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edited by

Paul Newman
Indiana University

Larry M. Hyman
University of California, Berkeley

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Photo of Russell Schuh courtesy of Roxana Ma Newman

CONTENTS

Preface vii

1. *Roxana Ma Newman*
   Russell G. Schuh: A Biographical Profile and Bibliography 1

2. *Abdullahi Bature*
   Tarnaƙin Jerin Gwanon Amo ga Cunkoson Baƙaƙen Marabar Gaɓar Hausa ("Sonority Hierarchy Constraint on Hausa Abutting Consonants") 17

3. *Norbert Cyffer*
   Kanuri and its Neighbours: When Saharan and Chadic Languages Meet 33

4. *Christopher Ehret*
   The Nilo-Saharan Background of Chadic 56

5. *Alhaji Maina Gimba*
   Jinsi a Bolanci ("Gender in Bole") 67

6. *Larry M. Hyman and Imelda Udoh*
   Relic Noun-Class Structure in Leggbo 75

7. *Philip J. Jaggar*
   The Hausa Perfective Tense-Aspect Used in *Wh*-/Focus Constructions and Historical Narratives: A Unified Account 100

8. *Herrmann Jungraithmayr*
   Apophony in the Verbal System of Gadang 134

9. *William R. Leben and Firmin Ahoua*
Phonological Reflexes of Emphasis in Kwa Languages of Côte d'Ivoire 145

10. *Ian Maddieson*
Bilabial and Labio-Dental Fricatives in Ewe 159

11. *Leslie C. Moore*
Changes in Folktale Socialization in an Urban Fulbe Community 176

12. *Paul Newman*
Comparative Chadic Revisited 188

13. *Mariame I. Sy*
Vowel Harmony in Wolof Loanwords 203

14. *H. Ekkehard Wolff*
Encoding Topography and Direction in the Verbal Systems of Lamang and Hdi (Central Chadic) 221

Russell G. Schuh

PREFACE

In 1976, Russell Schuh co-edited a festschrift for William Welmers, Professor of Linguistics at UCLA and America's leading African linguist of his day. At the time, Russ could not have imagined that 30 years later he would be occupying that position, that he would have established himself as one of the world's most prominent African linguists of *his* day, and that he would be the recipient of a festschrift in his honor (appearing like the earlier one as an *SAL* supplement). But that is the way things have turned out and we are extremely pleased to applaud Russ's enormous contributions to African linguistics, in both research and teaching, by means of this congratulatory volume. It is a testimony to the breadth of Russ's interests and his scholarly impact that the articles in this festschrift are not limited to Chadic, Russ's primary area of specialization, but also cover a range of West African languages extending from Nigeria to Senegal.

The contributors to the volume have all had long-term personal and professional connections with Russ (in a couple of cases including co-authors who graciously agreed to participate). Will Leben and Russ were in the Peace Corps together in Niger working on similar adult literacy projects. Norbert Cyffer, Phil Jaggar, Roxana Ma Newman, and Ekkehard Wolff interacted with Russ in northern Nigeria in the mid 1970s when Russ was working at the Centre for the Study of Nigerian Languages, Abdullahi Bayero College, now Bayero University. (Roxana Newman had worked with Russ a few years earlier on a comparative Chadic syntax project.) Herrmann Jungraithmayr, the doyen of Chadic linguistics, first met Russ at conferences and throughout the years greatly appreciated and supported his work.

Alhaji Maina Gimba, Phil Jaggar, Leslie Moore, and Mariame Sy were Ph.D. students of Russ at UCLA. Russ and Gimba have since been co-investigators on a major NSF-supported Chadic project in northeastern Nigeria. Abdullahi Bature met Russ when he was a Ph.D. student of Will Leben at Stanford. Later, back in Nigeria, Bature worked closely with Russ on an innovative Hausa video project. In recognition of Russ's long time commitment to the development of local languages, evident in his publications list, both Bature and Gimba agreed to write their contributions to this volume in Hausa.

Chris Ehret and Ian Maddieson have been valued colleagues of Russ at UCLA (Ian also being Russ's running partner). The two of us editors have had long and

close relationships with Russ. Larry Hyman and Russ were fellow Ph.D. students at UCLA and worked together on *Studies in African Linguistics* in its early years, both having served as editor at different periods. They remained close colleagues when Larry was at USC and later Berkeley, and the two of them co-authored a major paper on tone. Paul Newman hired Russ as a graduate research assistant on his comparative Chadic project, research that formed the basis of Russ's Ph.D. dissertation, and later enticed him to join the research team of the fledgling Centre for the Study of Nigerian Languages. They frequently exchanged ideas, resulting in an important jointly authored paper on the Chadic aspect system.

In preparing this volume, we acknowledge the invaluable assistance and encouragement of David Odden, the current editor of *SAL*. Roxana Ma Newman helped greatly with technical and editorial matters. Financial support was provided by the West African Languages Institute, Indiana University.

1

RUSSELL G. SCHUH: A BIOGRAPHICAL PROFILE AND BIBLIOGRAPHY

Roxana Ma Newman

Russell Galen Schuh, affectionately known by his Hausa sobriquet as Malam Takalmi ("Mr. Shoe"), was born on March 14, 1941, in Corvalis, a small town in Oregon, although he spent most of his childhood in Klamath Falls, which he considers his hometown. Russ took an early interest in foreign languages, and earned a B.A. in French at the University of Oregon in 1963. He spent the following year at Northwestern University as a teaching assistant, earning his M.A. in French. It was there that he was introduced to the relatively new field of linguistics and began to develop his lifelong curiosity about the structural properties of the world's different languages. After his M.A., he spent a year studying linguistics at the University of California at Berkeley, where he was exposed to Asian and Native American languages. By then, he knew he was "hooked, born to be a linguist."

Not content to continue being just a student, and wanting to broaden his experience, Russ embarked on a path that he says was "*the* defining moment" of his life: he volunteered for the Peace Corps in 1965. He went to Niger, a francophone African country, and there he spent two years supervising adult literacy programs in the Agadez-Tahoua-Bilma region, applying his linguistics training to learn both Tamashaq, a Berber language, and Hausa, a Chadic language.

Like many returned Peace Corps volunteers, Russ came back ready to go on to graduate school. He enrolled at the University of California at Los Angeles (UCLA), which had a nationally prominent program in African studies and African linguistics, and in a year (1968) earned a second M.A., this time in linguistics. Russ supported himself at UCLA as a teaching assistant responsible for teaching all levels of Hausa. In 1969-70, he interrupted his degree program to

return to West Africa as a research assistant for Paul Newman, who had received a National Science Foundation grant to conduct research on a number of Chadic languages in northern Nigeria. Working on this project, says Russ, gave him the research and geographical focus that he would subsequently develop over his linguistic career. Russ, accompanied by his wife Maxine, was based in Potiskum, now a thriving commercial center, but then a small town without electricity or running water. There he did research on Ngizim while Maxine collected data on Karekare, another West Chadic language. Russ's nearly 500-page dissertation on Ngizim syntax earned him a Ph.D. in 1972.

Russ stayed on at UCLA as an acting assistant professor, teaching Hausa and general linguistics, until Newman, who had been appointed director of a newly formed Centre for the Study of Nigerian Languages (CSNL) at Abdullahi Bayero College in Kano—now Bayero University—again tapped Russ to join him, this time as a research fellow of the center. Russ spent most of his two years (1973 to 1975) in Gashua, a remote town out in the bush doing ground-breaking fieldwork and writing up grammatical sketches on Bade, continuing to gather further data on Ngizim, while also learning about the little-known Manga dialect of Kanuri, a non-Chadic language. It was during those years that their first daughter Gretchen was born. (Their second daughter Elizabeth was born in the States.)

In 1975, a tenure-track position in African linguistics opened up at UCLA, for which almost all of the research staff at CSNL applied, but for which Russ was ultimately and wisely chosen. He has been there ever since, teaching with enthusiasm about the nature of language, phonological analysis, the principles of historical change, and Hausa per se. He became full professor in 1984. Over the past 30 years, Russ has made some 15 trips to West Africa, some teaching related, but mostly for field research. For example, in 1982–83, Russ accepted a visiting professorship at Ahmadu Bello University (ABU) in Zaria, teaching courses on Hausa linguistics—taught entirely in Hausa! He spent two summers in 1987 and 1988 as director of the University of California's Education Summer Abroad Program in Togo, where he also worked on two Togolese languages, and the summer of 1991 in Dakar, Senegal, where he interviewed Wolof linguists and poets and collected Wolof poetry and songs, related to his growing linguistic interest in poetic meter in West African languages.

What is immediately evident in reviewing Russ's record as a scholar is his wide intellectual curiosity about languages, his indefatigable energy as a field linguist, and his uncanny ability to write with little revision, which has permitted him to be so prolific. It is therefore no surprise that Russ has published studies on a wide array of languages. Within Chadic, he has done major work on Hausa,

Ngizim, Miya, Bade, Bole, and Ngamo, and to a lesser extent on Bele, Galambu, Gera, Geruma, Karekare, and Kirfi, all West Chadic languages, as well as on Biu-Mandara (Central) Chadic languages Bura, Gude, Kilba (whose speakers he managed to locate among the international film and television students of Columbia College in Hollywood!) and Gidar, an East Chadic language. To broaden his knowledge of the Afroasiatic phylum to which Chadic belongs, Russ has taken classes at UCLA on Arabic, Hebrew, Ancient Egyptian, and Tigrinya. Among non-Chadic West African languages, he has done what he calls "a non-trivial amount of work" on Tamashaq (Berber); Fula (West Atlantic); Akposso, Avatime, and Ewe (all Kwa); Kanuri (Nilo-Saharan); and Wolof (West Atlantic), and has even published studies on some of these. Not to be confined to the languages of Africa, Russ has more recently developed a keen interest in the structures of Bulgarian, Korean, Russian, Tamil, and Turkish!

Russ's gift for understanding languages, his "no-nonsense" approach to analysis, his ability to focus his energies, and his love of writing converge in a way that enables him to write easily and clearly. I remember during the CSNL years when Russ and Maxine came to Kano for a center meeting or to get supplies that Russ would typically find a place to sit in the middle of our living room with people all around, focus his thoughts, and simply start writing, blocking out any conversation or noise going on around him. As part of his teaching, Russ often writes up short original studies of language data for his students as models for the kind of research papers he expects from them. On top of his many publications, Russ has a long list of unpublished manuscripts including a monograph-length manuscript on Gidar written in French. Many of these are available on his personal web pages.

Among the more than 100 items in the accompanying list of books, articles, reviews, and edited series that attest to Russ's energy and productivity, the following are highlighted. (Individual items are noted here by a square bracketed number.) His first book, published in 1978, consists of grammatical sketches of five previously undescribed West Chadic languages spoken in the Bauchi area [22]. This work, based on a mere four days of intensive fieldwork in five different villages, includes descriptions for each language of the verbal complex accompanied by a short wordlist. His delimited goal was to get a glimpse into certain areas of the verbal systems and provide a general phonological sketch that could be used for subgrouping purposes. His *Dictionary of Ngizim* (1981) [24], based on fieldwork done in 1969 and at various times from 1973 to 1975, comprises a substantial base of data from direct elicitation and transcribed texts of

folktales, oral history, ethnography, and proverbs. The dictionary has a large Ngizim-English section and a smaller English-Ngizim wordlist.

Russ's most remarkable work is his 1998 *Grammar of Miya* [46], a language of the North Bauchi subgroup of West Chadic. It is a work that took many years in the making and is surely one of the most thorough descriptions of a Chadic language other than Hausa ever published. He first started work on Miya in 1982-83 while he was a visiting professor at ABU, and wrote a nearly complete draft in 1987, but with teaching obligations and five years in administration, he was unable to get a final version done until 1995. In 1996, he made a final short field visit to Miya country to check some data while absorbed in a completely different project in Kano. In other published work, Russ has written a range of descriptive and historical studies on aspectual systems in verb morphology, determiner systems, phonological systems, tonal systems, language in relation to history, and metrical structures in the poetry of several African languages.

Closely related to Russ's long years of involvement with a closely-knit group of Chadic languages has been his determination to give something back to the communities that have worked so enthusiastically with him—an attitude no doubt inspired by his earlier Peace Corps experience in literacy projects. He has always sought to involve his speakers in the work that he was doing, and to consider them as collaborators, producing works together that they could use with pride of ownership. When he was in Gashua in 1973-75, he worked with educated native speakers to develop orthographies for Ngizim and Bade, which were then employed in the preparation of booklets of traditional oral literature (with Russ's own illustrations) that were printed locally for community use [93 to 96].

More recently, between 2001 and 2004, he received a three-year grant from the National Science Foundation for a "Yobe Languages Research Project" to do further research on the five Nigerian languages indigenous to Yobe State (Bade, Bole, Karekare, Ngamo, and Ngizim), working with his former Ph.D. student Alhaji Maina Gimba (Maiduguri University) and teams of educated speakers and community leaders. The primary goal was to develop good-sized, linguistically sophisticated dictionaries of each language documenting such features as derivational morphology, compounds, idioms, and loanwords. The project resulted in a remarkable set of attractively designed trilingual (with Hausa and English) dictionaries—ranging from 2,000 to 4,000 head entries—that were locally printed and published [59 to 64], works of great pride for these language communities. The linguistic value of the dictionaries lies in the methodic documentation and phonological accuracy of the data, attesting to a rich lexical store that will be useful for further research and comparative work. The Yobe

project also produced a parallel set of oral literature readers in these languages [97 to 105]. Of this highly intensive project, Russ says he had never worked so hard, but also never felt so satisfied as when it was all accomplished.

Although the works above were locally published and are available in print form only in Nigeria, they in fact are accessible to the larger public through a graphically attractive web site at UCLA. One of Russ's most admirable scholarly qualities is his strong belief in the openness of science and sharing of knowledge. The power of the Internet provides him the perfect means to do so, and his mastery of the technology enables him to make most of his recent works freely available as downloadable pdf files and searchable lexical databases (for example, see www.humnet.ucla.edu/humnet/aflang/Yobe/yobe.html).

Given his career-long devotion to the study of "minority" Chadic languages, it is ironic that Russ is probably more broadly known for what he has done for the largest and best known Chadic language, namely Hausa. Over the 30 years that he has taught Hausa, Russ has produced a substantial output of pedagogical materials, in print and non-print media, undoubtedly more than any other linguist involved in Hausa language teaching. In 1976, he co-authored a textbook, *Spoken Hausa* [85], modeled on now-outdated structuralist pedagogical principles, but still in print. In the 1980s he developed computer assisted language instruction (CALI) modules for Hausa [87] (and Wolof) in the form of interactive exercises using HyperCard software. In 1990, he completed the draft of a new pedagogical grammar, "Hausa a Aikace" [Hausa in Action], co-authored with then Ph.D. student, Lawan Danladi Yalwa (Bayero University), which, though never published, was widely used by Hausa language teachers. In the mid-1990s, Russ collaborated with Abdullahi Bature (Bayero University) and Richard Randell (Stanford University) on a videofilming project in Kano that produced a set of three videotapes, edited down to five hours, featuring more than 90 short segments of natural speech in cultural contexts, controlled for grammar and vocabulary [89]. Supplementing the tapes is an enormous body of written material (transcriptions, translations, exercise manual, grammatical explanations, vocabulary) that Russ has subsequently developed and made available on a UCLA Web site [90], thus creating an integrated video-based course to teach beginning and intermediate levels of Hausa. These materials constitute one of the best video courses ever developed to teach an African language. This ambitious project, on which he has spent thousands of hours by his own reckoning and which is still evolving, is by far his most successful pedagogical work.

As if his busy agenda of research and teaching were not enough, Russ has taken on major administrative responsibilities. For example from 1989 to 1993 he

served as chair of the UCLA Department of Linguistics, one of the largest in the country, a task he approached with the same dedication he exhibits in his scholarly work. He also devoted fifteen years (1976 to 1991) as editor of *Studies in African Linguistics* (*SAL*), the leading American journal for African linguistics.

Apart from his professional work, Russ manages to make time for personal pursuits. He has been an avid runner for years and during the past decade has participated in the Los Angeles marathon, where he came in fifth for his age group in 2002, one of his proudest moments. He considers running his major passion, doing an average of 45 miles a week, during which, he says, he does all his critical thinking about linguistics. In addition, Russ has recently resumed playing the clarinet—an instrument he had played throughout high school and college—and has been performing around the Los Angeles area for several years in a six-piece Bulgarian wedding band. The energetic, intricate rhythms and ever-changing meters of Bulgarian and other Balkan music are a source of fascination and challenging to play, but if anyone would be up to the task, it would be Russ. The band has developed such a reputation that they were invited in the summer of 2005 to perform in an international folk music festival in Bulgaria.

Given Russ's creativity, energy, enthusiasm, and youthfulness of spirit, we can be sure that he will continue to be engaged in all the areas of activity that currently drive him—Chadic linguistics, poetic meters, Hausa pedagogy, running, and musical performance—and we anticipate many productive years and new forays in the future.

List of Publications

A. Books and Articles

(1) 1971. "Verb forms and verb aspects in Ngizim." *Journal of African Languages* 10(1):47–60. (*Special Chadic Issue*, ed. by Paul Newman.)

(2) 1971. "Reconstruction of the syntax of subject emphasis in certain Chadic languages." In *Papers from the Second Conference on African Linguistics*, ed. by Talmy Givón, pp. 67–77 (*Studies in African Linguistics*, Supplement 2.) Los Angeles: Dept. of Linguistics, UCLA.

(3) 1972. "Notes to a Bade dialect map." *Africana Marburgensia* 5(2):50–56.

(4) 1972. "Rule inversion in Chadic." *Studies in African Linguistics* 3:379–97.

(5) 1974. "The linguistic situation in the Potiskum area." *Africana Marburgensia* 7(1):3–8.

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(7) 1974. "Sound change as rule simplification? A study of consonant weakening in Kanakuru and in Hausa." In *Third Annual Conference on African Linguistics*, ed. by Erhard Voeltz, pp. 95–101. (I.U. Publications, African Series, 7.) Bloomington: Indiana University.

(8) 1974. "A note on inalienable possession in Hausa." *Journal of West African Languages* 9:113–14.

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(13) 1975. "Bode, Ngo:djin and Do:ai in the Polyglotta Africana." *African Languages/Langues africaines* 1:290–99.

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(20) 1978. "Tone rules." In *Tone: A Linguistic Survey*, ed. by Victoria A. Fromkin, pp. 221–56. New York: Academic Press.

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(29) 1983. "The evolution of determiners in Chadic." In *Studies in Chadic and Afroasiatic Linguistics*, ed. by Ekkehard Wolff and Hilke Meyer-Bahlberg, pp. 157–210. Hamburg: Helmut Buske.

(30) 1983. "Kilba equational sentences." *Studies in African Linguistics* 14:311–26.

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Items (59) to (64) consists of linguistically sophisticated editions of trilingual dictionaries (local language-English-Hausa) of several northeastern Nigerian languages, published locally for a local readership.

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Roxana Ma Newman
Indiana University
email: rmnewman@indiana.edu

2

TARNAKIN JERIN GWANON AMO GA CUNKOSON BAƘAKEN MARABAR GAƁAR HAUSA

("Sonority Hierarchy Constraint on Hausa Abutting Consonants")

Abdullahi Bature

1. Gabatarwa*

A cikin wannan takarda zan yi bayani ne a kan rawar ganin da Tarnaƙin Jerin Gwanon Amo ke takawa wajen jerin gwanon cunkoson baƙaƙen marabar gaɓar Hausa. Ba shakka an daɗe da gano cewa Hausa ba ta da cunkoson baƙaƙe a gaɓa, watau ("consonant cluster"), amma tana da cunkoson baƙaƙe a marabar gaɓa, watau ("abutting consonants"). Ba fariya ba, a iya sanina, sama da shekara ɗari da aka fara bincike a harshen Hausa, ban taɓa ganin inda wani ya yi cikakken bincike a wannan fage na cunkoson baƙaƙe a marabar gaɓa ba. Don haka zan iya cewa wannan shi ne bincike na karon farko a wannan fage da na ambata a sama. Kuma ina fata wannan zai buɗe ƙofa ga sauran masu sha'awar ƙara faɗaɗa bincike a wannan fagen.

Za a kasa wannan takarda kamar haka. Kashi na farko zai yi bayani ne a kan ire-iren yadda jerin baƙaƙen marabar gaɓa yake tare da ba da dalilan da ya sa ya kamata su zamo a hakan. Jerin baƙaƙen marabar gaɓa ba kawai suna haɗuwa ba ne kara zube sakaka, a'a kowanne da inda ya kamata ya zo a layi. Misali, kalmar ts**afta**, an sami /f/ ta zo kafin /t/ a manne, watau /f.t/ amma ba inda za ka sami kalmar Hausa da harafin /t/ ya zo manne a bayan harafin /f/, watau misali ba *ts**atf**a ko *ka**tf**a da sauransu. Abin tambaya a nan shi ne Me ya sa /f.t/ za su iya haɗuwa amma /t.f/ ba za su haɗu ba? A nan ne zan fito da Tarnaƙin Jerin

* Ina miƙa godiyata ta musamman ga shehunan malamaina Paul Newman (Malam Sabo) da kuma Mu'azu Sani Zariya don shawarwarin da suka ba ni wajen kammala wannan takarda. Lalle kam na amfana sosai da gyare-gyaren da suka ba ni.

Gwanon Amo da kuma nuna irin rawar ganin da yake takawa wajen kansancewa ko rashin kasancewar jerin gwanon cunkoson baƙaƙe a marabar gaɓa wajen gina kalmomin Hausa da sarrafa kalmomin aro.

Kashi na biyu kuwa zai tattauna ne a kan yadda Hausa ke sarrafa baƙin kalmomi musamman na Turanci don su dace da tsarin sautin Hausa, watau "Hausa phonological system".

Kashi na uku kuwa zai yi tsokaci ne kan alaƙar da Tarnaƙin Jerin Gwanon Amo da wannan takarda ta fito da shi (dangane) da sauran dokokin tsarin sautin Hausa da suka shafi wannan fage. A kashi na huɗu kuwa wanda shi ne na ƙarshe zai ɗan yi bayani ne a kan irin tsarmin wasalin ("epenthesis") da ya kamata a zaɓa wa kalmar aro tare da hasashen irin launin tsarmin wasalin.

A ƙarshe, wannan takarda za ta rufe da jawabin kammalawa tare da ba da shawarwarin irin sauran binciken da ya kamata a ci gaba da yi don faɗaɗa wannan fage. Haka kuma za a yi amfani da alamar lamba # don nuna farko da kuma ƙarshen kalma, zan kuma yi amfani da alamar ɗugo watau . don nuna marabar gaɓa. Misali, kalmar *tsafta* za ta zama kamar haka: *#tsaf.ta#*, ka ga a nan harufan /f/ da /t/ suna manne da juna, amma a marabar gaɓa. Daga ƙarshe kuma alamar tambaya ? na nuna kalmar duk da cewa ba ta da ma'ana a Hausa, amma ba ta saɓa wa sigar tsarin sauti ko tasarifi na Hausa ba.

2. Sigar Jerin Baƙaƙen Marabar Gaɓa

Babu shakka kowa ya dubi zubi da tsarin kalmomin (1a–e) ya san kalmomin Hausa ne kuma akwai su a cikin ƙamus na Hausa tare da ma'anarsu. Amma in ka dubi na (2a–e) za a ga cewa su ma zubi da tsarinsu irin kalmomin Hausa ne, sai dai kash! ba za ka same su a kowane irin ƙamus na Hausa ba kuma ba su da ma'ana, watau an sami giɓi mara dalili, watau da Turanci ("accidental gap"). Daga ƙarshe in aka lura da jerin kalmomin (3a–e), za a ga cewa ba su hau zubi da tsari na kalmomin Hausa ba, kuma bugu da ƙari babu su a cikin ƙamus na Hausa ballantana ma a ba su ma'ana, wannan kuma ana ce masa ("systematic gap").

(1a)	bi**rn**i	(1b)	ta**lg**e	(1c)	ba**rk**a	(1d)	fu**sk**a	(1e)	tsa**ft**a
(2a)	?ma**rn**u	(2b)	?gu**lg**e	(2c)	?za**rk**o	(2d)	?sa**sk**a	(2e)	na**ft**o
(3a)	*bi**nr**i	(3b)	*ta**gl**e	(3c)	*ba**kr**a	(3d)	*fu**ks**a	(3e)	*tsa**tf**a

Wannan takarda za ta yi tsokaci a kan ire-iren kalmomin (1) da na (3) ne kawai don amsa wannan tambaya: Me ya sa kalmomin (1) suke karɓaɓɓu amma na (3) ba karɓaɓɓu ba? A nan, kalmomin (2) ba su a cikin ƙamus na Hausa amma ba su

keta wata ƙa'ida ta tsarin sauti ko tasarifi na Hausa ba, don haka ba mu da magana a kansu domin harshen ne kawai ya sami wannan giɓi na tsautsayi ba da niyya ba. Amma bambancin kalmomin (1) da na (3) lalle kam suna buƙatar bayani domin rashin karɓuwar kalmomi na (3) yana da dalili a sigar tsarin sauti da tasarifi na Hausa.

A nan za a ga ashe cunkoson baƙaƙen marabar gaɓa ba kawai sakaka suke kara zube ba, suna da nasu tsarin na bi-biyar juna. To kuma a nan ne ya kamata na gabatar da wani tarnaƙi da zai warware wannan matsala. Kamar yadda masana tsarin sauti suka bayyana, amo yana da wani jerin gwano da ya kamata ya kasance. A Hausa, tarnaƙin amon da ke gudanar da kasancewa ko rashin kasancewar jerin cunkoson baƙaƙen marabar gaɓa na dangana da taiƙaitaccen Tarnaƙin Jerin Gwanon Amo kamar yadda yake a (4) tare da yadda aka faɗaɗa bayaninsa a (5)

(4) *dangin wasulla* > *ruwantau* > *'yan hanci* > *takurau*

Don ƙara fito da wannan tarnaƙi ɓaro-ɓaro a fili, to ga yadda cikkaken jerin gwanon amon Hausa zai zama a lamba (5):

(5) *dangin wasulla* (wasulla > sulalau) > *ruwantau* (raa-kaɗe da raa-ɓuje > 'yan jirge) > *'yan hanci* (baleɓe > hantacciya) > *taakurau* (zozau > 'yan buga)

In aka duba da kyau za a ga jerin misalan sautuka da suka dace da waɗanda ba su dace ba kamar yadda ya zo a (6) ya danganta ne da tarnaƙin da yake lamba (5). Watau, karɓaɓɓun kalmomin sun bi jerin gwanon tarnaƙin (5), amma kalmomin da ba su karɓu ba, lalle kam za a ga sun saɓa wa wannan tarnaƙi da aka fito da shi a wannan takarda kamar yadda yake a (5)

(6) a.	zozau – 'yan buga	fuska, tsafta
	*'yan buga – zozau	*fuksa, *tsatfa
b.	ruwantau – zozau	tarfa, salsala
	*zozau – ruwantau	*tafra, *tasla
c.	'yan hanci – zozau	gamsu, danshi
	*zozau – 'yan hanci	*gasmu, *kafna
d.	'yan hanci – 'yan buga	hanta, gamba
	*'yan buga – 'yan hanci	*katna, *habma
e.	ruwantau – 'yan buga	kwalbaa, talge
	*'yan buga – ruwantau	*tabla, *sagla

Wannan ya nuna mana cewa duk lokacin da aka samu cunkoson baƙaƙen marabar gaɓa, lalle kam *baƙin ƙeyar gaɓa* watau ("coda"), ya zama amonsa ya ɗara na *baƙin goshin gaɓa*, watau (onset) kenan kamar yadda yake a (5). Ga wannan doka a lamba (7).

