Greenberg's "case" for Khoisan: the morphological evidence[1]

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Introduction

For a long time, Greenberg's (1963) "The languages of Africa" has been the uncontested basis for the genealogical classification of African languages. Compared to his earlier studies on African languages (1949/50/54), this work can be said to mark the endpoint of a major shift in his approach, namely from a more conservative, splitting classification approach to a highly lumping one. Greenberg's later classifications for other areas like the Pacific (1971), the Americas (1987), and Eurasia (2000-2) are generally questioned by the majority of historical linguists and this has increased, too, the doubts about his hypotheses for the African continent (cf., e.g., Thomason 1994).

The weakest (though not the only disputable) of Greenberg's proposals for Africa has been the hypothesis of a Khoisan family that comprises all click languages other than from the Bantu and Cushitic families (see Güldemann and Vossen 2000). As opposed to several of his other chapters which underwent major revision, it is surprising that there are virtually no changes from his first Khoisan treatment (published in 1950 as part VI "the click languages" in SJA 6,3: 223-237) to that of 1963.[2] In fact, his later Khoisan version is essentially a literal copy of the first; there are only minor editorial differences and a somewhat distinct terminology.[3] In view of his move away from a moderately splitting classification, it seems somewhat ironic that the most doubtful proposal today is the one he was convinced of right from the beginning.

Greenberg's failure to rework in any form his Khoisan chapter is also remarkable in another respect. By the time of publication of his final views on African languages, for the last time in 1966, Westphal had published several important works on the classification of the languages concerned (1956, 1962a, b), explicitly contradicting the lumping proposal on the basis of more up-to-date data, including material collected in a then ongoing survey of the southern Khoisan area. Neither then nor later did Westphal's opposing opinion receive any reaction on Greenberg's part (nor was it duly recognized by the general Africanist public). It is hard to avoid the conclusion that Greenberg either had nothing further in support of his Khoisan hypothesis, or worse, did not bother to justify it against Westphal's serious and informed challenge.

In any case, one can identify several reasons why Greenberg's attempt to classify the languages under consideration has found few followers among specialists. These

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[1] I am grateful to the 'Deutsche Forschungsgemeinschaft' for having made this research possible. Thanks are also due to Orin Gensler for reading and helping to improve an earlier draft of this paper, and to Bonny Sands for further comments, many of which I was no longer able to include.

[2] For this reason, it will suffice here to cite from just one source; this will be the more accessible 1963-version.

[3] "Khoisan" first denotes only the languages in southern Africa, while it later includes Sandawe and Hadza in eastern Africa, making necessary the creation of a new term "South African Khoisan". Although facilitating the distinction between the languages in southern and eastern Africa, this term is potentially confusing. D. Bleek's "Southern Bushman" came to be called "South(ern) Khoisan" so that outsiders may well mistake the one for the other.

reasons are of a specific nature associated with the research discipline, that is, separate from the general methodological defects of his approach to language classification.

First and most importantly, although he came to shape Khoisan studies decisively, he was not a Khoisanist, in the sense that he was unfamiliar with the languages and the nature of the then available data. On the one hand, he underestimated the linguistic complexity of the languages he was confronted with. Surely, it could hardly have been expected at the time that the languages of this area were destined to confront future researchers with many uncommon and intricate linguistic phenomena and would in certain domains even come to range among the most complex languages on earth. It is no exaggeration to say that a Khoisan comparison of the kind pursued by Greenberg was an impossible task at the time. Nevertheless, he did attempt it and the result was to become common ground for Africanists and non-Africanists. On the other hand, he clearly overestimated the reliability/quality of his data sources, a fact which is of particular concern in view of the previously mentioned complexity of the languages (cf. Westphal (1971: 374-5), Sands (1998a: 31-2, 1998b: 266, n.d.), and Güldemann (2002b) for some discussion regarding highly problematic material by D. Bleek, involving languages from different Khoisan lineages). Moreover, even when Greenberg himself recognized problems with the data, this did not restrain him from using them freely for drawing far-reaching conclusions. He remarks, for instance, on Hadza (p.73) that "our knowledge of this language is very limited, consisting of several far from complete grammatical sketches and Dempwolff's short vocabulary." It comes as no surprise that Sands later identified "errors in one-third of the possible [lexical] cognates involving Hadza cited by Greenberg" (1998a: 32) and, based on different methodology, concluded that "the hypothesis of a genetic relationship of Hadza and Khoisan cannot be discounted, but there is NO SATISFACTORY EVIDENCE FOR IT at this point" (1998b: 281, capitals mine).

A second important problem with Greenberg's approach has to do with the research history of Khoisan studies and how it influenced the structure and argumentation of his work. One can identify two major objectives of Greenberg's study, which he intimately -- possibly too intimately -- intertwined with each other: (a) to argue for a genealogical Khoisan unit and (b) to disprove Meinhof's (e.g., 1912) claim that Khoekhoe (a.k.a "Hottentot") somehow belongs to Afroasiatic (a.k.a "Hamito-Semitic"). Regarding the second issue, Greenberg presented an overall convincing argument to the effect that the true relatives of Khoekhoe are languages which were then grouped as "Central Bushman". This was an extension of the arguments of several earlier scholars who had already identified the relevant empirical data. Since the general issue has been discussed extensively (e.g., Köhler 1960, 1975; Voßen 1991, 1997), this component of Greenberg's study will not be taken up in this article. In any case, laying to rest Meinhof's ill-founded hypothesis on the "Hamitic" affiliation of Khoekhoe is, in my opinion, Greenberg's most important contribution to Khoisan studies.

The mere fact that he had to give attention to this matter is, however, important for the way he dealt with the first goal, that of establishing Khoisan as a language family. In putting the status of Khoekhoe at the forefront of the argument, he neglected an even more problematic question, which is the important one for the present discussion: do the click languages of southern Africa other than Khoekhoe represent a genealogical unit? His opinion on the matter can only be discerned "between the lines", namely from the fact that he simply followed what he called "the usual view", viz. "that

the languages of the Bushmen [= San], which are quite diverse, form a single family" (p.66). His text contains little more than unsubstantiated generalizations such as "everywhere else in the Khoisan languages", "average Bushman language", "any other Khoisan language" (all p.68/9). He tried, it would appear, to "kill two birds with one stone": if he succeeded in rectifying the position of Khoekhoe by proving that it is related to some other click languages (and also in showing that Sandawe and Hadza belong to the same group), he would have proved that all the languages concerned are related genealogically.

