North Khoisan is what could be called the "fifth click problem". It has been noted by several researchers, including Snyman himself, that some North Khoisan words beginning with the alveolar click ! tend to preserve it in all the dialects, while certain other words tend to substitute it - either with the lateral click //, or with a special type of click articulation, for which C. M. Doke had much earlier proposed the term "retroflex" [Doke 1925, p. 148]. The "retroflex"/alveolar/lateral trifurcation of the click seems to be more or less regular, depending on the particular dialect (according to Snyman, Northern dialects tend to have the lateral variant, Southern dialects tend to have the alveolar variant, and Central dialects fluctuate between the retroflex and lateral variants), but the reasons for this trifurcation are still obscure; Snyman's attempt [Snyman 1997, p. 35] to explain it

through prosodic influence ("retroflexization" before a high tone) can hardly be called satisfactory, both because of a large number of countercases and the unclear character of the mechanism of phonetic change.

The problem, however, can be successfully eliminated - on the Proto North Khoisan level at least - if we suppose that the "retroflex" articulation of the "trifurcated" click is actually original. Reconstruction of five, instead of four, clicks for North Khoisan, at this point seems not only the best, but the *only* way to deal with the problem based on the classic comparative method. The original alveolar click, then, remains unchanged in all NK dialects, while the original retroflex click is preserved in but a few, having merged with either the alveolar one or the lateral one in most others in a general simplification-of-the-system process. We can even define quite a few minimal pairs for PNK, such as *!gu* "belly, stomach" (//Au//en *!gu*, Ju|ʼhoan *!gú*, !O!Kung *!gu*) vs. *!̣gu* "water" (//Au//en *!gu*, *//gu*, !Kung *!̣gu*, Žu|ʼhoan *!gú*, !O!Kung *//gu*), etc. Obviously, the downside of this decision is that it "burdens" us with yet another opposition to be explained on the Proto-Khoisan level, but on the other hand, it might just as well provide extra insight into the original phonological system.

The hypothetical PNK form, then, can be described as "The Žu|ʼhoan form with the alveolar click replaced with a retroflex where necessary *and* possible". Unfortunately, too often the only form in our possession is the Žu|ʼhoan one, and since Žu|ʼhoan always replaces the original retroflex articulation with the alveolar one, without additional dialectal data it is impossible to determine whether it goes back to *!* or *!̣*.

b) <u>South Khoisan</u>. The genetic unity of this branch is quite obvious and can easily be seen from Westphal's lexical data in [Westphal 1965]; a detailed study of the problem with positive results can be found in [Hastings 2001]. The Proto-Taa form is essentially the !Xóõ form as given in [Traill 1994], possibly with a trimmed derivational suffix to emphasize the exact form of the root; Bleek's data on Masarwa and |Nu//en add little, and what little differences there are can actually be due to errors in transcription. The same problem, but in a much worse form, arises when we attempt to reconstruct Proto-!Wi: there is not one fully reliable (in terms of transcription) source of data for any of the languages in this subgroup, and any hypothetic reconstruction of a Proto-!Wi form, based primarily on |Xam, ǂKhomani, and Batwa (//Xegwi) material, would have to be "twice hypothetic" because of poor transcription quality. Yet, as will be seen below, this data should not be neglected altogether, as in certain cases it can provide valuable insight into some of the processes in Khoisan historical phonetics. However, out of all the reconstructions below, the Proto-!Wi one is, without a doubt, the most questionable one.

c) <u>Central Khoisan</u>. As mentioned above, most of the intermediate reconstructions of both PKK and PNKK are either taken directly from [Vossen 1997], or based upon the correspondences set up by Rainer Vossen in that work. The few cases of disagreement with or modification of Vossen's correspondences (e.g. the treatment of uvular effluxes, etc.) will be discussed specially.

II. Lexicostatistical data with commentary.

<u>Preliminary notes</u>. Obviously, these wordlists do not pretend to be a hundred percent correct. For some subgroups in some cases it is impossible to reconstruct any proto-form, due either to lack of data or to the existence of too many candidates for one position. In most cases, however, we can come up with a rather clear idea of what the proto-form (or two synonymous proto-forms) actually looked like. For suppletive verbs with different singular and plural stems in PNK, PT, PKw, ǂHoan, and Sandawe, the singular action stem is taken as the default one.

II.1. "ALL":

A) PNK ***wV** (//Au. *wasi*, Žu. *wą̀ᵑ-sì*, *we-šě*, !O. *wešěšě*); PKK ***hoa** (Nama *hoa*, !Ora *hoà*); PNKK ***we** (Naro *we-*, |Gwi *we-ha*, //Gana *we-kae*); Hadza **waina**; B) PT ***kU** (!Xóõ *kōo kàʔàᵑ*, Masarwa *kuka*); PKw ***ku** (|Xam *ku*, //Ng *kw-a*, Seroa *ku*); C) Sandawe **chia**.

Notes. The NK, CK, and Hadza roots constitute a match according to rule (a), if we suggest that Hadza *-na* is an affix. It is unclear whether the initial aspiration in Khoekhoe is original (and the PK root should look something like **hwe-*) or prothetic, but it is hardly dubious that it belongs together with the rest of Central and North Khoisan forms. The structure is actually unusual, as there are very few roots in any Khoisan branches (outside of Hadza and Sandawe) starting with a labial w-, and the root for "all" is the only one that shows this feature in several branches at once, confirming the connection. It is theoretically not excluded that SK **kU < *(h)wV*, but this assumption is unverifiable, so no sure match can be postulated here.

II.2. "ASHES":

A) PNK ***tɔ** (//Au. *tɔ*, Žu. *tɔ̞*, !O. *tā̞otā̞o*); PKK ***thao** (Nama *tsao-b*, !Ora *thao-b*); PNKK ***thau** (Naro, //Gana, #Haba, Danisi *thaù*); B) PNK ***#goa** (!O. *#gwa*); PT ***#goa** (!Xóõ *#goa*, Mas. *//gwa*); PNKK ***#goa** (//Ani *#goà*, Buga *#noà*, |Ganda *#noa*, |Gwi *#guà*, //Gana *#goa*, |Xaise, Kua *ʒoa*, Cara *ʒoa*, Tsixa, Danisi *djua*, Tsua *ʒua*, Hie. *ʒoa*); C) PKw ***!ui** (|Xam, #Kho. *!ui*); D) Sandawe **!ʔupha**; E) Hadza **ho-ço**.

Notes. Two different Proto-Khoisan roots are obvious here; judging by the fact that the meaning of the first one tends to develop into "flame" (in //Ani and Kxoe in particular), while the second one often means "clay, mud" (Nama *#goa-b*, etc.), it is possible that the original differentiation had been along the lines of "hot ashes" and "cold ashes, dust". The correspondence between PNK **t* and PCK **th* is surprising (considering that both distinguish between aspirated and non-aspirated phonemes), but cf. also cases like PNK **tama(h)* vs. PCK **thama* "tsamma melon" which show this is possible.

Root (b) serves as the regular form for "ashes" in !O!Kung (the "North" cluster of NK dialects); in Žu. the meaning of *#goah* is 'soap', with a possible influence of (or even direct borrowing from) Khoekhoe.

One cannot theoretically exclude that PKw **!ui* and Sandawe *!ʔupha* are related, but apart from the same click influx there is little to support that hypothesis, which leaves unexplained the lack of glottal stop efflux in PKw and, especially, the second syllable in Sandawe.

II.3. "BARK (of tree)":

A) PNK ***//nɔʔòrV** (Žu. *//nɔʔòrò*, !O. *//nuli*, *!nuli*); B) PT ***gu** (!Xóõ *gúle*, pl. *gún*, Mas. *gule*, |Nu. *!gum*); (?) PKw ***(!)go** (//Ng *!go*); PNKK ***gu-re** (|Gwi *gure*, //Gana *gure*, Hie. *ʒore*); C) PKK ***soro** (Nama *soro-b*, !Ora *soro-b*); D) PNKK ***//kxuᵑ** (//Ani, Kxoe, |Ganda *//kxuᵑ*, Buga *//kxuᵑ*, Naro *//kxu̞ᵑ*, #Haba *//ʔu̞ᵑ*, |Xaise, Cara, Tsixa, Kua *//ʔuᵑ*); E) Sandawe **ʒ̂a**; F) Hadza **he-ḵwa**.

Notes. The only root here that has a fairly wide distribution is **gu* or **go*, possibly **gurV* if the suffix alternation in !Xóõ is a secondary morphological process cutting across the original root structure. However, the root is rather local in CK (only a few languages), and its presence in !Wi languages is equally dubious (although there are certain cases in Bleek's dictionary where clickless roots are being transcribed with "false" initial clicks, the main problem here is that the root is only found in one language).

On the other hand, it is the only root, apart from the isolated PCK **//kxuᵑ*, that cannot be traced back to a different meaning; PNK **//nɔʔòrV* begs for comparison with PT **//Gu̞lV* "to peel, strip, remove bark", while PKK **soro* goes back to PCK **coro* "shell, pod". The Sandawe and Hadza forms look slightly similar, but there is no serious evidence confirming the *ʒ̂* - *ḵ* correspondence, not to mention any possible ties with the other languages' data.

II.4. "BELLY":

A) PNK ***!gú** (Žu. *!gú*, !O. *!gu*, //Au. *!gu* "body"); #Hoan **!o**, B) PT ***!hūma** (!Xóõ *!hūma*); C) (?) PKw ***!autu** (|Xam *!autu*); D) PKK ***!na** (Nama *!na-b*, !Ora *!na-b*); E) PNKK ***|a~*|na** (//Ani *ᵖná*, Kxoe, Cara, Danisi, Cua *|ǎ*, Buga *|á*, |Ganda, |Xaise, Kua *|à*, Naro, |Gwi, //Gana *ᵖná*, #Haba *ᵖná*, Deti, Tsixa, Tsua *|à̂*); F) Sandawe **ƛabisò**; G) Hadza **ho-ča**.

Notes. A good match between NK and #Hoan; the correspondence "NK voiced efflux - #Hoan zero efflux" can be found in at least several other good examples, e.g. PNK *!ga̍ʔamá* "to enter" - #Hoan *!aam* "to enter (pl. stem)", etc. On the other hand, tracing a match between NK and the several isolated SK forms would be more risky. Theoretically, |Xam *!autu* and !Xóõ *!hūma* might be related, but that would require explaining the different suffixes.

It is also tempting to compare the Khoekhoe and Non-Khoekhoe forms, but no sufficient evidence exists to suppose a click replacement from dental to alveolar (or vice versa) within CK. We will have to assume that the two roots are unrelated.

II.5. "BIG":

A) PNK ***!naʔa** (//Au. *!na*, !Kung *!!nʔa* (Doke), Žu. *!naʔaᵑ*, !O. *//na*); B) PT ***!xa** (!Xóõ *!xaV*, Mas. *!xa-i*); C) (?) PKw ***!ui** (|Xam *!ui-a*); D) #Hoan **//nam**, E) PKK ***kai** (Nama *kai*, !Ora *kaí*); PNKK ***kaí** (Naro *kaí*, Deti *kaí*); F) Sandawe **baʔe**; Hadza **pakapaʔa**.

Notes. The NK and #Hoan forms are possibly related, but so far no other convincing examples of the PNK *!* - #Hoan *//* correspondence have been found (running ahead, I should note here that click influx correspondences between NK and #Hoan, apart from those involving the #Hoan labial click, happen to be extremely stable, with the retroflex click regularly corresponding to the #Hoan alveolar click). The CK forms are obviously connected with !Xóõ *kaí* "to grow".

The Hadza and Sandawe forms are obviously related (the Hadza form looks like a composite, with the second root the same as *pa(ʔ)a* "great, old"), although the voicing (or devoicing) is unclear. Strictly speaking, it could be discredited due to "irregular" correspondences, but the root *PV* meaning "big" or "many" is more or less a global etymology, and this gives additional support to this particular matching.

II.6. "BIRD":

A) PNK ***cʔamà** (//Au. *cama*, Žu. *cʔamà*, !O. *caba, cama*); #Hoan **chama**, B) PT ***|gū** (!Xóõ *|gūhʔu*, |Nu//en *si-|kou*, (?) Mas. *ši-//gu*); PKw ***!u-i** (|Xam, //Ng *|wi*, //Kxau *|hwiᵑ*); C) PKK ***kxani** (Nama *ani-*, !Ora *kxaní-s*); D) PNKK ***ʒará** (//Ani, Buga, Naro, #Haba, Danisi *ʒará*, Kxoe *ʒádá*, |Ganda, |Gwi *ʒará*, //Gana *ʒará*, |Xaise, Tsua *ʒérá*, Deti *ʒará*, Tsixa *ʒìrá*, Kua *ʒérá*, Hie. *zera*); E) Sandawe **thui**, Hadza **thithi-**.

Notes. Another clear match between NK and #Hoan (it is quite possible that the preglottalization of the affricate in NK correlates to the pharyngealized vowel in #Hoan; aspiration can be neglected because of frequent variation of aspirated/unaspirated variants in North Khoisan dialects). Some Taa dialects display a strange composite form for bird (*si-|gu*), but the main root is obviously the same for most SK languages.

The original PCK root for "bird", *ʒará*, was replaced in PKK by *kxani*, originally "vulture" as shown by Non-Khoekhoe data.

Hadza and Sandawe forms closely match in the consonantal structure; the Hadza form is most certainly a reduplicated stem, possibly with the reduction of the original diphthong (*thuithui- > thithi-*).

II.7. "BITE":

A) PNK *!*nai* (//Au. *!ne*, Žu. *!naí*, !O. *!naí*); B) PT *síʔi* (!Xóõ *síʔi*, (?) |Nu//en *tseja* //*ai*); PKw *cʔi* (|Xam, //Ng, #Kho. *ci~cʔi*); Sandawe |*ʔiᵖ-khe*; C) #Hoan *!gai*; D) PKK *!*Pa* (!Ora *bá*); PNKK *pá* (//Ani, Kxoe, Buga, |Ganda, |Gwi, //Gana, |Xaise, Deti, Cara, Tsixa, Danisi, Kua, Tsua *pa*, Hie. *pha*); E) Hadza *kaʔ-ǯ́o-*.

Notes. As much as the NK and #Hoan forms are similar, it is very hard to explain the nasal efflux in PNK - there is no other clear-cut example where it would appear so thoroughly unmotivated. Instead, I strongly suspect that #Hoan *!gai* is the same root with *!gai* "snake", corresp. to PNK *!*!gai* "puff-adder", a meaning shift all too common in other Khoisan branches.

This shift is, in fact, present in Proto-Taa, where the root *síʔi* means both "to bite" and "snake"; and similarly, Sandawe |*ʔiᵖ-khe* "to bite" looks very much like a derivation from |*ʔiᵖ* "snake". The resemblance between PSK *cʔi* and Sandawe |*ʔiᵖ* is obvious, and the correspondence between the SK affricate and the Sandawe dental click reappears one more time in the list (item II.16), which makes the probability of the forms being related even higher. This is, then, a definite match.

II.8. "BLACK":
A) PNK *ǯó* (//Au. *ǯɔ*, Žu. *ǯó*, !O. *ǯo*); B) PT *#a[-ʔna]* (!Xóõ *#áʔna*, (?) Mas. |*kxa*, |Nu//en *#ana*); #Hoan *#kxau*; C) PKw *!Ue* (|Xam *!ue-n*, //Ng *!oe*); D) PKK *#nu* (Nama *#nu*, !Ora *#nù*); PNKK *#nu* (//Ani, |Gwi, //Gana *#ᵖnú*, Kxoe, |Ganda, Tsixa *#ᵖú*, Buga *#ᵖŭ*, Naro *#ᵖnŭ*, |Xaise *nǯu*, Deti *jŭ*, Cara *jú*, Danisi *ndú*, Kua *ǯu*, Tsua *dú*, Hie. *ǯu-nje*); E) Sandawe *ḳaŋḳara*; F) Hadza *tiči-*.

Notes. The match between PT and #Hoan, with an "extra" velar affricate efflux in #Hoan, is possible; cf. examples like #Hoan //*kxao* "to chop" - PT *//a̰*, pl. action *//a̰o* id; also "small" (II.77). If the mysterious Masarwa form (|*kxa*) belongs here indeed, with an incorrectly transcribed click influx, it may represent an earlier variant of the PT form.

Unfortunately, no other matches are found. The resemblance between forms like !O. *ǯo* and Hie. *ǯu-nje* turns out to be false, as the latter goes back to the regular *#nu* proto-form, with secondary affricativization of the palatal click; no such development can be established for NK. It is interesting to note that both the Sandawe and the Hadza form may be reduplicated (*ḳaŋḳara* < *ḳarḳara*, *tiči-* < *čiči-*), but that does not mean their segment structure is actually comparable.

II.9. "BLOOD":
A) PNK *|ʔŋ́* (//Au. |*iᵖ*, Žu. |*ʔŋ́*); #Hoan |*qʔi*; PKK *|ʔao* (Nama |*ao-b*, !Ora |*ʔau-b*); PNKK *|ʔào* (all languages exc. Kua, Tsua, and Hie. have |*ʔáo*); B) PT *!na* (!Xóõ *!na̰a*, Mas., |Nu//en *!na̰a*); C) PKw *//xau* (|Xam *//xau-ken*, //Ng *//xau*, |Auni *//xauʔu*); D) Sandawe *//ʔeḳa*; E) Hadza *ʔatʰaʔma-*.

Notes. The SK forms are unclear (unless by some chance PKw *//xau* can be related to Sandawe *//ʔeḳa*, but it is hardly possible to prove that). However, there is a certain, if at first sight unnoticeable, match between NK and #Hoan. The glottalized uvular efflux is lost in PNK, like in II.93; the vocalic correspondences are very similar to the ones in II.72 (syllabic nasal developing to *-i-* in #Hoan). The match with PKK and PNKK is actually harder to demonstrate; both the click influx and efflux are the same, but the correspondence PNK *-ŋ-* = PCK *-ao-* is not met anywhere else in this exact form. Cf., however, PNK *šŋ́* "to be fat" (Žu. *šiᵖ*, !O. *čŋ*, etc.) and PCK *cau* (//Ani *cáu*, Naro *cau*, etc.) id.; it is possible that the *-o-/-u-* element in CK derives from an earlier detachable class marker. With some caution, we may suggest a match here.

II.10. "BONE":

A) PNK *!ʔú (//Au., !O. !ʔu, Žu. !ʔú); B) PT *#âⁿ (!Xóõ #aⁿ, Mas. //a, |Nu//en #aⁿ); PKw *!(o)a (?*#(o)a) (|Xam !wa, Batwa !wa); C) #Hoan caa, D) (?) PKK *#xo (Nama #kho-b); E) PNKK *ǀʔoaⁿ (almost all languages have ǀʔoaⁿ, exc. Deti, Kua ǀʔoaⁿ, Tsua ǀʔoaⁿ, Hie. ǀŋwa); F) Sandawe !i; G) Hadza miꝄa.

Notes. The PT and PKw forms are the same, considering the frequent tendency to transcribe the palatal click as the alveolar one in !Wi data. Apart from that, no forms present any clear matches - not surprising considering the high "mobility" of the word for "bone" in Khoisan (thus, PKK *#xo is hypothetical, since in !Ora the same root means "fruit kernel", while the actual word for "bone" is unknown; PNKK *ǀʔoaⁿ, on the other hand, is comparable with Žu. ǀʔoaⁿ "leg", etc.).

II.11. "BREAST (chest)":
A) PNK *!goʔa (//Au. !gwa, Žu. !goʔá); PT *//gu (!Xóõ //gúu); PNKK *//gŭ (//Ani, Naro, |Xaise, Deti, Cara, Tsixa, Danisi, Kua //gŭ, Tsua //ŭ, //Gana //gŭ); B) PKw *//no[e]ⁿ (|Xam //noain-tu, //Ng //nwoeŋ, //Ku//e //goin-tu); C) #Hoan !gama; D) PKK *//xai (Nama //khai-b); E) Sandawe saka; F) Hadza ʔiriba-.