(7) Lalle ne amon *baƙin ƙeyar gaɓa* ya ɗara *baƙin goshin gaɓar da suke manne da juna a marabar gaɓa*

Da ma tuni an faɗa a baya cewa shekaru aru-aru Hausa ta hana cunkoson baƙaƙe a cikin gaɓa, watau ba dama a samu cunkoson baƙaƙen ƙeyar gaɓa ko na goshin gaɓa a cikin gaɓa ɗaya kamar yadda yake a Turanci. Ita wannan doka za a bayyana ta a taƙaice a lamba (8).

(8) *$BB da kuma *BB$

Da waɗannan dokoki da aka bayyana a sama tare da ɗan bayanin da aka yi ya ba da hasken amsa tambayar da aka yi a baya cewa me ya sa kalmar tsa**fta** ta ke karɓaɓɓiya a Hausa amma *tsa**tf**a ba karɓaɓɓiya ba. Jerin gwanon *t.f* a kalmar tsa**tf**a ya saba wa dokar tarnaƙi ta (5) da kuma ta (7); domin lalle baƙin /t/ ya gaza na /f/ a amo kamar yadda yake a (5), don haka kalmar ba za ta karɓu ba. Amma jerin gwanon *f.t* a kalmar tsa**ft**a ta karɓu domin baƙin /f/ yana sama da na /t/ a amo. Haka in aka duba waɗannan kalmomi na (9) za a ga duk inda cunkoson baƙaƙen marabar gaɓa yake, to baƙin ƙeyar gaɓa ya ɗara baƙin goshin gaɓa amo, saɓanin jerin kalmomi na (10) in da baƙin ƙeyar gaɓa ya gaza baƙin goshin gaɓa amo.

(9) fu**s.k**a, ga**m.s**u, gwa**n.k**i, fa**r.k**aa, ka**l.m**a, fi**z.g**e, sa**r.k**i, ka**r.t**a, bi**r.g**e, ga**m.j**i, ga**m.**zaki, Ta**l.**ba, ta**l.g**e, ka**l.m**a, fa**w.c**e, ƙa**w.n**a, ba**w.t**a, a**m.s**a, Ga**m.b**o

(10) *fu**k.s**a, *ga**.sm**u, *gwa**k.n**i, *fa**k.r**a, *ka**m.l**a, *fi**g.z**e, *sa**k.r**i, *ka**t.r**a, *bi**g.r**e, *ga**j.m**i, *ga**z.m**aki, *Ta**b.l**a, *ta**g.l**e, *fa**c.w**e, *ba**t.w**a, *Ga**b.m**o

Yanzu kuma lokaci ya yi da a yi magana a kan baƙin /r/ da na /n/ a wannan wuri saboda 'yar rikirtarwa da suke da ita. Baƙin /n/ na zuwa kafin baƙin da ya ɗara ta amo kamar yadda ya zo a misali na (11).

(11) a. ƙa**nw**a, b. ka**ny**a

Idan za a yi la'akkari da ƙa'idar (5) da (7), ya kamata a ce waɗannan kalmomi na (11) su zama ba karɓaɓɓu ba domin /w/ ya ɗara /n/ amo, amma ga shi ba haka ba ne. Wannan yana faruwa ne saboda ita /n/ kullum na naso ne da baƙin da ya zo gabanta, don haka a furuci ba a faɗar /n/ kamar yadda take ita kaɗai. Wannan abu ne sananne da ba ya buƙatar dogon bayani a kai.[1]

3. Sarrafa Baƙin Kalmomi

A wannan kashi za a yi tsokaci ne a kan yadda Hausa ke sarrafa baƙin kalmomin da suka shigo mata masu cunkoson baƙaƙe a gaɓa. Ga misalan kalmomin Larabci a (12) da na Turanci a (13):

(12)		*Larabci*	*Hausa*
	a.	Ba**dr**	(yaƙin) bada**r**
	b.	qi**bl**a	ƙi**bil**a
	c.	al'a**sr**	la'a**sar**
	d.	ƙa**br**u	ƙa**bar**i
	e.	Abuba**kr**	Abubaka**r**

(13)		*Turanci*	*Hausa*
	a.	li**br**ary	la**bur**are
	b.	do**ct**or	da**ft**an
	c.	se**cr**etary	saka**t**are
	d.	ta**x**i [ta**ks**i]	ta**s**i
	e.	Eng**l**and	Ingi**l**a

Idan aka duba waɗannan misalai na (12) da (13), za a ga yadda kalmar ta zo daga harshen farko ba haka ta kasance a Hausa ba. Domin da ma sananniyar ƙa'ida ce a Hausa cewa in ta ari wata kalma, to lalle ne ta daidaita ta inda za ta iya hawa tsarin sauti da tasarifin harshen daram.

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[1] Amma inda matsalar take a baƙin /r/ ne, wanda ita ma na zuwa kafin baƙin da ya ɗara ta amo kamar yadda misalai na (i) suka nuna a fili. (i) a. karka**rw**a b. ka**ry**a c. kutu**rw**a. A nan za a ga cewa duka /**r**/ biyu da muke da su, watau raa-kaɗe da raa-buje, duk sun gaza baƙaƙen sulalau /w/ da /y/ amo, amma duk da haka kalmomin sun karɓu. A fili za a ga kamar wata ce babba, amma ba haka ba ne, a tarihance jerin gwanon *n.w* / *n.y* da *r.w* / *r.y* suna haɗe da ɗafan jinsin mace na (i)yaa ko (u)waa kamar yadda yake a misalin kare da kar-ya. Don neman ƙarin cikakken bayani duba Newman (1979 shafi na 197-226) ko kuma Newman (2000 shafi na 213-215).

To a nan kowa ya sani tuni Hausa na amfani da tsarmin wasali, ko canza wani baƙi da wani, ko share shi da dai sauran hanyoyin daidaita kalma. Abin lura a nan shi ne, kowa ya yarda Hausa na yin waɗannan abubuwa ne don kaucewa cunkoson baƙaƙe na gaɓa da babu a Hausan. Wannan shi ne bayanin da aka saba shekaru da yawa.

In aka lura da kyau abin ya wuce nan. Misali, ɗauki (13b), za a ga ko a Turancin kalmar *doctor* na da gaɓa biyu, to in ko haka ne, me ya sa Hausawa suka ƙi barinta a haka, sai da suka canza harafin /k/ ya koma /f/? Ni a nan ba wani dalili ba ne ya jawo hakan illa kalmar ta saɓa wa doka ta (7). Saboda me? Saboda haɗuwar *k.t* a manne ba ta cikin tsarin sautin Hausa domin /k/ ya gaza /t/ amo, don haka aka canza /k/ ɗin da harafin /f/ wanda ya ɗara na /t/ amo. Inda kuma za a san wannan magana haka take shi ne, in aka sami inda baƙaƙen biyu suka haɗu a ita kalmar ta asali, kuma baƙaƙen ba su saɓa ƙa'ida ta (7) ba, to wannan kalmar haka Hausa za ta bari, ba za ta sa wani wasali ko canza harafin ba kamar yadda ta yi a kalmar *doctor*. Kwatanta (14) da (15) don fito da misalan ɓaro-ɓaro:

		Turanci	*Hausa*
(14)	a.	co**mp**uter	kwa**mf**yuta
	b.	te**lev**ision	ta**lb**ijin
	c.	pla**nk**	fila**nk**i
	d.	mini**st**er	mini**st**a
	e.	**ice c**ream	a**sk**irin
(15)	a.	go**vern**or	gwa**m**na
	b.	do**ct**or	da**ft**an

Abin da ake cewa a nan shi ne, a misali na (14), duk baƙaƙen da suka haɗu a kalmomin Turancin sun dace da ƙa'ida ta (7) don haka da suka zo Hausa ba wani canji da ake buƙata. Amma a misalai na (15) da yake haɗuwar baƙaƙen ta saɓa wa ƙa'ida ta (7), lalle sai sun sami ɗaya daga cikin hanyoyin daidaita kamar yadda misalan (15) suka nuna. Don haka ba daidai ba ne a ce wai Hausa na raba cunkoson baƙaƙe don kawai ba ta da cunkoson baƙaƙen a gaɓa kawai, a'a, har da ma ƙoƙarin kauce wa saɓa waɗannan ƙa'ida da wannan takarda ta fito da ita a (7) kamar yadda ya gabata. Watakila za a iya cewa tsarmin wasali ne kaɗai ya shafi maganar raba cunkoson baƙaƙe kai tsaye, amma sauran hanyoyin daidaita kalmomin aro suna da alaƙa mai ƙarfi da abin da wannan takarda ta fito da shi na tarnaƙin jerin gwanon amo a cunkoson baƙaƙen marabar gaɓa.

Daga cikin hanyoyin da Hausa take bi don kauce wa ƙa'idojin da wannan takarda ta fito da shi sun haɗa da musayar baƙi kamar yadda aka misalta a (15). Haka kuma akwai tsarmin wasali wanda ya kasu gida uku; akwai na farkon gaɓa (16), akwai kuma na tsakiyar gaɓa (17) sannan akwai na ƙarshen gaɓa (18). Daga ƙarshe akwai sharewa ko yar da baƙi wanda shi kuma ya kasu gida biyu: akwai share baƙin tsakiyar gaɓa (19), sannan kuma akwai na ƙarshe gaɓa (20).

(16) *Tsarmin wasalin farkon gaɓa*

	Turanci	*Hausa*
a.	**gl**ass	**gi**lashi
b.	**br**ush	b**u**rushi
c	**sc**ale	**si**keli
d.	**dr**iver	**di**reba
e.	**pr**ice	**fa**rashi

(17) *Tsarmin wasalin tsakiya*

	Turanci	*Hausa*
a.	hea**dm**aster	(s)hed**i**masta
b.	rai**lw**ay	re**li**we
c.	si**gn**al	sig**i**na
d.	**typ**ewriter	tafi**r**eta
e.	mi**cr**ophone	mak**u**rofo

(18) *Karin wasalin ƙarshe*

	Turanci	*Hausa*
a.	sta**mp**	sitam**fi**
b.	ben**ch**	benb**i**
c.	ba**nk**	ban**ki**
d.	cha**nge**	can**ji**
e.	pla**nk**	filan**ki**

(19) *Share baƙin tsakiyar gaɓa*

	Turanci	*Hausa*
a.	lou**d s**peaker	la**s**ifika
b.	ha**ndk**erchief	ha**n**kici
c.	sa**ndp**aper	sa**m**fefa
d.	gra**nd v**alve	gara**m**baw**u**l
e.	cra**nksh**aft	kara**n**shaf

(20) *Share baƙin ƙarshen gaɓa*

	Turanci	*Hausa*
a.	communi**st**	kwaminis
b.	carro**ts**	kara**s**
c.	(bank) dra**ft**	dira**f**
d.	be**lt**	be**l**
e.	yea**st**	yi**s**

Babu shakka waɗannan misalai suna buƙatar bayani filla filla. Tuni dai an yi bayani game da misalai na (15) inda ake samun canjin baƙi da wani baƙin wanda aka nuna ana canjin ne don samo baƙin da ya fi baƙin goshin gaɓar da ke manne da shi amo. Kamar yadda misalai na (18) suka nuna yadda ake ƙara wasali a ƙarshen kalmar aro, misalai na (16)-(17) kuwa suna magana ne a kan tsarmin wasali tsakanin cunkoson baƙaƙe tun da Hausa ba ta da shi. Bayani kan wane irin wasali ya kamata a sa a tsakanin baƙaƙen abu ne da yake buƙatar wani bincike mai zaman kansa, wanda a yanzu ba za mu iya yi ba. Su ko misalai na (19)–(20) na magana ne game da share baƙi daga baƙaƙen da suke manne da juna. To a nan ma fa share wannan baƙi ba kawai sakaka yake ba, shi ma da nasa tsarin. Idan aka yi la'akkari da duk misalan (19)–(20) za a ga ana share baƙin da ya gaza ɗayan amo ne, ba wai kowanne aka ga dama ake yar wa ko sharewa ba.

Daga ƙarshe, ya kamata a faɗakar game da rashin haɗuwar baƙaƙen 'yan buga mabambanta ("different stops") da gwarman baƙaƙe ("double consonants and diagraphs") a matsayin baƙaƙen marabar gaɓa, kamar su yadda (21) suka nuna.

(21) *d.k.; *k.d; *k.b; *g.b; *ɓ.d; *d.ɓ; da *gygw, *gwgy, *shts, * tssh, *gwsh, *kyts, ds

Wannan an taƙaita shi kamar haka: *XY inda X da Y suna da siffar tsarin sauti ("features") iri ɗaya.

4. Alaƙar Tarnaƙin Jerin Gwanon Amo da Sauran Dokokin Tsarin Sautin Hausa

A wannan sashi kuma za a ɗan yi bayani ne a kan alaƙar tarnaƙin jerin gwanon amon da wannan takarda ta fito da shi (5) da sauran dokokin tsarin sautin Hausa. Da farko za a fara da abin da kowa ya fi sani da Dokar Klingenheben wadda take sassauta baƙaƙen 'yan hanɗa su koma wasalin /u/ kamar yadda misalan (22) da (23) suka nuna.

(22) *'Yan hanɗa:*

a.	tala**kci**	=	tala**uci** (talaka)
b.	ha**gni**	=	ha**uni** (hagu)
c.	zu**kciya**	=	zu**uciya** (zukata)
d.	ha**ƙre**	=	ha**ure** (haƙori)
e.	ɓa**kna**	=	ɓa**una** (ɓakane)

(23) *Leɓawa:*

a.	A**bdu**	=	A**udu**
b.	ka**bri**	=	ka**uri**
c.	sa**fka**	=	sa**uka**
d.	a**mre**	=	a**ure**
e.	a**f**!	=	a**u**!

Abin lura a nan shi ne, wannan daɗaɗɗiyar doka ba wani abu take cewa ba illa kalmomin (22) sun saɓa wa dokokin na (5) da na (7) na wannan takarda, don haka lalle waɗannan baƙaƙe da suka gaza na gabansu amo a sama musu waɗanda suka ɗara na gaban amo, shi ya sa aka ɗauki harafin /w/. Me ya sa aka zaɓi wannan baƙi na /w/ da ire-irensu, abu ne da shi ma yake buƙatar bincike mai zaman kansa.

Haka in aka kula da wasu misalan kamar na (24), su ma sun yi daidai da na (22) da (23) wajen kauce saɓa wa waɗannan ƙa'idoji na (5) da na (7).

(24)	a.	*fa**tke**	=	fa**lke** (= fa**rke**)
	b.	*anna**bta** (daga annabi+ta)	=	anna**fta**
	c.	*ɗali**bta** (daga ɗalibi+ta)	=	ɗali**fta**
	d.	*zu**bda**	=	zu**fda**

A nan za a ga dokar Klingenheben ba ta yi amfani ba, domin ta kasa sassauta leɓawa su koma /w/ kamar yadda suka yi a (23) (Newman 2000). Watakila wani zai iya cewa wannan ya faru ne saboda leɓawa a nan ba a asalin kalma suke ba, ɗafau ne ("affixes"). In ko haka ne, to lalle ana buƙatar wata takarda mai zaman kanta don ta tabbatar da bambancin baƙaƙen asalin kalma ("lexical consonants") da baƙaƙen nahawu, watau ("grammatical consonants") da Turanci. Amma a wannan takarda babu wata matsala ko neman hasashe domin leɓawan misalai na (24) dole su koma 'yan atishawa ("fricatives") wanda sun ɗara baƙaƙen da ke manne da su a gaba amo. Yin haka sai ya dace da abin da muke da'awa a dokoki na (5) da na (7). Haka kuma Newman (2000) ya nuna cewa dokar Klingenheben

ta bambanta da ta dokokin ninki ("laws of reduplication") kamar yadda misalai na (25) suka nuna.

(25	a.	*fik-fike (= fika-fiki)	=	fiffike
	b.	*sak-saka	=	sassaka
	c.	*bug-buga	=	bubbuga
	d.	*daf-dafa	=	daddafa
	e.	*laɓ-laɓe	=	lallaɓe

Wannan bambanci bai shafi wannan takarda ba, domin dai babu misalan da suka saɓa wa wannan da'awa da wannan takarda ta fito da shi na tarnaƙin jerin gwanon amo. Haka dai labarin yake da 'yan tsinin harshe ("coronals") a misalai na (26) ba sai na sake wani dogon bayani ba.

(26)	a.	*ma**ts**-matsa	=	ma**r**matsa
	b.	*ha**d**-hada	=	ha**r**hada
	c.	*ka**ts**-katsa	=	ka**r**katsa
	d.	*ka**s**-kashe	=	ka**r**kashe

Daga ƙarshe zan rufe wannan sashi da tsokaci a kan alaƙar wannan bincike da tasarifin Hausa. Haɗa ɗafau masu farawa da baƙi na buƙatar bayani ko yaya yake? Misali, in za a ƙara wa wata kalma harafin ɗafau a ƙarshe, galiban Hausa na yar da wasalin ƙarshe na asalin kalmar kamar yadda misalai na (27) suka nuna.

(27)	a.	mota	mot-oci	f.	ƙane	ƙan-wa
	b.	yaro	yar-a	g.	dako	dak-a-ta
	c.	adali	adal-ci	h.	Kano	Kan-anci
	d.	yaro	yar-inta	i.	cika	cik-owa
	e.	saya	say-e	j.	buwaya	buway-i

Amma in aka duba misalai na (28) lamarin ya sha bamban. A nan za a ga wasu wuraren an bar wasalin asalin kalmar, wani wurin kuma an share shi. To me ya sa hakan yake faruwa? Amsa a nan ita ce, wannan yana faruwa ne saboda dacewa ko rashi dacewa da ƙa'idoji na (5) da na (7). Dauki misalai na (28) don ƙarin bayani.

(28)	a.	karant**aa**	+ waa	=	karant**aa**waa
	b.	muug**uu**	+ waa	=	muug**u**waa
	c.	cik**aa**	+ sa	=	cik**aa**sa

d.	aw**oo**	+ naa	=	a**w**-naa
e.	aadal**ii**	+ cii	=	adal-cii
f.	tay**aa**	+ makoo	=	ta**y**-makoo
g.	tar**aa**	+ koo	=	tar-koo
h.	shariif**ii**	+ taa	=	sharif-taa
i.	saaf**ee**	+ makoo	=	*sa**f-m**akoo = sa**mm**akoo
j.	abook**ii**	+ taa	=	*aboo**k-t**aa = abo**w**-taa (= abootaa)

A misalai na (28a)–(28c) dole a bar wasullan asalin kalmar domin in aka share su kamar yadda aka yi a (27), to kalmomin za su kasance kamar haka: *karan**tw**a; da *mu**gw**a da *ci**ks**a. Harafin /t/ ya zo bayan /w/ ya saɓa wa dokoki na (5) da na (7) domin /w/ ya ɗara /t/ da na /g/ amo. Haka lamarin yake da *ci**ks**a inda harafin /s/ ya ɗara na /k/ amo. To amma in aka duba misalai na (28d) da (28e) lamarin ya sake fitowa fili. A kalmomin *awoo* da *aadalii* an share wasullan domin baƙaƙen da aka bari in sun haɗu da ɗafau na *-na* da *-ci*, baƙin ƙarshen kalmomin sun fi na ɗafan amo, don haka sun dace da ƙa'idojinmu na (5) da na (7). Haka labarin yake a sauran misalai na (28f)-(28h). In ko aka lura da ragowar misalan (28i) da na (28j), za a ga an sami canjin /f/ zuwa /m/ da kuma canjin /k/ zuwa /w/. Wannan ya faru ne don cika ƙa'idar nan ta (7) wadda take cewa lalle baƙin ƙeyar gaɓa ya ɗara na goshin gaɓa amo, don haka *sa**fm**akoo da abo**kt**aa suka zama ba karɓaɓɓu ba don /f/ ta gaza /m/ amo, haka ma /k/ ya gaza /t/ amo, ko kuma a ce duk /k/ da /t/ 'yan buga ne mabambanta.[2]

5. Zaɓen Tsarmin Wasali

A wannan sashi za a yi ɗan ƙoƙari ne a kan irin yadda mutum zai kirdaji ("predict") irin tsarmin wasalin da ya kamata a sa wa kalmar aro mai cunkoson baƙaƙe a gaɓa. Za a gina wannan kirdado a kan rikiɗar wahainiyar ("context colouring") da tsarmin wasali yake yi don ƙoƙarin daidaita baƙuwar kalma don ta dace da tsarin sautin Hausa. Amma tsokano rigima babba za a yi domin wannan fagen yana buƙatar cikakken bincike mai zaman kansa ba sharar fage irin wanda zan yi yanzu ba.

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[2] A ganin Paul Newman, share wasalin ƙarshe na tushe ko rashin share shi bai shafi wannan tarnaƙi ba kamar yadda nake so na nuna. Newman na ganin wannan abu ne da ya shafi tasarifi ("morphological formation") ba tarnaƙin amo ba ("phonological strength"). A gaskiya maganarsa tana da ƙanshin gaskiya, sai dai kawai in ce wannan ya zama wani fage da yake buƙatar wani bincike don tabbatar da gaskiyar lamarin ko akasin hakan.

Da farkon akwai abin da mai karatu ya kamata ya ɗan sani game da shi kansa tsarmin wasali. Masana tsarin sautin harsuna sun gano cewa sigar tsarin furucin ("phonetic feature") tsarmin wasali ɗan alamtuwan baƙi ne ("minimally marked"), kuma yana ɗaukar hoton launin da ke biye ko gaba da shi (Ito 1986, Lowenstamm and Kaye 1986). Bugu da ƙari kuma, masanan tsarin sautukan dai sun nuna cewa, bincike na sauran harasan duniya ya nuna cewa wasalin gaba na *-i* shi ne wasalin asali ("default") aka fi zaɓa don ya zama tsarmin wasali. Wasu harsunan sukan zaɓi baƙin sulalau na *-y* wanda yake takwaran wasalin *-i* ne (McCarthy & Prince 1993, Prince & Smolensky 2004).[3]

Wannan magana ko ta sake tabbatuwa a Hausa, domin yawancin tsarmin wasali a Hausa shi ne *-i*. Kuma shi wannan baƙi na *-i* ya zo ne a farkon gaɓa, tsakiya ne ko kuma ƙarshen gaɓa.

(29) *Farkon gaɓa:*

a.	**gl**ass	=		g**i**lashi
b.	**st**amp	=		s**i**tam
c.	**sc**ale	=		s**i**keli
d.	**dr**iver	=		d**i**reba
e.	**pr**emier	=		f**i**remiya

(30) *Tsakiyar gaɓa:*

a.	hea**dm**aster	=	hed**i**masta
b.	sin**gl**et	=	sing**i**leti
c.	**ice c**ream	=	ask**i**rin
d.	Eng**l**and	=	ing**i**la
e.	sig**n**al	=	sig**i**na

(31) *Ƙarshen gaɓa:*

a.	stam**p**	sitam**fi**
b.	bucke**t**	boki**ti**
c.	gara**ge**	gare**ji**
d.	clu**tch**	kulo**ci**
e.	car**d**	ka**ti**

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[3] Tuni aka yi bayani game da baƙin /r/ cewa ya zame mana togaciya, don haka misalai kamar haka ba mamaki ba don ganin /r/ ta ɗara /w/ amo ba, wanda ya kamata a ce kalmomin ba su sami karɓuwa ba.

kuturu +wa ko -aa	=	kuturwaa
karee + yaa ko -aa	=	karyaa

To amma fa ba haka abin yake ko da yaushe ba, a wasu wuraren za a sami tsarmin wasalin yakan zama na *-a* ko *-u* kamar yadda misalai na (32) da (33) suka nuna a jere.

(32) *Wasalin -a*

a.	**sp**are	=	**s**afaya	a	*farkon gaɓa*
b.	**pr**ice	=	**f**arashi	a	*farkon gaɓa*
c.	**pr**ivate	=	**f**arabiti	a	*farkon gaɓa*
d.	se**cr**etary	=	saka**t**are	a	*tsakiyar gaɓa*
e.	Abuba**kr**	=	Abubaka**r**	a	*tsakiyar gaɓa*
f.	Ba**dr**	=	bada**r**	a	*tsakiyar gaɓa*
g.	Isra'e**l**	=	Isira'il**a**	a	*ƙarshen gaɓa*

(33) *Wasalin -u*

a.	**cl**utch	=	**k**uloci	u	*farkon gaɓa*
b.	**tr**ouser	=	**t**uroza	u	*farkon gaɓa*
c.	**br**ush	=	**b**urushi	u	*farkon gaɓa*
d.	**pl**ot	=	**f**uloti	u	*farkon gaɓa*
e.	mi**cr**ophone	=	mak**u**rofo	u	*tsakiyar gaɓa*
f.	rai**l**way	=	rel**u**wee	u	*tsakiyar gaɓa*

Tun da a misalai na (32) da (33) an samu wasu wasullan ban da na **-i**, to lalle kam ya kamata a ce me ya sa hakan yake faruwa. Shin wannan haka yake sakaka ko shi ma yana da nasa tsarin? A haƙiƙa, ba haka yake sakaka ba, akwai doka da ya kamata a kiyaye kafin tsarmin wasali. A nan za a fito da dokar tsarmin wasali a Hausa ta zama kamar haka (34).

