Asien- und Afrika-Studien der Humboldt-Universität zu Berlin

Band 47

2016
Harrassowitz Verlag · Wiesbaden

Linda Gerlach

N!aqriaxe –
The Phonology of an Endangered Language of Botswana

2016
Harrassowitz Verlag · Wiesbaden

Bibliografische Information der Deutschen Nationalbibliothek
Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.dnb.de abrufbar.

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the internet at http://dnb.dnb.de.

For further information about our publishing program consult our website http://www.harrassowitz-verlag.de

© Otto Harrassowitz GmbH & Co. KG, Wiesbaden 2016
This work, including all of its parts, is protected by copyright. Any use beyond the limits of copyright law without the permission of the publisher is forbidden and subject to penalty. This applies particularly to reproductions, translations, microfilms and storage and processing in electronic systems.
Printed on permanent/durable paper.
Printing and binding: docupoint GmbH
Printed in Germany

ISSN 0948-9789
ISBN 978-3-447-10724-2

Table of Contents

Acknowledgements XI

1 Introduction 1
1.1 'Khoisan' languages and the classification of ǂ'Amkoe 2
1.1.1 The classification of ǂ'Amkoe: a much disputed case 6
1.1.2 The ǂ'Amkoe language and its varieties N!aqriaxe, ǂHoan, and Sasi 7
1.2 The ǂ'Amkoe language and its speakers 9
1.2.1 Current language area 9
1.2.2 Historic language area and history of the Kweneng district 12
1.2.3 The language names ǂHoan, N!aqriaxe, and Sasi 14
1.2.4 Sociolinguistic and language contact situation 16
1.3 Previous work and literature on ǂ'Amkoe and state of documentation 17
1.3.1 History of field research on ǂ'Amkoe 17
1.3.2 Publications 18
1.4 Aims of dissertation 19
1.5 Data 20
1.5.1 Data of other languages 22
1.5.2 Orthography of cited data 22
1.6 Structure of the thesis 23

2 Phoneme inventory 25
2.1 Consonant inventory 25
2.1.1 Terminology and concepts 25
2.1.2 Phonotactics of lexical roots in Khoisan 29
2.1.3 Click inventory 31
2.1.3.1 Production of clicks 32
2.1.3.2 Influxes 33
2.1.3.2.1 Articulatory properties of clicks 33
2.1.3.2.2 Acoustic properties of clicks 34
2.1.3.3 Accompaniments 43
2.1.3.3.1 Plain – the voiceless accompaniment (series 1) 46
2.1.3.3.2 The voiced accompaniment (series 2) 48
2.1.3.3.3 The ejective accompaniment (series 3) 49
2.1.3.3.4 The voiced ejective accompaniment (series 4) 51
2.1.3.3.5 Plain+/ʔ/ – the glottal stop accompaniment (series 18) 53
2.1.3.3.6 The aspirated accompaniment (series 5) 56
2.1.3.3.7 The voiced aspirated accompaniment (series 6) 59
2.1.3.3.8 Plain+/h/ – the glottal fricative accompaniment (series 19) 61