Notes. Case (A) is the first one in the wordlist where we actually meet with a possible correspondence of one click influx in one language branch to a different click influx in other branches - namely, NK ! vs. SK and CK //. As can be easily demonstrated, this is a rather frequent correspondence. Cf., for instance: PNK *!ʔoaⁿ "to open" - PT *//oʔa id.; PNK *!oma "short" - PT *//ôhʔm "light, short, insubstantial in weight" - PCK *//óm "short"; PNK *!guʔubú "to swell" - PT *//uʰʔbu id.; PNK *!ga "to belch" - PT *//gaʰa id.; PNK *!xo "to be unlucky" - PT *//xō id.; PNK *!gxoó "to be pregnant" - PT *//gxoV id.; PNK *!naʔi "crowned plover" - PT *//naêⁿ id., etc. To be precise, it must be noted that some of these PNK forms are postulated on the basis of Žu. evidence alone, and so may actually contain a PNK retroflex click instead of the alveolar one; however, such a correspondence (PNK *! - PT, PCK *//) also exists, as will be demonstrated below.

II.12. "BURN (tr.)":
A) PNK *kuʔú (//Au. kou, !Kung (Doke) kuʔu, Žu. kùʔú); B) PT *ɵʔá (!Xóõ ɵʔaa, Mas. ϑpwa "to make a fire"); C) PT *//āʰa (!Xóõ //āʰa "to set alight, singe", Mas., |Nu//en //a "to burn"); PKw *//a (|Xam, //Ng, //Ku//e //a, Bat., |Auni //a "to cook"); D) #Hoan ɵui; E) PKK *dao (Nama, !Ora dao); PNKK *dao (//Ani, Buga, Tsua daó, Kxoe, Naro dàó, |Ganda, Deti, Cara, Danisi dao, |Gwi, #Haba dío, //Gana, |Xaise, Tsixa, Kua dáo, Hie. dhau); F) Sandawe kama; G) Hadza muli-.

Notes. Proto-Taa has two different roots. *//a, functioning as the main root for "burn" in Masarwa and |Nu//en, is obviously related to PKw *//a; however, a match between PT *ɵʔá and #Hoan ɵui is hardly possible, not so much because of the vocalism but rather because there is no evidence for the correspondence "PT glottal stop efflux - #Hoan zero efflux" (not to mention that - running ahead - #Hoan and SK labial clicks practically never correspond to each other).

II.13. "CLAW (fingernail)":
A) PNK *!uʔuru (//Au. //kuru, Žu. !uʔúrú, !O. //kulu); PT *//qû[rV] (!Xóõ //qûle, pl. //qûn-sâ); PKw *//urV (|Xam //uru, //Ng //urisi, #Kho. //oro, Bat. //ola, |Auni //orasa); (?) #Hoan !oʔo, PKK *//oro (Nama //goro-s, !Ora //órò-b); PNKK *//oro (Naro //oro "finger, toe", |Gwi, //Gana (Tanaka)!ore, Deti //óró, Cara, Kua //oro, Danisi //áro); B) PT *//gàʔm (!Xóõ //ga'm); PNKK *//a (//Ani, Tsixa, Danisi //à, Buga, Cara //â, |Xaise //hâ); C) Sandawe çwaʔa; D) Hadza baꝄu.

Notes. This is one of the most stable roots in the wordlist - found in all the main branches of

Khoisan except for Sandawe and Hadza. The correspondences, however, need some explanation. For PNK *! vs. #Hoan ! and SK/CK *//, cf. II.54 ("moon"); PNK *!xom "river" - PCK *//xom id.; PNK *!nabu "wing" - PCK *//abo id. (Nama //gawo-b, etc.); some of the examples in II.11 can also belong here if the corresponding NK etyma have a retroflex click in PNK. For the uvular efflux in PT (and possibly PKw, since no recordings of !Wi languages mark the uvular consonants in that group), cf. PNK *!aʔo "cheetah" - #Hoan !au̯ᵖ id. - PT *!qāʰ id.; PNK *!aè "to hunt" - PT *!qāeʰ id.; whether the glottal stop in PNK *!uʔuru and the pharyngealization in #Hoan !ọʔo have anything to do with PT -q- remains to be established.

The #Hoan form is surprising in its lack of an inlaut resonant; it is possible that the matching is wrong, but considering the stability of the root almost everywhere, it is more likely that #Hoan either preserves the suffix-less root or features a peculiar development, e.g. *!ọʔro > !ọʔo, with the resonant lost after a glottal stop.

There is also a possible second root, *//a- or *//ga-, found in PT and PNKK; the difference between the two is not quite clear, but some meaning nuances in !Xõõ suggest it could have been an early opposition between "a person's fingernail" and "hoof".

II.14. "CLOUD".

There is no special root for "cloud" in any of the major branches of Khoisan; it is usually denoted by composite forms like Žu. !ga̠-!kxui̋ or !Xõõ !qha̠a |Ghūa (both literally meaning "rain-hair"). It is interesting to notice that the same root composition (see below the entries for "hair", "rain", and "water") is used in both NK and SK, yet for safety reasons we will not propose any root matches here. Occasionally we meet isolated obscure forms like Nama !a̋u-s, etc.; also Sandawe **ƛuŋgu** and Hadza **malundi-**, but none of these forms have any reliable Khoisan etymologies.

II.15. "COLD":

A) PNK *#a̋ʔu(!Kung #a̋o, Žu. #a̠ʔű); PT *//a̋ʔu(!Xõõ #âʔuᵖ, (?) Mas. |kxau, |Nu//en //kʔauᵖ); (?) #Hoan #a̠; B) #Hoan |aba; C) PKK *!xai(Nama !khai, !Ora !xai); PNKK *!qhai(Naro !xa̠i, //Gana qai, Hie. haii); D) Sandawe **chawa**; E) (?) Hadza **//naƛa** [uncertain].

Notes. The most important thing about this item is the match between NK and PT - the Žu. and !Xõõ forms, in particular, coincide fully but for the click influx. The resemblance is hardly coincidental: the correspondence PNK *# - PT *// is confirmed by multiple examples, such as: PNK *#gaʰ "old (of things)" - PT *//a̋ʰᵖ "old, mature"; PNK *#kxőbő "to trample" - PT *//xuBV id.; PNK *#au "giraffe" - PT *//qhū̠ᵖ id.; PNK *#ọè "young" - PT *//quV "new"; PNK *#na̠m "frog" - PT *ʔ//nā̠ʰm id.; PNK *#nŋ "Acacia fleckii" - PT *//na̋ʰᵖ "Acacia hebeclada", etc.; cf. also II.80 from the wordlist. It is, however, unclear what is the corresponding click in CK languages, as no reliable matches in either PKK or PNKK have been found for any of these examples.

It should be noted that the PNKK form is reconstructed by me as *!qhai, with a uvular aspirated efflux, based on the data of //Gana (uvular articulation) and Naro (aspiration). Vossen's reconstruction does not include uvular consonants/click effluxes for PCK, and he is more inclined to treat occasionally met CK uvulars as innovation [Vossen 1992], but since the exact reason for such an innovation has not yet been determined, I find it reasonable to mark the presence of uvular reflexation in daughter languages by postulating uvular phonemes in the protolanguage, at least hypothetically.

II.16. "COME":

A) PNK *cí (//Au. *ci*, Žu. *cí*, !O. *ci*, *či*); PT *sí/*sV (!Xóõ *sɨ̄i*, *sa-*, Mas. *se*, *si*; |Nu//en *sa*, *se*, *si*); PKw *sV (|Xam *sa*, *se*; //Ng, Bat., |Auni *sa*, *se*, *si*; #Kho., //Ku//e *sa*, *si*); Sandawe |i; B) #Hoan *ča*; C) PKK *ha (Nama *ha*, !Ora *hà*); PNKK *hǎ (//Ani, #Haba, |Xaise, Cara, Danisi *hǎ*, Kxoe *jǎ*, Buga, Naro, |Gwi, //Gana, Tsixa, Deti, Kua, Tsua *hǎ*, Hie. *ja*); D) Hadza ʒà-.

Notes. The NK and SK forms match perfectly (the correspondence of NK *c to SK *s is quite frequent, as demonstrated in [Honken 1988] and [Honken 1998]). The match with Sandawe is suggested on the same grounds as in II.7. #Hoan *ča*, however, is much more probable to belong together with PNK *ča (Žu. *čá* "to go and fetch"), despite the same root structure (affricate+vowel). Whether PCK *ha and Hadza ʒà- have anything to do with the NK/SK forms remains to be established; at present, there is no solid evidence to confirm a possible relationship.

II.17. "DIE":
A) PNK *!aí (//Au. #ei, !Kung ̣!ai (Dk.), Žu. *!aí*, !O. //e); #Hoan *šɨ͂*; B) PT *|ʔâ (!Xóõ |ʔâa, Mas., |Nu//en |ʔa); PKw *|ʔa (nearly all languages have |ʔa); C) PKK *//ʔo (Nama //o, !Ora //ʔo); PNKK *//ʔo (all languages have //ʔo, exc. Tsua ʔǒ, Hie. oo); D) Sandawe **ƛasi**; E) Hadza **tan//ʔi-**.

Notes. The comparison of PNK *!aí and #Hoan *šɨ͂* may seem dubious at first. However, a careful investigation of the data shows that there is indeed a very probable correlation between several lexical items containing a retroflex click in NK and an initial hushing fricative (voiced or voiceless) in #Hoan. This includes such cases as "hand" (II.37); #Hoan *šiu* "to dig" - Žu. *!gau* (? < PNK *!gau) id.; and "water" (II.94). Additional #Hoan data (only about a dozen etyma with initial *š-* or *ž-* have been published) would help clear this connection further.

Many other sub-branches display some kind of lateral articulation in the root (CK and Hadza lateral click, Sandawe lateral affricate), but currently there is no significant evidence to relate PCK *//(ʔ) to Sandawe *ƛ*; likewise, while the correspondence PNK *! - PCK *// does exist (see II.13), there are no examples of the PNK zero efflux corresponding to an "unwarranted" glottal stop efflux in PCK, so that we cannot propose a match between (A) and (C).

II.18. "DOG":
A) PNK *#ghÚ ((?) //Au. *!o*, !Kung #ʔhwi (Dk.), Žu. #ghuɨ͂, #ghóá, !O. #we); PKw *#(ʔ)uɨ͂ (|Xam, //Ng *!uɨ͂*, #Kho. #ʔVn, //Kxau #huni, Bat. //ui); (B) PT *#qha[-i] (!Xóõ #qhài, Mas. #xai, |Nu//en #khi); C) #Hoan **ce[a]ma**; D) PKK *ari (Nama *ari-*, !Ora *ʔari-b*); PNKK *arV (//Ani *ʔéri-ku*, |Gwi *hárúgu*, #Haba *hǎrúgu*); E) PNKK *aba (Kxoe *ʔápá*, Buga, |Ganda *ʔápà*, //Gana, |Xaise, Cara, Kua, Tsua *ʔàbà*, Deti, Tsixa, Danisi *ʔábá*, Hie. *aba*); F) Sandawe **kāka**; G) Hadza **//aʔano-**.

Notes. !Xóõ has two several roots for dog, one "main" (#qhà) and one specifically meaning "hunting dog" (#gxū). Their phonetic resemblance (palatal click + "complex" velar/uvular efflux) makes it hard to determine the exact relationship between these two roots and other subgroups' data. Yet the most probable solution is that PNK *#ghÚ- and PKw *#(ʔ)uɨ͂ (reconstruction very uncertain) are actually related to !Xóõ #gxū, both because of the vocalism (although this is not a decisive argument) and the voiced articulation in both PNK and PT (the exact efflux in PKw is, as in most cases, impossible to determine).

Outside of the NK/SK areal, however, there are no matches. #Hoan *cé[a]ma* (< *tema) has no etymology, while the CK forms may be either expressive in origin, or old borrowings from Bantu (cf. proto-Bantu *-bua- dog).

II.19. "DRINK":

A) PNK *čhì(ᵑ) (//Au. či, Žu. čhì, !O. čiᵑ); PT *kxā̄ᵗⁿ (!Xóõ kxā̄ʰⁿ, Mas. kxaᵑ, |Nu//en kxa); PKw *kx(o)aᵖ (|Xam kxwaᵑ, kxoeᵑ, //Ng kxa, kxaᵑ, #Kho. kxwaᵑ, Bat., |Auni kxa); #Hoan čų, PKK *kxa (Nama a, !Ora kxà); PNKK *kxâ (all languages have kxà or, in case of East Central Khoe, kʔà); B) Sandawe çḕ; C) Hadza fá̀-.

Notes. The SK and CK forms are clearly related acc. to principle (a). Less obvious is their connection with the affricate-containing roots in NK and #Hoan. Cf., however, the following supporting evidence: PT *kxā, PCK *kxě "to cry, sound" - PNK *čʔiᵑ id.; PT *kxai, PCK *kxaiᵑ "to laugh" - PNK *si~*chì id.; and particularly "liver" (II.48). The variation between the affricates in NK (*čʔ, *čh, *ch) is certainly questionable, but since a proper reconstruction of the PNK affricate/fricative system is still a task for the future, this cannot be a sufficient argument for rejecting the comparisons. Of special interest is the contrast between SK and CK, on one hand, agreeing on many PK items with initial kx-, and the near-total lack of good parallels with initial kx- in NK; it is very probable that the initial *kx- was palatalized in all contexts, while NK kx- itself originates from different sources.

This treatment makes it impossible to track Sandawe çē to the same source as the NK root - if PNK *čhiᵑ < *kxVᵑ, the Sandawe root obviously does not belong in the same group of etyma and has to be considered isolated.

II.20. "DRY":

A) PNK *!kxau (!Kung (Doke) !ʔau, Žu. !kxáú); B) PT *|ʔo (!Xóõ |ʔòo); PKw *|(ʔ)o (|Xam |owa, Bat. |owa "thirsty"); #Hoan |qʔau, PKK *|ʔo (Nama |o "to become dry (of cow)", !Ora |ʔò); PNKK *|ʔô (Naro, Kua, Tsua |ʔô); C) PT *//u̧ (!Xóõ //u̧a); PKw *//o (|Xam //o); D) PNKK *//xo (//Ani, |Gwi, //Gana, #Haba, Tsixa, Danisi //xò, Buga, Deti //xǒ); E) Sandawe |nìᵑ-.

Notes. There is a solid isogloss here between SK and CK (*/|ʔo), with #Hoan |qʔau very likely belonging here, acc. to the same correspondence pattern as in II.9 and II.93. On the other hand, while there is a certain level of resemblance between PNK *!kxau, PT *//u̧, and PCK *//xo, there is no evidence to support such a correspondence between click effluxes. Žu. does have both //xó "dryness (of the ground)" and |ʔò "to be dry", not found in any other North Khoisan dialects; whether these are genetically related to the corresponding CK forms or are both old borrowings from CK cannot be determined at this point.

II.21. "EAR":

A) PNK *|huí̋ (//Au., !O. |wi, Žu. |huí̋); PT *#nu̧ʰ (!Xóõ #nuhaᵑ, Mas. !nwa, |Nu//en #nu-ša, pl. #nu-i-te); PKw *#nu (|Xam !nu-intu, //Ng !nwe, !nwe-ntu, #Kho., |Au. #nu-i, |Nusan !nu-du); #Hoan |qhoe; B) PKK *#ae (Nama #gae-b); PNKK *#é (//Ani, Kxoe, |Ganda, Naro, #Haba, Tsixa #é, Buga, |Gwi, //Gana #ê̂, |Xaise, Deti, Cara, Danisi, Cua çé, Kua, Tsua kjê̂, Hie. čee); C) Sandawe keke; D) Hadza ha-šʔapiči-.

Notes. The match between PNK |huí̋ and #Hoan |qhoe is obvious (cf. for another example PNK *|hu̧ᵑ "steenbok" - #Hoan |qhoᵑ id.). The match between PNK and the SK forms, however, is only possible if the -n- efflux in SK is secondary - for instance, due to assimilation with subsequent nasal elements, such as the suffix *-ntu in PKw or -aᵑ in !Xóõ. Such cases are indeed met rather frequently, if without an obvious regular pattern (cf., for instance, Žu. !aʔami "to be in a circle" - PT *!naʔm "to go round"; #Hoan !hana "to snore" - PT *!na̧ʰna id.). As for the correspondence PNK *|- PT *#, cf. the following examples: PNK *|nui, #Hoan |noe "mouse" - PT *#nu̧, PCK *#nu-ni id.; PNK *|aboʰ "to pile up" - PT *#Gabo id.; PNK *|ari "Acacia tortilis" - PT *#Ga̧ʰli "Acacia fleckii"; PNK *|o̧ "bile, gall" - PT *#gáu id.; PNK *|aʔè "to hold under the arm" - PT *#Gā̧ʰʔm id.; PNK *|no̧í "to drown" (metathese from *|oni) - PT *#qʔoni id.; PNK

*/nù`ʔu̯ᵑ/ "to choke" - PT *#Gu̯ʰnu id., etc.

    The CK forms thus match the NK/SK forms as far as the click influx, but the efflux (zero) and vocalism are crucially different, so no match can be postulated. Sandawe *keke* can theoretically be compared with PCK *#e (< *#k̂e < *ćke < *ćeke < *keke, acc. to the same syllable reduction principle as in II.41), but the phonetic development is too complex to be taken for granted without supporting evidence.

    II.22. "EARTH":
    A) PNK ***kxa**̀ (//Au., !O. *kxa*, Žu. *kxa*̀); #Hoan **kxa**̀, B) PT ***#kxu̯m**̂(!Xóõ #*kxu̯m*̂, Mas. *!um*, //*um*, //*kxom*, |Nu//en *!om-sa*); C) PKw ***!ʔau** *(*#ʔ-)* (|Xam, //Ng //Kxau *!ʔau*ᵑ, (?) Bat. //*wa-lo* "ground", |Nusan *!ʔou*ᵑ); D) PKK ***!hu**(Nama, !Ora *!hu-b*); E) PNKK ***xom**́(//Ani, Kxoe, Buga, |Ganda, Naro, //Gana, #Haba, |Xaise, Cara, Tsixa, Danisi, Kua, Tsua *xom*́, |Gwi *xoám*́, Deti *xom*̀, Hie. *hom* "sand"); E) Sandawe **!ʔuma**̀, F) Hadza **jamu**-.
    <u>Notes.</u> Another clear match between #Hoan and NK; outside of this isogloss, no definite parallels. Even the PKw form, while theoretically comparable with PT, cannot be fully understood (no trace of the velar affricate efflux anywhere). Likewise, a comparison of PKK *!hu with Sandawe *!ʔuma* would require more examples of the PKK *-h- - Sandawe -ʔ- correspondence, which are absent.

    II.23. "EAT":
    A) PNK ***ʔm**(//Au. *m̄*, Žu. *ʔm*, !O. *m*); PT ***ʔa**̂ᵑ (!Xóõ *ʔa*̂ᵑ, Mas., |Nu//en *a*ᵑ); PKw ***a**ᵑ**~*e**ᵑ (|Xam, #Kho. *a*ᵑ, //Ng, Bat. *a*ᵑ, *e*ᵑ); #Hoan **ʔam**, B) PKK ***#ʔu**ᵑ (Nama #*u*̂, !Ora #*ʔu*ᵑ); PNKK ***#ʔu**ᵑ (//Ani, Kxoe, |Ganda, Naro, //Gana, #Haba #*ʔu*̌ᵑ, Buga, Tsixa #*ʔu*̌ᵑ, |Xaise, Deti, Cara, Danisi, Kua, Tsua *ʔju*̌ᵑ, Hie. *njoo*); C) Sandawe **mancha**, D) Hadza **seme**-.
    <u>Notes.</u> The same root is present in PNK and #Hoan; SK *ʔa*ᵑ~*ʔe*ᵑ does not display the same consonant structure, but in case *ʔa*ᵑ < *ʔŋ, this case is remarkably similar to the opposition between NK and SK 1sg personal pronoun (II.42), thus providing a solid match. The *-m-* vs. *-ŋ-* opposition, however, is still an important phonological isogloss between NK and #Hoan, separating them from SK.