(34) *Tsarmin wasali na rikiɗar wahainiya da launin wasalin da ke daf da cunkoson baƙaƙen baƙuwar kalmar.*

Wato abin da nake nufi a nan shi ne, in an zo za a raba cunkoson baƙaƙe na gaɓar baƙuwar kalma, tsarmin wasalin da za a saka yana ɗaukar launin wasalin da ya fi kusa da na asalin wasalin da yake cikin ita kalmar ta asali. Ka dubi misalai na (32) za ka ga lalle wasalin asalin kalmar na da tasirin wajen irin wasalin da aka tsarma. Watau, in kalmar na da wasalin *-a* ko wanda yake makamancinsa a siga a dama ko hagu na gaɓar da za a tsarma wasalin, to sai a sa wasalin *-a*. In ko wasalin kalmar na da *-u* ko mai makamancin sigarsa, to sai a sa wasalin irin na *-u* ɗin kamar yadda misalai na (33) suka nuna. Wannan shi ne rikiɗar wahainiyar da

tsarmin wasali yake yi, domin ita wahainiya tana rikiɗa ne da irin launin abin da ta taka ko take a kai a lokacin.

In aka yi la'akkari da sigar waɗannan wasulla guda biyu, watau na asalin kalmar aron da shi tsarmin wasalin da aka sa wa ita kalmar Hausa, za a ga kam lalle akwai rikiɗar wahainiya tsakaninsu.[4]

6. Jawabin Naɗewa

A wannan takarda an fito da yadda sigar baƙaƙen marabar gaɓar Hausa suke bisa zubi da tsarinsu tare da nuna cewa ba haka suke kara zube ba. Kuma a takardar dai an ga alaƙar Tarnaƙin Jerin Gwanon Amo ya yi tasiri a kan wasu dokokin tsarin sautin Hausa da tasarifiinta. Wannan ya taimaka wajen rage wasu dokokin zuwa doka ɗaya da aka fito da ita a (7).

Haka kuma takardar ta yi tsokaci a kan wasu matsaloli don faɗaɗa wannan bincike. Kuma an nuna waɗannan matsaloli suna buƙatar bincike mai zaman kansa.

Misali, an nuna me ya sa aka zaɓi wannan baƙi na /w/ da ire-irensu wajen sassauta furucin harafi kamar yadda dokar Klingenheben ta tanada abu ne da shi ma yake buƙatar bincike mai zaman kansa.

An yi hasashe kan cewa watałila wani zai iya cewa wannan ya faru ne saboda leɓawa a nan ba a asalin kalma suke ba, ɗafau ne. In ko haka ne, to lalle ana buƙatar wata takarda mai zaman kanta don a tabbatar da bambancin baƙaƙen asalin kalma ("lexical consonants") da baƙaƙen nahawu, watau ("grammatical consonants") da Turanci. Ko kuma a ce tarnaƙin jerin gwanon amo yana da tasiri ne kawai ga baƙaƙen asalin kalma ban da na ɗafau. Kowanne mutum ya zaɓa, abu ne da yake buƙatar hujja mai ƙarfi.

Daga ƙarshe kuma wannan takarda ta ɗan yi mtsokaci dangane da irin tsarmin wasalin da ya kamata a sa wa kalmar aro. A nan kuma an nuna cewa tsarmin wasalin na samun tasiri da irin wasalin da ke cikin baƙuwar kalmar ta yadda yake ɗaukar hoton launin wasalin baƙuwar kalmar.

Fata a nan, wannan takarda za ta zaburar da sauran masu bincike musamman a wannan fanni da aka bar shi a baya. Bugu da ƙari, tun da wannan takarda ita ce kamar ta farko wadda ta feɗe sigar cunkoson baƙaƙen marabar gaɓa da yanayin tsarmin wasali filla filla, babu shakka kurakurai da gyare-gyare ba sai an faɗa ba, suna nan rututu.

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[4] Ba ni da wani dalili mai ƙarfi da za a iya faɗa game da samuwar wasullan *-a* ƙarshen gaɓa a yanzu kamar yadda misalai na (32g) da na (32h) suka nuna

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Sonority Hierarchy Constraint on Hausa Abutting Consonants

(English Summary)

Hausa does not have true consonant clusters (i.e., sequences of two or more consonants functioning as syllable onsets or codas). It does, however, have abutting consonants where the consonantal coda of one syllable is followed by the onset of the next. Words borrowed into Hausa are generally modified to fit into the language's pre-existing phonological system. For example, elimination of clusters in the source word usually involves some adjustments such as epenthetic insertion and segmental replacements or deletion. In section 1 of the paper, I show that abutting consonants sequencing in Hausa is severely and systematically limited by a Hausa Sonority Hierarchy namely, *Vocoids* (vowels > glides) >

liquids (lateral and flap/trill)) > *nasals* > *obstruents* (fricatives > stops). Based on this hierarchy one can state a general sonority constraint rule for Hausa that "Codas must be higher in *sonority* than adjacent abutting Onsets."

Section 2 sets out the strategies employed to eliminate consonant clusters found in borrowed words, mainly from English. These strategies may apply in syllable-initial, syllable-medial, or syllable-final position.

Section 3 deals with the interaction of the Sonority Constraint with other Hausa phonological rules. In particular, Klingenheben's Law, the Law of Codas in Reduplication, and the treatment of codas in morphological processes are discussed.

Finally, section 4 attempts to predict the choice of the epenthetic vowel used to avoid unwanted clusters in loanwords based on the contextual coloring of the neighboring vowel.

Abdullahi Bature
Bayero University, Kano
email: suyudibature@yahoo.com

3

KANURI AND ITS NEIGHBOURS: WHEN SAHARAN AND CHADIC LANGUAGES MEET

Norbert Cyffer

1. Introduction*

Relations between languages are determined by their degree of similarity or difference. When languages share a great amount of lexical or grammatical similarity, we assume, that these languages are either genetically related or else they have been in close contact for a long time.

In addition to genetic aspects, we also have to consider phenomena which may lead to common structural features in languages of different genetic affiliation. We are aware, e.g., through oral traditions, that aspects of social, cultural or language change are not only a phenomenon of our present period, we should also keep in mind that our knowledge about the local history in many parts of Africa is still scanty. The dynamic processes of social, cultural and linguistic change have been an ongoing development. In our area of investigation we can confirm this from the 11th century. Here, the linguistic landscape kept changing throughout time.

The wider Lake Chad area provides a good example for these developments. For example, Hausa, which is today the dominant language in northern Nigeria, played a lesser role as a language of wider communication (LWC) in the past. This becomes obvious when we assess the degree of lexical borrowing in the languages that are situated between Hausa and Kanuri. However, during the past decades, we observed a decrease of Kanuri influence and an increase of Hausa.

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In this paper we will take a look into various aspects of language contact and its impact on the grammatical structures. Our concern is not only the amount of borrowing of structures and concepts, but also the time-depth of the contact procedures. Apart from lexical similarities, we will also throw some light on the phonological, morphological and syntactic structures of Kanuri at the time of the contact situation, Here, we may expect better information about the structural shape of Kanuri in past periods.

We should also note that research in this field must be carried on in order to improve our knowledge about language relations in the area. Further in-depth studies of the morphology and syntax of the neighbouring Chadic languages are necessary to obtain a more precise picture of the relation between Kanuri and its adjacent Chadic languages. Of course, a better knowledge of the history and societies of the area will assist us to evaluate our linguistic findings and to place them into the proper context of language development.

1.1. Historical and Sociolinguistic Background

The Kanuri speaking people began to move to their present habitat more than 1,000 years ago. The expansion of the Kanem empire (in present Chad) led to a continuous migration to the west of Lake Chad into present Nigeria and bordering Niger. Due to its political strength and economic importance on east-west and north-south trade routes the new Kanem-Borno Empire gained political and economical influence in the wider Lake Chad area. Early Islamization in the 11th century also played an important role (Lange 1984).

Before the area west of Lake Chad was inhabited by the Kanembu ('people of Kanem'), it was inhabited by peoples who spoke Chadic languages. Sometimes they were summarized under the term So or Sau. Increasing immigration from Kanem in Chad and political domination of the immigrants lead to a process of *Kanurization* in the area. The term Kanuri was applied to the Kanem people, who became residents in the west of Lake Chad in present Borno. Though the knowledge of the local history of Borno is very scanty, the former existence of Chadic languages in Borno can be illustrated by the occurrence of names of Chadic people in the east and south of the Kanuri area, which are identical with clan terms in the Kanuri society, e.g., Tera and Bade (Bulakarima 2001:22-27). This may lead to the assumption that some people left Borno looking for new residential areas, while others were integrated into the Kanuri society. Rothmaler (2003) relates numerous toponyms in Borno to pre-Kanuri settlements, which throw some light on earlier societies and languages in the area.

By the middle of the 19th century, the role of Kanuri as a LWC reached its peak. This can be well illustrated by a quote from the traveller Gerhard Rohlfs. In the 1860s he travelled from Tripoli across the Sahara desert and further to the West African coast. With regard to the linguistic situation in Fezzan (southern Libya) Rohlfs (1984) said:

> "*If at all, one may talk of a national language of a mixed people like Fezan* [i.e., present southern Libya], *one has to mention the Kanuri or Bornu language, which is also spoken by the children. Next to it one hears Arabic, and many people also understand the Tuareg as well as the Teda and Hausa language.* " (Translation mine).

From the second half of the 19th century onwards the importance of the Borno Empire declined. Reasons for this are the growing domination of the Sokoto caliphate, the colonial subjugation, the decreasing importance of the trans-Saharan trade, etc. Consequently, the Kanuri language gradually lost its function as a LWC. During the 20th century the dominance of the Hausa language grew rapidly because of intensive Islamization and Christianization as well as "western" education and mass media.

These historical developments left their imprints in the lexicon of languages in the Kanuri and Hausa contact areas in northeastern. Due to Russell Schuh's recent dictionaries of Bade, Karekare, Ngizim, Bole, and Ngamo (Schuh 2004a-f) and his study of Kanuri influence on Bade and Ngizim (Schuh 2003), plus the works of Löhr (1998, 2002) on Malgwa and Awagana (2001) on Buduma, we now have better insight into the contact phenomena affecting those languages.

In this context the question arises to what degree the Kanembu(-Kanuri) language adopted lexical or even grammatical features from Chadic languages (see Ehret, this volume). In the lexicon we find very few common lexemes which may be of Chadic origin. One of these is the term for 'crocodile', *kárám* in Kanuri, in Chadic reconstructed as **kdm*. However, those common terms are extremely rare. Most other similar lexemes moved into the opposite direction.

Greenberg (1960) pointed out that Hausa, too, borrowed Kanuri vocabulary in earlier times, e.g., *kāsúwā́* 'market', *karātū́* 'read', and *rubūtū́* 'write'.[1] In his Hausa reference grammar Newman (2000: 315) makes an interesting statement:

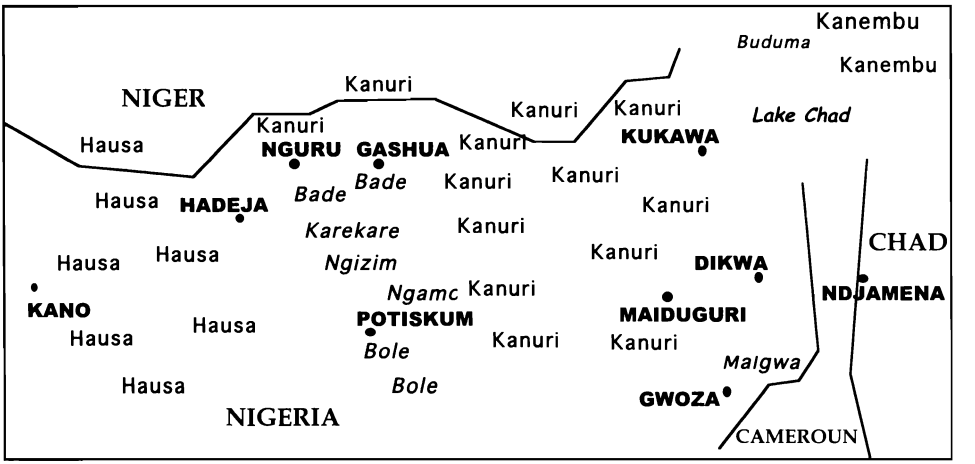
> *"The number of words borrowed from Kanuri is undoubtedly underestimated because many words of Arabic origin that are included in lists of Arabic loanwords in fact came into Hausa via Kanuri."*

[1] In examples in this paper, high tone is indicated by an acute accent, low tone is left unmarked.

From the point of view of the present linguistic landscape, this statement may appear to be counterintuitive. However, when considering that the political, social and linguistic situation in the area kept changing in past periods of time, we have to take Newman's quote as realistic. Phonological and morphological arguments also support the influence of Kanuri on Hausa.

2. Kanuri and its Chadic Neighbours

Map 1: Kanuri and contact languages



The map above only refers to those Chadic languages which are considered in this paper.[2] A special case could be made for the inclusion of Shuwa Arabic. This language, which is spoken in the Kanuri speaking area, also has been subject to influence by Kanuri (Owens 1993). However, its consideration would take us beyond the scope of this paper.

2.1. The Degree of Lexical Connection

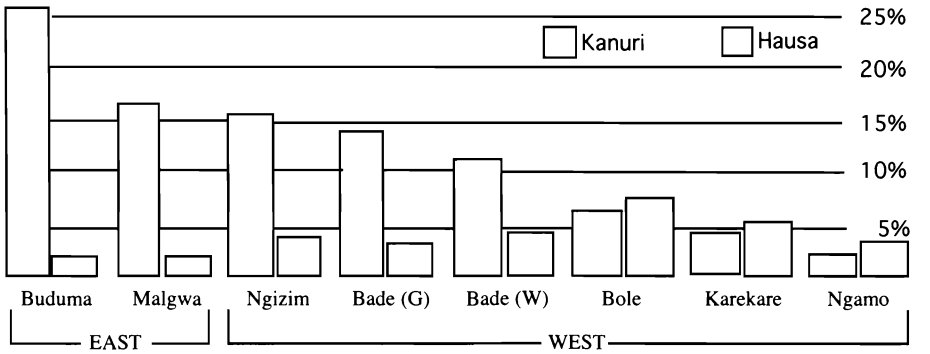
While the Chadic languages under consideration were exposed to borrowing from Kanuri in different amounts, the exposure to Hausa is more balanced and ranges between three and seven percent in the western contact area of Kanuri.[3]

[2] Chadic Kotoko, located between Buduma in the north and Malgwa in the south, should have been included in our consideration. Unfortunately sufficient data are not available to contribute to our analysis. However, it can be assumed from the few data inspected that the lexical coherence may be close to that of Malgwa (Cyffer et al. 1996).

[3] The results were obtained from the cited dictionaries and wordlists. This does not reflect recent developments in codeswitching between Hausa and the languages considered here.

The following diagram shows the different extent of lexical borrowing from Kanuri and Hausa. We should note that it does not contain recently adopted loans from Hausa.

Table 1: Lexical borrowing from Kanuri and Hausa in contact languages



Not surprisingly, in the eastern contact zone the rate of Hausa borrowings is below three percent. However, generally we have to consider that the influence of Hausa may become more prominent in the future through intensive contact phenomena.[4] On the other hand we have to assume that the influence from Kanuri has been a long process lasting over several centuries, during which the exposure to Kanuri differed in the individual languages. Kanuri also acted as a link to carry Arabic loanwords to other languages in the contact zone, including Hausa. We should also point out that the Lake Chad area attracted many people for a long time. One of the common languages in the region besides Kanuri was Hausa.

3. The Western Contact Zone

The languages bordering Kanuri in the west show a different degree of contact intensity from those in the east. But also within the western Chadic languages, we recognize different degrees of contact. Ngizim and Bade took over a bigger portion of their vocabulary from Kanuri, while Bole, Karekare and, especially, Ngamo were much less exposed to this influence from outside. On the other hand

[4] In this respect we also have to look into the impact of Hausa on the syntax of Kanuri and other language in northern Nigeria. Research on this issue is on the way, see also Ziegelmeyer (2005).

the impact of Hausa, which is evidently more recent, is relatively low. The varying degree of contact with Kanuri may also reveal the proximity or the distance between the Kanuri people and the other peoples in the past. As our knowledge about the local historical relations is still scanty, it is premature to relate social interactions of the past with the present linguistic or ethnic landscape. Here, linguistic relations may tell us more about social relations in the past.

Generally we confirm that lexemes were borrowed at a time when certain phonological processes had not yet applied in Kanuri at the period of borrowing. This especially refers to phonological processes of consonant weakening. Rules like voicing, spirantization or deletion were evidently not active in earlier periods. The following examples show the archaic structure of the borrowed forms.

(1)	*Kanuri*		*Ngizim*	*Bade*	*Bole*	*Karekare*	*Ngamo*
	reconstr.	present					
'cloth' (var.)	gaBaGá	gawaá	gabagá	gabagān	gabagá	gabagá	
'sword'	kashá*K*ar	kasháar	kasákâr	kasákar	kasíkar		kaskâr
'better'	ngálKo	ngálwo	ngálko	ngálko	ngálko	ngálko	ngálko

The comparison of Kanuri lexemes, which were borrowed earlier by neighbouring Chadic languages, unveils more archaic phonological structures of the older Kanuri grammar. For example, in Kanuri the palatal fricative /sh/ or the affricate /c/ usually occur in loan words (e.g., Arabic), or they are a result of a palatalization process when followed by front vowels. (This rule does not apply to some northern dialects.) Sometimes we can detect the underlying phonological structure as in (2).

(2) cári 'old (of male person)' < kyári < kiyári
(Note: Proper names still use the archaic form, e.g., Ábba Kyári.)

When palatal consonants occur in environments other than the above, we suspect that phonological processes have earlier taken place which cannot be recognized in present surface forms. However, the Kanuri loans in the contact zone may lead us to a plausible explanation as illustrated in the following example.

The Kanuri lexeme *kasháar* 'sword' contains a palatal fricative /sh/, for which we do not find immediate evidence in the language. When we consider the languages which adopted the word from Kanuri, we may obtain an explanation

for this "irregular" phonological shape. The clue may be found in Bole, which probably shows the most archaic form. From the Bole lexeme we may derive the archaic Kanuri form *kasíkar*.

(3) Old Kanuri (= Bole): (a) *kasíkar* becomes in Kanuri: (b) *kashíkar* > (c) *kashákar* > (d) *kashagar* > (e) *kasháar*

The steps of the phonological changes are: palatalization (*s* > *sh*), assimilation (*i* > *a*), voicing (*k* > *g*), and deletion *g* > Ø). It should be noted that these rules are still applied in present Kanuri.

We also note that other phonological rules had already applied before the borrowing took place. In Kanuri the lateral /l/ becomes a retroflex flap [ɽ] in front of /i/, i.e., /l/ → [ɽ] /___ i.

(4) /báli/ → [báɽi] 'tomorrow'
/líwula/ → [ɽíwula] 'needle'

As [ɽ] is also reflected in the Chadic contact languages (usually as /r/), it appears that this rule had already applied before those forms were borrowed. In other cases the borrowing may have taken place before Kanuri had applied the rule.

(5) *Kanuri*	*Ngizim*	*Bade*	*Bole*	*Karekare*	
a. /l/ followed by /i/, usually borrowed as /r/					
jíli [jíɽi]	jəri	jəri			'kind'
balími [baɽími]	bárəme	bâləma		bárime	'weapon'
zolí [zoɽí]	zōrí				'fool'
alinmá [aɽinmá]			arínma		'dyer'
linzâm [ɽinzâm]	lījâm	rənjâm	rīgīzâm (= līgīzâm)	lījâm	'bridle'
lətəlîn [lətəɽîn]		līterîn	līterîn		'Monday'
litəlîn [ɽitəɽîn]	rītərîn	rītərîn		rītīrîn	'Monday'
b. /l/ followed by vowel other than /i/, borrowed as /l/					
lâdə	lâduwa	lâdúwa	lâdī	lâ̂dī	'Sunday'
bígəla	bī́gəla			bī́gīla	'harvest season'
kalak-		kalaktú			'give back'
lárdə			lárdī		'country'

In environments without a following /i/, no change is observed in the borrowed forms. When followed by /i/, Kanuri applied its regular allophonic rules and the contact languages usually took over the forms with the *r*-like pronunciation. (In their own language, ɾ was replaced by *r*.) This allows the conclusion that the allophonic rule affecting /l/ is older than the consonant weakening rules, because effects of the latter are not visible in the Kanuri loans of the contact languages.

We also observe that syntactic features were taken over from Kanuri. At least in Bade and Ngizim we get the Kanuri lexeme *yayé* meaning 'even if, although, no matter (that)'. This form also functions in Kanuri as a concessive conjunct ('however') as well as, derived from it, a concessive conjunction ('though'), which is a derivation from its basic meaning. The neighbouring Chadic languages also adopted all of these functions. One reason for this may be that in general subordinate constructions did originally not exist. Kanuri, too, developed these clause types later in its development. The necessary subordination markers were introduced by external borrowing and, to a larger degree, by grammaticalization processes of existing forms. This takes us to the assumption that the borrowing processes took place after Kanuri had developed this subordination pattern.

The borrowing procedures from Kanuri into other languages are evident, when typical derivational Kanuri extensions in the receiving languages are also carried over, however, without any specific function in that contact language, e.g.,

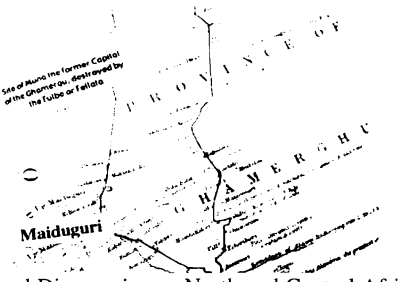
(6)	'kingship'	*Kanuri*	kərmâi	(*kər-* abstract derivative, *mai* 'king')
		Bade (G)	kərmâi	
		Bade (W)	kərmə́yín	
		Bole	kirmâi	
		Ngizim	kərmâi	
	'landlord'	*Kanuri*	fatomá	(*fáto* 'house', *-ma/ -má* noun agent)
		Bade (G)	pātōmá	
		Bade (W)	pātōmə́n	
		Ngizim	pātṓmá	

In the example in (6) lexemes are borrowed as monomorphemic forms and ignore the Kanuri derivation process.

4. The Eastern Contact Zone (Buduma, Malgwa)

To the east, two languages will be considered, Malgwa (formerly "Gamergu") and Buduma, recently documented by Löhr (2002) and Awagana (2001), respectively. Although these languages have been, and still are, in a very close geographical contact with Kanuri, they coped differently with this situation. Many speakers of Malgwa, especially those in proximity to Kanuri, gradually changed their ethnic and linguistic identity in favour of Kanuri (Cyffer et al. 1996). The following map illustrates this fact. In the following it can be illustrated that the derivation markers themselves are adopted and applied.

The map below reveals interesting bits of information. Though only 150 years old, it shows that the linguistic landscape in the area was different about 1850. Evidently the Kanuri territory was smaller than it is today. Though Kanuri already played the most important factor in the area, Malgwa (in the map referred to as "Ghamerghu") was still present in the east and northeast of the present Kanuri centre Maiduguri. The map also shows that the former Malgwa capital was located about 20 kilometers northeast of Maiduguri. *Kanurization* processes led (and still lead?) to changes of ethnic identity and the adoption of a new language. It is not the fact itself that these changes occurred here in the past, it is striking that in this part of Borno these change are likely to continue.



Heinrich Barth, Travels and Discoveries on North and Central Africa. 1857 - 59. Vol. II.

4.1. The Special Case of Buduma

We have already noticed that Buduma shows the highest degree of lexical borrowing from Kanuri followed by Malgwa in the southeast as well as Bade and Ngizim in the east. From the rate of lexical agreement we may derive the intensity of linguistic contact with Kanuri.

The Chadic languages to the west of Kanuri possess derivational abstract and agentive morphemes in borrowed nouns (see 3). We assume that they were taken

over as lexicalized forms, i.e., these don't carry any specific function or meaning in the contact language. This observation, however, does not apply to Buduma.

4.1.1. Abstract nouns. In Buduma some of these derivatives, e.g., abstract *kər-* and *nəm-*, also function as productive morphemes, e.g., they can be applied to other Buduma nouns (Awagana 2001:53-56):

(7) *Buduma*

dəmú	'big'	nə́mdəmú	'power'
tə́	'lay down'	kə́rtə́	'quietness'
Kanuri			
kúra	'big'	nəmkúra	'importance, bigness'
máləm	'learned person'	kərmáləm	'being a learned person'

In Kanuri the derivative suffixes exceed the prefixed ones by far in number. Buduma, too, applies several of such derivations and maintains the same ordering pattern. The examples in (8) – (11) illustrate this.

4.1.2. Agent nouns. The most common Kanuri derivative is the agent noun marker *-ma/-má*, which has high or low tone, depending on the preceding tonal structure. In the plural the suffix *-bu/-bú* replaces *-ma/-má*.

Buduma applies the suffix *-má* in the singular. Unlike in Kanuri, it always carries a high tone, but, like Kanuri, it requires preceding low tones. In the plural, the Kanuri *-bu/-bú* pattern is not applied, rather the common plural marker *-áy* is used.

(8) *Kanuri*

letə́	'going'	letə́ma, pl. letə́wu	'traveller'
cída	'work'	cidamá, pl. cidawú	'worker'
Buduma			
kidá	'work'	kidamá , pl. kidamáy	'worker'
tugún	'clay'	tugunmá , pl. tugunmáy	'potter'

4.1.3. 'Son of'. The derivative *-mi* illustrates that the borrowed form can adopt a new function. While it is in Kanuri related to the meaning 'son of', in Buduma it can also carry the meaning 'language of'. (Kanuri derives terms for languages, characteristics, etc. by a distinct tonal pattern).

(9) *Kanuri*

Músa	'Musa'	Músami	'Musa's son'

Buduma

Músa	'Musa'	Músami	'Musa's son'
Yédiná	'Buduma (person)'	yédinámi	'Buduma language'
Ngánay	'Kanuri (person)'	ngánaymi	'Kanuri language'

4.1.4. 'Daughter of'. In Kanuri the derivative *-ram/-rám* denotes 'daughter of', 'place', 'instrument', 'payments or presents'. The tonal structure is identical with that of the action noun.

(10) *Kanuri*

Músa	'Musa'	Musarám	'Musa's daughter'
cída	'work'	cidarám	'working place'
gota	'taking'	gotaram	'handle'
máləm	'learned person'	maləmrám	'fee for a learned person'

Buduma semantically distinguishes between a suffix *-rám* denoting 'body parts' and *-ram* denoting 'daughter of' or 'presents'. As the suffix is evidently taken from Kanuri, it seems likely that Kanuri too may have had tonally separate suffixes in the past, which might have been later collapsed to one form.