2.1.3.3.9	Plain nasal – the nasal accompaniment (series 7)	65
2.1.3.3.10	Preglottalized (series 8)	67
2.1.3.3.11	Plain+/q/ – the voiceless uvular accompaniment (series 9)	69
2.1.3.3.12	Voiced+/q/ – the voiced uvular accompaniment (series 10)	70
2.1.3.3.13	Plain+/q'/ – the uvular ejective accompaniment (series 11)	76
2.1.3.3.14	Voiced+/q'/ – the voiced uvular ejective accompaniment (series 12)	78
2.1.3.3.15	Plain+/q^h/ – the uvular aspirated accompaniment (series 13)	79
2.1.3.3.16	Voiced+/q^h/ – the voiced uvular aspirated accompaniment (series 14)	81
2.1.3.3.17	Plain+/χ/ – the uvular fricative accompaniment (series 15)	83
2.1.3.3.18	Plain+/qχ'/ – the uvular affricated ejective accompaniment (series 16)	84
2.1.3.3.19	Voiced+/qχ'/ – the voiced uvular affricated ejective accompaniment (series 17)	86
2.1.4	Non-click inventory	92
2.1.4.1	Plain – voiceless stops (series 1)	94
2.1.4.2	Voiced stops (series 2)	100
2.1.4.3	Ejective stops (series 3)	103
2.1.4.4	Voiced ejective stops (series 4)	105
2.1.4.5	Aspirated stops (series 5)	107
2.1.4.6	Voiced aspirated stops (series 6)	109
2.1.4.7	Plain stop+/χ/ (series 7) and Plain stop+/qχ'/ (series 8)	111
2.1.4.8	Voiced + /qχ'/ (series 9)	117
2.1.4.9	Plain nasal consonants (series 10)	118
2.1.4.10	Plain fricatives (series 11)	119
2.1.4.11	Approximants (series 12)	119
2.1.4.12	Lateral approximant (series 13)	120
2.1.4.13	Tap (series 14)	120
2.1.5	Analytical issues of consonants	123
2.1.5.1	Issues concerning the phonemic status of some segments	123
2.1.5.2	The phoneme /χ/	123
2.1.5.3	Series involving /χ/ and /qχ'/	124
2.1.5.4	Alternative analysis for uvular non-click phonemes	127
2.1.5.5	Analysis and phonemic notation of voiced (click) clusters	128
2.1.5.6	Analytical issues of MO's additional voiced click and non-click segments	129
2.1.6	Unit analysis or cluster analysis	137
2.1.7	Integrated consonant system	142
2.1.8	Comparative considerations	146
2.1.8.1	The N!aqriaxe consonant inventory in comparison with ǂHoan and Sasi	146

2.1.8.2 Some aspects of the click and non-click inventory from a cross-linguistic perspective ... 150
2.2 Vowel inventory ... 151
2.2.1 Vowel length ... 153
2.2.2 Series of vowels, phonation types, and modificational features ... 158
2.2.2.1 Plain vowels ... 158
2.2.2.2 Nasal vowels ... 161
2.2.2.3 Pharyngealized vowels ... 162
2.2.2.4 Glottalized vowels ... 165
2.2.2.5 Non-phonemic vowel modification: breathy vowels ... 170
2.2.2.6 Combination of modificational features ... 173
2.2.2.6.1 Pharyngealization & nasalization ... 173
2.2.2.6.2 Glottalization & nasalization ... 174
2.2.2.6.3 Non-phonemic combination: pharyngealization & glottalization ... 174
2.2.3 Diphthongization ... 175
2.2.4 Back vowel constraint ... 177
2.2.5 Vowel fronting ... 181

3 Suprasegmentals ... 183
3.1 Tone ... 183
3.1.1 Terminology and concepts ... 183
3.1.2 Tone in Khoisan languages ... 185
3.1.2.1 Kx'a family ... 186
3.1.2.2 Tuu family ... 186
3.1.2.3 Khoe-Kwadi family ... 187
3.1.3 Tone in the literature on ǂ'Amkoe languages ... 188
3.1.4 Phonetic properties influencing pitch ... 189
3.1.4.1 Laryngeal properties ... 189
3.1.4.2 Onset consonants ... 190
3.1.4.3 Vowel height ... 192
3.1.5 Analysis of N!aqriaxe tone based on F0 measurements ... 194
3.1.5.1 Method ... 195
3.1.5.2 Data sets of the present study ... 195
3.1.5.3 Results ... 196
3.1.5.3.1 Plain onset consonants (set 1) ... 197
3.1.5.3.2 Voiced onset consonants (set 2) ... 202
3.1.5.3.3 Glottalized onset consonants (set 3) ... 203
3.1.5.3.4 Aspirated onset consonants (set 4) ... 206
3.1.5.3.5 Nasal onset consonants (set 5) ... 207
3.1.5.3.6 Click + /h/ consonants (delayed aspiration) ... 209
3.1.5.4 Discussion ... 210
3.1.5.4.1 MM's mean F0 curves: comparison of the five different sets of onset consonants ... 215