    II.24. "EGG":
    A) PNK ***!nu**̀ (//Au., !O. *!nu*, Žu. *!nu*̀); B) PT ***#gu**̀ (!Xóõ #*gu*́-*a*ᵑ, Mas. //*w-a*, |Nu//en *!gu-oi*ᵑ); PKw ***#(g)u**(|Xam *!aui*, #Kho. #*gw-i* "ostrich egg", |Auni *!u-i*ᵑ id.); C) #Hoan **čxui**; D) PKK ***!ʔubu***(*!kx-)* (Nama *!uwu-s*); E) PNKK ***#ʔubi**̀(//Ani, Kxoe, Buga, Naro, |Gwi, //Gana, #Haba #*ʔubi*́, Deti *ʔjubi*̀, Cara *ʔjibi*́, Tsixa #*ʔubi*́, Kua, Tsua *ʔibi*́, Hie. *ibi*); F) Sandawe **diʔa**, G) Hadza **ʔuʌe**-.
    <u>Notes.</u> Considering that PT distinguishes between several roots similar in both semantics and phonetics (apart from *#gu*́, there is also *#u*ᵑ "empty ostrich egg" and #*gu*̄ʰ "sterile (of ostrich eggs)"), it is possible that some of the forms assigned to PKw belong to a different root, as there would practically be no possible way to distinguish between all these roots given the inferior quality of !Wi data transcription. It also makes any attempts at matching forms (A), (B), (D) and (E) extremely risky, even if some of them do look similar. Besides, there are serious phonetic problems here: Khoekhoe *!ʔ- can hardly correspond to Non-Khoekhoe *#ʔ-; and while some examples confirm that the correspondence PNK *! - PT *# is potentially valid (cf. PT *#xū-a "elephant" - PNK *!xo id.; PT *#nu̯n "navel" - PNK *!nÙʔm id.; PT *#ʔan "penis" - PNK *!a̯ʔm id., with glottal stop metathesis in one of the forms), this leaves totally unexplained the nasal efflux in PNK; as mentioned in II.21, secondary nasal articulation in the efflux is practically always motivated in some way.

II.25. "EYE":

A) PNK ***/gà?á** (//Au., !O. /ga, Žu. /gà?á); #Hoan **Ɵoa**, B) PT ***!?ûi[-ᵖ]** (!Xóõ !?ûiᵖ); C) PKw ***c?axu** (|Xam c?axau, //Ng caxu, #Kho. c?ax(a)u, //Kxau c?axo, Bat. caxu, cau, |Auni c?axu); D) PKK ***muᵖ** (Nama mû-s, !Ora muᵖ-b); E) PNKK ***#xái** (//Ani, Buga, |Ganda, //Gana, #Haba #xái, Kxoe, Naro, |Gwi #xéi, |Xaise cái, Deti, Kua, Tsua cxái, Cara, Danisi, Cua cxái, Hie. čaii); F) Sandawe **/we**; G) Hadza **?akhwa-**.

Notes. PNK */ is one of the two possible correspondences for #Hoan Ɵ; for more examples cf. PNK */?au "duiker" - #Hoan Ɵ?u id.; PNK */na?aᵖ "sky" - #Hoan ?Ɵnoa id.; and "head" (II.38). The efflux correspondence was spoken of earlier in II.4. Apart from this match, nothing definite can be suggested. PKK *muᵖ is a secondary derivation from PCK *muᵖ "to see" (see II.72); PNKK *#xái should be compared with PNK *#xái "to wake up", esp. since the PNKK root also has the same additional meaning in many languages. The PKw root is very unusual due to its peculiar bisyllabic structure (is -xu related in any way to PKw *xu "face"?), but that in itself does not shed any light on its origin.

II.26. "FAT (n.)":

A) PNK ***/nái** (//Au., !O. /ni, Žu. /nái); B) PT ***sàᵖ** (!Xóõ sàᵖ, Mas. šaᵖ); PKw **so(e)ᵖ** (|Xam, #Kho. soeᵖ, //Ng soa); Sandawe **chaᵖ**; Hadza **hi-ça-**; C) #Hoan **/(?)ui**, D) PKK ***//nui** (Nama, !Ora //nui-b); PNKK ***//nûi** (//Ani, #Haba, |Xaise //ᵖnûi, Kxoe, Buga, |Ganda, Naro, |Gwi, //Gana, Deti, Cara, Tsixa, Danisi, Kua //ᵖuî, Tsua //ᵖuî).

Root (B) is one of the most frequently used illustrations of the genetic relationship between all Khoisan sub-branches; to the PT, PKw, Sandawe, and Hadza forms must be added PNK *šɲ̃, #Hoan čaᵖ, and possibly PCK *cau "(to be) fat (adj./vb.)". For a more detailed account of the possible affricate correspondences in Khoisan see [Honken 1988]. It is possible that #Hoan /(?)ui corresponds to PNK */nái, given at least several other examples of "secondary" arisement of #Hoan -u- (cf., for instance, PNK *ž?ǎ, PT *c?a, PCK *c?âᵖ "to steal" - #Hoan ki-cu?u id.); however, the word is only found in an uncertain transcription in [Traill 1973], and until the click efflux is established properly, no final decision can be made.

II.27. "FEATHER".

Practically none of the major Khoisan subgroups have a root for "feather" that would be separate from the root for "hair", with the exception of PKK ***!?am** (Nama !ammi, !Ora !amma) and Sandawe **thawa**, possibly also Hadza **ha-i** "feather, wing", found in [Bleek 1956]. None of these three roots have any evident connections; the rest will be discussed below in II.36.

II.28. "FIRE":

A) PNK ***dà?á** (//Au., !O. da, Žu. dà?á); B) PT ***/?a** (!Xóõ /?aᵖ, Mas., |Nu//en /aᵖ); PKw ***/?i** (|Xam, //Ng, #Kho., //Kxau, |Auni, |Nusan /?i, Bat. /e, /i); PKK ***/?ae** (Nama /ae-s, !Ora /?ae-b); PNKK ***/?e** (//Ani, Buga, Cara, Tsixa, Danisi /?ě, Kxoe, |Ganda, Naro, |Gwi, #Haba, Kua, Tsua /?ê, //Gana /?ê, Hie. /?e); C) #Hoan **Ɵgoa**, D) Sandawe **//?iᵖ**; E) Hadza **çoko-**.

Notes. The match between SK and CK is obvious (the original vocalism is most probably *-e-, with regular diphthongization in PKK and a regular *-e- > -a- in PT, where -e-vocalism is extremely rare). PNK *dà?á may be related to PCK *dao "burn" (see II.12), serving as a replacement for the original root. #Hoan Ɵgoa is unclear.

II.29. "FISH":

A) PNK *//ʔau (Žu. //ʔau, !O. //ʔau); PCK *//ʔau (Nama //au-b, !Ora //ʔau-b); PNKK *//ʔau (//Ani, Buga, |Ganda, Naro, |Gwi, //Gana, #Haba, Tsixa //ʔau, Kxoe //ʔeu, |Xaise, Deti, Cara ʔau, Danisi ʔau); B) Hadza ǀʔama.

Notes. Although PNK and PCK belong together according to criterion (a), this is one of the cases where a direct borrowing from CK is very probable. The word for "fish" is not generally widespread in either NK or SK (for SK, no reconstruction is given because the word is not available for *any* of the major SK languages, including !Xóõ!); even in Sandawe, *somba* "fish" is a Bantu borrowing (Proto-Bantu *-cómbá). The only thing that still makes me - for now - count this as a possible match is the presence of //ʔau in at least two out of three clusters of NK dialects; however, a direct borrowing into PNK from PCK is not excluded either.

II.30. "FLY (vb.)":

A) PNK *!no[-m] (//Au., !O. !no-a, Žu. !nom); B) PT *ʒa̅~*ʒoe (!Xóõ ʒa̅hiⁿ, Mas. ʒoiⁿ, ʒwɛ); #Hoan zoe; C) PKw *//au (|Xam //au, //Ng //ou); D) (?) Hadza λeλe [Bleek 1956].

Notes. A special root for "fly" is not reconstructible for PKK or PNKK (in most cases, the meaning is expressed by a root originally meaning "run", "move", "flee", etc.). Despite the general 'weakness' of the item, it still manages to yield a good isogloss between PT and #Hoan.

II.31. "FOOT":

A) PNK *|kxai (//Au. |e, |xe, Žu. |kxai, !O. |kxe); B) PT *#nu (!Xóõ #nuⁿ, Mas. #no, |Nu//en #nu); PKw *#n(o)a (|Xam !noa, //Ng //na); C) #Hoan !gaʔu, D) PKK *#ʔai (Nama #ai-b, !Ora #ʔai-b); E) PNKK *!nare (//Ani !ⁿnare, Kxoe kare, Buga, Tsua kare, |Ganda, Kua kari, Naro !nare, Cua kare, Hie. karee); F) PNKK *ʒiⁿ (Buga, |Xaise, Deti, Tsixa, Danisi ʒiⁿ, Cara ʒiⁿ); G) Sandawe //hata, H) Hadza ʔapukwa-.

Notes. The root seems to be very unstable. PNK *|kxai is possibly related to PSK *|kxa 'hand' (see II.37), assuming the original meaning 'limb'; no better etymology can be provided. PKK *#ʔai goes back to a PCK root with the meaning 'to kick'; the areal root *ʒiⁿ, meaning 'foot' in one major subgroup of East Central Khoisan, probably has the original meaning 'toe' (cf. Nama tsi-s "big toe"). As it is, no matches can be found between subgroups.

II.32. "FULL":

A) PNK *!gaʔiⁿ (//Au. !geⁿ, Žu. !gaʔiⁿ); B) PT *|ʔo̅rV (!Xóõ |ʔo̅la); C) PKw *#auⁿ (|Xam !auⁿ-, //Ng !xVŋ, |Auni //auⁿ "to fill"); D) PKK *|kxoa (Nama |oa, !Ora |kxoa); PNKK *|kxoe (//Ani, Buga, |Ganda |kxoɛ, Kxoe, |Gwi |kxoɛ, Naro, Danisi |kxoe, //Gana |kxoe, #Haba |kxoe, |Xaise, Kua |ʔoe, Deti, Cara, Tsua |ʔoe, Tsixa |ʔoɛ, Hie. |we-ha); E) Sandawe !o̅-; F) Hadza (?) *//noso-.

Notes. None of the forms (apart from PKK and PNKK, of course) seem to match. Even assuming that PT *|ʔo̅rV < *|ʔo̅ with a secondary suffix, the correspondence between PT efflux *-ʔ- and PCK efflux *-kx- is not supported by any outside data.

II.33. "GIVE":

A) PNK *|ʔaⁿ (//Au. |a(ⁿ), Žu. |ʔaⁿ, !O. |a); PT *|nV (!Xóõ |naa "dative formative", |Nu//en |ni "give"); PKw *|na (|Xam, //Ng |na, |Auni |na, |no); B) PT *!qha (!Xóõ !qha-, Mas. !xe, !xa); #Hoan šu, C) PKK *ma (Nama ma, !Ora ma); PNKK *ma (Kxoe, Naro, //Gana maⁿ, |Gwi, #Haba ma, Hie. maa); D) Sandawe ie; E) Hadza kw(a)-.

<u>Notes</u>. Of the two roots for "give" in PT, */nV is easily comparable with PNK */ʔaⁿ (either secondary nasalization in PT because of the nasal vowel or dissimilation in PNK). As for PT *!qháˊ vs. #Hoan *šu*, cf. the strikingly similar case in II.94; apparently this correspondence fits in the same category as II.17, i.e. #Hoan fricative *š-/ž-* vs. retroflex/alveolar click in PNK/PT. The vocalism discrepancy is not a big problem considering that PT *!qháˊ can be < *!qhóˊ (another hypothesis is some kind of old ablaut as found in other verbal roots).

II.34. "GOOD":

A) PNK ***!aˋi** (/Au. *!aiⁿ*, Žu. *!aˋi-síˊ*); PKw ***!eiⁿ** (|Xam *!eiⁿ*, //Ng *!aiⁿ-ja*); PKK ***!aiⁿ** (Nama *!gâi*, !Ora *!aiⁿ*); PNKK ***!aˆiⁿ** (|Ganda, |Xaise, Deti, Cara, Tsixa, Danisi, Kua, Tsua *kaîⁿ*, Naro *!aîⁿ*, Hie. *kaie* "agreeable, nice, pretty"); B) PNK ***žaⁿ** (!Kung *ža* (Doke), Žu. *žaˋⁿ*); C) PT ***qaíⁿ** (!Xóõ *qaiⁿ*); PKw ***t₁ai** (|Xam *twai*, //Ng *kiai*, Seroa *tae*, |Nusan *toai*); #Hoan **qhaen**; PNKK ***tʔŨ[i]n** (//Ani, Buga, //Gana, |Xaise, Tsixa, Danisi, Kua, Tsua *tʔuiⁿ*, Kxoe *tʔoṅ*, |Ganda *tʔoṅ*, Naro *tʔueⁿ*, Deti *tʔuîⁿ*); D) Sandawe **λaˋ**; E) Hadza **cʔiˊʔeˊʔe-na**.

<u>Notes</u>. All the major subgroups have at least two roots for "good", with next to no differentiation in meaning. The first of these, the root *!ai⁽ⁿ⁾ is very well traced in NK, !Wi, and CK, without any serious phonetic disagreements between the groups.

The PKw root *t₁ai is clearly related to PT *qaíⁿ; cf. such a similar case as !Xóõ *qhûje* "ostrich" vs. |Xam *toe*, //Ng *kue*, #Kho. *twe*, etc.; note also that out of all the !Wi languages, //Ng shows a stable reflex *k-* in both cases as opposed to the rest. The PKw phoneme *t₁ is postulated (as opposed to a regular *t > t- everywhere) to account for this correspondence. The exact character of this phoneme, as well as the mechanism of its development into *q-/k-*, becomes more clear when we compare it with PNKK *tʔŨ[i]n: a glottalized *tʔ-* can easily shift into a velar/postvelar position through partial assimilation with the glottal stop. So, while the match is not perfect, it is postulated on the following grounds: a) phonetic closeness of PT and #Hoan; b) confirmed correspondence between PT and PKw; c) phonetic closeness of PKw and PNKK.

II.35. "GREEN":

A) PNK ***|a(u)ⁿ** (//Au. *|gauⁿ*, Žu. *|auʰⁿ*, !O. *|aⁿ*); PT ***|gāˋ** (!Xóõ *|gāhi*, Mas. *|gai̯*); PKw ***|aiⁿ** (|Xam *|ain*, *|ain-ja*); B) #Hoan **zaʔa**; Sandawe **ʒaŋga**; C) PKK ***!kxam** (Nama *!am*, !Ora *!kxam*); D) Hadza (?) **//nawečˇe**.

<u>Notes</u>. For the correspondence "PNK zero efflux - PT voiced efflux" cf. also PNK *!aˋi "mortar" - PT *|gâ[i]ⁿ id.; PNK *//aⁿ "to beg for" - PT *//gaˋ id.; PNK *//aˋma~*//aˋba "to wear" - PT *//gāʰBV "to tie onto the body (skin, blanket)"; PNK *//aˋʔu "Ehretia rigida sp." - PT *//gaˊu id., etc. More difficult is the possible connection between NK/SK forms, on one hand, and #Hoan *zaʔa*, on the other. There is at least one other possible case where #Hoan *z-* is descended from a click: *zana* "chin", cf., PNK *!gaiʰⁿ, PCK *!gan[i] id. However, the PT parallel there is *ʒàni, while the root for "green" also has a click reflex in PT; the two cases are thus far from being the same (not to mention that the latter one concerns a retroflex/alveolar click, whereas the former only concerns a dental one). For the moment, then, until we have more data on #Hoan, we will have to consider the two forms unrelated. #Hoan *zaʔa* is, however, very similar phonetically to Sandawe *ʒaŋga*, and we can hypothetically match these two on the basis of rule (a).

For PNKK we do not have enough data to even suggest a possible proto-form, atlhough Naro *cǎ* "blue, green" certainly suggests a possible affinity with the #Hoan-Sandawe isogloss (the other Naro form, *!am* "dark green" is an obvious borrowing from Nama *!am*).

II.36. "HAIR":

A) PNK *!kxúí (//Au. !kxwe, Žu. !kxúí, !O. !wi); PT *|Ghu (!Xóõ |Ghùaᵑ, Mas. |wa-ni); PKw *|khu (|Xam, //Ng |u, |khu, #Kho. |khu[ke], Bat., |Auni |kho); PKK *|ʔuᵖ (Nama |ú-b, !Ora |ʔùᵑ-b); PNKK *|ʔûᵖ (all languages have |ʔûᵑ exc. for Cara |ʔúᵑ, Tsixa |ʔúᵑ, Hie. |hoo); B) #Hoan #nu, C) Sandawe çe, D) Sandawe !ʔu, D) Hadza ha-ǯe.

Notes. Despite the lack of immediate similarity between NK, SK, and CK forms, this is one clear example of how the assumption of "more-than-one-to-one" correspondences can shed additional light on Khoisan etymology. The most questionable correspondence here is PNK *! - PSK *|, but there exists sufficient evidence to confirm it (and, as usual, where additional data exists, #Hoan sides with PNK, while PCK sides with PSK). Cf. the following examples: PNK *!naͅi "lion" - #Hoan !haʔe id., but PT *|aͅ id.; PNK *!gaiʰ "wildebeest" - #Hoan !g(a)i id., but PT *|aͅ id., PCK *|e id.; PNK *!gu "belly, stomach" - #Hoan !o id., but PT *|oʰ id.; PNK *!oʰm "dew" - PT *|uʰ id.; PNK *!uʔi "constipated" - PT *|gūʔ id.; PNK *!gxaru "to gnaw" - PT *|gxuʔrV id.; PNK *!guʔuᵖ "to look" - PT *|uͅ id.; PNK *!noo "to long for, desire" - PT *|no "to desire intensely", etc.; cf. also "heart" (II.40), "name" (II.57), "red" (II.66), and "stone" (II.81) - altogether five examples in the 100-wordlist (and 4 of them belonging to the ultra-stable 35-wordlist part).

More complex is the problem of the click efflux. Normally, PNK *-kx- does not correspond to PT *-Gh- or PCK *-ʔ- (the exact phonological nature of the PKw efflux is, of course, impossible to determine). However, the efflux *-Gh- itself is quite rare in PT, and its exact correspondences in other families are yet to be determined; besides, !Xóõ itself yields a dialect variant |qhùaᵑ, so we cannot even be sure of the proper PT reconstruction. Elsewhere, PNK *-i is easily explained as an old fossilized class suffix (*!kxu-i); cf. the same *-i in "head" (II.38).

II.37. "HAND":

A) PNK *!gaú (//Au. !gau, !Kung !gau (Doke), Žu. !gaú, !O. //gau); #Hoan šiu, PNKK *chau (//Ani, Buga, Cara, Danisi chau, Kxoe çeú, |Ganda, Naro, |Xaise, Deti, Tsixa, Kua, Tsua caú, |Gwi, //Gana caú, #Haba caú, Hie. cau); B) PT *|kxa (!Xóõ |kxàa, Mas., |Nu//en |kxa); PKw *|kxa (|Xam, //Ng, #Kho., //Ku//e, Bat., |Auni |kxa, |Nusan |a); C) PKK *!Um (!Ora !um-ma; possibly Nama !om-mi, but the latter form irregular - *!gommi should be expected); D) Sandawe ǯuᵖ; E) Hadza ʔukhwa.

Notes. The correspondence between the NK retroflex click and #Hoan š-/ž- has already been discussed in II.17. We would probably expect #Hoan *žiu in view of the voiced efflux in PNK, but numerous examples given above seem to show that in many cases the voiced efflux may be secondary, due to reasons yet to be established. PNKK has *chau for hand, counted as a match with NK and #Hoan because of the striking similarity with the reflexation of "water" (II.96); add to this PCK *chao "to dig" - Žu. !gaú (? < *!gau) id. - #Hoan šiu id., and the probability of chance resemblance moves close to zero.

II.38. "HEAD":

A) PNK *|naí (//Au., !O. |ne, Žu. |naí); PT *|na (!Xóõ |nàn, Mas. |na, |Nu//en |nVŋ); PKw *|na (all languages have |na or |naᵑ); #Hoan ʔΘnuᵖ; B) PKK *dana (Nama dana-s, dana-b); C) PNKK *ma (//Gana, Deti, Cara ma, |Xaise, Cua, Kua mà, Danisi ma, Hie. hma); D) PNKK *#u (//Ani, Kxoe, Buga, |Ganda, Naro #u; Tsixa #ú, cú); E) Sandawe cē; F) Hadza ǯoma.

Notes. The match between PNK and PSK is obvious. For the match with #Hoan, see II.25, where the correspondence "PNK *| - #Hoan Θ" has been demonstrated in more detail; note that the exact same correspondence, down to the click efflux, is also found in PNK *|naʔaᵑ "sky" - #Hoan ʔΘnoa id. #Hoan -u- is probably secondary, as most of the #Hoan words beginning with a labial click contain a labial vowel.

None of the CK forms show any firm matches with NK/SK/#Hoan. It would be excellent if one could demonstrate a shift from *Өn to *m in PNKK, thus bringing PNKK *má into comparison, but, unfortunately, it would be the only example of its kind, given the extreme rarity of initial *m- in CKH. (However, cf. also PCK *má "give" - PSK */nV id.? No #Hoan form, though).