In concentrating in his argumentation on a comparison "Khoekhoe vs. the rest", Greenberg was following a long established research tradition of assessing Khoisan in genealogical terms. For geographical reasons, early Khoisan research happened to focus on Khoekhoe-speaking pastoral populations and !Ui-speaking hunter-gatherer (= San) populations, resulting later in the misconception that the cultural dichotomy should generally correspond neatly with a linguistic one. After the discovery of the genealogical unity between the Khoekhoe group and some San languages, potential affinities between Khoekhoe and other San languages also tended to be uncritically interpreted as representing a common linguistic heritage. In an indirect way, Greenberg, too, fell victim to a non-linguistic argument.

There are two major problems with this traditional approach. First, the Khoekhoe branch is not typical for its family (Khoe) in a number of respects, thus rendering it unsuitable as a basis for hypothesis creation regarding the genealogical classification of Khoisan (see Güldemann (forthcoming d) for an explanation in terms of substratum interference from San languages of the Tuu family).[4] Second and more importantly, San languages had not, and still have not, been shown to form a genealogical entity. D. Bleek, for example, whom Greenberg relied on for most of his data, did not use the term "Bushman" in a clearly linguistic-genealogical sense. When Greenberg writes that "the present review of the morphological evidence from Hottentot [= Khoekhoe] should be sufficient to show that it resembles the Bushman [= San] languages at every turn" (p.71), this must be qualified. Clearly, though not "at every turn", Khoekhoe does show morphological affinities with San languages -- however, not with all of them, but only a particular group: "Central Bushman", constituting today the Kalahari branch of the Khoe family.

The following discussion will be concerned first of all with showing that Greenberg failed to establish this crucial point, namely that Khoe (composed of its two branches Khoekhoe and Kalahari) is actually related to the other San languages of southern Africa, to be subsumed for convenience under the term "Non-Khoe" (see below). I will focus specifically on the morphological data. In so doing, I will ignore Greenberg's lexical comparisons, for two reasons: (a) specialists consider these unconvincing (cf., e.g., Traill 1986) and (b) lexical data alone, even if acceptable, are not sufficient proof for establishing a new genealogical linguistic relationship.[5]

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[4] That a Khoe language deviates in some features from the general trend in the family and that this is in part due to language contact could also hold, although to a lesser degree, for Naro which is geographically sandwiched between Ju and Tuu languages and even had secondary contact with Nama.

[5] Just to mention one case, extensive lexical affinities involving regular sound correspondences can be diagnosed between creoles and their lexifier languages. However, this does not reflect a canonical genealogical relationship according to the classical family-tree model.

It will have become clear by now that this paper is not about historical reconstruction. It rather attempts to make two points, one particular and one more general. First, Greenberg's morphological evidence for a Macro-Khoisan family and even for a more restricted South African Khoisan family cannot be accepted, so that his classificatory proposal should be looked at as what it is -- one hypothesis among many, and on the evidence presently available, a weak hypothesis. Second, this concrete case of a doubtful, if not unfounded proposal is reason enough to challenge the wide-spread confidence with which the Africanist public has generally embraced Greenberg's linguistic classification of the continent as a whole.

An inventory of the languages concerned

Before discussing Greenberg's work, I give a brief overview of the relevant languages and language groups in a more updated classification and terminology. I will follow Güldemann and Vossen (2000), but add a few new results of research in Khoisan classification which have become available since then.

Lineages (and branches)	**Language(s) or dialects**	**Remark on classification**
(A)		
Hadza	single language (*Hatsa*)	
Sandawe	single language	potentially related to Khoe-Kwadi
(B)		
Khoe-Kwadi		
(Kwadi)	single language	newly affiliated to Khoe
Khoe (= Central Khoisan)		
Khoekhoe (*Hottentot*)		
North:	Eini†, Nama-Damara (*Nama*), Hai‖'om	
South:	!Ora† (*Korana*), Cape varieties†	
Kalahari		
East		
Shua:	Cara, Deti†, |Xaise, Danisi, Ts'ixa, etc.	
Tshwa:	Kua, Cua (*Hiechware*), Tsua, etc.	
West		
Kxoe:	Kxoe, ‖Ani, Buga, G|anda, etc.	
G‖ana:	G‖ana, G|ui, ǂHaba, etc.	
Naro:	Naro (*Naron*), etc.	
(C)		
Ju (= Northern Khoisan, DC)		
Northwest:	!'O!Xũu, !Xũu (*!Kung*)	
Southeast:	Ju|'hoan, ǂKx'au‖'e (*Auen*)	
(ǂHõa)	single language	probably related to Ju
Tuu (= Southern Khoisan)		
Taa:	!Xõo, N|amani†, N|u‖'en† (*/Nu//En = Nusan*), Kakia† (*Masarwa*) (DC)	
Lower Nossob:	|'Auni† (*/Auni*), |Haasi† (DC)	
!Ui:	N‖ng, ǂKhomani, N|huki (DC); ǂUngkue†; |Xam† (*/Kam*) (DC); ‖Xegwi†	

Note: DC = dialect cluster, † = extinct

Figure 1: Lineages subsumed under Khoisan and their internal composition

With the present state of knowledge, Khoisan languages are best classified into three pragmatically oriented groups: (A) the two East African languages, which show little evidence for being related to each other or to Khoisan languages in southern Africa; (B) the genealogical Khoe-Kwadi group in southern Africa; and (C) the non-genealogical, typologically based entity Non-Khoe, also in southern Africa, which consists of two families and one undetermined language (see Güldemann (1998), Güldemann and Voßen (2000), Güldemann (forthcoming a) for some discussion of this group).