	3.1.5.4.2	Tonal minimal pairs	220
	3.2	N!aqriaxe syllable structure and phonotactics	227
	3.2.1	Lexemes	227
	3.2.1.1	CVCV structured lexemes	230
	3.2.1.2	CVV structured lexemes	231
	3.2.1.3	CVN structured lexemes	232
	3.2.2	Grammatical markers	233
	3.2.3	Loan words	235
	3.2.4	Nakagawa's theory of feature distribution	237
4		Genealogical features	239
	4.1	Distribution of phonemes in ǂ'Amkoe and reconstructions of proto-Kx'a	240
	4.1.1	"Alveolar" affricates and sibilants	240
	4.1.2	Reconstruction of proto-Kx'a vowel inventory	244
	4.2	Features more likely to be inherited than contact induced	249
	4.2.1	MO's additional voiceless / voiced distinction for click and non-click consonants	249
	4.2.2	The lack of /q'/ in N!aqriaxe from a genealogical perspective	255
5		The Kalahari Basin as a linguistic area	262
	5.1	Types of transfer of phonological material	265
	5.1.1	Phonological borrowing via lexical borrowing	267
	5.1.2	Phonological borrowing independent of lexical borrowing	268
	5.1.3	Interference through shift in phonology	270
	5.2	Phonological areal features	271
	5.2.1	Palatalization	271
	5.2.1.1	Palatalization as a historical process of sound change	277
	5.2.1.2	Discussion	278
	5.2.2	Diphthongization	282
	5.2.3	The preglottalized series	284
	5.2.4	Discussion	287
	5.3	The N!aqriaxe phoneme inventory in an areal comparison	287
	5.3.1	Inventory size	287
	5.3.2	Characteristic features of phoneme inventories	289
	5.3.2.1	Consonant inventory	289
	5.3.2.2	Vowel inventory	291
	5.3.3	Phonemes and phonetic features in shared lexicon - Pan-Khoisan roots	292
	5.4	Features more likely to be borrowed / contact induced than inherited	302
	5.4.1	Devoicing	302
	5.4.1.1	Devoicing due to languages contact	302
	5.4.1.2	Devoicing as natural phonological process	304

5.4.1.3 Alternative way of avoiding voiced complex stops / clusters 304
5.4.2 Word-final nasals in ǂ'Amkoe and other languages of the Kalahari Basin area 306

6 Unclear origin of features: Inherited, borrowed or independent innovation? 309
6.1 The bilabial click 309
6.2 The uvular fricative /χ/ 312
6.3 Tone 317

7 Discussion and conclusion 319
7.1 Genetic population history and language contact 319
7.1.1 Genetic studies of population contact in the Kalahari Basin area 320
7.2 Discussion of language and population contact 321

Appendix 1 : Orthography 328

Appendix 2 : Frequencies of phonemes in N!aqriaxe 330

Appendix 3 : Methods, measurements, and program settings 334

Appendix 4 : Phoneme inventories 338

References 348

Acknowledgements

The realization of this project and its result - the present thesis - would not have been possible without the contribution of many people who supported me and my research during the last six years.

First of all, I am deeply grateful to my supervisors Brigitte Pakendorf and Tom Güldemann for all of their support, time-consuming discussions, and comments. Brigitte Pakendorf, in particular, I would also like to thank for her personal support. She did not only care about the progress of my project and thesis, but was also always concerned about my personal well-being and success.

I am deeply grateful to Falko Berthold for four years of joint research. I am so thankful to have been able to do the field trips to Botswana together with him. He is not only my colleague, but became a close friend. I also thank Falko for all the discussions, his analyses of N!aqriaxe grammatical structures, joint conferences and presentations.

I would like to give a warm thanks to all members of the Max Planck Research Group on Comparative Population Linguistics. I really enjoyed our scientific and non-scientific group meetings! I am especially grateful to Chiara Barbieri. She collected and analyzed a huge amount of saliva samples in Botswana and I thank her for sharing the results of her genetic analyses of the Kalahari Basin populations with me. I also still appreciate the way she welcomed me at the Max Planck Institute and I am so happy that I can still call her one of my best friends today. I would also like to mention Natasha Aralova. We have been sharing an office for the past six years. It was a pleasure to have her next to me and to experience all the highs and lows of doing a PhD together. I also thank her for her Siberian perspectives on some of my Khoisan phonetic questions.