II.39. "HEAR":

A) PNK *caˀa (//Au. ca, čˀa, Žu. caˀá, !O. sa); #Hoan ca; B) PT *ta̰ (!Xóõ ta̰ᵖ, Mas. taᵖ, |Nu//en taᵖŋ); C) PKw *tu (|Xam, //Ng, //Kxau, |Auni tu, #Kho. tjhu, Bat. tui); D) PKK *//nauᵖ (Nama //náu, !Ora //nauᵖ); Hadza //náˀe-; E) PNKK *kŪm (//Ani, Kxoe, Buga, |Ganda, Deti, Cara kóm, Naro, //Gana, #Haba, Tsixa, Danisi, Kua kúm, |Gwi kuám, Tsua cóm, Hie. čom); F) Sandawe kheˀe.

Notes. Despite the close resemblance of PT and PKw, the former rather belongs together with PKw *taᵖ "to feel" (|Xam taᵖ, etc.); it cannot be, however, excluded that both go back to a single old stem with some kind of lexicalized ablaut. This question deserves a separate study; for now, we do not postulate a match here. Likewise, it would be tempting to put together PNK *caˀa and PT *ta̰, but we do not have additional supporting data to confirm this hypothetical affricativization of *t- in PNK. On the other hand, we have a very interesting match between PKK *//nauᵖ and Hadza //náˀe-.

II.40. "HEART":

A) PNK *!kxa (//Au. !a, Žu. !kxá, !O. kxa); PT *|qˀa[n] (!Xóõ |qˀàn, Mas. |i, |Nu//en |gaŋ); PKw (?) *|e (|Xam |iᵖ, //Ng |gai, |ge, #Kho. |e-kji, //Kxau |ae, //Ku//e |εᵖ, |Auni |ε, |Nusan |eᵖ); #Hoan !qˀon; B) PKK *#ao (Nama #gao-b, !Ora #áo-b); PNKK *#áo (//Ani, Kxoe, Buga, |Ganda, Naro, |Gwi, //Gana, #Haba, Tsixa #áo, |Xaise cóo, Deti cao, Cara, Danisi cáo, Cua có, Kua kjo, Tsua kyo̰, Hie. čoo); C) Sandawe ʒigida; D) Hadza nkólo-.

Notes. PT and PKw are easily grouped together, despite some discrepancies in the vocalism (the efflux -qˀ- could not have even theoretically been marked in transcriptions of !Wi data). The #Hoan form matches PT according to the correspondence established in II.36 (PNK *! - #Hoan ! - PSK */ - PCK */). The PNK form is more problematic; there is no additional data to support the correspondence PNK *-kx- - PT *-qˀ-. On the other hand, there are no other firm examples of words with PT *-qˀ- corresponding to anything in PNK (one such example, PT *#qˀoni "to drown" - PNK *|nòˀi id., has a secondary nasalisation in PNK due to the metathesis of the inlaut nasal, obscuring the original reflexation); and the possibility of the development *-qˀ- > *-kx- (considering that phonetically, kx is an ejective affricate: kx = kxˀ) is quite high. We can therefore suggest a temptative match here according to rule (d).

II.41. "HORN":

A) PNK *!khú (//Au. !u, Žu. !khú, !O. !khu); #Hoan !ho; B) PT *//a(e)ᵖ (!Xóõ //āeᵖ, Mas. //Vn-ša, |Nu//en //aᵖ); PKw *//eᵖ (|Xam, Bat. //eᵖ, //Ng //aiᵖ, #Kho., |Auni //eᵖ); PKK *//naᵖ (Nama //ná-b); PNKK *//ná (all languages have //ᵖná); Sandawe λana; C) Hadza loˀo-.

Notes. The Sandawe/CK parallel (already present in [Ehret 1986]) is extremely interesting in that it shows one possible way for the secondary development of clicks in Khoisan out of consonant clusters formed through the reduction of original *CVCV > *CCV: *//na < *λna < *λana. This example is perhaps the most transparent of all; several more, although none of them with equally reliable phonology and semantics, can be found in [Ehret 1986]. To this root we might add PSK *//aeᵖ (*//eiᵖ) assuming the possibility of a dissimilation in PSK (see the frequent fluctuations of the nasality in click effluxes discussed above). PNK and #Hoan show an isogloss of their own, in contrast to SK and CK.

II.42. "I":

A) PNK ***mV** (//Au., !O. *m, me, mi*, Žu. *mí*); PT ***n̄** (!Xóõ *n̄*, Mas. *n, na*, |Nu//en *ŋ, na*); PKw ***n/*ŋ** (all languages have *n* or *ŋ*); #Hoan ***ma***, Hadza ***(o)na***, B) PKK ***ti** (Nama *ti[ra]*, !Ora *ti-re* m., *ti-ta* f.); PNKK ***ti** (//Ani, Kxoe, Buga, |Ganda, #Haba *tí*, Naro *tíjá, tírá*, |Gwi *tíre̖*, //Gana *tê̖*, |Xaise, Deti, Cara, Danisi *ta̖*, Tsixa *tí*, Cua *tjé̖*, Kua *kjé̖*, Hie. *či*); Sandawe ***ci***.

Notes. When it comes to the 1st person sg. pronoun, two types of forms are obviously distinguished - the form with a nasal (**m-, *n-*) and the form with a dental/affricate (**t-, *c-*). The question, then, is if they go back to no more than two roots or if this subgrouping does not reflect the actual historic situation.

It is possible that PNK/#Hoan **m* and SK **n/*ŋ* go back to different stems (both of them, interestingly enough, frequently found in different macrofamilies of the world). However, there is some significant evidence in favour of their being descended from one source. Comparing these phonological discrepancies with the ones found in the root "to eat" (II.23), we find the exact same correspondence - NK *m* to SK *ŋ*. It is also necessary to notice that in many languages of the !Wi subgroup, the main pronoun *ŋ* (or *n*) has a regular allomorph *m-, ma* before words beginning with a labial consonant. Therefore we can suggest that the original form was **ŋ*, with a later transition to **m* in PNK and #Hoan because of the loss of the 'unique' root structure (no other Khoisan root has a velar nasal as an individual phoneme, at least in the anlaut position), possibly triggered by assimilation in the pre-labial position. The Hadza form can be easily linked to the same source.

The alternate solution - i.e. treating PNK and PSK forms as descended from different roots - would look reasonable if there were at least some traces of both roots in both groups with a clear distinction of their possible functions (i.e. the opposition of direct/indirect stem, etc.). In SK, however, the variant with *m* is, as indicated above, in complete phonological distribution with the *ŋ*-variant. In NK we do find certain traces of a *-n-* or *-ŋ-* in the function of 1sg personal pronoun. In Žu|'hoan, there is a special "dative" form *na̖* "for me, to me", used postverbally or independently. Also, in [Bleek 1956] we occasionally find forms like *na* and *ŋ* either in the function of the subject ("I") or in the function of a possessive pronoun ("my") in several !Kung dialects. However, not a single dialect has any clear functional opposition of the two roots; it may well be that we are simply dealing with an archaic phonetic variant preserved in some places.

The CK/Sandawe parallel is likewise not a hundred percent convincing, as there is no regular correspondence "PCK **t-* - Sandawe *c-*". Yet there is nothing contradicting that correspondence, especially when it involves the sequence **ti-*, i.e. an environment in which the original dental is easily prone to palatalisation (which, by the way, does take place in some of the East Khoisan languages, such as Kua or Cua - irregularly, it should be noted). It is, in fact, an extremely important isogloss, and a very important argument in favour of the genetic relationship between Sandawe and the rest of Khoisan, as the morpheme **t-/*c-* for 1st person singular seems to be exclusive for that family, at least within African borders (much unlike **n, *m,* or **ŋ*, all of which have a fairly wide distribution across the world).

II.43. "KILL":

A) PNK ***!khú͡ŋ** (//Au., !O. *!uŋ*, Žu. *!khú͡ŋ*); #Hoan ***ǂhoŋ***; B) PT ***qâ[i]** (!Xóõ *qâi*, Mas. *//kxai* "to kill by a blow on the head"); C) PKw ****/V** (|Xam */a, /i*, //Ng */a, /i, /khi*, #Kho. */kxa*); D) PKK ***!am** (Nama *!gam*, !Ora *!am*); E) PNKK ***|kxú͡ŋ** (//Ani, Danisi */kxŭŋ*, Kxoe, Buga, Naro, |Gwi, //Gana, #Haba */kxúŋ*, |Ganda */kxúŋ*, |Xaise, Cara */ʔŭŋ*, Tsixa */ʔuŋ̀*, Kua, Tsua */ʔúŋ*, Hie. */goo*); F) Sandawe ***kwe***; G) Hadza ***//ó-***.

Notes. The only obvious match here is between PNK and #Hoan. It would be tempting to join both

of these forms with PNKK *ǀkxúⁿ, seeing as how the correspondence "PNK *ǃ - PCK *ǀ" was established earlier in II.36. However, the same cannot be said about the correspondence "PNK *-kh- - PCK *-kx-", for which no further evidence can be found. In fact, PCK *ǀkxúⁿ stands a better chance of finding a match in PKw *ǀV, in case the #Khomani form ǀkxa reflects a real -kx- efflux and the true PKw form is to be reconstructed as *ǀkxV. It is, however, hardly reasonable to draw such an important conclusion on the basis of one dubious form; besides, there is still the vocalism discrepancy to be explained.

II.44. "KNEE":
A) PNK *ǃγòà (//Au. ǃwa-ǀni, Žu. ǃγòà); PT *//γÚ (ǃXóõ //γúⁿ ǀnàn, Mas. //oⁿ-ǀnaŋ, ǀNu//en //guⁿ ǀni); PKK *//òa (Nama //goa-s, ǃOra //óá-b); PNKK *//óé (//Ani //óέ, Deti //oé, Cara, Danisi, Tsua //óé, Tsixa //úέ, Kua //uì); B) PKw *ǀno (ǀXam ǀno-aŋ, ǀnu-aŋ, //Ng ǀnoⁿ, Bat. ǀnu-ma); C) #Hoan //neme; D) PNKK *ǃúrù (Buga, ǀGanda kúrù, Naro, #Haba ǃúrù, ǀXaise (kú)kúrù, Cara (kú)kúrù, Hie. kukuru); Hadza guruŋguri-; E) Sandawe ke(ⁿ).

Notes. Root (A) is characterized by an alveolar/lateral initial click (see more examples of this correspondence in II.11) and, according to both NK and SK evidence, a voiced velar fricative efflux. For more evidence on CK zero efflux corresponding to SK *-γ- cf., for instance, PCK *//áúⁿ "to fence" - PT *//γáúⁿ "bush with hookthorns; to make a bush fence with hookthorns" - #Hoan //xauⁿ "fence" (there is no voiced -γ- in #Hoan). Curiously enough, both NK and SK demonstrate the same use of the root as first part of the composite *//γU-ǀnV; the second part may very well be the same as the main PKw root for "knee" (*ǀnɔ-), but the exact status of both roots and their relationship within Proto-Khoisan remains unclear.

Another interesting observation here would be to compare Hadza guruŋguri- with PNKK *ǃúrù, especially those forms that show a reduplicated stem, like Hie. kukuru, etc. The exact phonological processes taking place here are hard to establish, but the resemblance is exceptionally striking, to the point of allowing us to postulate at least a temptative match.

II.45. "KNOW":
A) PNK *ǃhaⁿ (//Au. ǃhaⁿ, Žu. ǃhaⁿ); PNKK *ǃʔáⁿ (//Ani, Deti, Tsixa, Danisi ʔǎⁿ, Kxoe, Buga, ǀGanda, ǀXaise, Cara, Kua, Tsua ʔaⁿ, Naro, ǀGwi ǃʔáⁿ, //Gana ʔǎⁿ, #Haba kʔáⁿ, Hie. an); B) PT *ǀgúma (ǃXóõ ǀgumaⁿ); C) PKw *#ʔεn (ǀXam #enn, ǀNusan #an); PKK *#ʔan (Nama #an, ǃOra #ʔán); PNKK *#ʔàn (ǀGwi, //Gana, #Haba #ʔán, ǀXaise, Deti, Danisi ʔjàn, Hie. njin "to think"); D) #Hoan cíʔa, E) Sandawe mana; F) Hadza çaha-.

Notes. PNK *ǃ can apparently correspond not only to PCK *// (see II.13), but also to PCK *ǃ; apart from this example, cf. also PNK *ǃgaiʰⁿ "chin" - PCK *ǃgàn[í] id.; PNK *ǃgaí "puff-adder" - PCK *ǃgai id.; PNK *ǃxaò "hippopotamus" - PCK *ǃxaò id. The correspondence PNK *-h- - PCK *-ʔ- is unsupported by additional data, but considering that there are no good matches in PCK for any other etyma with PNK *-h-, we may suggest a temptative match according to rule (d).

The other widespread root is *#ʔan, present in almost the exact same form in ǃWi and CK. In CK it functions as the main root for "know" in Khoekhoe; the main meaning in PNKK seems to have been "think". On the other hand, *ǃʔáⁿ, the main PNKK root for "know", corresponds to Nama ǃâ in ho-ǃâ "to feel, perceive, learn", and probably to ǃOra ǃʔaⁿ-b "head".

II.46. "LEAF":
A) PNK *dòrà (//Au. dora, Žu. dòàra); #Hoan ӡoba, B) PT *ǀgana (ǃXóõ ǀgāna, Mas. ǀgana); PNKK *ǀgàna (//Ani ǀgâⁿ, Kxoe, ǀGanda, Deti ǀgǎⁿ, Naro, Hie. ǀgana, //Gana ǀgána, ǀXaise ǀgàna, Cara, Tsixa, Danisi

|gà*ná*); Sandawe |*ā̀*; C) Hadza **háça-phi**.

Notes. Since #Hoan *ʒ* < **d*, we can easily compare its form with PNK, separating the elements **-ra* and **-ba* as different suffixes. Outside NK/#Hoan the more widespread root is **|gana*, found in the exact same form in PNKK and PT (in PKK **|gana* > **|aⁿ*, with the meaning shift "leaf" > "grass"; Nama |gà-b, !Ora |aⁿ-b). A temptative match may also be suggested with Sandawe |*ā* due to the same click influx; as for the voiced/voiceless character of the efflux, it fluctuates much too often between languages to form a serious objection.

II.47. "LIE":
A) PNK ***šu̯** (//Au., !O. *šu*, Žu. *šu̯*); B) PT ***tu̯** (!Xõõ *tu̯u*, Mas., |Nu//en *tu*); PKw ***tV** (|Xam *ta*, *teⁿ*, *tiⁿ*, //Ng *tia*, //Kxau *ta*); C) #Hoan **#qi?i**; D) PKK ***//oe** (Nama *//goe*, !Ora *//óé*); PNKK ***//oe** (//Ani, Kxoe, Buga, Naro, //Gana, #Haba, |Xaise, Cara, Tsixa, Danisi, Kua *//óé*, Deti *//òé*, Tsua *//úé*); E) Sandawe **//nine**; F) Hadza **//angala-hi**.

Notes. No matches, apart from the obvious one between PKK and PNKK. PNK **šu̯* and PT **tu̯* do look suspiciously similar, but the **š* - **t* correspondence is not supported by any other convincing data (on the other hand, there are at least several good examples of correspondences between PNK **š* and PT **s*).

II.48. "LIVER":
A) PNK ***čhiⁿ** (//Au. *či*, !O. *čiⁿ*, Žu. *čhiⁿ*); PKK ***kxaiⁿ** (Nama *âi-b*, *âi-s*, !Ora *kxaiⁿ-b*); PNKK ***kxaiⁿ** (//Ani, Buga *kxaiⁿ*, Kxoe *kxáiⁿ*, |Ganda *kxàiⁿ*, Naro, Danisi *kxáiⁿ*, |Gwi, //Gana, #Haba, Tsixa *k?aiⁿ*, |Xaise *k?iⁿ*, Deti, Cara *k?aiⁿ*, Cua *c?iⁿ*, Kua, Tsua *c?iⁿ*, Hie. *če*); B) PT ***//nam** (!Xõõ *//nàm*, |Nu//en *//nVm*); PKw ***//n(o)aⁿ** (|Xam *//noaⁿ*, //Ng *//nain*, (?) //Kxau *ŋaŋa*); C) #Hoan **kui**; D) Sandawe **thas(i)no**; E) (?) Hadza **//?neya-kho**.

Notes. The correspondence between PCK **kx-* and PNK **čh-* fully matches the one described in II.19 (curiously enough, the NK development here is fully parallel to the palatalization in certain East Central Khoisan languages). On the other hand, the resemblance between these forms and #Hoan *kui* is probably accidental, since, as seen in II.19, #Hoan should agree with PNK in this palatalisation process. It is theoretically possible that the palatalisation could be prevented in certain contexts, but until we have more data from both #Hoan and PNK/PCK, there is nothing else toillustrate such a suggestion.

The Hadza form (acc. to Derek Elderkin's data) is not compared with the SK forms, partially because of vocalism problems, partially because it is somewhat suspicious (it is not quite clear what is actually the main word for 'liver' in Hadza).

II.49. "LONG":
A) PNK ***#ga?V** (//Au. |gⁿ, !Kung (Doke) #ga?ŋ, Žu. #gà?iⁿ); B) PT ***!?a** (!Xõõ *!?ám* sg., *!?āⁿ* pl.); C) PKw ***/?a** (//Ng, //Kxau |?a); D) #Hoan **ča?a**; E) PKK ***ga[i]xu** (Nama *ga[i]xu*, !Ora *gaxù*); F) PNKK ***!ao** (//Ani, Buga, Naro, #Haba, Kua, Tsua *!aó*, |Gwi *!aù*, //Gana *!aú*, Deti, Tsixa, Danisi *kaó*, Cara *kaó*); G) Sandawe **maganʒa**; H) Hadza **thase-**.

Notes. All the branches and sub-branches seem to have a separate root for this word, frequently used also to denote "tall" and/or "deep".

II.50. "LOUSE":
A) PNK ***#nà** (Žu. #nà); B) PNK ***c?iⁿ** (Žu. c?iⁿ); #Hoan **c?i**; C) PT ***ϑnV̯** (!Xõõ *ϑnų̯ⁿ*, pl. *ϑnàⁿ-tê*); PKw ***ϑnU** (|Xam *ϑnuiŋ*, //Ng *ϑnoin-ja*); Sandawe **māŋ/?a**, Hadza **/?amaçi-**; D) PKK ***kxuri** (Nama

uri-, !Ora *kxùrĭ-b*); PNKK ***kxuni*** (//Ani *kxùní*, Buga, |Gwi *kxúní*, //Gana *kxúnì*, |Xaise, Deti, Cara, Kua, Tsua *kʔunì*, Tsixa *kʔunì*).

Notes. The SK-Sandawe-Hadza comparison is another interesting example (see [Ehret 1986]) of the possible secondary development of clicks - in this case, the labial click in SK is explained through the influence of the original labial nasal. The Hadza form is thus the archaic variant, with PSK *ӨnV < *ӨmV < *|mV < */ʔᵃmV*; the Sandawe form features a metathesis of the original structure. Of course, this is but a temptative match, but it perfectly agrees with the same model of development that was exposed in II.41.

The two PNK forms are very approximate, as Žu|'hoan is the only NK dialect for which the word "louse" is actually recorded, and there is no way of determining which form is the main one and which one is secondary. The form *#ná* bears a strong resemblance to PT *ӨnV̇*, right down to the pharyngealized vowel, however, no other fully convincing examples of the correspondence "PT * Ө - PNK *#" have been found (a much more probable correspondence is PNK *!, see II.53). The other form, *cʔiᵑ*, is obviously the same as #Hoan *cʔi*.

In Žu|'hoan there is also a form *kxúrí* "sp. of louse", obviously tied in with PCK *kxu-[ri/-ni]* and less obviously with PT *//gxóni* "species of louse". Regardless of whether the Žu|'hoan form is a borrowing from CK or related to it genetically, it seems to have a more restricted meaning and so cannot be taken into account.