Figure 1 summarizes this approach. It lists six lineages in boldface which have not yet been shown to be related to each other genealogically, although I indicate in the last column new proposals as well as promising but less secure hypotheses. These lineages are grouped according to the three pragmatic units mentioned above. The names of larger, clearly established language families (including the traditional terms) are underlined and followed by their internal breakdown into branches, sub-branches, and dialect clusters or languages. For a better comparison with Greenberg's study, I have given his language names in italics after the term used here, to the extent that the two differ. Two languages, Kwadi and ǂHõa, are listed in parentheses; although important for future Khoisan classification, they will not be relevant for this paper, because they were not yet known at the time of Greenberg's research.

Greenberg's grammatical Khoisan comparison

The grammatical comparisons Greenberg presents in prose as support for an alleged Khoisan unit might appear impressive at first glance, especially to a reader not familiar with the subject matter. They are not when displayed in a more systematic and transparent way.

For this purpose, I have presented the entire morphological evidence adduced by Greenberg in the appendix, listed according to the five relevant classificatory units Hadza, Sandawe, Khoe, Ju, and Tuu. An individual data item consists of the form(s) of a language-specific element followed by its meaning or function. In the columns III-V, referring to language groups, Greenberg's language name is given below the datum; a semicolon separates items from different languages. When he claims that the element is common in the entire group, this is indicated by *, without implying that the element in fact has the status of a valid reconstruction.

It is important to note that I have included every association made by Greenberg, in order to give the maximal possible evidence the reader might be prepared to accept. He notes himself that some of the proposed morphological affinities between languages or groups are highly speculative. Nevertheless, as they are presented side by side with other comparisons implied to be more substantial, they implicitly inform his general case for a Khoisan family.

For a maximally transparent review of Greenberg's study, it would be important to know the source of every individual piece of data. Unfortunately, Greenberg never indicates where he took a particular item of information from. In Table 1, however, I attempt to give the language-specific works likely to have been used by him; they are in any case what I had to have recourse to for reconstructing how a certain data point entered Greenberg's treatment (and thus the appendix).

Language	Greenberg's term	Greenberg's probable language-specific source(s) on grammar
Hadza	Hatsa	Obst 1912, Bleek 1931
Sandawe	Sandawe	Dempwolff 1916
Nama	Nama	Planert 1905a, Meinhof 1909, Dempwolff 1934/5
!Ora	Korana	Meinhof 1930, Maingard 1932
Cua	Hiechware	Dornan 1917
Naro	Naron	Bleek 1928, Schinz 1891
!Xũu	!Kung	Vedder 1910/1
ǂKx'au‖'e	Auen	Bleek 1928, Schinz 1891
N|u‖'en	|Nu‖En, Nusan	Bleek 1928
Kakia	Masarwa	-
|'Auni	|Auni	Bleek 1937
|Xam	|Kam	Meriggi 1928/9, Bleek 1928-30

Table 1: Data sources presumably consulted by Greenberg

In addition to the literature listed in Table 1, he also in all likelihood made use of (some of) the then-existing Khoisan surveys like Planert (1905b, 1926/7), Schapera (1930), and Bleek (1939/40) as well as lexical sources.

Discussion

Drawing on the presentation in the appendix, I will demonstrate that Greenberg had little reason to make a case for a genealogical super-group Khoisan on the basis of grammatical evidence.

A first major problem concerns the number of Khoisan units involved in Greenberg's comparative sets. The data available to him represent five units, Hadza, Sandawe, Khoe, Ju, and Tuu; all or most of these should ideally turn up repeatedly in a convincing comparison, because they are not obviously related to each other. Leaving aside the question as to whether a given comparison is in fact valid, the actual picture is as given in Table 2.

Khoisan units involved	Number of comparisons	Entries in Table 1
5	3	6, 20, 23
4	1	25
3	11	1, 3, 5, 9, 11, 16, 17, 21, 24, 27, 28
2	14	2, 4, 8, 10, 12, 13, 14 , 15, 18, 19, 22, 26, 29, 30
1	1	7

Table 2: Distribution of comparative data over major Khoisan units

Already this crude quantitative analysis casts considerable doubt on Greenberg's hypothesis. Just three out of 30 comparative sets involve all five Khoisan units; one additional set covers four units. As opposed to this, 14 sets, i.e. almost half of the total, are randomly distributed, bilateral comparisons, which are hardly sufficient to argue for the coherence of Khoisan as a whole; at least one set is entirely irrelevant, because it represents a unit-internal feature.

More specifically, the following comparative sets can already be removed from the list of alleged cross-Khoisan morphemes simply on account of their restricted or otherwise defective spread over the language groups.

(1)

Function	**Number in appendix**	**Khoe**		**Tuu**
		Khoekhoe	**Kalahari**	
Passive	7	*-e* (Nama)	*-e* (Naron, Hiechware)	
Possessive	26	*di* (Nama)	*di* (Naron)	*di* (|Nu||En)

The two sets in (1) present only Khoe-internal comparisons, of no significance for any higher-order group. The passive markers given for Nama, Naro, and Cua are all cognates going back to a Proto-Khoe form **-he* (Voßen 1997: 360). The set of possessives seems to be of the same kind, compounded by what appears to be a factual error: I have looked at the sources on N|u||'en (a.k.a Nusan) known to me, including D. Bleek's Khoisan surveys, without finding any evidence for a possessive marker *di*; Nama and Naro *di* are reflexes of the Proto-Khoe form **di* (Voßen 1997: 349, 379).

(2)

Function	**Number in appendix**	**Hadza**	**Sandawe**	**Khoe**	**Tuu**
				Kalahari	
Future	4	*so*, *si*			*se* (|Auni)
3rd singular object	18	*-a*	*-a*		
Masculine plural	22	*-či*		*-či* (Naron)	
Postposition 'to, at'	30	*-ina*	*-na*		

The comparisons in (2) concern Hadza and just one other language. Given that Güldemann (forthcoming a) shows Hadza to be typologically very different from the rest of Khoisan and that Sands (1998a, b), on the basis of several sophisticated lexical tests, finds no convincing evidence for assuming that Hadza is related to Sandawe or to languages in southern Africa, these sets can also be ignored henceforth. On the same grounds, I will refrain from any discussion of Hadza data in other comparisons. Note that this is done irrespective of whether the relevant Hadza items are at all comparable with other elements in Khoisan; that most are not can be inferred from Elderkin (1982) and Sands (n.d.), who discuss various problems in Greenberg's use of Hadza data in the comparison.