I would like to express my gratitude to the members of the EuroBABEL project "The Kalahari Basin area: a 'Sprachbund' on the verge of extinction" for the collaboration and fruitful discussions during the meetings and conferences. In particular, I am deeply indebted to Hirosi Nakagawa and Christfried Naumann for all the valuable input, discussions, and comments on presentations and my thesis. Hirosi also taught me the pronunciation of the click accompaniments and Christfried showed me how to recognize the accompaniment in PRAAT.

I am so thankful for all the technical support, material, and of course the office space that was provided to me at the Max Plank Institute for Evolutionary Anthropology in Leipzig. I especially want to acknowledge Peter Fröhlich for his advice on field work equipment, and for dealing with all my computer problems. Peter has actually helped me to survive two complete hard disc crashes without losing any data. Thanks also go to the Multimedia Department of the Max Planck Institute for producing all the wonderful maps in this thesis. I am very appreciative for having met so many wonderful linguists (colleagues and guests) at the MPI Department of Linguistics. Here, I particularly would like to acknowledge Sven Grawunder for helping me with the PRAAT scripts for the analysis of N!aqriaxe tones.

I would like to express my deep gratitude to Jeffrey Gruber, Bonny Sands, and Chris Collins for sharing their valuable ǂHoan and Sasi field data with me. I wouldn't have expected that such well-established researchers share their data so generously with a PhD student. I also thank Chris for his comments and for all the discussion and exchange via email.

Of course, my fieldwork in Botswana would not have been possible without the patient work and help of the N!aqriaxe speakers. In particular, I would like to thank Meme Monnatswane and Mosadi wa Dikgosi who spent a lot of their time telling stories and repeating words and phrases over and over again. I deeply appreciate Meme's way of indefatigably describing everything we saw around us in N!aqriaxe, and for being a friend irrespective of the language barrier. I further want to mention our G|ui consultant Gakenne who helped us identify shared lexemes and structures between N!aqriaxe and G|ui.

I would like to acknowledge the chief of Khekhenye village and all its inhabitants for allowing Falko and me to stay in their Kgotla (the public building for village meetings and court cases) for so many months. Many thanks go to our translators, Patrick Mazibane and Blesswell Kure. I especially appreciated Blesswell's heart-warming way of careing for the N!aqriaxe consultants, making them feel comfortable during the recording sessions. Thanks also go to Balekane Moloko who taught Falko and me basic Setswana and who helped us a lot by writing letters in Setswana and phone calls to the N!aqriaxe speakers. I also want to thank the Ministry of Youth Sport and Culture of Botswana for officially allowing us to carry out our field work. For the financial support and the generous funding of my PhD project I would like to thank the Max Planck Society, the Deutsche Forschungsgemeinschaft, and the EuroBABEL programme of the European Science Foundation.

Finally, I would not have finished this dissertation without the constant support from my family and friends.

This thesis is dedicated to my parents and to the N!aqriaxe speakers.

Leipzig, im August 2016 Linda Gerlach

> "Many investigators had commented on the variability and instability of vowels and consonants in these languages and it was true that no two Bushmen could easily be found who would pronounce the same word in the same way."
>
> E.O.J. Westphal (1969) in Snyman (1970: iii)

1 Introduction

N!aqriaxe (phonetically [ǃàˢɾɪāχè]) is a variety of the language or language complex called ǂ'Amkoe (pronounced [ǂʔām̃kòè]). It is very closely related to ǂHoan ([ǂʰòǎ]), with which it is subsumed under West ǂ'Amkoe. N!aqriaxe and ǂHoan are related to Sasi, which is the third known language belonging to ǂ'Amkoe. All three varieties, which are spoken by former hunter-gatherer populations in Botswana, are severely endangered. Based on the investigations of the present study, the estimated number of speakers of the two varieties N!aqriaxe and ǂHoan together is currently less than 50, including speakers that cannot be regarded as fluent in N!aqriaxe or ǂHoan anymore. Most of the speakers are around 70 years old, with the youngest fluent speaker being 46 years old.

On the basis of the scarce comparative data available for the three varieties it is very hard to clearly recognize what the exact status of each variety is within the family and what the relation of the varieties is to each other. There are basically two possible classifications: either ǂ'Amkoe is a single language and N!aqriaxe, ǂHoan, and Sasi are dialects of this language, or N!aqriaxe, ǂHoan, and Sasi are languages, making ǂ'Amkoe a language complex. Section 1.1.1 discusses this question in more detail. This thesis mostly refers to N!aqriaxe, ǂHoan, and Sasi as varieties of ǂ'Amkoe without specifically arguing for either of the two possible classifications.