II.51. "MAN":
A) PNK ***!hoáᵑ*** (//Au. *!waᵑ*, Žu. *!hóaᵑ*, !O. *!uᵑ*); B) PT ***Tâ*** (!Xõõ *tâa*, Mas., |Nu//en *da*); C) #Hoan ***ari***; D) PKK ***kxao*** (Nama *ao-b*, !Ora *kxao*); PNKK ***kxâo*** (//Ani, Kxoe, Buga, Naro, |Gwi, #Haba *kxáo*, //Gana *kxáo*, |Xaise, Cara, Tsixa, Kua, Tsua *kʔáo*, Deti *kʔáo*); E) Sandawe ***maxe***; F) Hadza ***λeme***.

Notes. The PKw root for "man" is impossible to determine (most languages have their own individual way of expression, see [Bleek 1929]). Likewise, PT does not have a special root and uses the word for "person" instead; NK, #Hoan, and CK distinguish "man" from "person", but none of the forms appear to be related.

II.52. "MANY":
A) PNK ***#khaí*** (//Au., !O. *#khi*, Žu. *#khaí*); B) PT ***//a-*** (!Xõõ *//áli*, Mas. *//ari*, |Nu//en *//ante*, *//arri*); C) #Hoan ***ʒua***, D) PKK ***#ui*** (Nama *#gui*); E) Sandawe ***dᴇ***; F) Hadza ***ndago***.

Notes. Neither PKw nor PNKK yield a good candidate for the root; apparently, it was hardly stable at the Proto-Khoisan level either. #Hoan *ʒua* has, however, an interesting parallel in !Xõõ *ʒàa* "multitude, crowd".

II.53. "MEAT":
A) PNK ***!kha*** (//Au. *!a*, *!kha*, *//a*, Žu. *!khá*, !O. *//kha*, *//a*); PT ***Өà*** (!Xõõ *Өàje*, Mas. *Өwe*, |Nu//en *Өwe*); PKw ***Өa*** (|Xam, //Ng *Өwai*, #Kho. *Өoi*, Bat. *Өwa*, |Auni *Өwe*); B) #Hoan ***//ae***, C) PKK ***kxo*** (!Ora *kxo-b*); PNKK ***kxó*** (//Ani, Danisi *kxŏ*, Kxoe, Buga, |Ganda, Naro, #Haba *kxó*, |Gwi, //Gana *kxô*, |Xaise, Deti, *kʔŏ*, Cara *kʔo*, Tsixa, Kua, Tsua *kʔo*, Hie. *koho*); D) Sandawe ***|nin***; E) Hadza ***mana-ko***.

Notes. Out of all the possible alternatives, the NK retroflex click looks like the most promising correspondence for SK labial clicks. Cf., apart from this example, the following: PNK *!ó* "elder brother" - PT *Өxa* id.; PNK *!há* "son, child" - PT *Өqâ* "child"; also, with either PNK alveolar or PNK retroflex, PNK *!gom* (*!-*) "edible caterpillar" - PT *Өgoᵑ* id.; PNK *!goaᵑ* (*!-*) "Kalahari raisin bush" - PT *ӨGhuᵑ* id. More problematic is the aspiration in PNK, which makes the match less reliable; most of the time PNK

-kh- corresponds to PT *-h-* or *-qh-*. It is, however, possible that the SK root was contaminated with the ancestor of !Xóõ *Өaᵑ* "herd of eland, flesh, meat", and thus lost the original aspiration.

II.54. "MOON":

A) PNK ***!nuí** (//Au. *!nwi*, Žu. *!nuí*, !O. *//nwi*); PNKK ***//noé** (//Ani //ᵖ*noέ*, Kxoe, Buga, Tsixa //ᵖ*oέ*, |Ganda, Naro, Deti, Cara, Danisi, Kua //ᵖ*oé*, |Gwi, //Gana //ᵖ*oe*, #Haba //ᵖ*noé*, |Xaise //ᵖ*noé*, Tsua //ᵖ*ue*); B) PT ***!qhàn** (!Xóõ *!qhàn*, Mas. *!xVn*, |Nu//en *!xan*); C) PKw (?) ***#ʔoro** (|Xam *!a!auru*, //Ng *!orre*, #Kho. *#ʔɔrɔ*, //Kxau *#ʔoro*, //Ku//e *tʔɔlo*, Bat. *ƛolo*); D) PKK ***//xaᵑ** (Nama *//khā-b*, !Ora *//xaᵑ-s*); E) Sandawe *!a-biso*, F) Hadza *setha*~.

Notes. The best match here is between PNK and PCK; see II.13 ("claw") for more examples of the **!* - **//* correspondence. Whether PT **!qhàn* and PKK **//xaᵑ* have anything to do with each other still remains to be established. The PKw root is exceptionally interesting in that some of the languages, most notably Batwa (//Xegwi) have a lateral consonant instead of the click in the anlaut position; again, it is not yet clear whether this lateral should be reconstructed for PKw or PSK, and if so, what are its origins and correspondences in other branches.

II.55. "MOUNTAIN".

In most major subgroups of Khoisan the word for "mountain" is the same as the word for "stone", with the following exceptions: #Hoan has *!hu* (probably related to !Xóõ *!uʰm* "hill, niche for trees"); Sandawe has *gawa*, and Hadza possibly has *//ʔuƛe*. None of these three words are related, and matches for the other languages will be discussed under "stone" (II.81).

II.56. "MOUTH":

A) PNK ***cʔí** (//Au., !O. *ci*, Žu. *cʔi*); B) PT ***#û** (!Xóõ *#û-e*, Mas. *!w-e*, |Nu//en *#u-eᵑ*); C) PKw ***tu** (|Xam, //Ng, #Kho., //Ku//e, Bat., |Auni *tu*, |Nusan *du*); D) #Hoan *šʔ*; E) PKK ***kxam** (Nama *am-s*, !Ora *kxam* "gate"); PNKK ***kxám** (all West CK languages have *kxám*; |Xaise, Cara, Tsixa, Cua *kʔám*, Deti, Kua *kʔám*, Tsua *kʔam*, Hie. *#am*); F) Sandawe *!num*, G) Hadza *ʔawanika*~.

Notes. Unless there are some deeply hidden, complex correspondences in this root, none of the forms seem to match. PNK **cʔ-* never seems to reflect a palatalised **kx-*, and even if it did, there would still be the vocalism and final *-m* to explain. Likewise, the resemblance of PNK and #Hoan is deceptive, since NK hissing consonants always correspond to #Hoan hissing ones (unless the transcription of the #Hoan word is actually incorrect).

II.57. "NAME":

A) PNK ***!u** (//Au., !O. *!u*, Žu. *!ú*); PT ***|à(u)ᵑ** (!Xóõ *|àuᵑ*, Mas. *|kxauᵑ*, |Nu//en *|aᵑ*); PKw ***|e(ᵑ)** (|Xam *|eᵑ*, *|e*, //Ng *|eᵑ*, |Auni *|e*, *|en*); #Hoan *|o*, PKK ***|kxon** (Nama *|on-s*, !Ora *|kxònná*); PNKK ***|kxon** (//Ani, //Gana *|kxón*, Kxoe *|kxón*, Buga, |Ganda, Naro *|kxuiᵑ*, |Gwi *|kxoàn*, #Haba, Danisi *|kxún*, |Xaise, Cara *|ʔón*, Deti *|ʔún*, Tsixa *|ʔòn*, Kua, Tsua *|ʔún*, Hie. *|un*, *//un*); B) Sandawe *//wa*, C) Hadza *ʔakana*~.

Notes. The word for "name", oddly enough, is often among the most stable elements of the 100-wordlist, and Khoisan is no exception. PNK and #Hoan, as usual, are closer to each other phonetically. PT **|à(u)ᵑ* perfectly matches them according to the correspondence exposed in II.36. As for the CK forms, there indeed is evidence for CK **-kx-* sometimes corresponding to a zero efflux in NK/SK, cf., for instance, PKK **|kxau* "dew, spring" - PNK **!oʰm*, PT **|uʰ* "dew"; PKK **#kxoni* "worm" - PNK **#nuʔúᵑ* id. (secondary nasal efflux due to assimilation with the nasal vowel). PCK also shows some irregular

fluctuations of the vocalism, including an unexplainable diphthongisation into either *-ui-* or *-oa-*; taking into account the PKw vocalism *-e-*, one might suggest that the original PK form contained some kind of diphthong, possibly **-eu-*, which later gave rise to all the untrivial vocalic developments.

Neither Sandawe nor Hadza, however, cannot be successfully linked to the PK root without making a handful of unverifiable assumptions.

II.58. "NECK":
A) PNK **!aɨᵖ* (//Au. *!eiᵖ*, Žu. *!aɨ̀ᵖ*, !O. *//aᵖ*); B) PT **#kxauᵖ* (!Xóõ *#kxau̯ᵖ*, |Nu// en *#uᵖ*); PKw **#ʔau* (|Xam *!au*, *!khou*, //Ng *!u*, //Kxau *#ʔu*, |Auni *#oɨᵖ*); C) #Hoan *ca*; D) PKK **!kxao* (Nama *!ao-b*, *!ao-s*, !Ora *!ʔaó-b*); PNKK **!kxáó* (//Ani, Naro, #Haba *!kxáó*, //Gana *kxáó*, |Xaise *kʔàó*, Deti, Kua *kʔáó*, Cara *kʔáó*, Cua *kʔáó*); E) Sandawe *kweŋ*; F) Hadza *|uti-ja*.

Notes. PT **#kxauᵖ* and PCK **!kxao* look extremely similar, but the correspondence "PT **#* - PCK **!*" is not found anywhere else; for the moment we should consider this as a mere chance resemblance.

II.59. "NEW":
A) PNK **ze* (//Au. *ze*, Žu. *zé*, !O. *ʒe*); #Hoan *za*; Hadza *ʒana*; B) PT **//qu̯V* (!Xóõ *//qu̯V*, Mas. *//xwe*); PKw **//ue* (|Xam *//we*); C) PKK **kaba* (Nama *kawa*); PNKK **qába* (Naro *kạba*, |Gwi, //Gana *qába*); D) Sandawe *//ae*.

Notes. A good match here between PNK and #Hoan, and we can furthermore add Hadza *ʒana* because of the phonetic resemblance. Sandawe and SK both have a lateral click efflux, but the resemblance ends there - and we would be expecting a bisyllabic root in Sandawe anyway, so as to account for the **//q-* anlaut in PSK.

II.60. "NIGHT":
A) PNK **|gu* (//Au., !O. *|gu*, Žu. *|gú*); B) PT **|nu̯* (!Xóõ *|nu̯e*, Mas. *|noe*, |Nu//en *|noe*); C) PKw **//ga* (|Xam, //Ng, Bat., |Nusan *//ga*, #Kho. *//ʔa*, *//ga*, //Kxau *//a*, |Auni *//gau*, *//go*); D) #Hoan *chao*; E) PKK **thu* (Nama *tsu-xu-b*); PNKK **thŭ* (//Ani, Kxoe, Buga, |Ganda, Cara, Tsixa, Danisi *thŭ*); Sandawe *twē*; F) Hadza *ç̌ifi-*.

Notes. Most of the roots are unrelated. PNK **|gu* and PT **|nu̯* are quite similar, but there is nothing to explain the nasality in PT (or its loss in PNK?); as we have seen many times earlier, every time a nasal influx "irregularly" appears where it should not be expected, it can be explained by the influence of an ensuing nasal element, not present in this root. On the other hand, PCK **thu* and Sandawe *twē* are quite similar and most probably belong together.

II.61. "NOSE":
A) PNK **cʔu̯ᵖ* (//Au. *ču̯ᵖ*, Žu. *cʔu̯ᵖ*, !O. *cuŋ*); B) PT **|nu̯ʰ* (!Xóõ *|nu̯hná*, Mas. *|nu*, *|nu-ča*, |Nu//en *|nuša*); PKw **|nu* (|Xam *|nu(n)tu*, //Ng, #Kho., //Ku//e *|nutu*, Bat. *|nu*, |Auni *|nu*, *|noᵖ*, |Nusan *|nudu*); Sandawe *|nathi*; Hadza *ʔinthawe-*; C) #Hoan *!qʔoᵖ*; D) PKK **#ui* (Nama *#gui-s*, !Ora *#uí-b*); PNKK **#ui* (//Ani, Buga, |Ganda, |Gwi, Tsixa *#uî*, Naro, #Haba *#uí*, //Gana *#guî*, |Xaise, Danisi, Cua, Kua, Tsua *cuî*, Deti, Cara *cuî*, Hie. *čui*).

Notes. SK forms are grouped together with Hadza and Sandawe based on the presence of the combination "click+nasal" or "stop+nasal" in all three branches, quite typical for the word "nose" in macrofamilies all over the world. This last factor is the chief reason why it is reasonable to make an exception from the stricter rules described in the introduction; there are no other cases of Sandawe *|n-*

directly corresponding to Hadza -nt(h)- (cf., however, a somewhat similar case in II.80), or to PT *|n-, yet there is nothing to disprove such a correspondence either, and the meaning "nose" is hardly coincidental for these structures. It is not excluded that PNK and #Hoan actually belong here as well (the former through secondary affricativisation of the click), but this is a very feeble hypothesis so far unsupported by further evidence.

II.62. "NOT":

A) PNK *|oV́ (//Au. |wa, Žu. |oá̀, !O. |wa, |wi, |we); #Hoan |hoʔon; B) PT *//qhuV̂ (!Xõõ //qhúa, Mas.//kʔa, |Nu//en //u); PKw *//V (|Xam kxau (?), //Ng //u, //e, //au, #Kho. //e, //ai, //o, //u; C) PKK *tama (Nama, !Ora tama); PNKK *ta (Naro -tá, -tàmá, //Gana tàmà, |Xaise, Deti, Cara, Danisi, Kua, Tsua -tà, Tsixa -taⁿ); D) Sandawe -ce; E) Hadza a-kwV (Bleek).

Notes. Each major subbranch of Khoisan seems to have its own primary negative morpheme, except for PNK and #Hoan, which form an obvious match. (#Hoan -h- is a little problematic, but words of this category - frequently used particles, etc. - may allow for slight irregularities; also the exact #Hoan form probably needs verifying). Their vocalism often varies due to assimilation with juxtaposed words.

II.63. "ONE":

A) PNK *|neʔe (//Au. |ne, Žu. |nèʔe, !O. |ne, |nee); #Hoan Onuⁿ; B) PT *#ʔû (!Xõõ #ʔu-, Mas. !uʔe, |Nu//en !oe); PKw *//ue~*!ue (|Xam !wai, //Ng //we, #Kho. //oe, Bat. //a, |Auni #uⁿ); C) PKK *|ui (Nama |gui, !Ora |ui); PNKK *|uí (all languages have |uí); D) Sandawe cexe; E) Hadza ʔičame-.

Notes. #Hoan and PNK match according to the correspondence laid out in II.35 ("eye"); #Hoan vocalism is secondary here due to assimilation with the labial click. The SK forms are rather strange, displaying an untrivial variation of clicks rarely met elsewhere - such as the lateral click in //Ng, Batwa, and #Khomani vs. the alveolar click in |Xam and the palatal click in !Xõõ and |Auni. This is not the same variation as when we deal with a simple palatal click, "yielding" supposedly alveolar reflexes (or, rather, supposedly transcribed as alveolar) in |Xam (see, for instance, II.24), because here the #Khomani form, where the palatal click is regularly marked, contains a lateral click. Whether this points to a "fifth" click in PKw, like in PNK, is yet to be determined; for now the one thing that is certain is that the PKw root does seem to match the PT one.

II.64. "PERSON":

A) PNK *žù (//Au. žu, Žu. žù, !O. ǯu, žu); PT *tâ (!Xõõ tâa, pl. tûu, Mas., |Nu//en da); B) PKw *!ui (|Xam, //Ng !wi, //Kxau !wi "man", Bat. kwi (?), |Nusan !gu, !gui); C) #Hoan *#ʔam-koe; D) PKK *khoe (Nama, !Ora khoe-); PNKK *khoé (//Ani, Buga, |Ganda, |Gwi, |Xaise, Deti, Cara khoé, Naro, //Gana, #Haba, Tsixa, Danisi khoé, Kua khoé, Tsua choé, Hie. čwa, čowe); E) Sandawe |nome-; F) Hadza ʔunu-.

Notes. Normally PNK *ž can be shown to correspond to PT *ʒ (cf. PNK *žam "thin" - PT *ʒạba id., PNK *žabì "to turn round" - PT *ʒạbi id., etc.). However, there is some evidence showing that the correspondence "PNK *ž - PT *t" is also valid. Cf., besides "person" (where the discrepancy in vocalism is explained through an old, somewhat obscure ablaut, cf. !Xõõ plural tûu), PNK *žo "black" - PT *toʰʸ "dark"; PNK *žom "paw, fist" - PT *taʰ "footpad"; PNK *žạʔa "blood" (rare form, as opposed to the commonly widespread */ʔŋ) - PT *ta-rV "clotted blood". In this context it is interesting to note that the reconstruction *tâ, with initial *t-, is made dubious because of the presence of a dialectal form la, found in Masarwa [Bleek 1956]. This, of course, reverts us to the question of possible SK laterals, first raised in II.54.

Lack of data from SK dialects, unfortunately, does not allow us to make any definite conclusions - but it is quite probable that PNK *ž actually stems from two earlier phonemes, namely, *ǯ (yielding PT *ʒ) and either lateral *ʎ̌ or *ʎ (yielding PT *t).

In #Hoan the second element of the composite used to denote "person" is obviously related to PCK *khoe, but it is the first element that should be used for comparison, and the root *#ʔam- so far does not have any plausible etymology.

II.65. "RAIN":

A) PNK **!gà** (//Au. !ga, !Kung //ga, !!ga (Lloyd), Žu. !gà, !O. //ga); PKw **!kh(o)a** (|Xam !khwa, //Ng !kha, //Kxau !ʔa); B) PT **!kxôe** (!Xóõ !kxoe, Mas. !we, |Nu//en !xwe); C) #Hoan čoʔaᵑ; D) PKK **tu** (Nama tu-s, !Ora tú-s); PNKK **tu** (all languages have tú exc. for Buga, Deti tǔ); Hadza ʔathi-; E) Sandawe ʎwaᵖ.

Notes. The words for "rain" and "water" in Khoisan seem to be often related; the most obvious situation is in Hadza, where there exists only one word for both notions. In PT there seem to be two different roots (*!kxôe for "rain" and *!qhá for "water", see below); however, PKw, at least, according to the poorly transcribed data in our possession, does not differentiate between the two either. In this respect it is interesting to compare the NK roots *!ga "rain" and *!gú "water", the only difference between which lies in the vocalism - which, furthermore, can be explained by the same kind of ancient ablaut that we see in "person" (II.64). If this is so, the -a-form of the root would have the primary meaning "rain", and then PNK and PKw are perfectly comparable; for more details on the problem, see II.96 ("water").

The Hadza form has been compared with PCK before, and although the vocalism correspondences are unclear, this does not prevent us from postulating a temptative match according to rule (a) (total or near total identity of consonant structure).

II.66. "RED":

A) PNK **!gàᵑ** (//Au. !gaᵑ, Žu. !gàaᵑ, !O. !gai, !gaᵑ); PT **|āʰ-na** (!Xóõ |āhna, Mas. |anja); #Hoan !aʔa, PKK **|kxaba** (Nama |awa, !Ora |kxábá); C) PNKK **|(n)oá** (//Ani ᵖnoá, Buga, Deti ᵖóá, Naro, #Haba ᵖnóá, |Gwi ᵖoá, //Gana ᵖnóá, |Xaise, Cara, Danisi |oá); D) Sandawe buʎ̣i; E) Hadza tekise (Bleek), tese (Elderkin).

Notes. PNK matches with #Hoan and PT according to several correspondences already established above (for PNK *-g- vs. #Hoan zero efflux, cf. II.4; for PNK and #Hoan *! vs. PT *|, cf. II.36). Whether the root can further be compared with PNKK *|(n)oá is unclear, because there is still the nasality to be accounted for in PNKK, even if it appears and disappears somewhat sporadically. The PKw root for "red" cannot be established, as there are numerous forms in [Bleek 1929] and [Bleek 1956], with almost none of the languages agreeing with each other.

II.67. "ROAD/PATH":

A) PNK **#khà** (//Au., !O. (?) |a, Žu. #khà); B) PT **dao** (!Xóõ dao, Mas. dau); #Hoan ʒeo, PKK **dao** (Nama dao-b, !Ora dáò-b); PNKK **dáo** (//Ani, Buga, Naro, //Gana, Tsixa, Danisi dao, Kxoe, |Xaise, Deti, Cara, Kua, Tsua dáó, |Ganda daù, |Gwi, #Haba díó, Hie. dhau); C) Sandawe //õ; D) Hadza jeke.