(3)

Function	**Number in appendix**	**Hadza**	**Sandawe**	**Khoe**	
				Khoekhoe	**Kalahari**
Reciprocal	8		*-ki*	*-ku* (Nama)	*-ku* (Naron)
1st singular	10		*tsi*	*ti* (Nama)	*ti* (Naron) *či* (Hiechware)
1st singular	11	*-ta*	*tsa*	*-ta* (Nama)	
3rd common sing.	15		*e*	*-i*, *-e* (Nama)	
3rd feminine sing.	16	*-sa*	*sa*, *-su*	*-s* (Nama)	*-sa* (Naron)
3rd masculine sing.	17	*-wa*,*-ya*,*-ma*	*-we*	*-b* (Nama)	*-ba* (Naron)

A number of comparative sets, which are given in (3), involve exclusively items from Khoe and Sandawe, or items from these two units together with a Hadza form. For these sets, it is important that it has been suspected for quite some time that Sandawe is indeed somehow linked historically to the Khoe family (Elderkin 1986, 1989; with the inclusion of Kwadi: Güldemann and Elderkin forthcoming). If this hypothesis turned out to be valid, these comparisons are again irrelevant for Greenberg's Macro-Khoisan.

On the basis of the foregoing remarks, the number of comparative sets is reduced to 18. These are essentially comparisons which involve Khoisan lineages in southern Africa and would thus support the hypothesis about a South African Khoisan family comprising Khoe, Ju, and Tuu. At first glance, such a lower-order group seems to fare much better in the count: eight sets involve all three groups (1, 5, 6, 20, 23, 25, 27, 28 in the appendix) and ten sets at least two groups (2, 3, 9, 12, 13, 14, 19, 21, 24, 29 in the appendix). Since these always involve a Khoe language, they are all good test cases for the related question of whether the fairly clear linguistic divide between Khoe and Non-Khoe can be bridged in historical terms on the basis of morphological data. Within Greenberg's procedure, they would represent the major evidence for his lumping hypothesis; if these comparisons fail to be valid, there is no case for Khoisan, even in the more narrow (i.e. South African) sense.

This is the point where a qualitative evaluation of the data becomes relevant. I will try to show that the situation becomes even more dramatic under this approach: there is not a single comparison that survives a more careful analysis to be a potential cognate set across the alleged South African Khoisan group. That is, comparing the items concerned in terms of a GENEALOGICAL interpretation is highly questionable, for a number of reasons. Recall that the 12 sets already excluded were discarded without actually looking at the data; the overall quality of these comparisons is in fact not different from those to be discussed in the following.

A first problem which must not be underestimated is the quality of the majority of the data used. With respect to all of the languages but Khoekhoe and |Xam, the material resulted from very short periods of field research. It was impossible to tackle, let alone clarify, the more intricate phenomena involved in the phonetics-phonology, morphosyntax, lexicon, and semantics of these languages, many of the phenomena being in general unfamiliar at the time. On the basis of the exiguous material available, the structure of these languages as fully functioning linguistic systems was all but unknown at Greenberg's time. Indeed, some of the linguistic domains concerned would even today require -- for any language -- a huge amount of data in order to come up with a more or less conclusive analysis.

(4)

Function	**Number in appendix**	**Khoe**		**Ju**	**Tuu**
		Khoekhoe	**Kalahari**		
Past	1	*go~ko* (Nama)	*ko* (Naron)	*ko* (Auen, !Kung)	*ko* (|Auni)
Continuous	2	*re* (Nama)	*re* (Naron)	*re* (Auen)	
Continuous	3		*a* (Naron)	*a* (Auen)	
'wish'	5a	*ka* (Korana)	*kaa* (Hiechware)		*ka* (|Kam)
Future/ optative	5b	*ga~ka* (Nama)	*ka* (Naron)	*ka*; *oga* (Auen; !Kung)	

To mention one such general area, I have serious doubts whether the data sets in (4) on verb grams contain elements which are truly comparable in semantic-functional terms. This domain manifests a high complexity, both in general and particularly in the languages at issue. It not only concerns such traditional categories as tense, aspect, modality, and polarity, which may already confront the linguist with considerable problems of analysis; it potentially involves also lesser known features like taxis, focus, theticity, deixis, evidentiality, etc. An additional complication is that yet other elements (e.g., those marking sentence type) may have a similar morphosyntactic behavior to core

verb morphology and cannot be distinguished easily from it. Therefore, labels like "continuous", "past", "future", etc. taken over uncritically from the then-available grammar sketches, which were very superficial and short (often just a handful of pages), cannot be trusted.

The general problem with verb grams is aggravated in Greenberg's comparison by possible mis-associations in terms of formal shape. For example, the Nama "continuous" marker *re* is actually imperfective *ra*, changing to *re* only after the tense morpheme *ke*. The past markers *ko* cited for Ju languages are also problematic in this respect. That Vedder (1910/11: 19/20) has *go*, not *ko*, might be viewed as a minor issue. However, data from Ju|'hoan, another Ju variety, pose additional problems: its past marker is not *ko* but *koh* (*h* stands for breathiness), which arguably has implications for an assumed Proto-Khoisan form; it also has a distinct imperfective gram *ku* -- a form which Bleek (1928: 62) simply lumped together with *ko* (?or *koh*) under the label "past" in ǂKx'au||'e a.k.a. "Auen", the closest relative of Ju|'hoan and one of Greenberg's languages. Compare also the discussion below on the last two sets in (4).

Another general problem relevant for the entire data set concerns the minimal phonetic substance of the elements compared, in that they are virtually all particles or suffixes of the shape CV, C, and V; formed from a small set of about ten consonants and five vowel monophthongs. This restricted phonetic material must be contrasted with the phoneme inventory available for lexical items, because these are the ultimate historical sources of the compared grams. This consideration is particularly important in Khoisan, where lexemes display an enormous variety in both their consonant and vocalic parts (in East !Xõo, the most complex language so far, there are on the order of about 120 initial consonants and 40 vowel monophthongs; the vocalic part may also consist of a sequence of unlike vowels multiplying the possible distinctions still further). Grammatical items are the outcome of phonetic reduction of this multiplicity of sounds to a tiny fraction of such complex original inventories. In a broad and fairly crude comparison of random data from any two languages, a generally simple, phonologically restricted gram shape is bound to yield a great many superficially similar or identical forms, which can have very different historical origins. Several concrete examples will come up in the discussion below.