(11) *Buduma:* body part

koráy	'urine'	korayrám	'bladder'
tídí	'beard'	tidirám	'chin'

Buduma: daughter of, gift, fee

máy	'king'	máyram	'princess'
mallə́m	'learned person'	mállə́mram	'present for a learned person'
báwa	'aunt'	báwáram	'present for the aunt'

Similar to the two different usages of *-ram* in Buduma, Kanuri employs two derivatives *-ma*. One denotes noun agent. The other one always carries a low tone and denotes the holder of a title or office, e.g., *bə́la* 'village, town' *bə́lama* (not **bələmá*) 'village head'.

4.1.5. Numerals. With regard to numerals, we note the borrowing of numerals from 6 to 9. This is a phenomenon which must be explained in terms of a very close contact situation. We may assume that Buduma, like other languages, originally operated a numerical system based on five and later changed it to a decimal system. The missing numbers were borrowed from Kanuri.

(12)

	Buduma	*Kanuri*
5	hinji	(úwu)
6	hərakkə́	arakkə́
7	tulwár	túlur
8	wosəkə	wusku
9	hiligar	ləgár
10	hákkán	(mewú)
20	hágə́	(fíndi)
30	fiyakkə	fíyakkə
40	fidegu/ hakkan higay	fídegə
100	aru	yôr

Awagana (2001:154-56) correctly observed that Buduma originally operated a quinary system. It seems clear that Kanuri was the primary donor language for numeral innovations in Buduma. Other neighbouring Chadic languages under consideration, on the other hand, did not follow the Buduma example of adopting a new numbering system. In this context, it should be noted that Kanuri, too, may originally have possessed a quinary system, e.g.,

(13) wuskú 'eight' composed of úwu 'five' and yaskə́ 'three'

We come across an interesting feature concerning the formation of ordinal numbers in Buduma. The formation principle is borrowed from Kanuri. However, while Kanuri, in addition to a derivative nominalizing prefix (*kə́n-*), applies the derivative *-mi* 'son of', Buduma uses the opposite gender and applies *-ram* 'daughter of'.

(14)

	Kanuri		*Buduma*	
	cardinal	ordinal (*-mi*)	cardinal	ordinal (*-ram*)
2	indí	kə́n'indímì	kí	kíram
3	yakkə́	kə́nyakkə́mi	gakə́nnə́	gakə́nnə́ram
5	úwu	kə́n'úwumi	hínji	hínjiram
6	arakkə́	kə́n'arrakkə́mi	hərakkə́	hərakkə́ram
7	túlur	kə́ntúlurmi	tulwár	tulwárram

4.1.6. Pluractional verbs. Pluractional verbs are of great interest with regard to their existence and formation in Kanuri (Awagana 2001:104-105). Though not active in present-day Kanuri, we may assume that they existed in Kanuri in the past. It cannot be ruled out that pluractional marking is also a Saharan feature, which is still operative in Teda-Daza. Those verbs which are cognates in Kanuri and Teda-Daza evidently utilize the pluractional form in Kanuri. However, Kanuri lost the function of pluractionality whereas the distinction is still evident in Teda-Daza (Cyffer 1981).

(15)

Teda-Daza[5]		*Kanuri*	
basic	*pluractional*		
dil-	dal-	dál-	'dye'
lu-	la-	lá-	'dig'
lus-	las-	lás-	'hang up'
kɔr-	kɔp-	kab-	'cut'
kurt-	kot-	kút-	'bring'

At present we cannot be sure whether this derivational process is a common Saharan feature or whether it was adopted by Kanuri and Teda-Daza through areal contacts. In connection with this discussion we should bear in mind that the infix *-a-* is a common Saharan plural feature (Cyffer 1981). However, we may allow two preliminary hypotheses. The first is that pluractional verb stems (excluding reduplication, which may be a universal feature) are an areal feature occurring in Chadic languages as well as in the Saharan languages Teda-Daza and Kanuri. The other hypothesis is that the feature of pluractional verb stems is basically Chadic and taken over by other non-Chadic language.

[5] Tone is not marked in the Teda-Daza forms.

The fact that Kanuri operates former pluractional stems as general forms may be a result of neutralization of such distinctions. Consequently those languages which borrowed these verb forms did so at a time when the distinction in Kanuri had already been given up, e.g.,

(16)	'dye'	*Teda-Daza*: dil-, dal- *Kanuri*: dál-	*Bade* (Western, Gashua) daltu (citation form); *Ngizim* daltu (citation form)
	'dig'	*Teda-Daza*: lu-, la- *Kanuri:* lá-	*Buduma* la-

5. Syntactic Structures

Syntactic descriptions of the languages in the Kanuri contact zone are still scanty. Nevertheless, the data provided by Awagana (2001) or Löhr (2002) allow us to take a new look at contact features in the syntax of the languages under consideration. In addition to the lexical and morphological ties between Kanuri and Buduma, we also observe—especially in Buduma—similar clause subordination patterns. However, it is noteworthy that Buduma only applies one of the two subordination types of Kanuri.

Those subordinations which are made on the sentence level we refer to as Type A subordinations. Those which are made below the sentence level are Type B subordinations.

5.1. Subordination Type A: Sentence Level Subordination

Because syntax does not play a central part in Awagana's monograph nor in the other grammatical descriptions, it is difficult to come to reliable conclusions about syntactic structures as they relate to contact situations with Kanuri. Yet, we can detect several structural features which display common syntactic patterns. These may be explained as direct borrowing, taking over a new concept, or as areal features. Specifically we refer to subordination patterns and to the multi-functionality of grammatical markers. In his chapter on temporal clauses Awagana (2001:196) makes an interesting statement:

> *"It is difficult to make a clear distinction between coordination and subordination with regard to temporal expressions. In Buduma we have a continuum, in which the syntactic category of the subject and the sequence of actions play an essential role."* (Translation mine)

From this statement we may conclude that temporal subordination is not a clear-cut syntactic category. This is also likely to be confirmed in other languages of the area (and beyond). For subordination, Buduma makes use of deriving a new function from an existing lexeme. Another strategy is the direct borrowing of Kanuri subordinators.

Kanuri itself underwent several grammaticalization processes to indicate subordinate clauses. As subordinate markers it also uses borrowed concepts as well as existing lexemes with an additional function and meaning, e.g.,

(17)

	Basic meaning	*Subordinator*
-ga	*reference marker*	'when, if'
duwô	'at first'	'while'
yayé	'however'	'though'
-só	'all'	'though'

In Kanuri subordinated clauses are innovative processes. They either result from new (areal or universal?) developments or they can be reduced to adverbial phrase constructions. The following examples illustrate the extension of a referential marker *-ga* to an (a) temporal and (b) conditional subordinator:

(18) (a) *cída tamojíya* Músa fátoro lejîn
'Musa will go home *when he finishes his work.*'
cída tamojí-GA Músa fáto-ro lejîn
work he.finished-TEMP Musa home-to he.will.go

(b) *cída tamojînga* Músa fátoro lejîn
'If Musa finishes his work, he will go home.'
cída tamojîn-GA Músa fáto-ro lejîn
work he.will.finish-COND Musa home-to he.will.go

Buduma has two postpositions that show functional similarities with the Kanuri referential suffix *-ga*. In Kanuri we assume that this suffix developed several functions from a basic form, which Hutchison (2000) relates to the "associative" and Cyffer (1998:70) to a "referential" marker, however, both are claiming the same basic concept of the morpheme. Though the form itself varies in some cases, the general grammatical functions are identical in both languages.

(19)	*Kanuri*	*Buduma*
Referential	-ga	ngə ('focus')
Associative	-ga	-gá
Direct object	-ga	–
Coordination	-ga ... -ga (yé... yé)	gá ... gá
Subordination:		
Conditional	-ga	ngə
Temporal	-ga	ngə

Buduma has two different forms, one of them likely being a loan from Kanuri *-ga*. We are not arguing that Buduma generally applies markers which are identical with Kanuri. We rather propose that the general concept is taken over accompanied by an expansion of the meaning or function of grammatical morphemes in order to create a new syntactic category.

(20) (a) Temporal subordination
'When I will go tomorrow to Malam Fatori, I will buy millet.'

həbá	*wəálə́*	*Mál Fátəri*	*ngə́*	wə́tu	piyáw
tomorrow	I.will.go.to	Malam Fatori	when	I.will.buy	millet

(b) Conditional subordination
'If he had come, he would have seen him.'

wánə	*náu*	*ngə́*	nə́munə
earlier	he.has.come	if	I.will.see.him

Buduma also follows the ordering pattern of Kanuri and places the "conjunction" at the end of the clause. This is the typical pattern in Kanuri, probably linked with its SOV typological system. Though Buduma is a SVO language, it generally adopted the same characteristics for clause subordination.

Two aspects should be considered here. First, it is assumed that in a number of languages grammaticalization processes have taken place, through which clause subordination on clause and sentence levels were made possible. It appears that the subordination on the clause level (Type B) are a development in a confined area, and those on sentence level (Type A) in a wider area. Evidently Buduma does not apply adverbial constructions (Type B) with embedded clauses like example (21) in Kanuri and Hausa.

5.2. Subordination Type B: Subordination Below Sentence Level

The following subordination pattern—clause embedding in an adverbial noun phrase—is quite common in Hausa and Kanuri, but, as it appears, uncommon in Buduma and Malgwa. Here we may ask, whether this clause type is a recent feature in Kanuri, which was taken over from Hausa, probably at a time when syntactic borrowing from Kanuri became less active. We have to emphasise that this interpretation must be conjectural for the time being. It is noteworthy that we don't find the construction in Koelle (1854). In order to obtain a clearer picture, we need further investigation.

(21) (a) Hausa

Adverbial noun phrase

sún tafí *báayán ítaacée* 'They went *behind the tree'*

sún	tafí	*báayá-n*	*ítaacée*
they.PERF	go	back-of	tree

Embedding in adverbial noun phrase

báayán *sún tafí gidáa* súka cí abíncí '*After they went home,* they ate food'

báayá-n	[*sún*	*tafí*	*gidáa*]	súka	cí	abíncí
back-of	they. PERF	go	home	they.RELP.	eat	food

(b) Kanuri

Adverbial noun phrase

ngáwo kəskábero lezána 'They went *behind the tree'*

ngáwo	*kəská-be-ro*	lezána
back	tree-of-to	they. PERF.go

Embedding in adverbial noun phrase

ngáwo fátoro lezánaben bə́ri jáwo '*After they went home,* they ate food'

ngáwo	[*fáto-ro*	*lezána*]-be-n		bə́ri	jáwo
back	home-to	go.they. PERF - GEN - LOC		food	they. PAST.eat

In (21) the subordination is carried out in an adverbial phrase construction. The locative noun phrase is filled by an embedded clause. Here we may raise the question, how present Kanuri speakers perceive these constructions. Analyses of

sentence intonation patterns suggest that individual speakers may have different perceptions about it. However, further investigation is required.[6]

It is premature to arrive at conclusions why Type B constructions are not common in Buduma. Further investigation into the syntactic structure of other Chadic languages in the Kanuri contact zone may contribute to a better understanding of the different innovation processes.

When taking a look at the role of Hausa and its influence on the languages in the area, its growing and dominant role is obvious. However, though Hausa has become the dominant LWC, the lexicon of the languages in the contact areas is less affected by Hausa than by Kanuri. A preliminary answer to this may be, that after borrowing the necessary lexemes from Kanuri, there was evidently no need of additional ones from Hausa. This especially applies to original Arabic lexemes which got into the contact languages through Kanuri. Even Hausa made use of this process.

Of course, we are aware of the present growing role of Hausa in northeastern Nigeria, esp. in urban areas. Codeswitching occurs frequently and may finally cause structural and lexical changes in the local languages. Syntactic structures of Hausa penetrate into other languages with increasing frequency, including Kanuri.

6. Conclusions

Though differing in many of their lexical and grammatical structures, the Saharan and Chadic languages coexisted in large parts of western and central Africa in a close neighbourhood for a long time. For some centuries Kanuri played the dominant role in the wider area around Lake Chad. This left its imprint on the structure of all surrounding languages, however, with a different intensity. When

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[6] Recently we carried out research on sentence intonation patterns, in order to identify the perception and structure of the sentences in question. There are no definite results yet. However, we can confirm that two downdrift structures are involved in the same sentence. Yet, for this we may have two interpretations:

(a) the original adverbial noun phrase has become a subordinate temporal clause, creating the sentence structure S = Cl1 + Cl2, or

(b) the adverbial noun phrase occurs in the fronted focus slot, thus involving a different intonation pattern: S = [FOC: adv.NP] + NPsubj, etc. + V. Though a final result is still awaiting, we can already propose that the study of intonation will help to solve the problem. Note that Hausa applies in analogous constructions the relative TAM, which also indicates a focus position of the (originally) adverbial construction (see example 20).

the dominance of Kanuri began to fade in the first half of the 20th century, Hausa began to take over its role and became the LWC in the second half of the 20th century.

Though lexical borrowing from Kanuri was common in the area, the quantity of Kanuri loanwords in the neighbouring languages varies considerably (see table 2). While it is rather low in Bole, Karekare and Ngamo, it is high in Ngizim, Malgwa and, especially, Buduma. In the latter case this is not necessarily surprising, because Buduma is completely surrounded by speakers of Kanuri(-Kanembu). It is noteworthy that the Buduma people have retained their linguistic identity. In other similar circumstances we observed a change of linguistic and even cultural identity. This certainly applied to other parts of Borno in the past.

Malgwa reveals by far less lexical influence from Kanuri than Buduma does. Here, however, we observe that the language is receding, and a change of linguistic and ethnic identity took place. A *Kanurization* process has taken place over the past two centuries or more. A map of the mid 19th century (see above) shows well that the present centre of the Kanuri people was predominantly inhabited by speakers of Malgwa (Cyffer et al. 1996). There is sufficient evidence, that these changes in the area around Maiduguri happened because of the political and religious dominance of the Borno empire. Today there is some indication that the impact of Kanuri is receding, and that of Hausa is taking its place. Here, we have to note that the new role of Hausa in the area cannot be compared with that of Kanuri in the past. Unlike Kanuri, Hausa is a more neutral language in the area, i.e., cultural or political dominance is not immediately related with the present role of the language.

On the one hand we observe these remarkable shifts of identity in parts of the Malgwa society, on the other hand we observe less infiltration of Kanuri grammar features in Malgwa than in Buduma. As illustrated above, Kanuri has not only penetrated the Buduma lexicon, but also grammatical structures, the morphology as well as the morphosyntax and the syntax. Here it is interesting to note that the borrowing processes were more intense from the western Kanuri varieties than from the eastern Kanembu varieties, though the latter occur in vicinity of the Buduma language.[7]

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[7] Barbara Dehnhard and Jan Patrick Heiss (personal communication) relate this fact to a different prestige of the two variety clusters among the Buduma society. They also argued that the Buduma retained their linguistic identity because of their tight social structure and delimitation of the surrounding peoples.

In order to better understand linguistic relations, it would be of advantage to take a closer look at the language situation in past times. Of course, this will not be always possible, but in our case we can well observe how the linguistic situation in a given area changed over time.

As already pointed out, we find a diametric situation in the eastern contact zone. On the one side the Buduma people successfully resisted a decline of their language, on the other side they were open to innovation processes in their lexicon and grammar. Though relatively small in number, the Buduma maintained until present their ethnic and linguistic identity. On the other side, many Malgwa speakers underwent a *Kanurization* process in the past.

In order to explain these phenomena, linguistics alone may not be suitable to find a solution. Here, further historical and sociological investigations may help to understand the phenomenon. A better knowledge of the social, cultural and political structures of the two societies may bring about a better understanding of these phenomena. Linguistics comes in to show us the former traces of contact relations between the languages. It may also provide some information about the time dimensions of the ongoing processes of change.

As already mentioned, Buduma differs from the other Chadic languages in the adjacent area in many respects:

(a) Unlike the Malgwa speakers in the Kanuri contact zone, the speakers of Buduma so far have not given up their language in favour of Kanuri.

(b) The counter strategy has been the flexibility to integrate a great number of lexemes into its own lexicon.

(c) The morphology and syntax of Buduma adopted Kanuri grammatical structures, e.g., the derivation of nouns and subordination of clauses.

The explanation for (a) may be found through studies of the Buduma as well as the Kanuri and Kanembu societies. That for (b) may be explained by the intense contacts in all social domains of the people. With regard to (c), a plausible answer may be more complex. The derivational morphology may be seen in the light of the possibility of a wider range of lexical innovations. The influence of syntax, however, is more intricate. There are convincing arguments that Kanuri, like other languages, did not employ subordinate clauses. The new subordinators were either obtained through lexicalization and grammaticalization procedures, or through borrowing from other languages. In a second phase these structures were also accepted by the Buduma language.

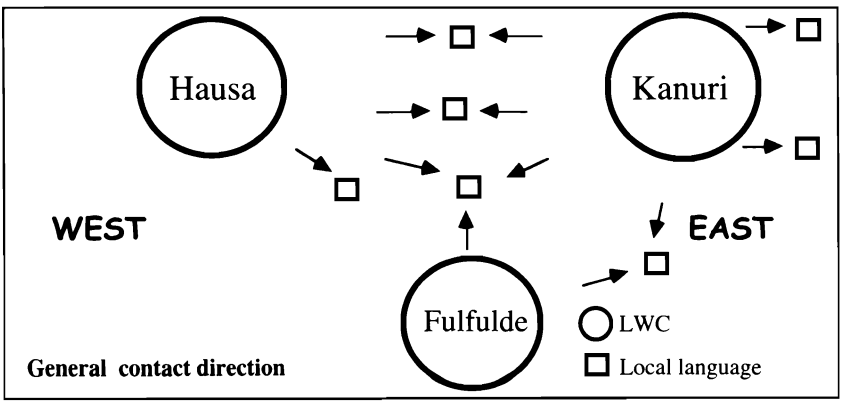
It was the aim of this paper to stimulate further research in various aspects of language contact, especially with regard to the changing structures of the grammar and the lexicon. To present comprehensive ready results would be

presumptuous at this time. However, I tried to illustrate, that the thorough knowledge of language structures will assist us to discover how languages reacted to the challenges of their linguistic neighbours, and generally to the adaptation to new requirements and concepts.

Earlier analyses of language contact reveal that we could propose an eastern boundary of a language contact zone extending from Lake Chad to the southwest along the mountain region in the Nigeria–Cameroon borderland. As Kanuri-Kanembu is represented on both sides of this boundary, we observe that Kanuri in the west of the lake absorbed more syntactic features through influence from the west than Kanembu did on the eastern side. Analyses of the development of the Kanuri TAM system confirm this hypothesis.

We also argue that in general many contact features in West Africa extended from the west to the east and were held up at Lake Chad. However, we should not take this as a one way road. The assumed expansion of linguistic structures may have taken place in a more complex manner. Though we are aware that this hypothesis requires further investigation, we propose the movement of contact features, as shown in figure 1.

Figure 1: Hypothetical contact directions in West Africa (here northern Nigeria)



In this context, a closer look at the derivational morphology and the syntax of the sub-branches of Chadic, which are found over a wider area in West and Central Africa, may also give us more information about areal features in the different contact zones.

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Norbert Cyffer
University of Vienna
email: norbert.cyffer@univie.ac.at

4

THE NILO-SAHARAN BACKGROUND OF CHADIC

Christopher Ehret

An important focus of Russell Schuh's varied work has been Chadic languages spoken on the frontiers of Chadic with the Nilo-Saharan family. In his Ngizim lexicon (Schuh 1981), in particular, this topography of contact reveals itself in a number of loanwords from Kanuri of the Saharan subgroup of Nilo-Saharan. But as many scholars are aware, the linguistic encounter of Chadic with Nilo-Saharan languages must have had a much more venerable history. The comparative reconstruction of Nilo-Saharan is now sufficiently advanced (Ehret 2001, 2003) that we can sketch out a preliminary plot of that story, and that is what the present article aims to do.

1. Early Nilo-Saharan History

From the distribution of the deepest branches of Nilo-Saharan, it is clear that the first two eras of divergence in the family took place entirely in the Middle Nile Basin, in the easternmost parts of the Sudan belt of Africa (Ehret 1993, 2001). At the third stage in the differentiation of the family, a striking new semantic domain emerged in the lexicon of subsistence in the proto-language of the Northern Sudanic sub-branch of the family: namely, a set of roots specifically and diagnostically referring to the raising of livestock and to cattle in particular. This trend of vocabulary development expanded further in the proto-Sahelo-Sahelian daughter of proto-Northern Sudanic, with the addition of lexicon for the first time diagnostic of cultivation and also of lexicon descriptive of complex homesteads with thornbush cattle pens, substantial round houses, and granaries. Finally, in the proto-Saharan and proto-Sahelian languages, into which proto-Saharo-Sahelian then diverged, there emerged breeding terminologies for goats and sheep (Ehret 1993, 1999).

This sequence of developments—first, cattle raising; then settlements with large homesteads and granaries and *prima facie* indications of cultivation; and finally the addition of goats and sheep—is precisely paralleled in the archaeology of the northern parts of the eastern Sudan, in what is now the southeastern Sahara. There the archaeology reveals the presence of the first tending of cattle by transhumant pastoralists between 8500 and 7500 BCE; a second era, beginning before 7200 BCE, in which round houses, granaries, and other indications of large, semi-permanent homestead settlement patterns become the norm; and a third era, dating to the 6000s BCE in which ovicaprids (i.e., sheep and/or goats) turn up for the first time (Wendorf & Schild 1998; Wendorf et al., 2003). The detailed fit of the linguistic and the archaeological sequences allow us, with an unusual degree of confidence, to correlate the early Northern Sudanic speech communities and their proto-Saharo-Sahelian descendant communities with this history of a Sudanic development of food-producing ways of life and to locate these communities in time and space.

For the first 2000 years of the new subsistence developments, these particular Nilo-Saharan groups apparently remained limited to portions of the eastern Sahara. Another much more widely spread set of peoples, practicing an intensive aquatic based food-collecting economy occupied the rest of the Sahara as far west as the Hoggar Mountains and the Bend of the Niger River. The Aquatic societies appear to have been very closely related culturally to the Northern Sudanians, however, and so in all probability would also have been Nilo-Saharan in language (Ehret 1999). In that case, since they did not participate in the Northern Sudanic development of cattle raising, their languages most likely belonged not to Northern Sudanic proper, but to a closely related sister branch of family.

During the mid-Holocene Arid Phase, ca. 6700-5500 BCE, the environmental advantage shifted away from Aquatic peoples, with their dependence on aquatic resources, and toward the cattle-raising Nilo-Saharans of the Northern Sudanic branch of the family. The result evident in the archaeology is that between 6000 and 5000 BCE cattle-raising spread far west across the Sahara and Sahel belts, in most areas replacing and/or incorporating the Aquatic peoples. From the linguistic geographical evidence, one must argue that the major correlative consequence was the spread of the Sahelian sub-branch of the Northern Sudanic languages across the major part of the southern Sahara, eventually as far west as the Niger Bend. The Saharan sub-branch of Northern Sudanic (called "Central Saharan" in Greenberg 1963 and elsewhere) apparently remained restricted to more limited areas around and to the south and southeast of Tibesti (Ehret 1999). The peoples of the Eastern branch of Sahelian expanded widely within the Middle

Nile Basin, giving rise to such later well-known groups as Nubian and Nilotic. The communities of the Western branch of Sahelian are directly relevant to Chadic history because they carried the expansion westward, apparently through the areas around Lake Megachad and as far west eventually as the great northern bend of the Niger River. The two extant members of the Western Sahelian languages are Songay, today found around and eastward from the bend of the Niger, and the Maban group of languages, of eastern Chad.

2. Early Chadic History

How do we fit the early Chadic speakers into this history? Paul Newman (1980) has hypothesized that the closest relationships of the Chadic and Berber divisions of Afroasiatic may well be with each other. From as yet unpublished work I have undertaken recently, I have come round to the view that Newman was right in this respect as he has been in many others. The probable early archaeological correlations for the mutual ancestors in language of the Chadic and Berber language groups are with the Capsian tradition of the northern half of the Sahara. Initially a food-collecting culture with a particular emphasis on wild grain collection, Capsian became established across most of these regions in the ninth millennium BCE. The raising of cattle, sheep, and goats diffused from the east to the Capsian peoples between 6500 and 5000 BCE, during the same period that the Saharo-Sahelian agripastoralists spread across the southern half of the Sahara. The cultivation of grain crops reached the Capsian groups in the same manner in still later periods, from 5000 BCE onward. The key point here is that, differently from the southern Sahara, new populations did not spread across the northern Sahara introducing agriculture. Rather domestic animals and, later, crops diffused to Capsian peoples from the east, over the long term transforming subsistence, but without disrupting the older cultural continuities (Rahman 2003).

In light of the distribution of the primary branches of Chadic—along an east-west axis from northern Nigeria to central Chad—we must place proto-Chadic somewhere in that region, most probably around southern sides of the former Lake Megachad. But the proto-Chadic language itself would have had to derive from the language of a still earlier pre-proto-Chadic society. The proto-Chadic speakers would have been a daughter community of pre-proto-Chadic that moved south to the Chad Basin from an earlier location in the central Sahara.

Two features of Chadic lexical history, taken together with the evidence of Capsian archaeology, favor a particular dating range for this initial move. The first feature is proto-Chadic's possession of lexicon diagnostic of livestock

raising, including terminology for cattle, sheep, goats, and donkeys—none of it borrowed from Nilo-Saharans. There are apparent loans the other way, however: Kanuri *tam* 'sheep' is such a word. This evidence would place the pre-proto-Chadic movement southward into the Chad Basin after the diffusion of livestock-raising to the Capsian peoples, hence since 6500-6000 BCE (Rahmani 2003).

The second element is the proto-Chadic lexicon of cultivation, which reveals their possession of Sudanic-type farming with, for example, sorghum as a key crop (Saxon 1979; also table 1 below). This fact indicates that the southward dispersal of the pre-proto-Chadic speakers into the Chad Basin took place after or during the period of the spread of Sudanic cultivation across the Sahel zone (Ehret 1999). It also suggests that the pre-proto-Chadic movement south began before the full diffusion of Middle Eastern staples, wheat and barley, across the Capsian cultural regions of the northern Sahara. The reason is that those crops depend on cold-season rainfall. A people who already had developed even a partial dependence on wheat and barley would have had to give up this part of their subsistence in the hot-season rainfall regimes that characterized the southern Sahara in those particular eras. It is not impossible to imagine circumstances that might have led to their moving south anyway, but it would nevertheless have been an unlikely scenario.