Notes. The most widespread root for "road" in Khoisan is *dao (no relation to modern Chinese!), present in all the branches except for PNK (and PKw, where again no proper reconstruction can be suggested). Unfortunately, there is no way so far to make sure it is not really a cultural borrowing from PKK into all the other families; however, for the time being we will make the assumption of genetic relationship

between all these forms.

II.68. "ROOT":

A) PNK *//àri (Žu. //àri, //Au. //ari "root fibre", !O. //ale, //are id.); B) PT *!kxá (!Xõõ !kxái); C) #Hoan !qʔai; D) PKK *!noma (Nama !noma-b, !Ora !nòmắᵖ-b); E) Sandawe !nìᵖ; F) Hadza wili (Elderkin).

Notes. A very poor, unstable item; language data shows that the word for "root" very frequently assumes a more localized meaning, e.g. "root of a particular plant" or "root fibre", and vice versa. For PKw and PNKK it is more or less impossible to suggest a protolanguage form, due to lack of data in general and/or lack of comparable forms. !Xõó and #Hoan forms are similar, but the correspondence "PT *-kx- - #Hoan -qʔ-) does not exist, and the resemblance appears to be a chance one.

II.69. "ROUND".

No major Khoisan branch has anything even remotely approaching a protolanguage root for "round"; the closest would be PKK *!ʔuBV (Nama !ubu, !Ora !um), which does not have any external parallels anyway. We will have to exclude this root from our calculations.

II.70. "SAND".

In most Khoisan languages the word for "sand" is the same as the word for "earth", with no differentiation at all; thus, matchings for most branches are the exact same ones as for "earth" (II.22). Elderkin records çawa "sand" for Hadza, as opposed to jamu- "sand", but this is not much help.

II.71. "SAY":

A) PNK *kU (!Kung kue (Lloyd), Žu. kò); PKw *kV (|Xam ka, #Kho. ka, ku, kwa, //Kxau ku, |Auni ko); B) PT *tám (!Xõó tám); C) PKK *mìᵖ (Nama mî, !Ora míⁱᵖ); PNKK *míⁱ) (//Ani, Kxoe, Naro míⁱᵖ, #Haba, Cara mí, Hie. me); D) Sandawe bo; E) Hadza he-.

Notes. Curiously enough, none of the recorded forms have any clicks, probably reflecting the frequency of their use and the semi-particle status of many of them. Despite this, only PNK and PKw forms actually agree in having *kV as the basic structure; PT prefers *tV (cf. also !Xõó tána "to talk, speak"); and CK languages have the extremely rare *mV structure.

II.72. "SEE":

A) PNK *sɳ̃ (//Au. se, !Kung sn (Doke), Žu. se, !O. siŋ, sŋ); #Hoan ci; B) PT *|na (!Xõó |naᵖ, Mas. |na, |Nu//en |ne); PKw *|na ~ *|ne (|Xam |na, |naᵖ, |ne, |ni, //Ng |na, |ne, |ni, #Kho. |na, |ne, |niᵖ, //Kxau, |Auni |na, //Ku//e |ne, Bat. |na, |ne); C) PKK *muᵖ (Nama mû, !Ora müᵖ); PNKK *mûᵖ (//Ani, Kxoe, Buga, |Xaise, Deti, Cara, Tsixa, Danisi, Kua, Tsua müᵖ, Naro, #Haba mò, |Gwi, //Gana m̂, Hie. moo); D) Sandawe |a; E) Hadza kli-.

Notes. PNK *-ɳ̃ is used here to denote the "i-tinged" syllabic nasal (which in some dialects alternates with -e- and -i-), as opposed to the "a-tinged" syllabic nasal found, for example, in *|ʔŋ "blood". The PNK form itself is obviously related to #Hoan ci, according to the same vocalic correspondence as found in "blood" (II.9); for the *s - c correspondence, cf. also PNK *si "they" - #Hoan ci id., etc. No other matches are found, although it is interesting to note that PSK has *|n while PCK has *m - - just like in "head" (II.38) and "give" (II.33); Sandawe |a can also be viewed only as a very hypothetical match with PSK, since the effluxes do not match.

II.73. "SEED":

A) PNK ***//àʔá** (Žu. //àʔá); B) PT ***saʔⁿ** (!Xóõ sâʔaⁿ); C) #Hoan **ǀuru**, D) PNKK ***ǀxurí** (//Ani, |Gwi, //Gana, #Haba, Deti, Cara, Danisi, Kua, Tsua ǀxurí, (?) Buga ǀxuí, Naro ǀxurí, Hie. ǀkhurì); E) Sandawe **bojo**, F) Hadza **ǀotu** (Bleek).

Notes. Also a very weak root, only relatively stable in PNKK; for PKw and PKK it is unreconstructible, and even in PNK and PT not all dialects agree. Despite the huge variety of forms, none present any firm matches.

II.74. "SIT":

A) PNK ***ǀŋŋ** (//Au. ǀni, Žu. ǀńŋ, !O. ǀŋ); #Hoan **ʔǀna**, PKK ***#nuⁿ** (Nama #nû, !Ora #ⁿu); PNKK ***#nuⁿ** (//Ani, Kxoe, #Haba #ⁿnuⁿ, Buga, |Ganda, //Gana #ⁿnu, Naro #ⁿnu(ⁿ), |Xaise, Kua nuⁿ, Deti nǔⁿ, Cara, Tsixa, Danisi nu, Tsua núⁿ, Hie. njo); B) PT ***chu** (!Xóõ chû, Mas. ču, |Nu//en šu, ču); PKw ***so(ⁿ)** (|Xam, //Ng so, soeŋ, #Kho. sou, Bat. šo, |Auni saⁿ, saoⁿ); C) Sandawe **hakic(i)**, D) Hadza **hama**.

Notes. PNK does not distinguish between the preglottalized nasal efflux and the simple nasal efflux, which makes the match with #Hoan quite justified (cf. also PNK *ǀnòm "springhare" - #Hoan ʔǀnạm id., etc.). Moreover, there is a good match with PCK - the correspondence "PNK, #Hoan *ǀ- PSK, PCK *#" had previously been established in II.21 ("ear"), and the effluxes correspond to each other directly. The same root is thus lacking only in both SK branches which instead display a root with an initial hissing fricative/affricate (Masarwa and |Nu//en forms with hushing sounds are non-diagnostic since we also meet many cases where hissing and hushing reflexes appear to be in free variation), and in Hadza/Sandawe.

II.75. "SKIN":

A) PNK ***ǀno** (//Au., !O. ǀno, Žu. ǀnó); B) PT ***t(ʔ)um** (!Xóõ tùm, Mas. tʔym, |Nu//en tʔum); PKw ***tuⁿ** (|Xam tuⁿ, //Ng tuⁿ, twaⁿ, #Kho. gjo); #Hoan **čʔu**, C) PKK ***kho** (Nama kho-b, !Ora khõ-b); PNKK ***khǒ** (//Ani, Buga, Tsixa, Danisi, Kua, Tsua khǒ, Kxoe kxo, |Ganda, Naro, |Xaise, Deti, Cara kho, |Gwi, //Gana, #Haba khô, Cua chǒ, Hie. čo); D) Sandawe **kelemba**, E) Hadza **ʔaha-**.

Notes. #Hoan čʔu is counted as a match with PT and PKw for the following reasons: 1) all the forms bear strong phonetic resemblance; 2) no other correspondences for #Hoan čʔ- have been found so far; 3) there exists evidence showing that the initial phoneme in PSK wasn't merely a simple *t-; Masarwa and |Nu//en data are recorded with a glottalised phoneme, and #Khomani shows a rare reflexation gj-, only found in a few other cases (gjisi "what" < *Tisi, see "what") - so the glottalisation in #Hoan actually agrees with the SK data.

II.76. "SLEEP":

A) PNK ***cʔa** (//Au., !O. ca, cʔa, Žu. cʔá); #Hoan **ca**, B) PT ***Θa[i]n** (!Xóõ Θân, Mas., |Nu//en Θwoin); PKw ***ΘVn** (|Xam Θoeŋ, //Ng Θoeŋ, Θwoiŋ, #Kho. Θʔoⁿ, //Kxau Θan, Bat. Θweni, |Auni Θwaʔiⁿ, |Nusan Θuin); C) PKK ***//ʔom** (Nama //om, !Ora //ʔùm̀); PNKK ***//ʔóm** (Naro, //Gana, #Haba //ʔóm̀, |Gwi //ʔóam̀, Danisi //ʔùḿ, Hie. //gom); Sandawe **//ʔo**, D) Hadza **//upi-**.

Notes. PNK and #Hoan match exactly, apart from the unclear glottalisation in PNK; however, observe the same correspondence in "tooth" (II.89). Another exact match is found between PCK and Sandawe, a rare case of both click efflux and influx being the same. Hadza //upi-, however, cannot be placed here for the time being, as the influxes do not match, and the bisyllabic character of the root requires additional explanation.

II.77. "SMALL":

A) PNK *c'ema̍ (//Au., !O. *cema*, Žu. *c'emà*); Sandawe **c̣ō̍**; B) PT *\|ʔûi (!Xóõ *\|ʔûi*); #Hoan **\|kxui̍**; C) PKK *\|a (Nama *\|ga*, !Ora *\|à*); D) PNKK *\|kxare̍ (Naro, \|Gwi, #Haba *\|kxare̍*, Deti, Kua, Tsua *\|ʔare̍*, Cara, Danisi *\|ʔare̍*, Hie. *kare* "a little"); E) Hadza **ḳumi–**.

Notes. Sandawe and PNK forms feature the same consonant structure (PNK *-ma̍ is originally a diminutive suffix; the simple form *c'e* is also found in a couple of dialects) and thus form a possible match. As for the other roots, some of them find parallels in other branches: PT *\|ʔûi and #Hoan *\|kxui* (for the efflux correspondence cf. II.8) can be compared with PNK *\|uʔí "to be thin", while PKK *\|a finds a parallel in PT *\|qa̱- "diminutive formative for pronouns". However, only PT and #Hoan present an exact wordlist match. The PKw form for the root cannot be suggested.

II.78. "SMOKE":

A) PNK *šorV̂ (//Au. *šore*, *šori*, Žu. *šóra̍*, !O. *čule*, *čuli* "tobacco"); B) PT *ckxajV (!Xóõ *ckxa̍je*); PKK *\|kxan (Nama *\|annis*, !Ora *\|kxȧn*); PNKK *c'an[i] (//Ani, Kxoe, Buga, \|Ganda *c'ani̍*, Naro, //Gana, #Haba, Tsixa, Danisi, Kua, Tsua *c'íni̍*, \|Gwi *c'ɛnɛ̍*, \|Xaise, Deti, Cara *c'ani̍*, Hie. *cene*); Sandawe **c̣uḳa̍**, Hadza **c̣iḳo-wa̍**; C) #Hoan **ʒue̍**.

Notes. Root (b) is one of the most interesting cases in the wordlist; this comparison, already present in [Ehret 1986] and several other sources, is an exceptionally strong argument in favor of "macro-Khoisan" relationship. The basic root structure *c̣VḳV, preserved in Hadza and Sandawe, develops into *c̣ḳV through regular reduction of the first syllable; this structure is clearly seen in PT *ckxa̍-jV and PCK *c'a-ni - the latter form could also serve as an indirect argument in favour of interpreting the correspondence "PKK *\|kx - PNKK *c'" as the cluster *ckx rather than the glottalised affricate *c' in Vossen's reconstruction. There are, of course, no other firm examples of the same correspondence, but the supposed developments look perfectly logical and do not contradict any other established or hypothetical correspondences.

In PNK the original root was replaced by *šórV̍, with unclear connections. #Hoan *ʒue̍* (where *ʒ* < *d) is obviously connected with Žu. *dǫe* "to smoke out (bees), to inhale smoke".

II.79. "STAND":

A) PNK *!nuᵖ (//Au. *!nu*, Žu. *!nuᵖ*, !O. *!nw-a*); PT *//hûᵖ (!Xóõ *//hûᵖ*, Mas. *//uᵖ*, *//oᵖ*, *//huᵖ*, \|Nu//en *//hu*, #hu); B) #Hoan **ḥui̍**; C) PKK *maᵖ (Nama *ma̱*, !Ora *ma̱ᵖ*); D) PNKK *te̍ (//Ani, Kxoe, Buga, \|Ganda *tɛ̍*, Naro *te̍ᵖ*, \|Gwi, Danisi, Kua *te̍*, //Gana *te̍*, Deti *te̍*, Cara, Tsua *te̍*, Tsixa *tɛ̍*, Hie. *the*); E) Sandawe **//nume̍**; F) Hadza **ʔiḳa–**.

Notes. For the click influx correspondence between PNK and PT, see II.11; the irregularity between the effluxes is again explained by the influence of the nasal vowel in PNK, leading to the secondary nasalisation of the efflux. It is tempting to compare the forms with Sandawe *//nume*, but there are too many problems with this comparison - the nature of the second syllable in Sandawe, the question of whether the lateral or the alveolar manner of articulation is primary, and the question of the click influx (is assimilation with the following nasal element also characteristic of Sandawe? This question is practically impossible to answer for now).

II.80. "STAR":

A) PNK *#uᵏⁿ (//Au. *#goeᵖ*, Žu. *#uʰᵖ*, !O. *#uᵖ*); PT *//ōna (!Xóõ *//ōna*, Mas. *//gwana-te* pl., \|Nu//en *//ana-te* pl.); PKw *//oV (//Ng *//kxwe-sa*, #Kho. *//ʔwai-kje*, //Ku//e *//an-te* pl.); #Hoan **#oᵖ**; B) PKK *\|(n)amVro (Nama *\|namiro-s*, !Ora *\|ȧmȯrȯ-b*); C) PNKK *\|xani̍ (//Ani, \|Xaise *\|xani̍*, Buga, \|Ganda, Deti,

Tsixa, Danisi, Kua |xáni̜, Cara |xíni̜, Tsua |xaíni̜, Hie. #khaine); D) Sandawe |nowaᵑ; Hadza ncha.

Notes. NK, #Hoan, and SK forms all match according to the correspondence established in II.15; the efflux is zero in every case, and the nasalisation in PNK and #Hoan may reflect an earlier nasal consonant, still preserved in many SK languages. To these forms one should add Naro #o̜nu; although the root has a very scant distribution in CK, it can hardly be qualified as a borrowing from NK because of phonetic dissimilarities.

Sandawe |nowaᵑ and Hadza ncha are joined together due to the similarity between this case and II.61 ("nose"); in both cases, Sandawe |n corresponds to a Hadza initial cluster "n + dental/affricate". Whether these forms have anything to do with PKK *|(n)amVro remains to be seen.

II.81. "STONE":
A) PNK *!nŬm (//Au., !O. !num, Žu. !nòm); PT *!nū (!Xóõ |nūle, pl. |nūn, |Nu//en |nyle "stone", |nun "mountain"); B) PKw *!au (|Xam !au, !au-ken, //Ng !au, //Kxau !ao, |Nusan !gou); C) #Hoan //ho̜a, D) PKK *|?ui (Nama |ui-, !Ora |?ui); PNKK *//noa (//Ani //ᵖnóa, Kxoe, Buga, |Ganda, //Gana, Tsixa, Danisi //ᵖóá, Naro, #Haba //ᵖno̜á, |Gwi //ᵖoá, Kua //ᵖóá, Hie. //gwa); E) Sandawe dim, F) Hadza ha!?a–.

Notes. PNK and PT match according to the correspondence established in II.36 (provided that PNK *-m is originally a detachable suffix). Apart from that, there are no matches, even if #Hoan //ho̜a is comparable with PNKK *//noá; the nasal efflux in NKK, however, asks for additional explanation.

II.82. "SUN":
A) PNK *|am (//Au., !O. |Vm, Žu. |ám); PNKK *|ám (all languages have |ám); B) PT *//?an (!Xóõ //?ân, Mas., |Nu//en //Vn); PKw *//?Vn~*//?Vᵖ (|Xam //oiᵑ, //Ng //oeᵑ, //oiᵑ, #Kho. //?uiᵑ, //Kxau //?oe, Bat. //oiᵑ, //un); Sandawe //?aka-su, C) #Hoan čha, D) PKK *sore (Nama sore-s, !Ora sóré-b); Hadza ?ĩso–.

Notes. PNK and PNKK present a perfect match (note that in PKK the same root is also found, but only in the meaning "to heat up, be hot" - Nama |gam - which makes the idea of borrowing into NK from CK much less probable, since most of these borrowings are of Khoekhoe origin).

There are also interesting isoglosses between Sandawe and SK, on one hand, and PKK *sore and Hadza ?i-šo-, on the other hand. In the latter case PKK -re- is detachable as a derivative suffix, and Hadza ?i- is one of those "classificatory" prefixes whose function and usage are still not quite clear due to lack of an extensive description of the grammatical/derivational structure. #Hoan čha is unclear, but possibly connected with words like Nama tsē-b "day", etc., all of Bantu origin.

II.83. "SWIM":
A) (?) PNK *ǯxa (Žu. ǯxà); B) (?) PKw *ϑxu (|Xam ϑxu); C) PNKK *thaᵖ (Nama tsâ, !Ora thaᵖ̂); D) PNKK *bara (//Ani, Kxoe, Buga, Naro, Deti, Cara, Tsixa, Danisi bará, |Xaise barà); Sandawe phuduse, E) Hadza //o?o–.

Notes. Apart from CK, this item is very poorly recorded in other branches - absent even in Traill's extensive !Xóõ dictionary. If the PNKK root is to be transcribed as *badá (*-d- and *-r- are in free variation in CK; I prefer to transcribe the consonant as *-r- simply because it agrees better with the 'classic' scheme of the Khoisan disyllabic root as seen also in NK and SK material), it is easily comparable with Sandawe phudu-se. That said, one should note that initial *b- is a very rare phoneme in PCK, and most CK words beginning with this consonant (or the voiceless p-) are Bantu borrowings, either recent or going back to the PCK stage itself; this makes the comparison somewhat unstable.

II.84. "TAIL":

A) PNK *!xuí (//Au. !khwi, Žu. !xui̒, !O. //we); (?) PKw *!khui (|Xam !khwi); #Hoan Ɵxui; B) PT *|aṷ (!Xóõ |auᵖ, Mas. |auᵖ, |gauᵖ, |Nu//en |gauᵖ); C) PKK *sao (!Ora sáo-b, (?) Nama sao "to follow, go in single file"); PNKK *cáó (all languages have cáó except for Kxoe tçáó, #Haba cáó, and Hie. cau); Sandawe çwa, Hadza çáhó-.

Notes. Root (C) is an important (and previously well-known) cognate not only between Hadza and Sandawe but also, as it seems, between them and CK. One could expect CK to have *cʔ- so as to fit in better with the Hadza/Sandawe forms, but if PCK *cʔ- indeed = *ckx-, as has been demonstrated in II.78, glottalisation in Hadza and Sandawe does not have anything to do with glottalisation in CK.

The other match here, between PNK and #Hoan (possibly also PKw, although the form itself is only present in |Xam), looks extremely promising due to the near-total similarity between the two - everything coincides except for the click influx. PNK *!- is known to correspond to #Hoan !- (II.13) and to #Hoan hushing sibilants (II.17; II.37; II.94); its ties with the labial click were so far established only for SK (II.53), but cf. also #Hoan Ɵoa "to kill (pl. action)" - PNK *!ʔoáᵖ id.; apparently, in some cases the same correspondence also works for #Hoan.

II.85, II.86. "THAT/THIS":

A) PNK *Toʔá (Žu. to̒ʔá "that", !Kung (Lloyd) doa "this, that", !O. doa "that"); PT *tV (!Xóõ tVʔV "this", ta̒ʔa BV kV "that", Mas. ta, ti "that", te a, ti e "this", |Nu//en ti "that"); PKw *tV (//Kxau ti "this", //Ku//e ti "this, that", |Auni ti "that"); #Hoan coa "that"; B) PNK *čV (//Au. či "this, that", !O. či "this"); C-D) PNK *he̒ (Žu. he̒ "this"); PT *ʔV (!Xóõ ʔVV "this, that"; PKw *(H)a/*(H)e (|Xam, //Ng, |Auni a "this, that", |Xam ha, he "this, that", Bat. ha "this, that", |Auni ha, hi "that"); #Hoan ha "this"; PNKK *a "that" (//Ani ʔá-te̒, Kxoe ʔá, //Gana ʔá-séá, #Haba ʔá-sa-ha̒, Hie. a); PNKK *i (Kxoe ʔí "that (fem.)", Naro ʔi-sí-ha "that", Deti hiᵖ "this", Cara, Danisi, Kua, Tsua i "this"); Sandawe ha "that", he "this"; Hadza ha "this"; E) PKK *ne "this" (Nama ne); PNKK *|ne̒ "this" (//Ani |ᵖne̒ "this", |ᵖne̒-te̒ "that", Buga |ᵖne̒ "this", |ᵖne-há "that", Kxoe, Naro, //Gana, #Haba, Tsixa |ᵖne̒ "this", Kua, Tsua |ᵖní "this"); F) PKK *//na "that" (Nama //na̒ᵖ, !Ora //na); PNKK *//na (Kxoe //ᵖnǎ "that", Naro //ᵖna̒ "this").