(5)

Function	**Number in appendix**	**Sandawe**	**Khoe Khoekhoe**	**Kalahari**	**Ju**	**Tuu**
Continuous	3			*a* (Naron)	*a* (Auen)	
Copula	6	*i*	*i* (Nama)	*e* (Naron) *je* (Hiechware)	**e*	**e*
Demonstrative	23	*ha~he*	*he* (Korana)	*xa* (Naron) *ho* (Hiechware)	**ha~he*	**ha~he*
Demonstrative	24	*na~ne*	//*na~ne* (Nama)			*//*na*

Possible chance resemblances of highly reduced phonetic material, in conjunction with problems in the concrete data themselves, is an important factor which casts doubt on a number of comparative sets, especially those involving just a vowel or particularly unmarked consonants like *h* and *n* as in (5), even if some of them may look "convincing" purely in terms of the number of Khoisan units involved.

The above problem could have been partly countered if basic principles of historical-comparative work had been respected, in particular (a) that the language-

specific elements under comparison should be analyzed rigorously in semantic-functional terms (inter alia by embedding them into their respective morphological paradigm) and (b) that comparative data or reconstructions of older language states from within a unit should be taken into account. This, however, is not what Greenberg tried to do. I will argue that several comparative sets appear in a different light as soon as the initial, fairly crude level of analysis is left behind and a more informed evaluation is attempted.

(6)

Function	**Number in appendix**	**Sandawe**	**Khoe Khoekhoe**	**Kalahari**	**Ju**	**Tuu**
(3rd common) plural	19		*-n*, *-na* (Nama)			*-ni* (|Auni, |Nu‖En)
(3rd) feminine plural	20	*-si* ?or *-tsi*	*-ti* (Nama)	*-si* (Naron)	**-si*	*-ti* (|Kam) *-si* (|Auni)
(3rd masculine) plural	21	*-ko*	*-ku~-gu* (Nama)			*-gu* (|Kam)

The comparisons in (6) represent as a set a clear case showing that the application of the above two principles can weaken the proposed morphological similarities and their explanation in terms of common inheritance. The elements *-n(a)*, *-ti* (or *-di*), and *-ku~-gu* of Nama are part of an elaborate paradigm of person-gender-number markers (= PGNs) which have two quite different functions as (a) pronouns (here all for 3rd persons) and (b) gender-number suffixes on nouns. They can be reconstructed back to Proto-Khoe; the respective proto-forms according to Voßen (1997) and Güldemann (2004) are **-nV*, **-di*, and **-Cu* (C stands here for a voiceless, non-laminal click; see below). Naro has reflexes of all three forms; the feminine plural counterpart, however, should not be *-si*, but *-dzi* (Voßen 1997: 240). By contrast, the elements from other languages compared with these Khoe PGNs have a very different status with respect to their paradigmatic and, in part, their semantic properties. The forms cited from Non-Khoe languages are thus unlikely to fit into a plausible comparison with Khoe, a point which will be addressed now.

The information on a suffix *-ni* in |'Auni and N|u‖'en which is compared with the Nama form *-n(a)* goes back to Bleek (1937: 254 and 1928: 65, respectively). While the form *-ni* does indicate plural, it is not associated with common gender or with use as a 3rd-person pronoun. More importantly, Bleek's brief discussions already show that *-ni* is just one among several plural endings on nouns and a deeper analysis reveals that it is not, as Greenberg claims, "the common noun plural" (p.70) of these languages but a lexically highly restricted formation, and this across all attested languages of the northern part of the Tuu family (it is thus far unattested in the !Ui branch in the south).

Although one might be tempted to assume on phonetic grounds a proto-form **ti* (as in |Xam) which underwent weakening first to *tsi* (as in Sandawe) and further to *si* (as in Ju and |'Auni), or first to *di* (as in Proto-Khoe) and further to *dzi* (as in Proto-Kalahari Khoe including Naro), these items are also heterogeneous as far as Non-Khoe is concerned. The element *-si* of southeastern Ju varieties is a phrasal enclitic and serves as the default plural marker on nouns. It derives with high probability from a still-existing 3rd-person pronoun *si*. This partakes in a complex agreement system in which it is the only item that marks unambiguously plural number; but its gender meaning is "own group human" rather than feminine (see Güldemann 2000). The |'Auni suffix *-si*, like *-ni* above, is a poorly attested and apparently marginal plural ending without pronominal

use and feminine semantics. The |Xam element -*ti* is even more restricted, occurring on just a handful of human nouns. Furthermore, it has a clear counterpart in the N||ng cluster of !Ui whose initial consonant appears to oscillate between *t*, *c*, and *k*, thereby posing a problem for Greenberg's sound correspondence. In any case, it is already unlikely that |'Auni -*si* and |Xam -*ti* should be cognates, because they are maximally remote from each other in semantic terms (plural vs. feminine singular, respectively); this suggests strongly that the two items should not be included simultaneously in a comparison.

Finally, it is questionable that |Xam -*gu* and Nama -*ku* can be explained as reflexes of a shared proto-form. Apart from the semantic difference (-*gu* is not a 3rd-person masculine plural form, but a so-called "associative plural" restricted to human nouns), there is the problem of divergent form: while -*ku* in Nama certainly goes back to a form with an initial voiceless click (the proposals are *//, **!!*, and **!*; see Güldemann 2004), there is no evidence so far for assuming such a click replacement in |Xam.