Together the archaeological dating of these two features make a plausible case that the initial movement of pre-proto-Chadic speakers southward from the central Sahara took place after 6000 years ago but no later than the early fifth millennium BCE. An arrival of proto-Chadic speakers in the Chad Basin between 6000 BCE and the early fifth millennium BCE would have brought them into extensive interactions with incoming or already established Nilo-Saharan speakers. The Nilo-Saharan groups in and around the Basin by the close of the sixth millennium can be expected to have included member communities of the early Saharan sub-branch of Northern Sudanic. It is possible also that some remaining Aquatic communities would have been neighbors of the proto-Chadic society. But, if our arguments about Nilo-Saharan expansions are on target, much of the Chad Basin proper would have been a region of Western Sahelian settlement. The primary routes of early Chadic intrusion into the Chad Basin in that case would have cut across the probable earlier lines of Western Sahelian expansion. This pattern in turn predicts that any Nilo-Saharan loanwords in early Chadic are most likely to be from a Western Sahelian language.

3. Nilo-Saharan Loanwords in Early Chadic

The materials available to us are sufficient for a first, exploratory investigation of the loanword evidence. We have extensive and detailed phonological reconstructions for a good part of Nilo-Saharan (Ehret 2001). For Chadic we often have to rely, at this point in time, on partial reconstructions of roots, in many cases consisting of the consonants of a root but not of the intervening vowel(s) or the tones. Surely as a result, some of the postulations in this article will eventually have to be discarded. Despite these limitations, though, I would expect that a majority of the cases presented here should probably stand the test of time wholly or in part. The two families involved are very different in lexicon and basic phonological structures, and the consonant sound change histories of different Nilo-Saharan groups are sufficiently striking that the Chadic borrowings not uncommonly preserve features allowing us to pin down the particular Nilo-Saharan sources of the loanwords, at least at the branch level.

The interim criterion applied here in attributing a Chadic root to proto-Chadic is its presence in two or more of the primary branches of Chadic, as identified by either Jungraithmayr or Newman. Jungraithmayr divides the group into three branches, West, Central, and East. His subclassification differs from Newman's by incorporating one of Newman's four branches, Masa, into the Central Chadic branch. With respect to Jungraithmayr's classification, the notation W identifies the presence of a root in West Chadic; C, the presence of the root in Central Chadic; and E, the presence of the root in East Chadic. A root from Jungraithmayr & Shimizu (1981) or Jungraithmayr & Ibriszimov (1994) is marked with '(J)' following the meaning; roots not so marked come from Newman (1977) or, in one case, from the author's proposed reconstruction.

In the tables that follow, the Nilo-Saharan roots are from Ehret 2001. The root numbers are those used in the etymological dictionary of that work, and the sound changes rules of the particular Nilo-Saharan languages and subgroups are laid out in detail in Chapters 2 and 3.

These lists of putative Nilo-Saharan loanwords by no means exhaust the possibilities even in the current state of the overall information for Chadic. Other possible loans in early Chadic have been set aside for future consideration. In addition, there must be numerous instances, for future investigation, of significant Nilo-Saharan loanword sets limited to particular Chadic subgroups and even particular languages.

Table 1. NILO-SAHARAN LOANWORDS IN PROTO-CHADIC

A. Items showing Western Sahelian (Maban and Songay) sound shifts or shapes

Chadic root	Nilo-Saharan root	Commentary
**bs* 'small' (J)	579. **pis* 'little, slight'	PNS **p* > proto-Western Sahelian (PWS) **b*
**gʸəwən* 'elephant'	992. **kɔ:wɔn* 'elephant'	PNS **k* > *g* is a specifically PWS sound change
**isi* 'excrement'	963. **iṭ'* 'filth, dirt'	**iṭ'* > *s* /V_ in PWS
**f-f* 'breast' (modified from J)	Songay *fòfè* 'breast' (redup. form of 672. **áp^{h}óh* 'upper torso' with regular Songay sound changes)	J has **p-ɓ*, but this seems a protean shape for accommodating two or three distinct roots; the following can be argued, however, to reflect a valid root: W: Ron **fof* ~ **fuf*, Bade *fufa^{u}*; E: Dangla *pòòpiy*, Migama *pú:pú*

B. Items showing specifically Maban (but not Songay) sound shifts

Chadic root	Nilo-Saharan root	Commentary
** ɗəŋk(ar)-* 'louse' (W/C/ E)	746. **t̪'éŋkw* 'louse'	** t̪'* > **ɗ* (> modern Maba *d*) only in Maban of all of NSah; shape with **-ar* n. suff. is known so far, however, only in proto-Daju (Eastern Sahelian subgroup) **tiŋgar-*
**pm* 'to beat' (C/E) (J)	687. **p'im* 'to thump'	** p'* > proto-Maban **p* (> Maba /*f*/), but > Songay /*b*/

C. Items non-diagnostic as to particular Nilo-Saharan source language

Chadic root	Nilo-Saharan root	Commentary
**kyn* 'small' (J) (W/C/E)	1018. **k^{h}ayn* 'to be little, small'	
**w-* 'sorghum' (WCh: BT, SB **wa*; Masa *wa-na*)	1451. **Wa:y* 'edible grain'	
**min* 'small' (J) (C/E)	129. **min* 'to be small'	Age-distribution criteria favor NSah source for this root: it is ancient in Nilo-Saharan, but appears limited to Chadic within Afroasiatic
**zəm* 'skin (of person)' (W/C/E)	1225. **zim or *zi:m* 'torso, body' (revises meaning 'stomach' suggested in Ehret 2001); 1227. **zìmàh* 'joint (of body)'	PNS **z* > Songay, Maba /*s*/, but devoicing is likely to have been a separate change in each; so the shift is not diagnostic in this instance

4. Source Language of Nilo-Saharan Loanwords in Proto-Chadic

The cumulative indications of this evidence conform to the expectation that the proto-Chadic settlers moving into the Chad Basin ca. the sixth or early fifth millennium BCE would have encountered an established Nilo-Saharan population speaking a Western Sahelian language. Six borrowings of probable Western Sahelian origin appear here (Table 1, Sections A and B). Four of the roots (listed in Section A) could have come, on phonological grounds, from either the Songay or the Maban branch of Western Sahelian. None of the six borrowings show sound changes specifically diagnostic of Songay, but two of them (listed in

Section B) do reveal changes diagnostic of the Maban group. Four further proposed loanwords (Section C) lack sound shift evidence diagnostic of their particular source. The most parsimonious explanation of this evidence is that all ten proposed Nilo-Saharan loanwords derive from a single source language and that this source language was related most closely to the Maban branch of Western Sahelian. None of the loanwords show specific features attributing them to a Saharan language or indicating that they might have come from a more distantly related Nilo-Saharan language spoken by communities of the Aquatic culture.

One aspect of this conclusion—that the source language of the Nilo-Saharan loanword set in proto-Chadic was related closest to the Maban branch of Western Sahelian, today located east of Lake Chad, rather than to the westerly, Songay-related branch—raises a further interesting question. We often tacitly assume that proto-Chadic speakers spread into the Chad Basin via the areas west of Lake Megachad. But if the loanwords in proto-Chadic came from a language of the eastern subgroup of Western Sahelian, might not the original southward route of proto-Chadic settlement instead have passed to the east side of the lake?

5. Nilo-Saharan Loanwords in the Chadic Branches

As the proto-Chadic speakers spread out east and west in the Chad Basin and their language began its divergence into the ancestral languages of the primary branches of Chadic, we can expect that the descendant societies came into further encounters with other Nilo-Saharan-speaking populations. This is a proposal that scholars will be able to evaluate in more detailed ways in the future as Chadic reconstruction progresses. Here are two examples of Nilo-Saharan loanwords from West Chadic subgroups, indicative of contacts of much more recent periods than proto-Chadic.

Table 2. TWO PROPOSED NILO-SAHARAN LOANWORDS IN WEST CHADIC

**təŋ* (or * *təŋg*) 'to sit' (SG: Sura *tɔŋ*, etc.; BT: Karekare *tɔŋg*-) (J)	891. **ṭòŋkw* 'to sit, stay, stop'	J includes Ron cases that do not belong with this root

bənak- 'fish' Ngizim-Bade [-k* anim. suff.]	703. **pu:n* or **p'u:n* 'fish'	PNS **p* > **bin* Maba, Songay (same sound change occurs in several other NSah languages, however); PNS **p'* > Songay */b/* > proto-Maban **p* (> Maba */f/*)

6. The Historical Implications of Loanwords in Early Chadic

The overall historical picture suggested by the loanword sets in early Chadic conforms to the broad historical patterns already reconstructed for the early Nilo-Saharan and Chadic histories on the basis of linguistic geographical arguments and reconstructed histories of subsistence vocabularies.

The proposed Nilo-Saharan loanwords in proto-Chadic indicate that the earliest Chadic speakers, as they settled in the southern Chad Basin sometime around the sixth millennium BCE, encountered Western Sahelian peoples, whose language most likely belonged to the Maban sub-branch of Western Sahelian. The fact that this loanword set included some basic words (i.e., words with meanings on the Swadesh 100-word list, including 'skin,' 'louse,' 'small'), implies that the proto-Chadic society developed out of the incorporation a large majority element of former Western Sahelian speakers into a minority immigrant community of Chadic speakers (see Ehret 2000 for a tabling of borrowing types and their associated social and demographic histories).

The two proposed loanwords in West Chadic (table 2), each limited to a different subgroup of West Chadic, also bear basic vocabulary meanings. This feature suggests that the Chadic interactions with Nilo-Saharans in several later eras may have repeated the pattern implied by the proto-Chadic borrowings, in which Chadic expansion came through incorporation of existing majority Nilo-Saharan populations into intrusive, originally minority communities of Chadic speakers.

In addition to the deeper investigation of these particular histories, numerous other possibilities for exploring the encounters of Chadic speakers with Nilo-Saharans lie ahead of us. Scholars who have studied particular Chadic languages or narrow subgroups know of loanwords from Nilo-Saharan limited to those particular languages and groups (e.g., Schuh 1981, among others). As students of Chadic build up the intermediate stages in Chadic reconstruction, they will surely also discover many more loanwords from Nilo-Saharan that occur limited to particular primary branches as well as to particular sub-branches. Separating out

these borrowed roots from the inherited roots that trace back to the Afroasiatic origins of Chadic will be a challenging and interesting and very long-term task.

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Christopher Ehret
UCLA
email: ehret@adelphia.net

5

JINSI A BOLANCI

("Gender in Bole")

Alhaji Maina Gimba

1. Gabatarwa

Bolanci dai wani harshe ne da ke cikin harsunan da asalinsu a ke kira *Chadic*, kuma ta danganci *West Chadic* (watau Cadi ta Yamma) wadda ta ƙunshi Hausa, Tangale, Karekare, Ngamo, Kanakuru, da sauransu (Newman 1977). Ainihin masu amfani da Bolanci watau Bolewa dai suna cikin Jihohin Yobe da Gombe ne a Arewacin Najeriya. Ko da yake masana ƙalilan ne (Lukas 1969, 1970-72, 1972, Schuh 1983, Gimba 2000) suka yi nazari a kan Bolanci, amma akwai abubuwan da suka shafi nahawu waɗanda ba a yi masu nazari mai zurfi ba musamman ta jangaren jinsi 'gender'. Adalin wannan ne ma na ga cewa ya kamata in ɗan rubuta wani abu game da jinsi a Bolanci, musamman ganin muhammancin cewa duk wani abu da yake da suna ko kuma suna (*Noun*) ne, yana da jinsi ko 'na miji', ko 'mace'. Bayan haka, 'yan shekarun da muka yi da Shaihin Malami Russell G. Schuh (Malam Takalmi), ya furta mini cewa yana ganin ya kamata na yi ɗan fashin baƙi a kan jinsi na Bolanci asali tun da ni Babole ne.

2. Jinsi

Bolanci dai ba shi da tasirifin jinsi sai dai abu yakan zama ko na miji ko mace. Wannan kuma alama ce da ake samu cikin harsunan dangin Cadi kamar su Kanakuru (Newman 1974) da Miya (Schuh 1998). Duk da haka, jinsi dai a Bolanci abu ne mai rikitarwa domin ko wajen Bolawa da kansu, akan samu sunaye da dama wanda za ka ji an faɗe su da jinsin na miji kuma ana iya faɗansu da jinsin mace. Za mu iya ganin misalan irin waɗannan kalmomi tare da yin amfani da manunai *emè* 'wannan (na miji)' da *oshè* 'wannan (ta mace)':

(1) mềmù emề 'wannan mutumin' mòndù oshề 'wannan matar'

Idan muka duba waɗannan kalmomi na ƙasa, za mu ga cewa za a iya amfani da su a matsayin miji ko mace:

(2)	lằwò	'yaro/yarinya'	mànshi	'tsoho/tsohuwa'
	lằwò emề	'wannan yaro'	mànshi emề	'wannan tsoho'
	lằwò oshề	'wannan yarinya'	mànshi oshề	'wannan tsohuwa'
	àdà	'kare/karya'	yàuno	'giwa'
	àdà emề	'wannan kare'	yàuno emề	'wannan giwan'
	àdà oshề	'wannan karya'	yàuno oshề	'wannan giwar'
	kùrềɗì	'maciji/macijiya'	yằro	'tsuntsu/tsuntsuwa'
	kùrềɗì emề	'wannan maciji'	yằro emề	'wannan tsuntsu'
	kùrềɗì oshề	'wannan macijiya'	yằro oshề	'wannan tsuntsuwa'

A nan dai za mu ga cewa ko da yake a Hausa wasu sunaye suna da takamamman jinsi ko na miji ko mace musamman ta yadda tsarin tasirifi ya nuna (Newman 2000, 2002), a Bolanci kuwa a kan iya laƙaba su da kowane jinsi. Misali a Hausa dai 'bishiya' mace ce, a Bolanci kuwa kamar yadda muka gani a misalan sama, bishiya watau *rèwe* dai ana iya laƙaba ta da mace ko na miji.

2.1. Jinsi Miji

Yawancin sunaye a Bolanci dai suna da jinsin na miji duk da dai cewa Bolanci ba shi da tasirifin jinsi kamar yadda muka ambata a baya. Sunaye da dama da suka shafi jikin mutum, abinci, kayan gida, kayan sakawa, yanayi, sunayen dabbobi, da dai sauransu, sukan ɗauki jinsin na miji. A nan muna nufin kowanne yana iya ɗaukan manuni *emề* 'wannan (na miji)' kamar a ce, *kằla emề* 'wannan yatsa', amma ***kằla oshề***. Ga nan 'yan misalai na irin waɗannan kalmomi masu jinsin miji:

(3) Jikin Mutum

wàyyà	'jela'	shèkè	'ƙafa'
ìdo	'ido'	òsoki	'ƙashi'
sàra	'hannu'	azìn	'hanji'
ùnti	'hanci'	tìlo	'zuciya'
sòwwò	'gashi'	kằla	'yatsa'

(4) Abinci

ottò	'abinci'	àmma	'ruwa'
àtti	'kunu'	biyè	'miya'
'yàla	'hatsi'	lo	'nama'

(5) Kayan Gida

kulà	'ƙwarya'	kùmbà	'faifai'
bǔri	'randa'	kùɗa	'tukunya'
tǔmà	'turmi'	danda	'taɓarya'
ɓǎdi	'wuƙa'	bōka	'madubi'
bìm	'ɗaki'	bònò	'gida'

(6) Kayan Sakawa

zottò	'zane'	shìmi	'shimi'
sùɓà	'riga'	tǎjiyà	'hula'
tàkà	'takalmi'	bèntel	'bante'

(7) Yanayi

pempelì	'iska'	ùzur	'ƙura'
wòli	'ƙasa'	yǎyà	'yashi'
kāshakì	'tsakuwa'	pito	'ruwan sama'
gǔsho	'dutsi'	njùlùr	'sanyi'

(8) Dabbobi; Tsuntsaye

gāzà	'zakara'	gam	'rago'
kàɓar	'taure'	dōsho	'doki'
yǎro	'tsuntsu'	didì	'ƙuda'
tītokì	'tsutsa'	mèmù	'mutum'

2.2. Jinsin Mace

Sunaye masu jinsin mace dai yawansu bai kai na jinsin miji ba. Wannan ko ba abin mamaki ba ne idan mun yi la'akari da bayanin da muka yi tun farko cewa bambancin jinsi a Bolanci yana da rikitarwa ainun. A dalilin haka ne ma yawancin kalmomi sai ka ga an laƙaba masu jinsin na miji. A bincike da na gudanar tare da duba shafin ƙamus na kwamfyuta na Schuh da Gimba (2005), na lura cewa itatuwa ko bishiyoyi kamar tsamiya, ɗorawa, kuka, magarya, da sauransu, ana laƙaba masu jinsin mace.

(9)

dèmi oshề	'wannan tsamiyar'	mòcci oshề	'wannan ɗorawar'
kùshi oshề	'wannan kukar'	āwe oshề	'wannan magaryar'
dìbinò oshề	'wannan dabinon'	shǔla oshề	'wannan ceɗiyar'
dèwe oshề	'wannan ɗinyar'	gàngà oshề	'wannan giginyar'

Dukkan waɗannan da dai sauran bishiyoyi kamar yadda muka faɗa, suna ɗaukan jinsin mace. Duk da haka dai, yawancin sunayen dabbobi da na halittu masu rai, ana iya laƙabta masu *gorzo* 'miji' ko *màndù* 'mace' domin tantance jinsinsu. Kaɗan daga cikin irin waɗannan kalmomi ko su ne:

(10)

Miji	Mace	
kǎyàu n gorzo	kǎyàu n màndù	'maraya'
dìn'il n gorzo	dìn'il n màndù	''yan biyu'
mbùkùm n gorzo	mbùkùm n màndù	'makaho/makauniya'
bìdò n gorzo	bìdò n màndù	'biri'
kòsum n gorzo	kòsum n màndù	'ɓera'
bàmbà n gorzo	bàmbà n màndù	'fara'
kōro n gorzo	kōro n màndù	'jaki'
dōsho n gorzo	dōsho n màndù	'doki'

2.3. Sharhi

Duk da dai cewar dukkan itatuwa ko bishiyoyi ana laƙabta su da jinsin mace, to idan ana nufin a yi nuni ga 'ya'yan ne, to jinsin na miji ake amfani da shi. Watau abin nufi a nan shi ne, itatuwa ko bishiyoyi mata ne amma 'ya'yansu maza ne. Nan za mu iya harsashen cewa wannan wataƙila bai rasa nasaba da yadda Ubangiji ya halicci abubuwa masu rai ba. Kasancewar mata ne ke haihuwa ba maza ba saboda haka tun da 'ya'yan itatuwa daga itatuwan aka same su, to su kansu itatuwan sai aka ɗauke su tamkar mata. To tun da dai 'ya'yan itace da kuma ita itaciyar da kanta sukan zama sunayen iri ɗaya ne, zamu iya warware wannan taƙaddama tare da misalai don nuna bambancin itaciya da kuma ɗanta cikin jumla. Kalma na aikatau a Bolanci dai na ɗaukar jinsin sunan da ake nufi: idan ana nufin na miji, aikatau mai shuɗewa na ɗaukar *-wo*, idan kuma ana nufin mace ce, aikatau mai shuɗewa na ɗaukar *-kko*. Misali, *ɗowu-* 'zauna (zama)', *ɗowu-wò* 'ya zauna', *ɗòwa-kkò* 'ta zauna'. To ga misalai nan don tantancewa.

(11)

(rèwe) dèmi lǎkkò	'(bishiyar) tsamiya ta haihu'
*(rèwe) dèmi leyuwò	*'tsamiya ya haihu'
dèmi sǒruwò	'tsamiya (*bishiya) ya faɗi'

(rèwe) dònshi sòrakkò	'(bishiya) kaɗanya ta faɗi'
*(rèwe) dònshi leyuwò	*'kaɗanya ya haihu'
dònshi sòruwò	'kaɗanya (*bishiya) ya faɗi'
(rèwe) āwe sòrakkò	'(bishiyar) magarya ta faɗi'
*(rèwe) āwe leyuwò	*'magarya ya haihu'
āwe sòruwò	'magarya (*bishiya) ya faɗi'
(rèwe) dibinò lăkkò	'(bishiyar) dibino ta haihu'
*(rèwe) dibinò leyuwò	*'dibino ya haihu'
dibino sòruwò	'dibino (*bishiya) ya faɗi'
(rèwe) mongòrò lăkkò	'(bishiyar) mangwaro ta haihu'
*(rèwe) mongòrò leyuwò	*'mangwaro ya haihu'
mongòrò sòruwò	'mangwaro (*bishiya) ya faɗi'

Wani abin sha'awa a nan shi ne, sunayen itatuwa kamar *dibinò* da *mongòrò* wadda asalinsu an ara ne daga Barbarci ko Hausa, su ma sukan ɗauki jinsi mace idan ana nufin bishiyar, sannan jinsin na miji idan ana nufin 'ya'yan ne kamar yadda misalan da aka bayar suka nuna.

Bayan haka, sunaye wanda asalinsu daga aikatau ne, wadda a Turanci ake kiransu 'verbal nouns', duka sukan ɗauki jinsin miji ne. Ga wassu 'yan misalai:

(12)

Aikatau		Suna	Misali	
ngoru-	'ɗaura'	ngòryà	ngòryà īwò	'ɗauri ya yi'
ɗìnku-	'dafa'	ɗìnkò	ɗìnkò tàkāwò	'dafuwa ta ƙare'
sòru-	'faɗuwa'	sòrò	sòrò jàttūtùwo	'faɗuwa ta ɓata'
kara-	'yanka'	kèrè	kèrè ī gòŋ	'yanka ya yi kyau'
ɗa-	'hawa'	ɗèshi	ɗèshi īwò	'hawa ya yi'

3. Jinsi na Asali

Bolanci na da sunaye masu jinsi na asali ko na ainihi. Watau, akwai wassu sunaye wanda kowane jinsi na miji yana da 'yar'uwa ta mace. Ga wassu misalai nan biye:

(13)

Miji		Mace	
bùnga	'saurayi'	gùnyò	'budurwa'
bùnga amā	'wancan saurayi'	gùnyò oshā	'waccan budurwa'

gāzà	'zakara'	yə̀wi	'kaza'
gāzà amā	'wancan zakara'	yə̀wi oshā	'waccan kaza'
gam	'rago'	tèmshi	'tunkiya'
gam amā	'wancan rago'	tèmshi oshā	'waccan tunkiya'
kàɓar	'taure'	ɓàrkè	'akwiya'
kàɓar amā	'wancan taure'	ɓàrkè oshā	'waccan akwiya'

Akwai sunaye kamar su 'kura' (*zònge*), 'kare' (*àdà*) wanda ba su da kalma dabam wadda ta bambanta jinsi ko miji ko mace, a saboda haka, a kan yi amfani da jinsin mace idan ana son a yi nuni da su:

(13)	zònge ngàɗattùd dāndèto	'kura ta cinye 'ya'yanta.'
	àdà oshā l lò	'waccan karyar waye ce?'

5. Rikitattun Jinsin

Akwai wassu kalmomi wadda su ke da rikitarwa wajen laƙabta masu jinsi ko na miji ko mace. Tari sau da yawa za ka ji Babole ya yi amfani da jinsi na miji wajen ambaton wani suna, bayan ɗan lokaci kuma sai ka ji ya yi amfani da jinsin mace ga wannan sunan:

(15)	mōtà sə̀rakkò / sə̀ruwò	'mota ta/ya faɗi'
	rēdiyò 'yorajjìtò / 'yorūjìnì	'rediyo ta/ya tsaya'
	yə̀ro dòɓɓannakkò / doɓɓināwo	'tsuntsuwa ta / tsuntsu ya cake ni'
	rèwe oshā / amā à sə̀rà	'waccan/wancan bishiya zata/zai faɗi'

Ko da yake Bolewa suna samun matsala wajen laƙabta jinsin kalmomi kamar su mota, rediyo, tsuntsu da dai sauransu, ba sa samun wannan rikitarwa da sunaye kamar babur, jirgin sama, da sauransu duk da dai cewa sun yi kama da juna ta wajen asali. Ga wassu 'yan misalai:

(16)	kə̀ke ɓoluwò / *ɓòlakkò	'keke ya/*ta karye'
	bə̀bur jàttūjìnì / *jàttajjìto	'babur ya/*ta ɓaci'
	jirgi sə̀rakkò / *sə̀ruwò	'jirgi ta/*ya faɗi'

5. Karshe

Daga ƙarshe, ina so in jaddada cewa jinsi a Bolanci dai abu ne mai wuyan lafabtawa. Wannan matsala ko ba ya rasa nasaba da ganin cewa Bolanci ba shi da tasirifin jinsi. A dalilin haka, sai a sami ruɗani wajen lafabtawa kalma jinsin ko na miji ko mace. Sau da dama idan Bolewa suka sami kansu cikin irin wannan ruɗani, to sai ka ga sun yi amfani da jinsin na miji. Abin nufi a nan shi ne, Bolewa sun fi sakewa su lafabtawa suna jinsi miji fiye da lafabta jinsin mace. Wannan ko ya ma fi bayyana wajen kalmomi musamman na aro ko na abubuwan zamani ko na'urorin zamani kamar su keke, babur, talbijin, da sauransu. Alal misali, *àlkebbà* 'alkyabba' sunan riga ce da Bolanci ta ara daga Hausa, to amma a Bolanci ana lafabta ta da jinsin na miji, a Hausa kuma mace ce. Mun kuma gani a sashe na 2.3. cewa dukkan sunaye na aikatau suna ɗaukan jinsin na miji ne.

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Gender in Bole

(English Summary)

Bole is a West Chadic language spoken in Yobe and Gombe States of North-eastern Nigeria. Gender is one of the most problematic aspects of Bole grammar. Gender is rarely shown in nominal morphology itself but rather in agreement, as seen, for example, in the perfective verb stem markers *-wo* (masc.) and *-kko* (fem.). Demonstrative pronouns also show gender agreement, e.g., *amā* 'that' (masc.) and *oshā* 'that' (fem.).

The tendency is to use masculine gender as the 'default' for most nouns. However, trees bearing fruits are generally treated as feminine, e.g., 'tamarind', 'plum tree', etc.; but the fruits are masculine. Verbal Nouns are also all masculine. With words having biological sex reference, e.g., people and animals, grammatical gender is assigned in accordance with the natural gender whether different lexical items are used for the different referents or not.

Speakers sometimes do not know which gender, masculine or feminine, to use with individual words. Due to this "uncertainty", speakers use them interchangeably, e.g., *mōtà sòrakkò / sòruwò* 'The car (fem./masc.) went off the road.'