Notes. It is extremely hard to deal with Khoisan demonstrative pronouns separately - practically none of the subgroups seem to draw a sharp line between the bases for "this" and "that", either switching functions between two bases in what seems a thoroughly random fashion, or using one root for both, with the difference in meaning expressed with a suffix, vowel alternation, or, sometimes, merely a tonal opposition. In view of this, it will be more appropriate to discuss both words together.

Apart from more "local" cases like the NK stem *čV or the CK stems *|ne and *//na, Khoisan shows three distinctly opposed stems: *TV (NK and SK), *a (omnipresent), and *e/*i (also omnipresent). Note, however, that the latter two bases are often undistinguishable from each other - in !Xóõ, for instance, the vowel quality in the demonstrative pronoun is dependent on the phonetic/morphologic characteristics of the adjacent noun. All of these three bases probably date back to Proto-Khoisan and were used to indicate various levels of deixis, but for now, it is hardly possible to assign them exact meanings, considering how little we know of the actual deictic system in the majority of Khoisan languages. External data from other language macrofamilies indicates that the stem *a is normally used for "that" and *i (*e) for "this" all around the world, and this is, in fact, the situation that we find in Sandawe; on the other hand, Sandawe seems to lack the *t-form so widespread in other branches.

The following conclusions are the most important to our lexicostatistical analysis: a) the *t-stem is characteristic of NK, SK, and #Hoan, but not any of the other branches; b) the two vocalic stems, whatever

their exact meanings were, are definitely opposed in CK and Sandawe, but have most probably merged everywhere else; c) all the other stems are either innovations in respective branches, or have ceased to function as the main forms for "this" and "that" on the protolanguage level in the branches where they are not found.

II.87. "THOU":

A) PNK *à (//Au. *a-hi*, Žu. *à*, !O. *a-hi*, *a*); PT *ā̃ʰ (!Xóõ *ā̃ʰ*, Mas., |Nu//en *a*); PKw *a (|Xam, //Ng, #Kho., //Kxau, Bat., |Auni, |Nusan *a*); PKK *sa-c, *sa-s (Nama *sá-ts* (m.), *sá-s* (f.), !Ora *sa-c* (m.), *sa-s* (f.)); PNKK *cá "thou (m.)" (//Ani, Buga, |Ganda, Naro, Deti, Cara, Tsixa, Danisi, Cua, Kua, Tsua *cá*, Kxoe *tçá*, |Gwi *cí*, //Gana, #Haba *cá*, |Xaise *cá*, Hie. *ča*); PNKK *sá "thou (f.)" (//Ani, Buga, |Ganda *ha(ᵑ)*, Kxoe *haᵑ*, |Gwi *sí*, //Gana, #Haba *sá*, |Xaise, Deti, Cara, Tsixa, Danisi, Cua, Kua, Tsua *sá*); B) #Hoan **u**; C) Sandawe **hapu**; D) Hadza **te**.

Notes. PCK is the only language for which two different stems of the 2nd person sg. have to be reconstructed - masculine *cá* and feminine *sá* (Hadza also distinguishes between masculine and feminine forms, but only by means of an additional suffix - *te* m., *te-ko* f.). A closer analysis shows that the same opposition (*-c-* for masculine, *-s-* for feminine) is characteristic for a number of other pronominal forms, cf., for instance, //Ani *com* "we" (excl. masc. dual), *som* "we" (excl. fem. dual), etc.; it turns out that these are actually detachable gender prefixes, easily reconstructible on the PCK level. As for the PKK forms, they are obviously descended from *sa-ca* and *sa-sa*, with reduction of the second syllable; the initial *sa-* is the "full stem indicator" morpheme that gets lost, for instance, when the pronoun is used in the object position.

In this way, PCK shows the same basic "pure" stem *-a-* for the 2nd sg. pronoun as NK and SK. This is an extremely important isogloss and a very strong argument in favour of Khoisan relationship, as no other major language family in the world is known to have *a* in this particular function. Within "South African Khoisan" only #Hoan shows a different stem - possibly influenced by the 2nd plural stem *u*, found in SK. Whether the same *-a-* is represented in Sandawe *h-a-pu* is unclear; however, considering that the indirect (enclitic) stem in Sandawe is simply *-pV-*, and that *ha-* also functions as a potential prefix in other pronominal forms (*ha-we* "he", *ha-su* "she"), we cannot propose a match here. As for Hadza, it shows a definitely different stem, closer to Euroasiatic, in fact, than to any other macrofamily.

II.88. "TONGUE":

A) PNK *dhari (//Au. *tari*, Žu. *dhari*, !O. *tali*); PT *ʔ|na (!Xóõ *ʔ|nàn*, Mas. |*nan*, |Nu//en |*ani*); PKw *|ʔa-, *|ʔe-, *|ʔa-Ri (|Xam |*érri*, |*énni*, //Ng |*eᵑ*, //Kxau |*ʔanansi*, |Auni |*aᵑri*); #Hoan **cela**; PKK *dammV (Nama *nammi*, *lammi*, *tammi*, !Ora *tàmmà*); PNK *dam (//Ani, Buga, Naro, |Xaise, Deti, Cara, Tsixa, Danisi, Cua, Kua, Tsua *dàm*, |Ganda *dàm*, |Gwi *gjàm*, //Gana, #Haba *dám*, Hie. *dham*); Hadza |natha-; B) Sandawe **!beᵑ**.

Notes. The root "tongue" is known to behave irregularly in quite a few language families over the world, and it is hardly a pure coincidence that the irregular fluctuation of consonantism in Nama (*nammi*, *tammi*, *lammi*) is strangely similar to the one observed in, for instance, Latin (*dingua*, *lingua*); in both cases we may be witnessing either a unique consonant cluster in the protolanguage, or a specific irregularity characteristic of this particular word. Within Khoisan, the same peculiar behaviour can be observed for the root "throat" (PNK *doʰm; PT *ʔ|num; PKw *dǫm; #Hoan *ʔ|nqo; PCK *dóm), although the reflexation of the original phoneme/cluster is slightly different. The lexeme is represented in NK, SK, and (possibly) #Hoan with a *-rV/*-nV/*-lV suffix, as opposed to CK *-m, but the root itself is most probably the same everywhere - only #Hoan *cela* is dubious, considering that for "throat" #Hoan has *ʔ|n*, just like !Xóõ. Hadza

|natha- can also tentatively belong here due to a direct phonetic match with PT; Sandawe is the only language that clearly has a different root, as there is no way to link an initial *!h-* to all these other reflexations.

II.89. "TOOTH":
A) PNK ***c?aù** (//Au. *cau-si*, Žu. *c?au*, !O. *cau*); #Hoan **ciu**, B) PT ***//qhV$^{\eta}$** (!Xóõ *//qha$^{\eta}$*, Mas. *//xu$^{\eta}$*, |Nu//en *//Vn-te* pl.); PKw ***//khei$^{\eta}$** (|Xam *//khei$^{\eta}$*, //Ng *//ai$^{\eta}$*, *//e$^{\eta}$*, #Kho., Bat. *//ei$^{\eta}$*); PKK ***//u$^{\eta}$** (Nama *//gu-b*, !Ora *//u$^{\eta}$-b*); PNKK ***//u$^{\eta}$** (Kxoe, |Gwi, //Gana, |Xaise, Cara, Tsixa, Danisi, Cua, Tsua *//u$^{\eta}$*, Buga, Naro, Deti *//u$^{\eta}$*, #Haba *//ŭ$^{\eta}$*, Kua *//u$^{\eta}$*, Hie *//goo*); C) Sandawe **!?akha$^{\eta}$**; D) Hadza **?aba-**.

Notes. Another obvious match between NK and #Hoan here. The connection between SK and CK is somewhat less obvious because the vocalism correspondences are blurred, but on the other hand, the correspondence "PT *-q(h)- - PCK zero" is practically the same as in "claw" (II.13), which leaves no unresolved problems in the consonant area.

II.90. "TREE":
A) PNK ***!ai$^{h\eta}$~*!au$^{h\eta}$** (//Au. *!gai$^{\eta}$*, *!ga$^{\eta}$*, Žu. *!ai$^{h\eta}$*, !O. *!gau$^{\eta}$*, *!ga$^{\eta}$*); B) PT ***?Өna** (!Xóõ *?Өnaje*, Mas. *Өnoe*, |Nu//en *Ө?a*); PKw ***Өho** (|Xam, Bat. *Өho*, //Ng *Өgo*, *Өho*, #Kho. *Өgo*, //Kxau *Өo*, |Auni *Өgoa*, *Өo*); C) #Hoan **/?o$^{\eta}$**; D) PKK ***hai** (Nama *hai-i*, !Ora *hai-sa* "bush"); PNKK ***ji** (//Ani, Kxoe, Buga, Naro, #Haba *jĭ*, |Ganda, |Gwi, //Gana, Deti, Cara, Tsixa, Danisi *jì*, |Xaise *ʒi*, Kua *jî*, Hie. *hii*); E) Sandawe **thē**; E) Hadza **çiti-**.

Notes. No matches between any of the major sub-branches, although the question of #Hoan */?o$^{\eta}$* vs. the SK forms with the labial click needs further investigation - so far, it is only clear that #Hoan and SK labial clicks mostly stem from different origins and are not directly related to each other, but there is too little #Hoan data to uncover the real picture. Since #Hoan mostly agrees with NK in terms of click correspondences, it would be reasonable to assume that #Hoan / can correspond to PSK *Ө if the same correspondence can be found between PNK and PSK; so far, however, the more frequent correspondence is PNK *! to PSK *Ө.

II.91. "TWO":
A) PNK ***ca$^{\eta}$** (//Au., !O. *ca, ča*, Žu. *ca$^{\eta}$*); B) PT ***#num** (!Xóõ *#num*, Mas. *//num, !num*, |Nu//en *!num*); PKw ***!?u~*//?u** (|Xam, //Ng *!u, !?u*, #Kho., //Kxau, //Ku//e *!?u*, Bat. *//u, //?u*, |Auni *!?u*); C) #Hoan **Өoa**, D) PKK ***|am** (Nama *|gam*, !Ora *|am*); PNKK ***|am** (all languages have *|am*); E) Sandawe **ki**, **ki-soxo**.

Notes. No obvious matches here. It is curious, however, that this is the second time in the wordlist where PKw yields a peculiar alternation of alveolar and lateral clicks as a correspondence to PT *#; the first time was also a numeral ("one", II.63), and in both cases the respective form in #Hoan begins with a labial click. Normally, we should expect PNK and PSK *| where #Hoan has *Ө (cf. II.38), but since we do not exclude the possibility of more than one-to-one correspondences, this case is very much in need of further investigation, although it requires more #Hoan data, as well as a more detailed analysis of the *!~//* alternation in the !Wi subgroup.

II.92. "WALK (GO)":
A) PNK ***u** (//Au., !O. *u*, Žu. *ú*); PT ***û** (!Xóõ *û-lu* "to enter, go into", Mas. *u*); PKw ***u** (|Xam, //Kxau *u*, //Ng *u* "to pass", Bat. *u* "to go away"); B) #Hoan **cao**, C) PKK ***!u$^{\eta}$** (Nama *!gú*, !Ora *!u$^{\eta}$*); PNKK

*ĥ͡ʔ (//Ani, Kxoe, Buga, |Ganda, //Gana, #Haba, |Xaise, Deti, Cara, Tsixa, Danisi, Kua, Tsua *kũʔ*, Naro, |Gwi *!uʔ̃*, Hie. *kho*); D) Sandawe **hįḵi**; Hadza **haka**-.

Notes. The root *u* "to walk, go, go away" is widely represented in both NK and SK, but does not seem to be present anywhere else. On the other hand, this is compensated by an interesting isogloss between Hadza and Sandawe - provided we can disregard "extra" glottalisation in Sandawe.

II.93. "WARM":

A) PNK ***//ʔuʔ*** (Žu. *//ʔuʔ*); #Hoan ***//qʔo***, PNKK ***//ʔo*** (Kxoe *//ʔò*, Buga, Naro, //Gana, #Haba *//ʔò*); B) PT ***kúbi*** (!Xóõ *kúbi*); PNKK ***khóbò*** (//Ani, Buga, |Ganda *khóbò*, Kxoe *kxóbò*, Naro *khóbò* "to sweat"); C) PKK ***!nae*** (Nama *!nae-sa*); D) Sandawe **hoḵa**.

Notes. The first root (*//qʔU*) is a good match between NK, #Hoan, and NKK, with the ejective uvular efflux lost in those branches where it is never actually found, predictably replaced by a glottal stop. There is also a more local click-less root, represented by !Xóõ *kúbi* and West Central Khoe *khóbò*; despite its limited distribution, the possibility of borrowing is rather low due to minor phonetic disagreements between branches.

II.94. "WATER":

A) PNK ***!gú*** (//Au. *//gu*, *!gu*, Žu. *!gú*, !Kung (Doke) *ǃguʔ*, !O. *//gu*); PT ***!qhà*** (!Xóõ *!qhàa*, Mas. *!kha*, *!xa*, |Nu//en *!kha*); PKw ***!kha*** (|Xam *!kwa*, *!khwa*, //Ng *!ha*, *!kha*, #Kho. *!kha*, Bat. *//kha*, |Auni *//kha*, *!a*); #Hoan **žo**, PNKK ***chǎ*** (//Ani, Buga, |Xaise, Deti, Cara, Tsixa, Danisi, Kua, Tsua *chǎ*, Kxoe *çǎ*, |Ganda, Naro *chà*, |Gwi, //Gana *chà*, #Haba *chá*, Hie. *caa*); Sandawe **ça**; B) PKK ***//ami*** (Nama *//gammi*, !Ora *//ammi*); D) Hadza **ʔathi**-.

Notes. This root, once again, returns us to the problem of the correlation between #Hoan hushing sibilants, NK retroflex clicks, and CK affricates. It is very probably related to "rain" (II.65) - in SK the same form often has both meanings - and features correspondences similar to or coinciding with the ones established earlier in II.17, II.37, and II.65, with the addition of Sandawe *ç*- - provided the similarity between Sandawe *ça* and PNKK *chǎ* is not coincidental; however, given the several satisfactory cases where CK has *ch*- corresponding to NK retroflex clicks, I actually feel even more inclined to group CK "water" with NK and #Hoan "water" rather than with the respective Sandawe item. That said, further data is necessary to confirm this particular grouping, particularly data on #Hoan *ž*- and PNKK *c(h)*-.

II.95. "WE":

A) PNK ***e*** excl. (//Au. *e*, Žu. *è*, *è-!á*, *è-cá* dual, !O. *e*, *ehŋ*); PT ***ih*** (!Xóõ *íʰ*, Mas. *i*, |Nu//en *i*, *e*); PKw ***i*** incl. (|Xam, //Ng, //Ku//e, Bat., |Auni *i*); PKK ***-e*** plural (Nama *sí-k-e* m. excl., etc.; !Ora *si-tj-e* m. excl., etc.); PNKK ***-e*** plural; B) PNK ***m*** incl. (Žu. *m*, *m-!á*, *m-cá* dual, !O. *m*, *m-!a*); #Hoan **n-!àʔe**, PKK ***-m*** dual (Nama *sí-kx-m̀* m. excl., etc.; !Ora *si-kha-m̀* m. excl., etc.); PNKK ***-m*** dual; C) PKw ***si*** excl. (|Xam, //Ng, //Kxau, //Ku//e, |Nusan *si*, #Kho. *si*, *sa*, |Auni *si*, *se*); D) Sandawe **suʔ**; Hadza **u**-.

Notes. Most Khoisan subgroups distinguish between exclusive and inclusive 1st person plural/dual; both stems are included into comparison where present. The actual pronominal system can be extremely complex in this case, particularly in CK, where nearly every form of the 1st person plural/dual pronoun consists of three distinct (or not so distinct) morphemes, one indicating the "full form" of the stem (which disappears in the object position), one marking the class/gender, and one actually serving as the main pronominal base; thus, in Nama *sí-kx-m̀ si* is the "full stem marker", *-kx-* the masculine gender marker, and *-m̀* the main pronominal stem for the dual number. This system, naturally, undergoes a lot of changes in

different CK languages, and it is hardly possible to go into the details of these changes because of space limitations; a complete list of forms and paradigms, as well as ample historical commentary, can be found in [Vossen 1997].

The most important detail of the CK system in general, however, is that one can firmly establish two main pronominal morphemes, *-m for 1st p. dual and *-e for 1st p. plural. These bear a striking resemblance to, respectively, PNK *m "1st p. inclusive" and PNK *è "1st p. exclusive"; apparently, either the opposition "dual/plural" had been at one time reinterpreted in PNK as "inclusive/exclusive", or vice versa. A further clue here can be found in comparing PKw *si "1st p. inclusive" with the PKK "full stem marker" *si-, used only in 1st p. inclusive pronouns; this can indicate that originally it was the morpheme *si- that was used to express the idea of "inclusiveness", while *-m and *-e were primarily differentiated by the category of grammatical number. This is why I am not counting Nama si-kx-m̀ and PKw *si as an exact match - because if the morpheme *si- really goes back to Proto-Khoisan, it functions rather as a special pronominal prefix than a true pronominal root.

As for the rest of the forms (that is, the ones that are not *m-type or *-e-/*-i-type), #Hoan n̄-!à'e is probably related to PNK *m, with some sort of contextual sandhi before the pronominal suffix (which is common to both #Hoan and PNK), and both Hadza and Sandawe agree in having an u- stem that is absent in other Khoisan languages.

II.96, II.98. "WHO/WHAT":
A) PNK **(h)a** (Žu. ha-žoè "who", ha-čé "what"); PKK **ha**- (Nama ham̄ "who", !Ora ham "which"); PT ***èʰ** (!Xóõ |V... eh "who, what"); B) PKw ***d(j)e** "who, what" (|Xam de, //Ng gi-si, ki-si, #Kho. gji-si, //Kxau de); #Hoan **cini** "what"; PKK ***TV** (Nama tari-ʔi "who", tare-ʔi "what", !Ora da- "who"); PNKK ***(n)dV** (Naro di "who", du "what", |Gwi dí "who", //Gana dí "who", dǔ "what", Deti dú "what", Cara, Danisi ndú "what"); C) PNKK ***ma(ᵑ)** (//Ani, Buga ma "who", Kxoe maᵑ "who", Naro m "what", |Gwi maᵑ "what", //Gana mâ "what", Deti, Cara, Kua má "who", Tsixa, Danisi má(é) "who"); D) PNKK ***nV** (//Ani, Tsixa né "what", Buga ná "which", Cara ná "who", Kua nǎ "who", ná "what"); E) Sandawe **ho** "who", **ho-co** "what".

Notes. Judging by the material, any opposition between the stems for "who" and "what" found in Khoisan should be judged secondary; the majority of the branches simply does not have two different stems, expressing the difference by means of affixation, tonal distinction (as in Kua), or not expressing it at all (as in !Xóõ). Thus, the two items of the wordlist have to be discussed together, just as in the case of Khoisan demonstrative pronouns.

NK and SK agree in showing a monovocalic interrogative base (*a~*e, the original vowel is impossible to determine, especially since the original vocalism could have been obscured by later assimilation processes caused by the morpheme's clitical status), which, within CK, is only present in PKK. The other important morpheme is *TV, widely spread in !Wi and in all CK branches, but practically absent in NK and Taa languages (at least, according to recorded data). Apart from that, CK also boasts two additional interrogative morphemes, *ma and *nV, none of which have any direct correlates outside CK. Hadza and #Hoan seem to agree with !Wi and CK in having *TV as the main stem (#Hoan cini < *tV-ni); as for Sandawe ho, it remains yet to be seen if we can actually compare it to the NK/SK monovocalic stems, since there is no reason for a 'secondary' labialisation.