(7)

Function	**Number in appendix**	**Khoe**		**Ju**	**Tuu**
		Khoekhoe	**Kalahari**		
'wish'	5a	*ka* (Korana)	*kaa* (Hiechware)		*ka* (|Kam)
Optative/ future	5b	*ga~ka* (Nama)	*ka* (Naron)	*ka* (Auen) *oga* (!Kung)	

The forms in (7) represent another instructive case for demonstrating that Greenberg's comparisons remain on the surface and fail to take into account the possibility of language-specific complexity as well as lineage-internal time depth associated with language change. The four items listed from Khoe languages can indeed be argued to represent a set of cognates: the two verbs translated as 'wish' could be traced back to Proto-Khoe **!a* 'seek something, want' (Voßen 1997: 496); it is quite possible, too, that such a verb developed in some Khoe languages to a marker of irrealis in a wide sense (including future, subjunctive, volition, etc.), which could account for the two modality grams.

The elements from Non-Khoe languages, however, should be kept apart from these Khoe data. The |Xam form *ka* must be viewed against the more general picture of how intention/volition is often expressed in Tuu languages (see Güldemann forthcoming b, c); it is not a verb meaning 'wish', but a far more versatile predicative element which also seems to have an alternate form *ta*. Its reading of volition is derived from its use as a marker of reported discourse and is primarily triggered in a particular clause structure [subject$_X$ *ka* pronoun$_X$ verb]. This is a specialized quotative construction conveying internal awareness; the approximate meaning 'X think/say X would/should VERB' yields 'X wants/is about to VERB'. East !Xõo has an entirely parallel element *ta*. Including the formal variants of *ka* in both families, the comparison even ceases to be probable in terms of formal similarity: Tuu *ta*, *ka* vs. Khoe **!a*, *ka*.

The compared elements from the relevant Ju varieties cannot be easily evaluated due to the questionable quality of the data and the lack of modern, more reliable sources. At least the !Xũu form *oga*, which is likely to go back to Vedder (1910/1: 19-20), is not a clear match for the Khoe set of forms -- this because Vedder in fact gives two future markers, *oga* and *o*, which suggests that the important component in the complex form *oga* is not *ga*, as required in Greenberg's comparison, but rather *o*.

(8)

Function	**Number in appendix**	**Khoe Kalahari**	**Ju**	**Tuu**
Interrogative	25	*du* (Naron)	*de* (!Kung)	*de* (|Kam)

Another example of an inappropriate association of elements is (8). The Naro form *du* is an interrogative pronoun 'what' that can be reconstructed to Proto-Kalahari Khoe **(n)du* (Voßen 1997: 380). The form *de* in |Xam is of a very different nature. I refer the reader to Güldemann (2005, forthcoming b, c) for more discussion and illustrative examples of the structure of questions in Tuu in general and |Xam in particular; here, I will give only some basic information. The element *de* can be translated conveniently as 'which', because it is the second component of compound forms whose first parts are semantically generic nouns (thus, *!ude* 'who' < *!u* 'person', *tsade* 'what' < *tsa* 'thing', *tide* 'where' < *ti* 'place'). It is important that these complex words require an additional general question particle detached from them. The stem *de* is likely to be derived ultimately from an indefinite locative predicative 'be somewhere', as it can render a 'where'-question in conjunction with the above mentioned question particle. Greenberg's source for !Xũu *de* is not entirely certain, but it seems to have been taken from Bleek (1939/40: 65, 70). Provided this is correct, the data there show this *de* to have properties which are quite reminiscent of |Xam *de* (e.g., it also renders apparently a 'where'-question) and unlike those of a canonical interrogative pronoun 'what'. These remarks will suffice to show that Naro *du* (< **(n)du* 'what') is a very improbable cognate of *de* in |Xam and !Xũu on semantic-functional grounds, and considering the vowel quality, also for formal reasons.

(9)

Function	**Number in appendix**	**Khoe Khoekhoe**	**Tuu**
1st plural	13	**-i* (Nama)	**i*
2nd plural	14	**-u* (Nama)	**u*

The two comparative sets in (9) involve a brave attempt by Greenberg at internal reconstruction: he entertains the possibility that certain morphologically complex PGNs of Nama reflect two very old pronoun forms, **u* for 2nd-person plural and **i* for 1st-person plural. According to Voßen (1997) and Güldemann (2004), these interesting ideas find partial corroboration on the level of Proto-Khoe and an even earlier language state, Proto-Khoe-Kwadi, respectively. The forms reconstructed there are **o* or **u* for 2nd-person plural and **e* for 1st-person plural. The last item, however, is formally closer to the 1st-person EXCLUSIVE **e* of Proto-Ju (Heine forthcoming) than to the 1st-person INCLUSIVE **i* of Proto-Tuu. This observation, including the meaning difference between the two Non-Khoe forms, raises the question as to which elements truly are appropriately comparable with Khoe: the Ju form, the Tuu form, both, or neither. The last hypothesis, that the similarity is a superficial one, is a very real possibility, given the minimal phonetic substance of the items involved. This consideration becomes even more salient when other data are taken into account: Proto-Ju also has a pronoun form **i*, but this encodes not 1st-person but 2nd-person plural (Heine forthcoming) so that it would have to be compared with **u* in Proto-Tuu and **o* or **u* in Proto-Khoe-Kwadi. What, then, would the two relevant pronoun forms be like in a hypothetical Proto-South

African Khoisan and what sort of historical scenarios could plausibly derive their modern family-specific reflexes according to an internally consistent pattern of linguistic changes? Given that (a) the number of pronouns to be distinguished in the system is about six to eight across Khoisan (and this ignores different genders in 3rd-person forms), (b) the relevant pronoun shape is maximally simple, consisting of only a vowel, and (c) just five to six phonemic vowel qualities are available across southern African Khoisan, accidental similarity cannot be dismissed.