This introductory chapter briefly introduces ǂ'Amkoe with its varieties, N!aqriaxe, ǂHoan, and Sasi, and provides some information about the ǂ'Amkoe speakers. Since the data for the present thesis were mainly gathered in the area where N!aqriaxe is spoken, information will be most detailed for this variety. Where possible, some historic information about the varieties and their speakers will be provided, although in fact not much is known about the history of ǂ'Amkoe. Section 1.1 discusses the current classification of Khoisan languages. Section 1.1.1 specifically deals with the classification of the ǂ'Amkoe language and section 1.1.2 discusses the internal classification of ǂ'Amkoe. Section 1.2 describes where the language is currently spoken (section 1.2.1) and where speakers could presumably be found some generations ago (section 1.2.2). Section 1.2.3 briefly discusses the language names and the way speakers of different languages in the area refer to each other. Finally, the language contact and sociolinguistic situation of West ǂ'Amkoe, with a focus on N!aqriaxe, is introduced in section 1.2.4. Section 1.3 summarizes the research history on ǂ'Amkoe and gives an overview of previous publications and unpublished material on the different varieties. Sections 1.4, 1.5, and 1.6, finally, give

details on the aims and organization of the present thesis as well as on the language data and orthographies of the different languages. All N!aqriaxe data were collected in collaboration with Falko Berthold, who is also a doctoral student working on the description of the morphosyntax of N!aqriaxe.

In this thesis the term 'Khoisan' is used as a cover term for all click languages of southern and eastern Africa that are neither Bantu nor Cushitic, without implying a genealogic relationship between all of them (Güldemann & Voßen 2000: 102, cf. also section 1.1).

1.1 'Khoisan' languages and the classification of ǂ'Amkoe

The Khoisan language phylum was established by Greenberg (1950) subsuming almost all sub-Saharan non-Bantu languages that make use of clicks as phonemes. Apart from the presence of clicks, Greenberg's hypothesis of a genealogical relationship between all these languages is primarily based on lexical evidence. However, as section 5.3.3 will show, relying on shared lexemes as a proof of genealogical relatedness is extremely difficult for Khoisan languages, since many lexemes are shared between structurally diverse languages belonging to different languages families. In these cases, shared lexemes point towards language contact rather than genealogical relatedness (cf. Güldemann & Loughnane 2012). In his classification, Greenberg (1950) proposes a first major split between the South African Khoisan languages (SAK) and the two click languages spoken in Tanzania, Hadza and Sandawe. The SAK languages further divide into three families, Northern, Central, and Southern Khoisan. According to Güldemann & Voßen (2000), the languages within each of the three SAK groups can be shown to be related, resulting in well-established genealogical relationships on lower levels (such as the Khoe languages as shown by Voßen 1997). The genealogical relationship between the three branches of SAK (Northern, Central, and Southern), however, is highly questionable due to extensive grammatical differences between the three groups (Güldemann 2008a). Khoisan as a genealogical language phylum is therefore rejected by most linguists working on Khoisan languages today. The term Khoisan in the sense of "non-Bantu click language" is, however, still widely used by scientists working on the respective languages. As already mentioned, the use of the term Khoisan in this thesis follows scholars such as Köhler (1975), Traill (1980), Güldemann & Voßen (2000), or Güldemann (2014) in being "a cover for all non-Bantu as well as non-Cushitic click languages of eastern and southern Africa, but without explicitly adhering to the genealogical implications" (Güldemann & Voßen 2000: 102).

Fig. 1 shows Greenberg's (1950) Khoisan phylum and Fig. 2 presents Güldemann's (2014) classification of the SAK languages which is a revised version of the classification proposed by Güldemann & Voßen (2000: 102) and Güldemann (2008b). The two East African languages, Hadza and Sandawe (not included in Fig. 2), could not yet be shown to be related to any of the languages shown in Fig. 2 and are thus still treated as single languages. For Sandawe there are, however, suggestions of a potential genealogical relationship to the Khoe-Kwadi family (cf. Güldemann & Elderkin 2010). Hadza remains an isolate language (cf. Sands 1998).