II.97. "WHITE":
A) PNK ***!àʔú** (//Au., !O. !au, Žu. !àʔú); PKw ***!ʔu(i)** (|Xam !ui-ta, #Kho. !ʔu-rija, //Kxau !ʔui);

PKK ***!ʔu-ri** (Nama *!uri*); PNKK ***!ʔú** (Naro, |Gwi, //Gana, #Haba, Tsua *!ʔú*, Kua *!ʔǔ*); B) PT ***!nú** (!Xóõ *!nú-ná*); C) #Hoan **#aʔana**; D) Sandawe **phȭ**; E) Hadza **peʓa-**.

Notes. A good match between PNK, PKw, and both CK branches; the glottal stop efflux in CK is almost certainly related to the inlaut glottal stop in NK, which explains the formal lack of direct correspondence between effluxes, although it is unclear which variant is primary here. Sandawe and Hadza cannot be counted as matches, since there is no further evidence for Hadza *-ʓa-* being a suffix of any sort.

II.99. "WOMAN":

A) PNK ***ʒhʔàú** (//Au. *ʒau*, *ʒou*, Žu. *ʒhʔàú*, !O. *cau*); B) PKw ***|ʔai-tje** (|Xam *|ʔai-tje*, *|ʔai-ti*, //Ng *|ʔai-ti*, *|ʔai-ki*, #Kho. *|ʔai-tje*, //Kxau, //Ku//e *|a-ti*, Bat. *|a-ze*, |Auni *|ge-kî*); C) #Hoan **//gai**, **ʔari-//gai**; PNKK ***//gae**, ***//gae-khoe** (//Ani *//gɛ-*, Kxoe *//gɛ̌-*, Buga, |Ganda, //Gana *//gɛ-*, Naro, |Gwi, #Haba, |Xaise, Deti, Danisi, Kua, Tsua, Hie. *//gae-*, Cara, Tsixa *//ga-*); D) PKK ***tara** (Nama, !Ora *tara-s*); Sandawe **thame-cu**, E) Hadza **ʔakhwiti-**.

Notes. While some of the groups have a distinct root for "woman" (NK, !Wi), others either replace it with the root "female" (#Hoan *//gai*), or use the compound "female person", like PNKK. In the Taa subgroup the exact proto-form cannot be established, since some languages use the form **ta-qae* (lit. "person-mother"), while others prefer **ta-//gae* ("person-female"). #Hoan displays a rare case of agreeing with CK (rather than NK) in having *//gae* as the main root for "woman". There is also an interesting possible isogloss between PKK and Sandawe (both *-ra* and *-me* can be seen as fossilized suffixes, as they're frequently found in other nouns).

II.100. "YELLOW":

Almost none of the sub-branches of Khoisan allow for a distinct root with the meaning "yellow" to be reconstructed. Most languages either use the same word for "yellow" and "green", or, on the contrary, distinguish between several different shades of yellow, making it impossible to determine the "main" root; finally, in some groups/languages the word "yellow" has not even been recorded. We will have to exempt this particular item from the analysis.

III. **CONCLUSIONS.**

III.1. *Phonetic correspondences.* It is practically obvious from this analysis that any attempt to reconstruct Proto-Khoisan based on a "one-to-one" correspondence system is bound to fail. Out of all the items in the wordlist, only a miserably small minority of cases demonstrates such correspondences (that is, when *both* click influxes and effluxes are taken into account) - and some of these cases, such as "fish," are highly suspicious in the first place. On the other hand, while some of the proposed "non-trivial" correspondences are supported by more data than others, it seems clear to me that the true picture can be established only by attempting to go beyond the concept of "obvious resemblance."

Let us list all the suggested click influx correspondences between the "main" branches of Khoisan, excluding Hadza and Sandawe (since PNKK and PKK data never disagree with each other about the click influx treatment, both will be joined here under PCK; same with PT and PKw, joined under PSK):

(a) PNK *|* - PSK *|* - #Hoan *|* - PCK *|* (II.9, II.20, II.28, II.33, II.35, II.46, II.62, II.82);
(b) PNK *|* - PSK *#* - #Hoan *|* - PCK *#* (II.21, II.74);
(c) PNK *|* - PSK *|* - #Hoan *Ө* (II.25, II.38, II.63);
(d) PNK *#* - PSK *#* - #Hoan *#* - PCK *#* (II.2, II.8, II.18, II.45);

(e) PNK *# - PSK *// - #Hoan # (II.15, II.80);

(f) PNK *! - PSK *! - #Hoan ! - PCK *! (II.4, II.34, II.41, II.43, II.97);

(g) PNK *! - PSK *| - #Hoan ! - PCK *| (II.36, II.40, II.57, II.66, II.81);

(h) PNK *! - PSK *// - PCK *// (II.11, II.44, II.79);

(i) PNK *! - PCK *! (II.45);

(j) PNK *! - PSK *// - #Hoan ! - PCK *// (II.13, II.54);

(k) PNK *! - - PSK *! - #Hoan š~ž - PCK *ch (II.17, II.33, II.37, II.65, II.94);

(l) PNK *! - PSK *Ө - (?) #Hoan Ө (II.53, II.84);

(m) PNK *// - PSK *// - #Hoan // - PCK *// (II.13, II.29, II.41, II.89, II.93, II.99).

Some of the "one-to-one" correspondences seem to be supported by a significantly bigger amount of data than others, but a closer look reveals that these are mostly cases of PNK vs. #Hoan correspondences, and these two branches never disagree with each other when it comes to click influxes, with the exception of the #Hoan labial click. Apart from that, practically every one of these correspondences finds at least some support from outside data, and the strict semantic criteria applied to data selection significantly diminish (though by no means liquidate) the probability of chance resemblances.

Even from this limited amount of data we can already draw some conclusions. First, as has already been mentioned, is the peculiar "agreement" between PNK and #Hoan. These two branches, on the other hand, are obviously opposed by PSK and PCK, which only disagree when it comes to SK labial clicks and the "fricatives vs. clicks" correspondence (k). Which situation should be considered original - the PNK/#Hoan one or the PSK/PCK one - is, of course, an open question. Either the original PK system was preserved in PNK/#Hoan, with certain unknown factors contributing to the bi- and trifurcation of click reflexes in the other two branches, or, vice versa, the original system underwent radical changes in PNK/#Hoan, with factors that "forced" most of the clicks to merge in the alveolar one in a large part of the lexicon.

It must be specially noted that the correspondences given above in no way violate the Neogrammarian demand of *regularity* of phonetic changes, for one simple reason: so far, I am not proposing any actual *reconstructions* of Proto-Khoisan phonemes that would yield an unexplained bifurcation of reflexes in daughter languages. All of these bifurcations have to have some kind of explanation - but it must be remembered that there might have been additional factors at work in Proto-Khoisan itself that have not survived in any of the daughter languages. There might have been tonal, prosodic, vocalic, or other reasons that have progressively become obscured over time; there might also have been additional factors of click articulation (for instance, "tense" and "lax" articulation, or labialized/non-labialized articulation) that have become neutralized in PNK, PSK, and PCK after the original split. In any case, a set of major phonological changes in sub-branches of Khoisan, taking place over a period of seven or eight millennia, seems to me a much more realistic probability than a set of minor "cosmetic" phonological changes in these sub-branches over an even longer period (which would have to be assumed based on glottochronological calculations according to the "one-to-one" correspondence principle).

It could thus be argued, in terms of historical typology, that the situation with Khoisan historical phonetics might well be similar to that of, for instance, the Proto-West-Caucasian system. In the latter case, while the actual modern day phonological systems of West Caucasian languages such as Abkhaz and Adygh, already quite rich and complex by themselves, are quite close to each other, the correspondences between them are of an extremely complex nature and betray a proto-system even richer and more complex

in oppositions than any of its daughter languages. (Cf., for instance, six distinct series of affricates based on the three oppositions of "hissing/hushing," "palatalized/non-palatalized," "labialized/non-labialized," not more than four of which survive in daughter languages.) This kind of interpretation currently seems to me to be the most promising one, and should indicate the direction of further studies.

We must also keep in mind another extremely important factor: the obvious "imperfection" of our knowledge of Khoisan phonetics. So far, out of the three major subgroups of Khoisan only Central Khoisan languages have received a generally satisfactory description, and it is generally acknowledged among those who share the belief in Common Khoisan that Central Khoisan actually seems to simplify the original system to a much higher degree than the other branches. For North and South Khoisan, on the other hand, we only have exhaustive descriptions for *one* language/dialect per branch, and it is quite possible that, despite the complexity of their phonetic systems, there could be significant phonological oppositions that eventually became neutralized in these very languages (Žu|'hoan and !Xóõ).

In fact, at least for Žu|'hoan this is exactly the case. As has been demonstrated above, this dialect has lost the important phonological opposition between the alveolar and the retroflex click. As for South Khoisan, let us not forget that the dictionary of Anthony Traill has more than *doubled* the number of click effluxes that had been identified by previous explorers of South Khoisan, and has also introduced click effluxes that nobody has *ever* identified before in *any* Khoisan language.

Even for Central Khoisan the situation is far less clear than may be deemed at first. As has been shown in [Vossen 1992], for instance, Central Khoisan is not entirely devoid of uvular click effluxes, and it remains to be seen how well they correlate with uvular effluxes in other Khoisan languages. Vossen also postulates a newly found phonological opposition between the "voiced nasal click" (|^{g}n, etc.) and the "voiceless" nasal click (|n, etc.) in many Non-Khoekhoe languages; this opposition has not been taken into account in the present work yet, but it certainly deserves further attention. And in a relatively recent paper by Hirosi Nakagawa [Nakagawa 1996], yet another previously unheard of opposition is suggested for the language of |Gwi - between a simple glottal stop efflux (|ʔ, etc.) and a "voiceless velar ejective" efflux (k|ʔ, etc.), which the author claims is not only discernible acoustically and found in minimal pairs, but is even confirmed through external comparison with the language's closest relative, //Gana.

All of this goes to show that the "untrivial" correspondences, found by us among click effluxes as well as click influxes, may, in fact, not only reflect oppositions that have been lost in modern languages, but may actually reflect oppositions that have not yet been found. This is why further research and field work on poorly described Khoisan languages is of such crucial importance for any attempts to arrive at a reconstruction of Proto-Khoisan.

III.2. *Classification.* The other important result of our lexicostatistical analysis is that it allows shedding more light on the problem of the relation between various branches of Khoisan. Calculation of the percentage of matches between these branches helps us affirm that at least some of these branches are, indeed, related, and that the Khoisan genealogical tree should be treated as a rather complex hierarchic structure. Below I am listing some of the calculation results, going from higher numbers to lower ones to illustrate the various levels of relationship.

(a) Level 1 (65-70% matches). This is the relationship between PKw and PT (68%); and PNKK and PKK (70%). These actual relationships have never really been put in much doubt, and lexicostatistics/glottochronology only further confirms what has been long before stated given the number of phonological, lexical, and grammatical isoglosses between these branches. The huge number of matches suggests that the actual split between the two main branches of South Khoisan, on one side, and Central

Khoisan, on the other side, took place sometime in the 1st millennium B.C.

(b) Level 2 (40-45% matches). This is the case of PNK vs. #Hoan (43%). The resemblance between #Hoan, on one hand, and different NK and SK languages, on the other hand, have been noticed long before (see, for instance, [Traill 1973], where this resemblance is reflected in the very name of the article); since then, some researchers, chief among them Henry Honken, have preferred to link #Hoan more closely to NK, even including it directly in NK. As the above percentage shows, lexicostatistical analysis more or less confirms this hypothesis. #Hoan can be safely assumed to represent an "elder brother" of modern NK dialects, much more distant from them than they are from each other, but significantly closer to NK than anything else. According to glottochronological calculations, the split of "Proto-NK-#Hoan" must have taken place somewhere around the 2nd millennium B.C.

(c) Level 3 (30-35% matches). PNK has 32% matches with PT and 34% matches with PKw; #Hoan shows 28% matches with PT and 21% matches with PKw (the latter figure could be seriously erroneous due to the fact that PKw and #Hoan wordlists are the most incomplete and questionable of all). This confirms that NK and SK subgroups are actually more closely related to each other than to CK, an idea that is also supported by the fact that the grammatical systems of both groups share more similarities than any of them with CK, including more similar pronominal systems and a lack of complex verbal morphology, among other features. Glottochronology shows that the split between NK/#Hoan and SK must have taken place somewhere around the 4th millennium B.C.

(d) Level 4 (20-25% matches). PNK has 19% matches with PKK and 26% matches with PNKK; PT - 15% with PKK, 23% with PNKK; PKw - 20% with PKK, 24% with PNKK. These figures might be slightly lower if we eliminated several possible loans from PCK into other branches, like "fish," etc. Nevertheless, the figures still suggest that what has often been called "Proto-South-African Khoisan," i.e. the ancestor of modern day NK, SK, and CK languages, underwent its first split - into Proto-NK/SK and Proto-CK - some time around the 6th millennium B.C., i.e. is much older than, say, Proto-Indo-European, and should rather be compared in depth to deeper families such as Altaic.

(e) Level 5 (8-12% matches). This is the case of Hadza and Sandawe. The actual number varies from as much as 14% (Sandawe and PT) to as little as 2% (Sandawe and #Hoan). However, this is obviously the weakest spot in all the calculations. Most of the ties between Hadza/Sandawe and other languages have been established based on *resemblance* rather than *correspondence*, and, although a few parallels (like Sandawe /i - PNK *ci "come", Sandawe λana - PCK *//na "horn", etc.) look quite promising, even these are only vaguely confirmed by additional data. One thing is for certain: even if the figures are *approximately* true - which would put the split of "Proto-Khoisan" or "Proto-Macro-Khoisan" somewhere around the 8th or 9th millennium B.C. - and Sandawe and Hadza are indeed closer to the rest of Khoisan than to any other language family, our chances of arriving at a plausible reconstruction of this "Proto-Macro-Khoisan" look rather grim, comparable with, for instance, trying to reconstruct Proto-Nostratic on the basis of Proto-Altaic, modern day English, and modern day Hungarian.

That said, the final answer to this question must be postponed until at least two things have been done: a) a careful lexicostatistical analysis of Hadza and Sandawe data vs. at least some of the *other* African language families, so as to be sure that their ties with Khoisan are indeed closer than with anything else, and b) a working reconstruction of "Proto-South-African Khoisan". If anything, the results of these calculations, as well as the established correspondences, make me hope that such a reconstruction is, indeed, possible, and, given time and additional language material, will eventually appear.

NOTES ON TRANSCRIPTION

There is no universally accepted system of transcribing the extremely complex phonological inventories of Khoisan languages; apart from a general agreement about the symbols used to denote most click influxes, each researcher usually has his or her own preferences (and since new phonological oppositions are being discovered or at least suggested regularly, these preferences also change from time to time). Keeping in mind that the present work might be of interest to specialists outside the general field of Khoisan linguistics, I have tried to unify all the numerous transcriptions as well as possible in order to relieve the reader of the necessity of consulting the original sources for explanations.

It should be noted that the unification of transcription is far from an easy task, and in some cases is almost impossible to do, especially when dealing with older sources suffering from particularly imprecise phonological transcription. For example, Dornan records the Hietšware form for the verb "kill" as |goo; obviously, it is the same root with the general CK root for this verb, normally marked by Vossen as |kxúᵑ; according to the laws of CK historical phonetics, the intermediate branch from which the Hietšware form is descended has it represented as |ʔuᵑ. The question, then, is whether the Hietšware form *indeed* had a voiced efflux -*g*- and denasalisation of the vowel, or if this was merely an error on Dornan's part. Since, upon further analysis, we note that where Kua and Tsua (Hietšware's closest relatives) have -ʔ-, Hietšware has either zero, -*k*-, -*g*-, or -*h*-, we may draw the conclusion that Dornan's transcription of click effluxes was essentially misguided, and they should not be taken into account. But does this give us a right to "rectify" his transcription? Unfortunately, no, because knowing that Dornan could be wrong does not shed any light onto what was actually *right.* It could well be that in the dialect he was transcribing, the glottal stop efflux regularly developed into, say, an aspirated efflux, or merged with the voiced efflux, and we have no way of determining it.

Therefore, any attempts to "unify" the transcription of older sources (mainly represented in [Bleek 1956]) should only touch upon the purely *graphic* aspects of the systems used. One such important discrepancy between the transcription of Bleek and her sources, on one hand, and most newer sources, on the other, is that Bleek transcribes the so-called "zero efflux" as -*k*- and the so-called "glottal stop efflux" as zero, while nowadays the zero efflux is usually transcribed as zero and the "glottal stop efflux" as -ʔ- or -'-. Thus, Bleek's NK |*kam* "sun" = my |*am*, and Bleek's SK |*a* "to die" = my |ʔ*a*.

Below I list all the most frequent transcription signs that require explanation, with additional comments where needed.

Click influxes. ☉ - labial click; | - dental click; ≠ - palatal click; ! - alveolar click; // - lateral click; ! - "retroflex" click (in var. sources transcribed as !! or ⱡ).

Click effluxes. Zero - "zero" efflux (phonetically with a slightly articulated -*k*-); ʔ - glottal stop efflux; **h** - aspirated efflux (in NK phonetically a combination of glottal stop plus aspiration, sometimes transcribed as ʔ**h** or ʼ**h**); **kh** - zero efflux with aspiration (only known to be phonologically opposed to -**h**- in NK, sometimes transcribed as **h**); **g** - voiced efflux; **n** - nasal efflux; **n̲** - aspirated nasal efflux (in NK) or voiceless nasal efflux (in SK); ʔ**n** - preglottalized nasal efflux. The rest of the effluxes (**x**, **ɣ**, **q**, **kx**, etc.) represent combinations of clicks with various velar and uvular consonants.

Affricates. The maximum number of affricate series is Khoisan is three, and it is only found in #Hoan, where the original Khoisan dentals developed into palatal affricates. This triple distinction is regularly marked according to the following principle: **c** - hissing series, **č** - hushing series, **ć** - palatal series. Their correlates for other manners of articulation are, for all three series: voiced affricates (**ʒ**, **ǯ**, **ʒ́**), aspirated affricates (**ch**, **čh**, **ćh**), aspirated voiced affricates (**ʒh**, **ǯh**, **ʒ́h**); for two series only - preglottalized affricates (**cʔ**, **čʔ**), preglottalized voiced affricates (**ʒʔ**, **ǯʔ**), fricatives (**s**, **š**), voiced fricatives (**z**, **ž**).

Other consonants. Most of the other symbols used to transcribe consonants are self-explanatory.

The uvular series is transcribed in the following way: **q** = voiceless stop, **G** = voiced stop, **q̇** = ejective stop, **qh**, **Gh** = aspirated voiceless/voiced stops. Lateral consonants in Hadza and Sandawe are marked as **λ** (lateral fricative), **ƛ** (lateral voiceless stop), **Ł** (lateral voiced stop), and **ƛ̇** (lateral ejective stop).

Vowels. In most cases, the transcription is self-explanatory. Occasionally, especially in transcriptions of !Wi data, I use the signs **ɛ** (open *e*) and **ɔ** (open *o*) in the way they are used in the original sources, not being sure of their phonological status in those languages. Pharyngealized vowels are marked as **a̱**, **o̱**, etc. Aspirated vowels ("breathy voice") are marked as **a^h**, **o^h**, etc. Finally, nasalisation is marked as **a^ŋ**, **o^ŋ**, mainly for readability reasons, since otherwise the nasalisation marks could merge with tone marks.

Note on Nama. Nama words are the only ones where the transcription has not been unified, as Nama is currently the only Khoisan language for which there exists an established orthographic norm. It should therefore be kept in my mind that what is marked in Nama orthography as the zero efflux is actually the glottal stop efflux (i.e. #an = *#ʔan); and that the circumflex sign is used in Nama to mark vowel nasalisation, not tone (i.e. *â* = a^ŋ, etc.).

LIST OF ABBREVIATIONS
Hie. - Hietšware
Mas. - Masarwa
(P)CK - (Proto)-Central-Khoisan
PK - Proto-Khoisan
(P)KK - (Proto)-Khoekhoe
PKw - Proto-!Wi
(P)NK - (Proto)-North-Khoisan
(P)NKK - (Proto)-Non-Khoekhoe
(P)SK - (Proto)-South-Khoisan
PT - Proto-Taa
Žu. - Žu|'hoan
!O. - !O!Kung
#Kho. - #Khomani
//Au. - //Au//en

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