(10)

Function	**Number in appendix**	**Khoe Khoekhoe**	**Kalahari**	**Ju**	**Tuu**
Preposition 'in', 'at'	28	*ka* (Nama)	*ka* (Naron, Hiechware)	*ka* (Auen, !Kung)	*ka* (Masarwa)

Greenberg's comparison of adpositional grams of the form *ka* in (10) appears to have been inspired by Bleek's judgements, although it looks different in quality at first glance. Bleek often follows a very loose approach to comparative morphology; she writes (1939/40: 68), for example: "The verb /*ka* 'to be with' used to connect verb and noun in ǂkhomani ... is probably the root of the forms *ke*, *kie*, *ka*, and *kwe* found in |auni, Masarwa, |nu||en, ||kau||en, !kũ, Naron, and Hie, denoting the relationship of verb to noun, sometimes preceding the latter, sometimes following it." A closer look at Greenberg's set involves less obvious, yet similar analytical defects in formal and semantic terms. Even without knowing in all cases what Greenberg is referring to with *ka* in a particular language, the three-way set as its stands can be dismissed as a diagnostic for Khoisan. First, lexeme-specific suffixes, postpositions, and prepositions are all associated with no indication as to how a single proto-form would yield such different categories; e.g., unless it can be argued that adposition shift is universally frequent, the question would have to be addressed as to how/why the element has changed its position vis-à-vis its object in one or the other language (group). The comparison may also have ignored details bearing on the actual form of a language-specific element; the *ka* in Kakia, for example, could have been an instance of a default preposition *kV* whose vowel changes according to the agreement class of the following nominal, as is the case in its closest relatives of the Taa branch of Tuu (cf. Güldemann forthcoming c on East !Xõo). Last but not least, *ka* represents a particularly unmarked sound shape in Khoisan regarding both the consonant and the vowel, so that very different elements might be behind a surface form *ka*, even within an individual language. In view of the superficial analyses Greenberg relied on, it is more likely that what somebody (be it the original author, Bleek, or Greenberg) identified as an "adposition" *ka* meaning 'in' or 'at' actually reflects grams which are diverse in morphosyntactic behavior, function, and ultimate origin.

One might be tempted to argue in defense of Greenberg that much of the data I have drawn from in the above discussion were not available at his time. This, however, misses the point. It is not his comparisons as such which have to be questioned; a superficial data survey like Greenberg's might well serve as valuable input for the formation of hypotheses and their further testing in more in-depth research that reduces the risk of comparing randomly available data. Rather, it is the type of Greenberg's claims and the rhetoric with which they were made that discredit his approach to Khoisan classification. In his position, a linguist would do better to refrain from drawing

far-reaching conclusions; Greenberg, to the contrary, gave the impression to outsiders that the problem at hand could be considered as settled. In general, only a few sets survive a more careful analysis and are arguably valid in terms of the existence and mere comparability of the items involved. Two such sets are given in (11).

(11)

Function	**Number in appendix**	**Khoe**		**Ju**	**Tuu**
		Khoekhoe	**Kalahari**		
Preposition 'with'	27	*/ka* (Nama)	*/kwa* (Naron)	*/kwa* (Auen)	*/ka* (ǂKhomani)
Postposition 'in'	29	*!na* (Nama)		*!ne* (Auen) *!nẽ* (!Kung)	

Regarding the comitative markers 'with', the initial clicks should be transcribed more appropriately as */x*, but this applies to all the items involved. The two elements from Nama and Naro go back to Proto-Khoe **/xoa* (Voßen 1997: 353-4), probably derived ultimately from a verb. The identification of similar items in the two Non-Khoe languages seems to be adequate, although I could not determine conclusively Greenberg's precise source of information. The comparison of the inessive markers also deserves a closer look in a final evaluation of cross-Khoisan similarities, especially because these adpositions are common for Khoekhoe and Ju in general, may well both originate in a noun 'belly', and match formally at least in the initial click (the vocalic parts, under closer inspection, differ more than is apparent here, because the Ju forms of this inessive postposition known to me have a reduced vowel and a syllabic velar nasal).

However, sets of this kind lead to a final problem with Greenberg's approach: in his attempt to establish a genealogical unit Khoisan, he interprets every similarity as a result of inheritance from an ancient proto-language and entirely ignores language contact as a possible explanation for a particular affinity between different groups. This view is untenable for at least two reasons: (a) the languages concerned have a considerable time depth in the area and the attested sociolinguistic patterns were favorable to language contact and mutual linguistic interference, and (b) a number of Greenberg's data sets are just bilateral comparisons or can be interpreted in such terms. It must be investigated in the future whether language contact can account for this type of similarity between different families, which are invoked by Greenberg as evidence for a Khoisan unit.

A case in point is Greenberg's assumption that Khoekhoe and Tuu have inherited a 1st-person exclusive pronoun **si* from some early Khoisan chronolect. Despite the generally disfavored borrowing of pronouns, one can make a good case for the hypothesis that the relevant pronoun base *si* in independent compound pronouns, found in this form in Khoekhoe (but not in the rest of Khoe), has its origin in the 1st-person exclusive pronoun **si* to be reconstructed for Proto-Tuu (see Güldemann 2002a for a discussion of this hypothesis).

Khoekhoe and Tuu as groups share a particularly long history in the same geographical area, which is relevant in two ways. First, the linguistic data strongly suggest that the immigrant Khoekhoe branch of Khoe has a considerable substrate component from the indigenous Tuu family, distinguishing it from Kalahari Khoe (Güldemann forthcoming d). Second, individual Khoekhoe varieties have been important and prestigious contact languages for the majority of Tuu languages. The

plausible assumption of mutual influences of the two groups might thus be relevant in one way or another for some resemblances recorded in (12).

(12)

Function	**Number in appendix**	**Khoe Khoekhoe**	**Tuu**
1st plural exclusive	12	*si* (Nama)	**si*
Plural	19	*-n*, *-na* (Nama)	*-ni* (|Auni, |Nu‖En)
Plural	21	*-ku~-gu* (Nama)	*-gu* (|Kam)
Demonstrative	23	*he* (Korana)	**ha~he*
Demonstrative	24	*//na* (Nama)	**//na*
Preposition 'with'	27	*/ka* (Nama)	*/ka* (ǂKhomani)

Also, ǂKx'au‖'e (a.k.a Auen) of the Ju family is the direct northwestern neighbor of the Kalahari Khoe language Naro. Nama, too, has been interacting with several Ju varieties of northwestern Namibia. These contacts might account for some of the affinities in (13), provided the data are at all correct. In fact, regarding the comparison of adverbializers, Bleek (1939/40: 67) explicitly assumed that ǂKx'au‖'e *-si* has its source in the Khoe family, where *-se* is common.