Alhaji Maina Gimba
University of Maiduguri, Nigeria.
email: gimbaa2002@yahoo.com

6

RELIC NOUN-CLASS STRUCTURE IN LEGGBO

Larry M. Hyman and Imelda Udoh

1. Introduction*

In many West African Niger-Congo languages, historical noun class prefixes undergo significant levelling and/or fusion with the noun stem. Starting from a full set of singular-plural markers both on nouns and on agreeing elements, the logical endpoint of such changes can be the total loss of noun classes, as has happened some of the best-known Benue-Congo and Kwa languages, e.g., Akan, Ewe, Yoruba, Igbo. Resistance to this tendency can be found in certain subgroups in Nigeria, e.g., Upper Cross, where languages such as Mbembe (Barnwell 1969a,b), and Lokaa (Iwara 1982) have been reported to have full-fledged noun class marking and concord systems. It is thus striking that closely related Leggbo has lost all noun class agreement. Still, it is possible to identify a prefix-stem structure on the basis of a number of arguments.

The purpose of this paper is to document relic noun-class structures in Leggbo, an Upper Cross minority language. Leggbo is spoken by an estimated 60,000 Agbo people in two local government areas, recently named Abi and Yakurr, in Cross River State. In §2 and §3 we demonstrate that although Leggbo has lost the inherited noun class system, nouns must still be analyzed as consisting of a prefix-stem structure. Sections §4 and §5 provide further evidence from reduplication and compounding, respectively, and §6 illustrates relics of

* The present study is based on a field methods course held at the University of California, Berkeley during the academic year 2001-02, with the second author serving as consultant. Other work on Leggbo includes Spreda & Spreda (1966, 1969), Hyman et al. (2002), Hyman & Udoh (2003, n.d.), Paster (in press). We are grateful to Jeff Good, Ahmadu Kawu, Julie Larson, Ian Maddieson, Heiko Narrog, Mary Paster, and Keith Sanders, for their input during the course.

earlier noun class agreement found on possessive pronouns. The conclusion is that Leggbo represents an intermediate stage on the way to becoming like Yoruba and Igbo.

2. Basic Noun Structure

Most nouns in Leggbo consist of a prefix and a stem, the latter consisting of one or two (rarely more) syllables. Some 6% (35 out of 569) of the nouns collected are prefixless including the following, the last three of which are borrowings:

sìn	'hair'	nɔ̀nɔ́ŋ	'finger'
ddɛ̀n	'eye'	cɔcɔ	'small frog (sp.)'
dzè	'crocodile'	ttɛttɛɛ	'grandfather'
dzɔ̀	'snake'	kkàkki	'pants'
kkwàl	'boat'	fùfú	'fufu'
vvɔ́m	'thing'	bìleèdi	'bread'

Many of the bisyllabic and longer prefixless nouns are reduplications; cf. also *kkpakkpa* 'groundnuts', *kkwàkkwá* 'locust tree', *gbòŋgbòŋ* 'can, tin', *koolíkoòli* 'flower'. Others may be historical compounds whose parts can no longer be identified, or they may be borrowings, e.g., *jǎkpu* 'cassava', *tálatòlo* 'mumps'.

A noun prefix may have the shape CV- or V-, or it may consist of a homorganic (syllabic) nasal N-. Leggbo distinguishes the following prefixes.

li-	i-	N-	[m-, n-, ŋ-]
lɛ- (~ le-)	ɛ- (~ e-)		
gi-	a-		
gɛ- (~ ge-)			

The vowels in the prefixes are limited to /i/, /ɛ/ and /a/, round vowels being prohibited. Prefixal /ɛ/ harmonizes to [e] when followed by /i/, /e/, /u/ or /o/ in the root, e.g., *lɛ̀sàl* 'tooth', *lèbèl* 'beard'. While the /l/ of *li-* and *le-* is stable, prefixal /g/ may optionally be lenited to a continuant [ɣ] or be dropped entirely, e.g., *gìvála* ~ *ìvála* 'guilt', *gèbɔ* ~ *èbɔ* 'arm, hand'. Finally, note that of the 566 prefixed nouns entered into the lexicon, 371 carry L tone, while 187 carry M tone. This leaves only the following 8 nouns with H tone prefixes:

líddaddil	'rejoicing'	ákkpaŋ	'plate'
lídzil	'food'	líkpaal	'community'
íkílíbí	'cowry'	áŋàlà	'garden egg'
ékko	'vegetable (sp.)'	ɛ́wàwàɛ́	'child-like'

The first two are nominalizations (cf. *ddaddi* 'rejoice', *dzi* 'eat'), while others may be borrowings. Each of the Leggbo prefix shapes is illustrated below.

li-	litɔ́l 'ear', lìvɔl 'belly', lidɛ̀ɛ̀l 'name', linyumìl 'thorn'
lɛ-	lɛ̀bàl 'axe', lɛ̀zàŋàl 'river', lèttol 'head', lèbɛ̀l 'beard'
gi-	gìtáá 'witchcraft', gìvála 'guilt', gittù 'life', gìbáà 'marriage'
gɛ-	gɛ̀bɔ 'arm, hand', gɛ̀vɛ̀ 'foot', gètti 'tree', gɛ̀kù 'hoe'
i-	ìwà 'spirit', ìzù 'gourd', ìtóbo 'monkey', izɔ̀ɔ̀m 'knife'
ɛ-	ɛ̀nɔ̀n 'person', ɛ̀tɛɛm 'meat, animal', ɛ̀bbi 'goat', ɛ̀nùŋ 'salt'
a-	àzì 'blood', àsi 'water', ànààn 'oil', aggbà 'chin', àjí 'feast'
N-	m̀bom 'cheek', ǹzúŋ 'nose', ǹnyóŋ 'maggot', ŋ̀kɔ 'nut'

As seen in the following examples, indigenous Leggbo personal names also begin with these prefixes:

li-	líddaddìl (*m./f.*) ('happiness')
lɛ-	lɛ̀tɔ̀ɔ̀ŋɔ̀l (*m./f.*) ('praise')
gi-	gittù (*m./f.*) ('life')
gɛ-	?
i-	icéji (*f.*), ikkɔ̀ (*m.*), ìccá (*m.*)
ɛ-	elémi (*m.*), ɛ̀kàma (*f.*) (< ɛ̀kà amán 'our mother'), ɛkpaa (*m.*), ɛ̀bìa (*f.*), ɛ̀nnì (*m./f.*)
a-	ámɔ̀n (*m.*), àdìàaha (*f.*), àggbómi (*m.*)
N-	ntɔ̀mɔ (*f.*), ŋ̀káánu (*m./f.*)

Any other initial vowel indicates that a name has been borrowed from another language, e.g., from Efik: *okôn* (*m.*), *ùdɔ* (*m.*), *ódùdù* (*m.*).

The above prefixes are frozen relics of a former noun class system which conditioned full agreement—and which can be observed in nearby Upper Cross languages such as Lokaa (Iwara 1982) and Mbembe (Barnwell 1969a,b). In some cases these prefixes suggest a former grouping of nouns by semantic features:

First, we have found approximately 20 nouns denoting human beings with prefix *ɛ-* in the singular and *a-* in the plural (almost all of them with L tone):

èbɔ́bɔ́nɔ	'native doctor'	pl.	àbɔ́bɔ́nɔ
ècècèna	'guest, stranger'	pl.	àcècèna (cf. cce 'expect')
èdum	'husband'	pl.	àdum
egbó	'Leggbo person'	pl.	agbó
ègɔ̀gɔ̀mɔ	'fool'	pl.	àgɔ̀gɔ̀mɔ
èkaala	'European'	pl.	àkaala
èkkà	'mother'	pl.	àkkà
èkkàkkàya	'carpenter'	pl.	àkkàkkàya (cf. kka 'carve')
èllà	'servant, maid'	pl.	àllà
ènnè	'in-law'	pl.	ànnè
ɛtatàanɔ	'sorcerer, wizard'	pl.	atatàanɔ
ɛtatama	's.o. of Adadama'	pl.	atatama
ètètèèa	'blacksmith'	pl.	àtètèèa (cf. tèɛɛ 'burn')
ètètèla	'madman'	pl.	àtètèla
èttɛ	'father'	pl.	àttɛ
ètùlùkpa	'senior'	pl.	àtùlùkpa
èvaal	'chief'	pl.	àvaal
èvèvè	'thief'	pl.	àvèvè
èvóli	'servant, Igbo'	pl.	àvóli
èvvúà	'poor person'	pl.	àvvúà
èyòò	'friend'	pl.	àyòò

As seen, some of these nouns are agentives derived from verbs. However, most agentives in Leggbo are phrasal in natural:

ènɔ̀n (ákɛ) neè ttui àtɛèmì	'farmer'	=	person (who) cultivates farm
pl. ànɔ̀n (ákɛ) banà ttui àtɛèmì			
ènɔ̀n (ákɛ) nɛè waal gèdi	'tapper'	=	person (who) taps palm tree
pl. ànɔ̀n (ákɛ) banà waal gèdi			
ènɔ̀n (ákɛ) è nnɛni vvɔ́m	'owner'	=	person (who) has/owns something
pl. ànɔ̀n (ákɛ) bà nnɛni vvɔ́m			

Others are formed by compounding or use of the associative construction, e.g., *ènɔ̀n likwé-kɔ̀l* 'hunter' (person of hunting), or by nominalizing the verb with *è-* followed by an object. They do not take a plural in *a-*.

èttùi àtɛèmì	'farmer'	(cultivator + farm)
ètú gèzù	'dancer'	(dancer + dance)
èkkpɔ́ èttɔ	'house-builder'	(builder + house)

In addition to 'husband', 'mother', 'father', and 'in-law', a small set of other human terms involve a change of initial consonant in singular vs. plural forms:

gwànɔ	'woman'	pl.	bànɔ
wàdum	'man'	pl.	bàdum
wàɛ́	'child'	pl.	bèɛ́
wákkà	'sibling'	pl.	bákkà

To these we can add *àggwèéyé* 'wife' (pl. *àbbèéyɛ*) which both has a prefix and has undergone initial consonant change to form its plural. Several other kinship terms are derived by means of the above four nouns, e.g., *wàé a ggwànɔ* 'daughter', *wàé a wàdum* 'son', *wákkà a ggwànɔ* 'sister', *wákkà a wàdum* 'brother', *wààwáá* 'grandchild' (pl. *bèé a wàà*). Very few human nouns occur with other prefixes, e.g., *ikku* 'family, relatives', *m̀kpàláwa* 'boy, young man' (< Efik), *gituùtù(wé)* 'baby', *iyaà* 'grandmother, old woman'. The prefixless nickname *ttɛttɛ* 'grandfather' is derived from *èttɛ* 'father' via reduplication.

Except for *è-bbi* 'goat' (pl. *à-bbi*), non-human nouns taking either *ɛ-* or *a-* prefixes do not show a difference in sg/pl forms, e.g., *è-kómi* 'cotton tree(s)', *è-yím* 'onion(s)', *è-ttɔ* 'house(s)'. This includes the rather sizeable number of (mostly L tone) nouns denoting animals:

ècíŋ	'porcupine'	èvààm	'cow'
ekìlíkìlí	'weaver bird'	èvòm	'tsetse fly'
èkkwɔ̀	'snail'	èvù	'monkey (sp.)'
ènyì	'elephant'	èvva	'dog'
ɛppà	'hawk'	ɛwɔ̀wɔ̀ŋ	'hippopotamus'
èsè	'tiger'	ɛyá	'shrimp'
èttàmà	'guineafowl'	èyù	'antelope (sp.)'
ètɛɛn	'animal, meat'	èzɛ́ɛ́m	'python'
ètùwán	'bushcow'	èzì	'bushpig'

Several animal names consist of compounds, genitive constructions, or full sentences: *èvàà likɔ́ɔ́l* 'rabbit' (cf. *èvààm* 'cow', *likɔɔl* 'bush'), *èvva-kkɔ* 'hyena' (cf. *èvva* 'dog', *kkɔ* 'lack'), *èvàà esú ɛmmà* 'puff adder' ('he who is able to peck

with mouth'). Nouns designating animals, however, occur with all prefixes, or can be prefixless:

Ø- : dzè 'crocodile', dzɔ̀ 'snake'
li- : lìzol 'bird'
lɛ- : lɛkkpànál 'frog', lesǐl 'electric fish', lɛtɔ̀hɔl 'leech', lèvíìl 'owl', lèwɔ̀bùl 'toad'
gi- : gittù 'life', gitù 'lizard', gizù 'game', gibilèzèzèl 'bat'
gɛ-: gèbòò 'squirrel (sp.)', gèdèdèyí 'sheep', gèvé 'squirrel (sp.)', gèkká 'crab', gèzèzéni 'worm'
i- : iban 'fish (sp.)', ìdèlè 'vulture', ìmène 'firewood', ìtì 'antelope', ìtóbo 'monkey', ìvvaghan 'chameleon', ìwàtà 'chimpanzee, gorilla', iyàyàŋ 'crayfish', ifĭn 'cricket', ipìnápi 'mouse'
a- : àdáa-àdáa 'baboon', adzáŋì(lì) 'ant (sp.)', àkkoòmba 'pig', àŋwáàŋ 'cat'
N- : mbɛ̀kum 'tortoise', m̀bɔ́ŋ 'mosquito', ǹddén 'louse', ǹdòdòwé 'insect', ndummi 'sand-fly' (from dum 'bite'), nnyànyàŋ 'horse', ntɔtɔ̀ŋ 'rat', ŋ̀kààm 'caterpillar (edible sp.)', ŋ̀kìkìŋ 'shrimp (small sp.)', ŋ̀kɔ̀kɔ́ni 'bee', ǹnyɔ́ŋ 'maggot, jigger', ǹzùzùŋ 'housefly'

Although human *ɛ-/a-* nouns show sg/pl distinctions on their prefixes, other animate (and inanimate) nouns have non-alternating prefixes. Plurality can therefore only be marked on modifying elements which allow a sg/pl distinction, e.g., *èvva amma* 'this dog', *èvva àbɛmma* 'these dogs'. This includes subject-verb agreement, e.g., *èvva ɛ-ttɔ́* 'a dog fell', *èvva ba-ttɔ́* 'dogs fell', as well as pluractional marking on the verb, e.g., *ɛ baai èvva* 'he tied a dog', *ɛ baazi èvva* 'he tied dogs'.

In addition to the semantic correlation of *è-* with animates, several liquids begin with *a-*, e.g., *ànààn* 'oil', *àsi* 'water', *àzì* 'blood', as well as other soft substances, e.g., *àkkpɔ́* 'rubber', *àkkwàŋ* 'native bed', *àsɔ* 'soap', *àvíghà* 'brain', *àzɔ* 'mushroom'.

A number of body parts and associated concepts take either a *li-* or *lɛ-* prefix:

likukuúl	'eyebrow'	lèbáàl	'breast'
lìmáál	'faeces'	lèbèl	'beard'
limìttál	'saliva'	lèggwàl	'breath'
liŋwàl	'nail'	lèkòòl	'neck'
lisáŋìlì	'urine'	lèkul	'navel'
lisúàl	'feather'	lèmmɔ̀l	'flesh, muscle'

lìtìtal	'rib'	lènɔ̀l	'penis'
lìtɔ́l	'ear'	lèsàl	'tooth'
livɛìl	'wing'	lèsol	'face'
livil	'left side'	lèttol	'head'
lìvɔl	'belly, stomach'	lèvùl	'horn'

Body parts are, however, to be found with other prefixes, including the word *èkkpa* 'body' itself. A striking number of primary body parts occur with *gɛ-*:

Ø	:	sìn 'hair', nɔ̀nɔ́ŋ 'finger'
gi-	:	gittù 'life'
gɛ-	:	gèdɔ 'throat', gɛdɔ̀ 'goiter', gèkpòólo 'fat', gèmmà 'mouth', gepilipa 'shoulder', gèsɛ́ 'tail', gètàppa 'scar', gèkɔ ~ gètèkɔ 'bone', gèvà 'sore, wound', gèvè 'foot, leg', gewiya 'hips', gèzài 'rib'
i-		imaaŋi 'heartburn', ìmìmíŋ 'marrow'
ɛ-		èfi 'boil', ènò 'vagina', ètɛɛm 'chest, heart', ebuì 'waist (area)'
a-		àvíghà 'brain', àzì 'blood'
N-		ndodoŋ 'smallpox', ǹtètèbɛ́ 'grasshoppers (pl.)', m̀bom 'cheek', ǹzàm 'back', ǹzúŋ 'nose'

A particularly striking fact about nouns marked by a *li-* or *lɛ-* prefix is that they also take an *-l* suffix:

lèbàl	'axe'	lɛkkpànál	'frog'
lìbɔ́ɔ́l	'poison'	lilàmàl	'garbage'
lidèèl	'name'	linyumìl	'thorn'
lèsol	'face'	lɛvvánìl	'earthworm'
lɛtál	'kite'	lèzàŋàl	'river'

We see this particularly clearly in the following cases where there is a related noun taking another prefix:

lèbɔl	'handle'	cf.	gèbɔ	'hand'
lèdil	'palm seed'		èdi	'palm (tree)'
lèdzìl	'day'		èdzì	'sunshine'
lèkáalal	'English'		èkaala	'European'
lèmmàl	'door'		gèmmà	'mouth'
livɛìl	'wing'		gèvè	'foot, leg'

In addition, many nominalizations from verbs show that *-l* is a suffix:

libál	'question'	cf.	ba	'ask'
lídzil	'food'		dzi	'eat'
lìvèèl	'song'		vèe	'sing'
lèbbol	'death'		bbo	'die'
lìbbol	'crying, weeping'		bbo	'die'
lɛ̀kaal	'headpad'		kaa	'carry'
lɛkkaàl	'message'		kkagha	'delivery a message'
lɛ̀ddɛ̀ɛ̀l	'greeting'		ddɛ̀	'greet'
lìtɔ̀ɔ̀l	'harvest'		tɔ̀ɔ	'harvest, uproot'
lɛmmànàl	'birth'		mmàna	'be born'
lɛ̀mɔ̀ɔ̀ŋɔ̀l	'reply'		mɔ̀ɔ̀ŋɔ	'return'
lènnènèl	'answer'		nnènè	'answer'
lɛ̀dààɛ̀l	'love, passion'		dàa	'like, love'

Unpredictable segmental and tonal changes occasionally occur in both noun-noun and noun-verb pairs, e.g., *livɛìl* 'wing' (cf. gɛ̀vɛ̀ 'foot, leg'), lìkkɔ̀il 'vomit' (cf. vɔ̀ɔ 'vomit'). The nominalization *lɛ̀dààɛ̀l* 'love, passion' involves both an *-ɛ̀* suffix, as in the gerund *gɛ̀dààɛ̀* 'liking', as well as an *-l* suffix.

Although there are 16 verb stems of the form CV(V)l, we have found only three nouns which end in coda *-l* and do not have a *li-* or *lɛ-* prefix: *kkwàl* 'boat', *ŋ̀kul* 'flogging', *èvaal* 'chief'. The last of these is presumably derived from *lɛ̀vaal* 'chieftancy'. By contrast, there are 78 *li-* or *lɛ-* nouns whose stem is -CV(V)l and 29 whose stem is CV(V)CVl. Significantly, none of the other coda consonants, /m/, /n/ or /ŋ/, is found on noun stems with these prefixes. This suggests that suffixal *-l* may in some cases replace the historical final coda consonant, e.g., *lèdúl* 'bite' (cf. *dum* 'bite'), *lɛ̀nɔ̀l* 'penis' (cf. *nɔ̀m* 'copulate'). The following six nouns with a *li-* or *lɛ-* prefix were originally elicited as ending in a vowel, but later they were discovered optionally to take an *-l* suffix.

lèdzɛ̀lɛ̀(l)	'answer'	litɛha(l)	'gibberish'
lebilà(l)	'bundle'	liyòghò(l)	'cluster' (fruit)
lídaddi(l)	'happiness'	lisáŋ̀ilì(l)	'urine'

In addition, final *-l* optionally fails to appear on language names, presumably by analogy with the corresponding person nouns, which lack *-l*:

leggbó(l)	'Leggbo language'	cf.	eggbó/àggbó	'Leggbo person(s)'
levóli(l)	'Igbo language'	cf.	evóli/àvóli	'Igbo person(s)'
lèvì(l)	'Efik language'	cf.	èvì/àvì	'Efik person(s)'
lɛnɛmɛ(l)	'Ugep language'	cf.	ɛnɛmɛ/anɛmɛ	'Ugep person(s)'

However, note that final *-l* has a tendency to drop in general when occurring in close juncture with a following word, e.g., *lèttol sɔ́* ~ *lètto sɔ́* 'your head'. Thus, *li-* and *lɛ-* nouns are marked not only by a prefix, but also by an *-l* suffix. (See also §5 for the realization of *-l* in noun compounding.)

We conclude from the preceding that noun prefixes in Leggbo are synchronic reflexes of earlier noun classes. Since round vowels do not occur in prefixes, we suspect that *lɛ-* comes from earlier **lu* and *gɛ-* from earlier **gu-* (or **ku-*). The latter would correspond nicely to the observation that certain body parts that have a *gɛ-* prefix often have **ku-* in Bantu languages, e.g., *gèbɔ* 'hand, arm', *gèvè* 'foot, leg'. In addition, one pair of nouns used in the numeral system also shows an older *lɛ-*/a- singular/plural distinction: *lè-zɔl* 'twenty', pl. *à-zɔ*, as in *àzɔ àfɔŋ* 'forty' (twenties + two).

3. **Arguments for Prefix-Stem Structure**

Although, in most cases, these prefixes are frozen onto the nouns with which they occur, for reference, we list below the arguments that demonstrate that they are still morphological prefixes, not part of the noun stem itself.

3.1. Frequency. This group of arguments has to do with the fact that almost all nouns begin with one of a small set of phonetic forms. Below we talley 590 nouns (ignoring compounds) and observe that 555 begin with one of the following V-, CV- or *ŋ-*, only 35 lacking a prefix.

CV- prefixes:

li-	44
lɛ-	71
gɛ-	112
gi-	7

V-prefixes

i-	71
ɛ-	147
a-	29

N-prefixes

N-	74
Ø	35

3.2. Shapes. The following distributional observations can be made about the above prefixes as a class: (i) They are restricted to one of the indicated syllable shapes: V-, CV-, N- (where N- represents a homorganic nasal). (ii) The only vowels found in this position are /i, ɛ, a/, where /ɛ/ harmonizes to [e] when followed by an initial CV stem syllable containing any of the vowels /i, u, e, o/. (iii) The only consonants found in prefixes are /l/ and /g/. In addition, the /g/ can optionally be deleted when in a prefix, e.g., *(g)è-mmà* 'mouth', *(g)i-ttù* 'life', but not in stem-initial position, e.g., *ègídì* 'beans' (**èídì*). (iv) With 8 exceptions (see above), the only tones that are found on prefixes are L and M. Of the 555 nouns with prefixes, 367 have L tone, while 186 have M tone.

3.3. Human singular/plural pairs. As seen above, Leggbo marks number on a set of human nouns, e.g., *ènɔ̀n* 'person', *ànɔ̀n* 'people'. All but one of these, *emínaakòòl* 'young girl', have L tone on their è-/à- prefixes.

3.4. Related nouns. As also seen above there are several pairs of nouns that are clearly related, but differ in prefix. With respect to one of the above cited pairs, *lèbɔl* 'handle', *gèbɔ* 'hand, arm', we note that the noun *è-bbɔ́* 'branch', with a third prefix, may also be related. Although it has a geminate /bb/, a compound also exists for 'branch', *nti-bbɔ́*, presumably derived from *è-tti* 'tree' + *èbɔ* 'arm'. *nti-bbɔ́* would have an irregular transfer of gemination to the second consonant, when reduplicated to form a diminutive, the fortition appears in its etymological place: *ntti-bɔ-bɔ-wɛ́* 'small branch'.

3.5. Nominalizations. In addition, there are nouns in Leggbo which are clearly derived from verbs. As seen in the following examples, these nouns are derived by adding a noun prefix (and suffixal *-l*, where appropriate):

ggù	'blow'	→	li-gùgúl	'whistle'
bbo	'die'	→	lè-bbol	'death'
kaa	'carry'	→	lè-kaal	'headpad'
vè	'sing'	→	lè-vèl	'music, song'
mɔ̀ɔ̀ŋɔ	'return'	→	lè-mɔ̀ɔ̀ŋɔ̀l	'a reply'
kwɔ̀ɔl	'groan'	→	lɛ-kwɔɔl	'groaning'
mmàna	'be born'	→	lè-mmànàl	'birth'
yèɛl	'call'	→	lɛ-yèèlél	'calling'
dza	'be good'	→	gì-dza	'beauty'
baa	'marry'	→	gi-báà	'marriage'

mana	'catch'	→	gè-mana	'an arrest'
bbi	'be black	→	gè-bbi-è	'darkness'
tèe	'rain'	→	ge-teewa	'rain'
dì	'speak'	→	gè-dì	'story, speech'
yàal	'paddle'	→	gè-yàlí	'paddle'
kɔm	'be hot'	→	gɛ-kɔmɔ	'heat, fever'
nii	'give'	→	ì-nini	'gift'
kkpɔŋɔ	'be tall'	→	ì-kkpóŋɔ	'height'
dza	'be good'	→	gì-dza	'beauty'
kùmma	'worship'	→	ŋ̀-kùmmà	'honor'
ddoŋi	'beg'	→	n-ddoŋi	'begging'
kàam	'help'	→	ŋ-kàámi	'assistance'
vaan	'wrestle'	→	m-vaan	'wrestling'

In addition to the above lexicalized nominalizations, Leggbo uses the prefixes *gɛ*, *i-*, and *ɛ-* in a number of deverbal derivations. Thus, from the verbs *nùm* 'take' and *dum* 'bite', Leggbo can derive:

gè-nùm-è	'taking'	gè-dum-è	'biting'	= gerund
ì-nù-núm	'taking'	ì-du-dum	'biting'	= gerund
è-núm	'by taking'	è-dum	'by biting'	= focused verb
ge-nù-núm	'takability'	ge-dú-dum	'bitability'	= ability noun
e-nù-núm	'takable'	e-dú-dum	'bitable'	= ability adjective

In Leggbo, *gɛ-* is a frequent nominalizing prefix, whereas *e-* is the general prefix found on adjectives, many of which derive from or are related to corresponding verbs, e.g., *dzubbi* 'be cold', *èdzúbbì* 'cold', *bbi* 'be black', *èbbyo* 'black'.