(13)

Function	**Number in appendix**	**Khoe Khoekhoe**	**Kalahari**	**Ju**
		Nama	Naron	Auen
Past	1	*go~ko*	*ko*	*ko*
Continuous	2		*re*	*re*
Continuous	3		*a*	*a*
Future/ optative	5b	*ga~ka*	*ka*	*ka*
Adverbializer	9	*-se*	*-sə*	*-si*
Preposition 'with'	27	*/ka*	*/kwa*	*/kwa*

All in all, Greenberg's genealogically interpreted morphological evidence for a Khoisan language family can be discarded as a whole for a variety of reasons: inaccurate or at best doubtful data partly aggravated by his sloppy use thereof, his disregard of basic principles of historical-comparative reconstruction and diachronic typology, insufficient representation of the individual groups, probably coincidental resemblances, and possible borrowing across different families.

In particular, the above discussion has brought up a general pattern in his comparisons across southern African languages: on the one hand a number of valid associations between elements from different Khoe languages, many of them recognized by previous scholars (a fact hardly ever acknowledged by Greenberg), and on the other hand the large amount of deeply flawed "genealogical" associations between Khoe and some Non-Khoe language(s).

As argued above, if there is no clear evidence for a genealogical relationship between Khoe and Non-Khoe, there is no evidence for Macro-Khoisan. It must be concluded more generally that Greenberg did not have a case for such a genealogical unit, neither on lexical nor on morphological grounds. If somebody today adopts this hypothesis, s/he must still make that case before using it as a basis for any other conclusions.

It goes without saying that this paper does not say anything definite about the ultimate classificatory status of the languages at issue. In particular, it does not exclude

the possibility of some remote genealogical relationships; after all, there can be no proof for the unrelatedness of languages. The point here is that the commonly prevailing perception of Khoisan by non-specialists, insofar as it is shaped by Greenberg's work, is misguided and should yield to a more balanced view. Were it not for the widespread, uncritical acceptance of his hypothesis both in mainstream linguistics and in other research disciplines dealing with the peoples speaking the languages concerned, the present study would have been a pointless exercise. Finally, in more general terms, at least the Khoisan part of the African linguistic classification turns out to be as flawed as Greenberg's (1971, 1987, 2000-2) classificatory proposals for other areas of the world.

Appendix: Greenberg's grammatical Khoisan comparisons

	I. Hadza	II. Sandawe	III. Khoe Khoekhoe	Kalahari	IV. Ju	V. Tuu	Page no.
Predicate marking							
1			*go~ko* PST Nama	*ko* PST Naron	*ko* PST Auen, !Kung	*ko* PST |Auni	68
2			*re* CONT Nama	*re* CONT Naron	*re* CONT Auen		68
3	*a* CONT			*a* CONT Naron	*a* CONT Auen		74f
4	*so*, *si* FUT					*se* FUT |Auni	74
5a			*ka* 'wish' Korana	*kaa* 'wish' Hiechware		*ka* 'wish' |Kam	68f, 74
5b			*ga~ka* OPT Nama	*ka* FUT Naron	*ka*; *oga* FUT Auen; !Kung		
6	*e* COP	*i* COP	*i* COP Nama	*e*; *je* COP Naron; Hiech.	**e* COP	**e* COP	74
Derivation							
7			*-e* PASS Nama	*-e* PASS Naron, Hiech.			69
8		*-ki* RCPR	*-ku* RCPR Nama	*-ku* RCPR Naron			69, 73
9		*-se* ADJ, ADV	*-se* ADV Nama	*-sə* ADV Naron	*-si* ADV Auen		73
Person-gender-number marking							
10		*tsi* 1S	*ti* 1S Nama	*ti*; *či* 1S Naron; Hiech.			70-72
11	*-ta* 1S	*tsa* 1S	*-ta* 1S Nama				71, 74
12			*si* 1P.E Nama			**si* 1P.E	70f
13			**-i* 1P Nama			**i* 1P.I	FN5
14			**-u* 2P Nama			**u* 2P	FN5
15		*e* 3C.S	*-i*, *-e* 3C.S Nama				72
16	*-sa* 3F.POSS	*sa*, *-su* 3F.S	*-s* 3F.S Nama	*-sa* 3F.S Naron			72-4
17	*-wa*,*-ya*,*-ma* M.S	*-we* 3M.S	*-b* 3M.S Nama	*-ba* 3M.S Naron			72-4
18	*-a* 3S.OBJ	*-a* 3S.OBJ					74
19			*-n*, *-na* 3C.P Nama			*-ni* P |Auni, |Nu‖En	70
20	*-ti* F.P	*-si* ?or *-tsi* F	*-ti* 3F.P Nama	*-si* 3F.P Naron	**-si* P	*-ti* F.S; *-si* P |Kam; |Auni	70, 73f
21		*-ko* M.S~P	*-ku~-gu* 3M.P Nama			*-gu* H.P |Kam	70, 73
22	*-či* M.P			*-či* M.P Naron			74
23	*ha* DEM	*ha~he* DEM	*he* DEM Korana	*xa*; *ho* DEM Naron; Hiech.	**ha~he* DEM	**ha~he* DEM	71-4
24		*na~ne* DEM	*//na~ne* DEM Nama			**//na* DEM	73
25	*tu-* INT			*du* INT Naron	*de* INT !Kung	*de* INT |Kam	74

Adpositions

26		*di* POSS Nama	*di* POSS Naron		*di* POSS |Nu‖En	69
27		*/ka* 'with' Nama	*/kwa* 'with' Naron	*/kwa* 'with' Auen	*/ka* 'with' ǂKhomani	71
28		*ka* 'in' Nama	*ka* 'in' Naron, Hiech.	*ka* 'in' Auen, !Kung	*ka* 'at' Masarwa	71
29		*!na* 'in' Nama		*!ne*; *!nẽ* 'in' Auen; !Kung		71
30	*-ina* 'to, at'	*-na* 'to, at'				74

Abbreviations:

ADJ adjectivizer, ADV adverbializer, C common, CONT continuous, COP copula, DEM demonstrative, E exclusive, F feminine, FUT future, H human, I inclusive, INT interrogative, M masculine, OBJ object, OPT optative, P plural, PASS passive, POSS possessive, PST past, RCPR reciprocal, S singular; 1,2,3 person categories

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