3.6. Allomorphy. The sixth argument will be referred to as "allmorphy". In two cases, a particular (longer) allomorph is required in a construction when followed by a prefixless noun, but optional when the noun has a prefix. The first of these is the genitive or "associative" marker *awa* (often shortened to *aa* or *a*). As seen in the following examples, an overt associative marker *a* or *awa* is required when the N2 is prefixless:

lídzil a(wa) dzè	'food of crocodile'	*lídzil dzè
lídzil a(wa) wàɛ́	'food of child'	*lídzil wàɛ́

On the other hand, *awa* is optional if a prefix is present, e.g., lídzil a(wa) lɛ-vvánìl ~ lídzil lɛ-vvánìl 'food of earthworm'.

By this criterion, *wàɛ́* 'child' is prefixless, even though it has an initial consonant change in its plural, *bɛ̀ɛ́*. Similarly, *wàdum/bàdum* 'man/men' and *gwànɔ/bànɔ* 'woman/women' require the associative marker. It would seem that the associate marker moves into the prefix slot, if the latter is vacant. A similar phenomenon exists with respect to the locative sequence *ŋ́kɛ ìì* 'in, on, at': *ìì* is optional if the noun has a prefix, but obligatory if it doesn't:

ɛ ttɔ́ ŋ́kɛ (ìì) lèbbòl 'it fell into a hole'
ɛ ttɔ́ ŋ́kɛ ìì kkwàl 'it fell into a boat'

3.7. Tone. It has already been noted that almost all noun prefixes carry M or L tone. In addition, in the associative construction, N1 of N2, there is a tone change which is observable only when N2 has a L tone prefix: the L of an N2 noun becomes M and, if the stem is M, this M is also raised to H (Paster 2003):

sìn + lɛ̀-sàl	→	sìn lɛ-sàl	'hair of tooth'	L-L	→ M-L
sìn + lè-ttol	→	sìn le-ttól	'hair of head'	L-M	→ M-H
sìn + lì-tɔ́l	→	sìn li-tɔ́l	'hair of ear'	L-H	→ M-H

This same changes take place even if the associative marker is present: *sìn a(wa) lɛ-sàl*, *sìn a(wa) le-tól*. However, if N2 is prefixless, there is no tone change:

sìn + a(wa) + wàdum → sìn a wàdum 'hair of man' (*sìn a(wa) wadúm)
sìn + a(wa) + nɔ̀nɔ́ŋ → sìn a nɔ̀nɔ́ŋ 'hair of finger' (*sìn a(wa) nɔnɔ́ŋ)

Note that by this criterion, the initial [w] of *wàdum* (pl. *bàdum*) does not count as a prefix, rather it is incorporated into the stem.

3.8. Compounding. While not completely productive, there are numerous noun compounds in which a single prefix is followed by two (compounded) noun stems: pref-N1-N2. The original pattern seems to be that the prefix is deleted from the N2, but "re-appears" as a replacement of the prefix of the N1:

lè-sol + e-vvém → e-so - vvém 'forehead' (lit. face center)
è-ttɔ + ǹ-zàm → ǹ-ttɔ - zàm 'back yard' (lit. house back)

Other combinations do not show a literal replacement, but rather maintain the prefix of N1, or a replacement of the N1 prefix, sometimes unpredictably.

3.9. Diminutivization. The diminutivized form of a noun is derived by reduplicating the first CV of the stem, including its tone, and by postposing *-wɛ́* 'child' in the singular and *-bɛ́* 'children' in the plural: *gèkumì* 'fever' → *gè-ku-kumì-wɛ́* 'small fever', *gè-ku-kumì-bɛ́* 'small fevers'. Crucially, the prefix is skipped over, thus *gizù* 'game' → *gi-zù-zù-wɛ́* 'small game', not **gi-gi-zù-wɛ́*.

4. Reduplicated Noun Stems

Although the consonantal inventory is much larger, only a certain number of consonants may appear intervocalically in native Leggbo stems. These include /bb, dd, kk, l, m, mm, n, nn, ŋ, ŋŋ/, where double consonants are realized fortis and longer. When other consonants appear in apparent stem-intervocalic position in nouns, this may be due to three factors:

i. *Compounding.* The noun may be a frozen compound involving two historical stems, e.g., *ŋkátti* 'fence' (probably from *ŋ-ká* 'I carry, use' + -tti 'tree, stick, log'), *gedubɔ* 'right side' (probably from *du* 'pound' + *-bɔ* 'hand, arm', i.e., the right arm is used for such tasks).

ii. *Borrowings.* The noun may be borrowing, e.g., *ìlaàsì* 'rice', *èlòpìleèŋ* 'airplane', *bilɛèdì* 'bread', *m̀maŋgòlo* 'mango', *kkàkkí* 'pants', *fùfú* 'fufu', *ikɔbàsì* 'church' (< Efik).

iii. *Reduplication.* The noun may involve reduplication. Nouns consisting of identifical first and second stem syllables are extremely frequent, e.g.,

gèbèbè	'dust'	kkpakkpa	'groundnut'
ècècèna	'guest, stranger'	kkwàkkwá	'locust tree'
ndodoŋ	'smallpox'	elɔloŋ	'snail (small sp.)'
ǹddúddu	'advice'	ìmìmíŋ	'marrow'
gedzídzi	'edible'	nɔ̀nɔ́ŋ	'finger'
ègɔ̀gɔ̀mɔ	'fool'	ǹtùtúli	'egusi melon'
èggóggo	'potato'	ttɛttɛ	'grandfather'
ŋ̀gwɔ̀gwɔ́	'promise'	èvèvè	'thief'
ŋ̀kɔ̀kɔ́ni	'bee'	ɛwɔ̀wɔ̀ŋ	'hippopotamus'
kkaikkai	'locally brewed alcohol'	eyéyèe	'hiccup'
èkpíkpìná	'star'	èzòzòŋ	'smoke'

As seen, some of the above have bisyllabic stems with two identical syllables, while others are longer (having either a non-shared final consonant or an additional syllable). One pattern that has been discerned concerns deverbal nouns ending in a suffix /-(C)a/ which, exceptionally, does not assimilate to a preceding mid vowel:

ècècèna	'guest, stranger'	cce	'expect'
èkkàkkàya	'carpenter'	kka	'carve'
ekpíkpìná	'star'	kpi	'?'
akɔkɔna	'anger'	kkɔ	'hate'
ètètèla	'madman'	tèe	'rain'?
ètètèèa	'blacksmith'	tèèɛ	'burn'
ntítìŋá	'broom'	tìŋ	'toss down' (cf. taaŋ 'sweep')

The final *-a* does assimilate in one reduplicated noun, *èbɔ́bɔ́ŋɔ* 'native doctor' (cf. *bɔɔ* 'heal').

In addition, there are a few nouns involving reduplicated CVC and CVCV stems: *ttěmttěm* 'pigeon (domestic)', *wɔ́lɔ̀wɔ́lɔ̀* 'riot', *ekìlíkìlí* 'weaver bird'. There also are a few where the noun prefix is also reduplicated: *egúm-ègúm* 'hand piano, keyboard', *mkpɔ̀la-mkpɔ̀* 'elbow', *ŋ̀kònà-ŋ̀kò* 'tick'. These most likely derive from associative constructions.

It is noteworthy that of 28 prefixless nouns (other than those with alternating *(g)w-/b-*) in the lexicon, 14 involve reduplicated stems. This may have to do with the fact that adjectives and ideophones are often reduplicated, e.g., *kíki* 'small', *gbàgbàgbà* 'spacious', *miŋ́-mìŋi* 'sweet' (cf. *mìŋ* 'suck'), *velevele* 'very quickly' (cf. *vèlè* 'fast'), *wúkàlà-wùkàlà* 'rough' (cf. *wukki* 'be rough').

The one productive process of noun reduplication concerns diminutivization, where the first CV of the noun stem is reduplicated, along with its tone:

lìtɔ́l	'ear'	→	lì-tɔ́-tɔ́-wɛ́	lì-tɔ́-tɔ́l-bɛ́
lèttol	'head'	→	lè-tto-tto-wɛ́	lè-tto-ttol-bɛ́
gizù	'game'	→	gi-zù-zù-wɛ́	gi-zu-zu-bɛ́
gèkumì	'fever'	→	gè-ku-kumì-wɛ́	gè-ku-kumì-bɛ́
ìtóbo	'monkey'	→	ì-tó-tóbo-wɛ́	ì-tó-tóbo-bɛ́
èmùma	'seed'	→	è-mù-mùma-wɛ́	è-mù-mùma-bɛ́
àwìlì	'gown'	→	à-wì-wìlì-wɛ́	à-wì-wìlì-bɛ́
ǹzúŋ	'nose'	→	ǹ-zú-zúŋ-wɛ́	ǹ-zú-zúm-bɛ́

In addition, *-wɛ́* 'child' is suffixed to mark singulars (pl. *-bɛ́*). The prefix is not copied, e.g., *lìtɔ́l* 'ear', *lìtɔ́tɔ́wɛ́* 'small ear', *lìtɔ́tɔ́-bɛ́* 'small ears'. In diminutivization, the reduplicant is strictly limited to a CV syllable with a short vowel, even when a CVV, CVVC, or CVVCV stem has a long vowel:

gè-bòò	'cloud'	→	gè-bò-bòò-wɛ́	gè-bò-bòò-bɛ́
è-kàà	'argument'	→	è-kà-kàà-wɛ́	è-kà-kàà-bɛ́
à-móò	'cup, jug'	→	à-mó-móò-wɛ́	à-mó-móò-bɛ́
gè-zɛ̀ɛ	'journey'	→	gè-zè-zɛ̀ɛ-wɛ́	gè-zè-zɛ̀è-bɛ́
ètɛɛm	'heart'	→	è-tɛ-tɛɛ-wɛ́	è-tɛ-tɛɛ-bɛ́
ìbɛ̀ɛ̀n	'room'	→	ì-bɛ̀-bɛ̀è-wɛ́	ì-bɛ̀-bɛ̀è-bɛ́
àŋwáàŋ	'cat'	→	à-ŋwá-ŋwáà-wɛ́	à-ŋwá-ŋwáà-bɛ́
èkaala	'European'	→	è-ka-kaala-wɛ́	à-ka-kaala-bɛ́
imaaŋi	'heartburn'	→	i-ma-maaŋi-wɛ́	i-ma-maaŋi-bɛ́
lɛmɔ̀ɔŋɔ̀l	'reply'	→	lɛ-mɔ̀-mɔ̀ɔŋɔ̀-wɛ́	lɛ-mɔ̀-mɔ̀ɔŋɔ̀-bɛ́

Although there is variation, the final consonant of the root may also be dropped before -wɛ́ and -bɛ́. There are several phonological interactions between the stem and the suffixes *-wɛ́* and *-bɛ́*. First, *-wɛ́* optionally simplifies to *-ɛ́* after round vowels: *ì-zu-zu-wɛ́* ~ *ì-zu-zu-ɛ́* 'small calabash', *è-yɔ̀-yɔ̀ɔ̀-wɛ́* ~ *è-yɔ̀-yɔ̀ɔ̀-ɛ́* 'small friend', *gɛ̀-bɔ-bɔ-wɛ́* ~ *gɛ̀-bɔ-bɔɛ́* 'small hand, arm'.

Second, stem-final consonants may become modified or deleted. Coda /l/, which is a suffix, is obligatory deleted when followed by either *-wɛ́* or *-bɛ́*: *lè-ttol* 'head' → *lè-tto-tto-wɛ́* (~ *ɛ́*), *lè-tto-tto-bɛ́* 'small head(s)'. In careful speech, nasal codas are optionally pronounced without change. They are, however, more normally realized as a weakened assimilated [ŋ] before *-wɛ́*, with possible deletion and/or nasalization of the preceding vowel. Except in careful speech, they assimilate to [m] before *-bɛ́*:

ŋ̀gɔ̀m	'foolishness'	→	ŋ̀-gɔ̀-gɔ̀ŋ-wɛ́	ŋ̀-gɔ̀-gɔ̀m-bɛ́
ìnɔ̀n	'fowl'	→	ì-nɔ̀-nɔ̀ŋ-wɛ́	ì-nɔ̀-nɔ̀m-bɛ́
èwɔ̀ŋ	'storm'	→	è-wɔ̀-wɔ̀ŋ-wɛ́	è-wɔ̀-wɔ̀m-bɛ́

Since the [w] of *-wɛ́* may be absorbed into a preceding round vowel, the diminutive singular of *ìnɔ̀n* 'fowl' may be *ì-nɔ̀-nɔ̀n-wɛ́, ì-nɔ̀-nɔ̀ŋ-wɛ́, ì-nɔ̀-nɔ̀-wɛ́,* or *ì-nɔ̀-nɔ̀-ɛ́*, but not **ì-nɔ̀-nɔ̀n-ɛ́*.

When the first syllable of the stem contains a sequence of non-identical vowels, only the first of these is reduplicated:

lisúàl	'feather'	→	li-sú-súà-wɛ́	li-sú-súàl-bɛ́
livɛìl	'wing'	→	li-vɛ-vɛì-wɛ́	li-vɛ-vɛìl-bɛ́
gèwai	'comb'	→	gè-wa-wai-wɛ́	gè-wa-wai-bɛ́
geyuan	'humor'	→	ge-yu-yuaŋ-wɛ́	e-yu-yuam-bɛ́

This allows us to distinguish nouns with CyV vs. CiV:

èppyɔ́ŋ	'parrot'	→	è-ppyɔ́-ppyɔ́ŋ-wɛ́	è-pppyɔ́-ppyɔ́m-bɛ́
gèbbyo	'blackness'	→	gè-bbyo-bbyo-wɛ́	gè-bbyo-bbyo-bɛ́
ɛkpìàn	'chair'	→	ɛ-kpì-kpìàŋ-wɛ́	ɛ-kpì-kpìàm-bɛ́
gèbbiè	'darkness'	→	gè-bbi-bbiè-wɛ́	gè-bbi-bbiè-bɛ́

As with vowel sequences, only the first tone of a contour is found on the CV reduplicant. A LH rising tone is realized as L-H on the first two syllables of the stem, while a HL falling tone is realized as H-HL:

ifín	'cricket'	→	i-fi-fíŋ-wɛ́	i-fi-fím-bɛ́
e-ggŭ	'catfish (sp.)'	→	e-ggù-ggú-wɛ́	e-ggù-ggú-bɛ́
geppyôn	'afternoon'	→	ge-ppyó-ppyôŋ-wɛ́	ge-ppyó-ppyôm-bɛ́

Nouns without a prefix undergo the same diminutivization process:

dzè	'crocodile'	→	dzè-dzè-wɛ́	dzè-dzè-bɛ́
dzɔ̀	'snake'	→	dzɔ̀-dzɔ̀-wɛ́	dzɔ̀-dzɔ̀-bɛ́
kkwàl	'boat'	→	kkwà-kkwà-wɛ́	kkwà-kkwàl-bɛ́
ŋwènè	'book'	→	ŋwè-ŋwènè-wɛ́	ŋwè-ŋwènè-bɛ́

When the noun *vvɔ́m* 'thing' is reduplicated, it loses its final /m/ and is (optionally) pronounced with L tone: *vvɔ́-vvɔ́-wɛ́* ~ *vvɔ̀-vvɔ̀-wɛ́* 'small thing', pl. *vvɔ́-vvɔ́-bɛ́* ~ *vvɔ̀-vvɔ̀-bɛ́*.

The following examples show that *w-*, *gw-*, and *b-* have fused with the stem:

wàdum	'man'	→	wà-wà-dum-wɛ́	bà-bà-dum-bɛ́
gwànɔ	'woman'	→	gwà-gwà-nɔ-wɛ́	bà-bà-nɔ-bɛ́

Bisyllabic noun stems which are already reduplicated form their diminutive by simply adding *-wɛ́* or *-bɛ́*:

cɔ̀cɔ̀	'small frog'	→	cɔ̀cɔ̀-wɛ́	cɔ̀cɔ̀-bɛ́
kkpakkpa	'groundnut'	→	kkpakkpa-wɛ́	kpakpa-bɛ́
ìníní	'gift'	→	ìníní-wɛ́	ìníní-bɛ́
nnyànyàŋ	'horse'	→	nnyànyàŋ-wɛ́	nnyànyàŋ-bɛ́
ntɔtɔ̀ŋ	'rat'	→	ntɔtɔ̀ŋ-wɛ́	ntɔtɔ̀ŋ-bɛ́
ǹzùzùŋ	'housefly'	→	ǹzùzùŋ-wɛ́	ǹzùzùŋ-bɛ́
lèdudùl	'bundle'	→	èdudùl-wɛ́	èdudùl-bɛ́

Similarly, nouns with trisyllabic or longer stems, whether reduplications or not, generally form their diminutive by simply suffixing *-wɛ́* or *-bɛ́*:

ntítìŋá	'broom'	→	ntítìŋá-wɛ́	ntítìŋá-bɛ́
ŋ̀kɔ̀kɔ́ni	'bee'	→	ŋ̀kɔ̀kɔ́ni-wɛ́	ŋ̀kɔ̀kɔ́ni-bɛ́
gèzèzéni	'worm'	→	gèzèzéni-wɛ́	gèzèzéni-bɛ́
getokolo	'skull'	→	getokolo-wɛ́	getokolo-bɛ́
ipìnápi	'mouse'	→	ipìnápi-wɛ́	ipìnápi-bɛ́
ekkpokolo	'table'	→	ekkpokolo-wɛ́	ekkpokolo-bɛ́
ekìlikílì	'weaver bird'	→	ekìlikílì-wɛ́	ekìlikílì-bɛ́
gibilèzèzèl	'bat'	→	gibilèzèzè-wɛ́	gibilèzèzè-bɛ́

Non-compound bisyllabic stems reduplicate their first syllable:

ìtóbo	'monkey'	→	ì-tó-tóbo-wɛ́	ì-tó-tóbo-bɛ́
gekòlo	'hole'	→	ge-kò-kòlo-wɛ́	ge-kò-kòlo-bɛ́
gèyàlí	'paddle'	→	gè-yà-yàlí-wɛ́	gè-yà-yàlí-bɛ́
lebilà	'bundle'	→	le-bi-bilà-wɛ́	le-bi-bilà-bɛ́
gètènà	'bridge'	→	gè-tè-tènà-wɛ́	gè-tè-tènà-bɛ́
ekkpoma	'bottle	→	e-kkpo-kkpoma-wɛ́	e-kkpo-kkpoma-bɛ́
àwìlì	' gown'	→	à-wì-wìlì-wɛ́	à-wì-wìlì-bɛ́
àtɛ̀mì	'farm'	→	à-tɛ-tɛ̀mì-wɛ́	à-tɛ-tɛ̀mì-bɛ́
àkkoòmba	'pig'	→	à-kko-kkoòmba-wɛ́	à-kko-kkoòmba-bɛ́

On the other hand, bisyllabic stems which are recognized to be compounds reduplicate the second part. This includes cases where one of the two members of the compound cannot be identified, or even when neither part can be identified, or only with uncertainty:

ge-nyé-dze	'banana'	→	ge-nyé-dze-dze-wɛ́	ge-nyédze-dze-bɛ́
(nnya 'young' + gèdzé 'yam')				
i-te-vɔ	'street'	→	i-te-vɔ-vɔ-wɛ́	i-tevɔ-vɔ-bɛ́
(lètel 'compound' + vɔ 'flow')				
gɛ̀-kkpà-mìnà	'bed'	→	gɛ̀-kkpà-mì-mìnà-wɛ́	gɛ̀-kkpà-mì-mìnà-bɛ́
(gɛ̀kkpa 'cover' + mìna 'lie down'; cf. ɛ̀kkpa 'body')				
ǹ-ttɔ́-kkpaŋ	'roof'	→	ǹ-ttɔ́-kkpa-kkpa-wɛ́	ǹ-ttɔ́-kkpa-kkpa-bɛ́
(ɛ̀ttɔ 'house' + gɛ̀kkpa 'cover')				
ŋ-ká-tti	'fence'	→	ŋ-ká-tti-tti-wɛ́	ŋ-ká-tti-tti-bɛ́
(ŋ-ká 'I use' + gètti 'tree')				
ge-ku-ttɔ	'hut'	→	ge-ku-ttɔ-ttɔ-wɛ́	ge-ku-ttɔ-ttɔ-bɛ́
(? + ɛ̀ttɔ 'house')				
gè-búkpɔ̀	'board'	→	gè-bú-kpɔ̀-kpɔ̀-wɛ́	gè-bú-kpɔ̀-kpɔ̀-bɛ́
(? + kkpɔ 'build'?)				
n-disa	'picture'	→	n-di-sa-sa-wɛ́	n-di-sa-sa-bɛ́
(? + ?) (< Efik)				

In the last two cases it is the intervocalic consonant, e.g., /kp/ or /s/, which is prohibited stem-internally and therefore serves as a cue that more than one stem must be present, whether the result of an obscured old compound or a borrowing, e.g., *jǎkpu* 'cassava' → *jǎk-kpu-kpu-wɛ́, jǎk-kpu-kpu-bɛ́.*

In some cases we can identify an initial CV- element which has been reduced from a fuller stem shape, e.g., tɛ̀- (from ɛ̀tɛ̀ɛ̀n 'animal') and tɛ- from ɛ̀tɛɛm 'chest'. These still reduplicate as compounds:

gɛ̀tɛ̀-kkpaŋ	'skin'	→	gɛ̀-tɛ̀-kkpa-kkpa-wɛ́	gɛ̀-tɛ̀-kkpa-kkpa-bɛ́
gɛ̀tɛ̀-kɔ	'bone'	→	gɛ̀-tɛ̀-kɔ-kɔ-wɛ́	gɛ̀-tɛ̀-kɔ-kɔ-bɛ́
(cf. gɛ̀kkpa 'cover', gɛ̀kɔ 'bone')				
lɛ̀tɛ-bbɔ̀l	'heart'	→	lɛ̀-tɛ-bbɔ̀-bbɔ̀-wɛ́	lɛ̀-tɛ-bbɔ̀-bbɔ̀-bɛ́
(cf. lèbbòl 'pit', hence 'pit of chest')				

Note that when coda consonants occur as the second member of a reduplicated compound, they are obligatorily deleted before *-wɛ́/-bɛ́.*

Finally, three nouns have been found that are inherently diminutive and thus must therefore be listed in the lexicon: *ǹdòdòwɛ́* 'insect', *gituùtù(wɛ́)* 'baby', *ǹtètèbɛ́* 'grasshopper(s)'.

5. Compounding

Although apparently not a live or productive process, Leggbo exhibits a wide range of noun compounds, which can be defined as words containing two stems, the second of which has no prefix. This stands in contrast to the productive associative (N1 of N2) construction, which is sometimes an alternative:

Compound:	gètti-kkpal	'bark' (i.e. tree-covering)
Associative:	lìkkpal gettí	'bark' (i.e. covering of tree)
Compound:	gètti-nnɔ̀dɔ̀	'stump' (i.e. tree-stump)
Associative:	gènnɔ̀dɔ̀ gettí	'stump' (i.e. stump of tree)

The two equivalents for 'bark' and 'stump' both involve the nouns *gètti* 'tree, stick'. As N2 in the associative constructions, the L-M of *gètti* becomes M-H.

Both *gètti* 'tree, stick' and *lìkkpal* 'covering, peeling' (and the related noun *gèkkpa* 'cover (body)') are frequently found in compounds:

gɛ̀kɔ-tti	'forest'	(lìkɔɔl 'bush')
ntti-mùma	'tablet'	(èmùma 'seed'; also gètti-mùma)
ntti-wɔmá	'fruit'	(wɔm 'bear fruit')
lètti-dùl	'stick-bundle'	(ledùl = lèdudùl 'bundle')
gètti-buì	'tree-trunk'	(ebuì 'middle part of body, waist area)
gɛmmà-kkpa(ŋ)	'lip'	(gèmmà 'mouth')
lɛmmà-kpa(l)	'lip'	(lèmmàl 'door')
ǹttɔ́-kkpaŋ	'roof'	(èttɔ 'house')
gèzɔ́-kkpaŋ	'sky'	(gèzɔ 'top, up')
lìkpè-kkpál	'thatch roof'	(ɛkpèn 'raphia')

As the second element, *-kkpa* is the only stem that acquires a final *-ŋ*. (The final *-l*, on the other hand, is related to the *li-* or *lɛ-* prefix). In addition, the last three compounds are among the minority where a M tone of one or the other stem changes from M to H.

There are three arguments for considering the second stem (N2) to be the head of the compound. The first is semantic: A 'tree-stump' is a kind of stump, a 'raphia-covering' is a kind of covering, and so forth. The second is reduplication: As seen in §4, it is the second stem of a compound that undergoes prefixal CV reduplication, e.g., *gɛttɔ-kummà* 'ceiling' (*èttɔ* 'house' + *gèkúmmà* 'shelter, cover'), i.e., 'house-shelter', becomes *gɛttɔ-ku-kummà-wɛ́* 'small ceiling'. Third,

as discussed in the next paragraph, the second stem usually determines the prefix of the overall compound.

There are noticeable changes on the prefix of compounds, both in terms of its segmental identity and its tone. Judging from closely related languages (Mbembe, Lokaa), where the pattern is reported with greater regularity, the apparent inherited situation was that the prefix of the second stem replaced the prefix of the first. A number of Leggbo compounds show this pattern. This includes compounds where the first stem cannot be identified with certainty:

ǹttɔ-zàm	'backyard'	(ètto 'house' + ǹzàm 'back')
eso-vvém	'forehead, in front'	(lèsol 'face' + evvém 'place, center')
getto-kolo	'skull'	(lèttol 'head' + gekòlo 'emptiness')
lɛ̀bɔ-dùl	'fist'	(gèbɔ 'hand' + lèdùl ~ lèdudùl 'bundle')
lìkkwɛ-kɔɔl	'hunting'	(ɛ̀kwɛn 'fire, gun' + lìkɔɔl 'bush')
lɛ̀sɛ̀-mmàl	'proverb, saying'	(ɛ̀sɛ̀ 'tiger' + lɛ̀mmàl 'opening')
gɛ̀kkwá-mmàl	'fireplace'	(ɛ̀kwɛn 'fire' + gɛ̀mmà 'mouth')
lɛ̀kkwá-mmàl	'fireplace'	(ɛ̀kwɛn 'fire' + lɛ̀mmàl 'door')
le-nó-kkpɔ̀l	'buttocks'	(? + lɛkkpɔ̀l 'lump'; cf. ènò 'vagina')
i-kkí-zɔ̀ɔ̀m	'tapping instrument'	(? + izɔ̀ɔ̀m 'knife')
lèkkpè-mmàl	'communal house'	(? + lɛ̀mmàl 'door, opening')
ɛ̀kkpí-ttɔ	'umbrella'	(? + ɛ̀ttɔ 'house'; cf. ɛ̀kkpa 'body')

Compare also *lɛ̀-nnɔ́-m̀bbòl* 'well' (? + *lèbbòl* 'hole, pit'), which, however, appears to have an *m-* prefix on the second stem.

In a few cases, the prefix found on the N1 of the compound is not segmentally identical to either input prefix, and/or may carry a tone which is not found on either noun in isolation. This is particularly true with the N- prefix:

ntti-bbɔ́	'tree branch'	(gètti 'tree' + ɛ̀bbɔ́ 'branch')
ntti-mùma	'tablet'	(gètti 'tree' + èmùma 'seed')
gɛmmà-kkpaŋ	'lip'	(gɛ̀mmà 'mouth' + gɛ̀kkpa 'cover')
lɛttɔ kummà	'ceiling'	(ɛ̀ttɔ 'house' + gèkúmmà 'shelter, cover')

It may be that certain patterns are associated with nouns that occupy N1 or N2 position in more than one compound, e.g., *-tti* 'tree', *-kkpaŋ/-kkpal* 'cover(ing)'. Among the nouns inputting N1 in more than one compound are *gètà* 'big, old' and *ètɛ̀ɛ̀n* 'animal' (the latter being shortened to *tɛ̀-*):

gɛ-tà-kpón	'world'	(gètà 'big' + ekkpón 'land')
è-tà-nɔ̀n	'old person'	(gètà 'old' + ènɔ̀n 'person')
lè-tà-zàŋàl	'sea, ocean'	(gètà 'big' + lèzàl 'river')
lì-tà-kɔɔl	'thick forest'	(gètà 'big' + lìkɔɔl 'bush')
gè-tè-kɔ	'bone'	(ètèèn 'animal' + gèkɔ 'bone')
gè-tè-kkpaŋ	'skin'	(ètèèn 'animal' + gèkkpa 'cover')

Only one compound has been found whose input N2 is prefixless:

àggba nɔ̀nɔ́ŋ	'ring'	(gèggbà 'charm' + nɔ̀nɔ́ŋ 'finger')

As seen, both the prefix and the stem tone of *gèggbà* change, perhaps from an earlier, but no longer existent plural **àggbà* 'charms' in the associative construction, cf. *gèggbà a nɔ̀nɔ́ŋ* 'charm of finger'.

This last example shows that the N1 retains its own prefix. When N2 has a prefix, only a few compounds show stability of the N1 prefix:

ŋ̀kɔ-kwɛ́n	'bullet'	(ŋ̀kɔ 'seed' + èkwɛn 'fire')
ledùdu-ŋili	'knee'	(ledùdul 'mound' + nzíŋìlì 'egg')
lɛttá-kolo(l)	'cave'	(lèttál 'stone' + gekòlo 'emptiness')

Some nouns used adjectivally lose their prefix in attributive position, with or without conditioning a change in the prefix of the preceding noun:

lìzèl koola	'potting clay'	(lìzèl 'sand' + gèkoola 'red(ness)')
gètti dɔ̀	'short stick'	(gètti 'stick' + gɛdɔ̀ 'shortness')

Unless there is an unexpected segmental, tonal or semantic modification, it is not clear whether this is a sequence of noun + adjective or a compound:

èttɔ-gbala	'reception room'	(èttɔ 'house' + gbala 'long')
èggóggo mbàla	'sweet potato'	(èggóggo 'potato' + ?)
ɛggɔ̀ bbábbaa	'cloth (wrapper)'	(ɛggɔ̀ 'cloth' + ?)
ɛggɔ̀ gàlà	'rag'	(ɛggɔ̀ 'cloth' + gàlà 'torn')
kkàkki gbala	'trousers'	(kkàkki 'pants' + gbala 'long')
kkàkki dɔ	'short pants'	(kkàkki 'pants' + gɛdɔ̀ 'short(ness)')

Preservation of the N1 prefix is also observed when the second element of the compound is a verb:

lèdzìl sòò	'daybreak'	(lèdzìl 'day' + sòo 'dawn, break (of day)')
lìzèl ppì	'clay'	(lìzèl 'sand', ppì 'plaster (v.)'; cf. gèppì 'wall')
èvva-kkɔ	'hyena'	(èvva 'dog' + kkɔ 'hate, lack')
lèttó-ppɔ̀i	'head-ache'	(lèttol 'head' + ppɔ̀i 'knock')
gɛmmà-ggùmà	'yawn'	(gèmmà 'mouth' + ggùma 'blow')
ntti wɔmá	'fruit'	(gètti 'tree' + wɔm 'bear fruit')
gèkkpà-mìnà	'bed'	(gèkkpa 'cover' + mìna 'lie down')

In other compounds the first element appears to come from a verb:

gèbbò-ttɔ́	'grave (death-house)	(bbò 'die' + èttɔ 'house')
gedu-bɔ	'right'	(du 'beat' + gèbɔ 'arm')
bba-ddèn	'blind'	(bba 'block' ddèn 'eye')

The above deverbals are distinct from their gerund forms *gèbboè* 'dying', *gèduè* 'beating' and *gèbbɛè* 'blocking'. Use of such gerund forms in object + verb nominalizations, is quite frequent. In this productive process, the *gè-* prefix may optionally delete:

tɔ̀ɔ lìkkɔ̀il	'snore'	→ lìkkɔ̀i (gè)tɔ̀ɔ̀è	'snoring'	(nausea-reaping)
sɛŋ lìvɔ̀l	'travel'	→ lèvɔ̀l (gè)sɛŋè	'traveling'	(country-going)
yei gèkkwé	'rest'	→ gèkkwé (gè)yeì	'resting'	(strength-reducing)
dzi gita	'bewitch'	→ gita (gè)dziè	'bewitching'	(witchcraft-eating)
dzò ètɛɛm	'hope'	→ ètɛɛm (gè)dzòè	'hope'	(heart-keeping)

There are some noun stems which are treated as complex, as determined by their pattern of diminutive reduplication (§4), but whose parts cannot be identified:

ǹtò-fɔ̀m	'fish-net'	ǹtò-fɔ̀-fɔ̀ŋ-wɛ́	ǹtò-fɔ̀-fɔ̀m-bɛ́
ǹsikɔ̀ŋ	'pipe (smoking)'	ǹsi-kɔ̀-kɔ̀ŋ-wɛ́	ǹsi-kɔ̀-kɔ̀m-bɛ́
n-disa	'picture'	n-disa-sa-wɛ́	n-disa-sa-bɛ́
jǎkpu	'cassava'	ja-kpù-kpú-wɛ́	ja-kpù-kpú-bɛ́
emínaakòòl	'young girl'	e-mínaakò-kòò-wɛ́	e-mínaakò-kòò-bɛ́

6. Possessive Pronouns

Leggbo nouns generally have the structure prefix+stem, where prefixes are relics of noun class markers, as is the *-l* suffix. These markers occur only on the nouns themselves. Other than singular/plural distinctions, it was said that nothing remains of the noun class agreement system. However, indications of earlier noun class concord are found on possessive pronouns. The following are the possessive pronouns as realized with a zero noun head:

ŋgwɔ́min	'mine'	aamán	'ours'
ŋgwɔ́	'yours sg.'	aabɔ	'yours pl.'
ŋgwɛ́	'his/hers'	aabɔ	'theirs'

These possessive pronouns have the following structure:

ŋ-gwɔ́-min	cf. àmin 'me'	a + àman	'of us'
ŋ-gwɔ́-ɔ́	cf. -(y)ɔ́ 'you object'	a + àbɔ	'of you pl.'
ŋ-gwɔ́-ɛ	cf. -(y)ɛ 'him/her object'	a + àbɛ	'of them'

The singulars have an *ŋ-* prefix, followed by a *gw-* or *gwɔ-* element, followed by a pronominal element: *-ɔ́* and *-ɛ* are object enclitics. By contrast, the plural possessors consist of one of the independent pronouns preceded by the associative marker *a*. The tonal change of *àman* 'us' to *aamán* is expected in this construction, whereas the non-change of *aabɔ* and *aabɛ* is not. These forms were presumably introduced and contributed to the levelling of noun class distinctions in Leggbo. Longer associative forms are also possible, using the fuller element *awɔ* (cf. below): *awɔ amán/awaamán* 'that of us', *awɔ awaabɔ* 'that of you pl.' and *awaabɛ* 'that of them'. When appearing in attributive position, possessors follow the possessed noun.

èttɔ ŋgwɔ́min	'my house'	èttɔ amán	'our house'
èttɔ ŋgwɔ́	'your sg. house'	èttɔ abɔ	'your pl. house'
èttɔ ŋgwɛ́	'his/her house'	èttɔ abɛ	'their house'

In addition to *ŋgwɔ́min*, *ŋgwɔ*, and *ŋgwɛ́*, with most nouns, the singular persons may appear in a second form:

èttɔ lɔ́min	'my house'	lɔ-min
èttɔ sɔ́	'your (sg.) house'	s-ɔ́
èttɔ ayɛ́	'his/her house'	a + àyɛ

These forms cannot be used in isolation: **lɔ́min* 'mine', **sɔ́* 'yours sg.', **aayɛ́* 'his/hers'. As indicated, *lɔ́min* consists of a relic prefixal element *lɔ́* followed by the root syllable of the independent pronoun *àmin* 'me'. The form *sɔ́* 'yours sg.' most likely is a relic of another noun class, hence *s-ɔ́* (cf. *sɛ́* 'the', deriving from 'his/her'). The third singular possessive *aayɛ́* 'his/her' is built on the same associative construction (within tonal change) as the plural possessors.

The two different sets of singular possessive pronouns were found to be possible with a large group of nouns, including those beginning with all of the different historical noun class prefixes, including *lèttol* 'head', *gizù* 'game', *gètti* 'tree', *gèbɔ* 'arm, hand', *ìtóbo* 'monkey', *ènùŋ* 'salt', *èttɔ* 'house', *àzì* 'blood', *ǹzúŋ* 'nose'. The two forms were possible whether the noun was singular or plural, including most nouns with distinct singular and plural forms: *èllà ŋgwɔ́min ~ èllà lɔ́min* 'my servant', *àllà ŋgwɔ́min ~ àllà lɔ́min* 'my servants'. In some cases, one or the other form was preferred, and particularly human nouns showed some irregularities. Thus, *èkkà* 'mother' and *èttɛ* 'father' could not occur with *lɔ́min* or *sɔ́*. On the other hand, both these and several other kinship nouns occur with an encliticized third person singular possessor *-ɛ*:

èkkèɛ	'his/her mother'	pl. àkkèɛ	cf. èkkà / àkkà 'mother(s)'
èttɛɛ	'his/her father'	pl. àttɛɛ	cf. èttɛ / àttɛ 'father(s)'
ènnèɛ	'his/her in-law'	pl. ànnèɛ	cf. ènnè / ànnè 'in-law(s)'
èduumɛ	'her husband'	pl. àduumɛ	cf. èduum / àduum 'husband(s)'
àgwèɛ	'his wife'	pl. àbbèɛ	cf. àggwèéyɛ / àbbèéyɛ 'wife/wives'
èyòòɛ	'his/her friend'	pl. àyòòɛ	cf. èyòò / àyòò 'friend(s)'

In addition to *-ɛ*, the pronoun *sɛ́* 'his/her', which has developed into the definite article *sɛ́*, is also sometimes used, especially with certain of the above nouns which indicate relations between human beings, e.g., *èllà sɛ́* 'his/her servant', *wákkà sɛ́* 'his/her sibling', *gwànà sɛ́* 'his wife' (vs. *gwànɔ sɛ́* 'the woman'). It is uncertain how widespread it is in this function.

A dialectal study may show that there is even more variation. What is important for the present study is that variations such as the above point back to an earlier period when Leggbo had noun class agreement. With time it can be expected that these complexities will be levelled out, as has already occurred with

respect to noun class agreements in other contexts. The ultimate result will therefore be no agreement, the former noun-class vowel prefixes simply adhering to their stems, much as is found in modern-day Yoruba and Igbo.

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Larry M. Hyman
University of California, Berkeley
email: hyman@berkeley.edu

Imelda Udoh
University of Uyo
email: ichejiudoh@yahoo.com

7

THE HAUSA PERFECTIVE TENSE-ASPECT USED IN *WH-*/FOCUS CONSTRUCTIONS AND HISTORICAL NARRATIVES: A UNIFIED ACCOUNT

Philip J. Jaggar

1. Introduction*

Russell Schuh has always been attracted to the linguistic study of tense, aspect and mood categories in various genres of Hausa discourse. In the early 1980s he wrote up an insightful paper entitled "Hausa tense/aspect/mood (TAM) system" (Schuh, n.d.a), mainly for the benefit of UCLA students (of which I was one at the time). Around the same period, he also produced a paper dealing more specifically with the two Perfective tense-aspects in Hausa (Schuh, n.d.b). We were aware that the Hausa TAM system was poorly understood and would benefit by detailed and robust examination, and so I wrote a paper entitled "The two perfective aspects and their roles in the flow-control of narrative structures" (1981) as part of my graduate linguistics training, although I did not follow up on that line of research.

In this paper I want to revisit and elaborate some of the ideas I outlined in the earlier paper, concentrating on the semantic characteristics of the paired Perfective tense-aspects in a major discourse context—spontaneously-produced past-time narrative. The main focus is on the role of the paradigm known traditionally as the "Relative Perfective", a set that is in partial complementary distribution with the "General/Neutral Perfective". This tense-aspect form is the one exploited at discourse-level to assert prominent events on the time-axis in foregrounded narrative sequences, but it is also required in classic clause-level *wh*-constructions, i.e., *wh-*

* My thanks to Sani Ahmad Sufi who provided the oral narratives. I have exchanged ideas and data with Katharina Hartmann, who has been independently investigating Hausa focus and narrative discourse, see Hartmann (in press) and Hartmann & Zimmermann (in press).

interrogatives, declarative focus constructions, and relative clauses, operations which often share structural properties across languages. (The corresponding "Relative Imperfective" is also obligatory in these movement operations but is not required in narrative, because past-time historical narrative event-lines are carried by the "Relative Perfective".) Formal descriptions, e.g., Tuller (1986) and Green & Reintges (2005), essentially treat the two Perfectives as syntactically-conditioned variants of the *same semantic unit*, i.e., the assumption is that there is no specifiable (or interesting) correlation between the morphosyntactic signal and the meanings/functions of these variants. But the obvious question to be asked is: assuming that we are dealing with a single aspectual category here, what semantic properties do all these constructions share which account for their shared morphosyntactic properties and so explain why they constitute a natural class? I suspect that one reason this form-function question has not been properly addressed relates to the fact that, unlike foreground narrative clauses, *wh*-/focus/relative constructions all entail visible movement and so the various phenomena do not obviously fall together structurally.

Partly in response to earlier formal approaches, which leave various contrasts unexplained, both Schuh and myself have argued (and intuitively felt) for some time that the so-called "Relative Perfective" set is not simply a syntactically-governed replacement for the "General/Neutral Perfective" in fronting operations, but has a distinct *semantic* property which unifies all these related constructions with its role as the marker of narrative event-clauses, i.e., we are dealing with a single morphological and functional entity. Schuh (n.d.a) characterizes the superordinate semantic attribute as "definite" and the tense-aspect itself as the "Definite Perfective", but I prefer the cover-terms "prominence" and "Focus Perfective" for reasons outlined below (§3.3).

I am aware that "prominence" is an intuitive notion which is difficult to define in a totally satisfactory manner, but I hope to refine and validate this concept by pulling together a large body of evidence for the underlying semantic-pragmatic unity of these constructions. I also take a look at the TAMs which occur in background clauses, especially the General Perfective, examining how discourse-semantic constraints either restrict or favour the switch between the two Perfective sets. The corpus I am using consists of two naturally-produced oral narratives: a "brush-with-death" account and a *Pear Film* story-retelling task, see Chafe (1980). (For other discourse analyses of Hausa narratives, see Burquest (1991).)

My central claim is that the fronted focus/*wh*- constructions and pivotal foregrounded portions of past-time narratives utilize the same specialized Perfective tense-aspect morphology because they achieve the same *discourse-pragmatic*

goals—they all supply the most communicatively *prominent* and focal *new* information. At sentence-level, i.e., in focus constructions and interrogatives, it is typically an NP constituent (any syntactic function) which is given prominence via focus-fronting, and this will represent new information focus in response to a *wh*-question (and often in corrective focus); at discourse-level in foreground narrative, it is typically the verbal *predicate* which is highlighted as the pivotal new information, and the syntactic (topical) subject is presupposed, addressee-old information (though this is not an absolute requirement, since new subjects *can* be introduced in foreground). Verbal predicates, or alternatively verbs as heads of their VPs, correspond to the semantic predicate, and because they fill the central role of laying out individual narrative events they are logical recipients for focus marking (Hopper 1979). All these constructions, moreover, involve grammaticalized foregrounding or highlighting/focussing of an addressee-new element as the most informative element in the clause. (Relative clauses do not always manifest these co-varying features but they do share important semantic and syntactic attributes with focus/*wh*- and narrative sequences.) The hypothesis is supported by an empirical study of contexts in which the two Perfective paradigms align with both syntactic and semantic-pragmatic properties.

2. An Overview of the Hausa TAM System

Hausa is a discourse-configurational, pro-drop, SVO language in which TAM distinctions are marked by an obligatory inflectional element to the right of the (overt) subject, e.g., *yâaraa [sun]*$_{\text{infl}}$ *kaawoo àbinci* 'the children [3pl.pfv] have brought the food'.[1] This independent preverbal word contains a subject-agreement element (marking person, number and gender) and an auxiliary TAM-marker, and is known as the "person-aspect complex" (PAC) (Newman 2000; Jaggar 2001). Some of these inflectional heads are fusional, e.g., *sun* (3pl.pfv), others are segmentable, e.g., *su-nàa* (3pl subject pronoun-impfv auxiliary). West Chadic languages typically present a basic three-way TAM system which distinguishes "Perfective",

[1] Transcription: *à(a)* = Low tone, *â(a)* = Falling tone, High tone is unmarked; *aa*, *ii*, etc. = long, *a*, *i*, etc. = short; *ɓ*, *ɗ* = laryngeal implosives, *ƙ* = ejective, *r̃* = apical tap/roll, *c* and *j* = palato-alveolar affricates. Abbreviations: COP = (NON-VERBAL) COPULA; DD = definite determiner; EXIST = existential; F = feminine; FOC-IMPFV = focus (relative) imperfective; FOC-PFV = focus (relative) perfective; FUT = future; IMPFV = imperfective; i.o. = indirect object; M = masculine; NARR-PFV = narrative perfective; NEG = negative; PFV = (general) perfective; PL = plural; PRESENT = presentative; RELPRO = relative pronoun; SG = singular; SID = specific indefinite marker; SJNCTV = subjunctive; SUBORD = subordinator; VN = verbal noun; 1/2/3/4 = first/second/third/fourth person.

"Imperfective", and "Subjunctive" (Schuh 1977). The meanings of the two tense-aspect verbal paradigms correspond closely to the standard semantic definitions of perfective and imperfective aspectuality, i.e., the perspective adopted by the speaker in viewing the event—the Perfective describes situations in their entirety from the outside, whereas the Imperfective refers to the internal temporal structure (Comrie 1976). The basic syntactic cut in Hausa is between the Imperfective/Continuous forms (e.g., with non-finite VPs, possessive and adverbial complements), and Perfective/Completive TAMs (governing finite verbs), e.g.,

(1)		English		Hausa
a. *Tense*:	[non-past]	'he studies Hausa' PRESENT	=	yanàa kòoyon Hausa 3msg.impfv study.vn.of Hausa IMPERFECTIVE
	[past]	'he studied Hausa' PAST 'he has studied Hausa' PERFECT	=	yaa kòoyi Hausa 3msg.pfv study Hausa PERFECTIVE
b. *Aspect*:		'he is studying Hausa' PROGRESSIVE PRESENT	=	yanàa kòoyon Hausa IMPERFECTIVE
		'he was studying Hausa' PROGRESSIVE PAST	=	yanàa kòoyon Hausa IMPERFECTIVE

In (1a) English makes a formal tense distinction between non-past (Present Tense) and past time (Past Tense/Preterite), with Hausa using an Imperfective and Perfective tense-aspect respectively, locating the situation at a specific point in time (usually the moment of speaking). The Hausa (General) Perfective also encompasses both the Simple Past and Perfect in English, depending on context. In (1b), the formal switch in English from (Progressive Present) 'he is studying Hausa' to (Progressive Past) 'he was studying Hausa' is an obligatory reflex of the change from present to past-time reference, but Hausa expresses both meanings with the same Imperfective form (relying on context or an overt temporal adverbial to locate the event in time). The Imperfective views the situation from the inside, and the basic meaning is linked to "the internal temporal consistency of the situation" (Comrie 1976:4). Hausa can also use the non-completed Imperfective to encode both aspectual non-progressive 'he smokes' and progressive ongoing 'he is smoking' (situation coextensive with utterance), i.e., *yanàa shân taabàa* (3msg.impfv drink.vn.of tobacco).

3. The Perfective and Focus (inc. Narrative) Perfective Tense-Aspects

3.1. Forms

Hausa has two formally distinct affirmative Perfective paradigms, and one negative set (which functions as the negative to both). In the affirmative conjugations, Hausa displays a paradigmatic morphological cut between "General" and what I will term "Focus" inflection. All three sets are exemplified in Table 1 with the finite verb *daawoo* 'return':

Table 1. Hausa General Perfective, Focus Perfective, and Negative Perfective TAMs

	General Perfective	Focus Perfective	Negative Perfective
1sg	naa daawoo	na daawoo	bàn daawoo ba
2msg	kaa daawoo	ka daawoo	bà kà daawoo ba
2fsg	kin daawoo	kikà daawoo	bà kì daawoo ba
3msg	yaa daawoo	ya daawoo	bài daawoo ba
3fsg	taa daawoo	ta daawoo	bà tà daawoo ba
1pl	mun daawoo	mukà daawoo	bà mù daawoo ba
2pl	kun daawoo	kukà daawoo	bà kù daawoo ba
3pl	sun daawoo	sukà daawoo	bà sù daawoo ba
4pl	an daawoo	akà daawoo	bà à daawoo ba

From a West Chadic perspective, Hausa is unusual in distinguishing two paired Perfective paradigms (Schuh, n.d.c:10), though Kanakuru does exhibit the same pattern (Newman 1974:65ff.). Newman & Schuh (1974:7) claim that the *kà* is a reflex of a proto-Chadic perfective marker **kà* or **kə̀*, though Schuh (n.d.c:11) now relates this morpheme to a copular element derived from a **kV* deictic determiner (see also Jaggar 2001:205). The Focus/Narrative Perfective paradigm was the historically original set which became restricted to focus environments (including predicate "focus" in historical narrative, §6.1), when the new General Perfective was introduced. The General Perfective itself was originally a non-bound independent paradigm which was reworked as a preverbal subject pronoun set (Newman & Schuh 1974).

3.2. Basic Functions and Meanings of the Two Affirmative Perfective TAMs

The two affirmative Perfective tense-aspects are the main concern of this paper. Semantically they both express the temporal notion of *anteriority*, i.e., they locate a situation at a time preceding the time-orientation expressed by other elements in the

sentence (or speech context). To account for these (and other) temporal relationships between past, present and future time, and following Declerck (1986, 1991), I will use the following three concepts. (I have taken the liberty of simplifying her model for purposes of this discussion.)

a. The "time of orientation" (TO) = usually the time of speaking (or writing)
b. The "time referred to" (TR) = past time, present time, future time
c. The "time of situation" (TS) = locating the situation in time (perfective and imperfective aspectuality)

In the default case, the core function of both Perfectives is to express the past-time relation [TR is anterior to (<) TO], i.e., where TO is the moment of speaking, e.g., (TAM markers and verbs underlined):

(2) taa hàifi ɗaa namijì [Gen. Perfective = past time]
3fsg.pfv give birth to son male
'she gave birth to a boy'

(3) suu nèe sukà zoo [Focus Perfective = past time]
3pl cop 3pl.foc-pfv come
'they were the ones (they) came'

When we look at the General Perfective, however, the association between form and past-time reference is not a neat one-to-one match. Because perfective aspectuality expresses situations and events as complete wholes which are not time-related (Comrie 1976, 1985), past-time reference is not a necessary condition for selection of the General Perfective. It can be used, for example, in contexts which do not refer to the moment of speaking (§5.2.4), and can be regarded as the pragmatically neutral, unmarked form of the paired set. (It is also the form compatible with canonical declarative clauses, §5.2.1.) Thus, a future construal of the default General Perfective is found in subordinate conditional clauses, where it indicates that the reference time is posterior (>) to the orientation time, i.e., TR > TO, e.g.,

(4) koo kin zoo gòobe, bàa zaa kì sàamee sù ba [Gen. Perf. = future time]
even if 2fsg.pfv come tomorrow neg fut 2fsg find 3pl neg
'even if you come [have come] tomorrow, you won't find them'

In contrast, the affirmative Focus/Narrative Perfective is *deictic* in the sense that it is almost always interpreted in relation to the time of the utterance and in its primary use is restricted to expressing bounded single-occurrence events and situations

which are *anterior to the utterance-time only* (with the marginal exception of open *if*-conditional clauses, §5.2.4), i.e., the relationship must be TR < TO. The Focus form of the Perfective is therefore much closer to being a tense. Interestingly, if Schuh (n.d.c:11) is correct in identifying the Focus Perfective *kà* morpheme as a copular **kV* element derived from a deictic determiner, then we have a possible diachronic match in spatiotemporal deictic function.

3.3. Previous Descriptions and Definitions of the Two Perfectives

There are probably as many terms for the two paradigm sets in the literature as there are Hausaists who have described them, some based on semantic attributes and others on the grammatical properties, e.g., "Past Indicative/Relative Past" (Abraham 1959); "Perfect/Aorist" (Parsons 1960); "Accompli I/Accompli II" (Gouffé 1963/66, Caron 1991); "General Past/Relative Past" (Galadanci 1976); "Absolute Past/Relative Past" (Jungraithmayr & Munkaila 1985); "Completive/Relative Completive" (Burquest 1992); "Perfekt/Relative Perfekt (Historicus)" (Wolff 1993); "Completive/Preterite (Relative Completive)" (Newman 2000); "General/Focus Perfective" (Jaggar 2001); "General/Relative Completive" (Schuh, n.d.c).

The set I refer to here as the "Focus/Narrative Perfective" is probably best known to Hausaists as the "Relative Perfective" (because of its occurrence in relative clauses), and most descriptions analyze it simply as a syntactically-determined (obligatory) replacement for the "General Perfective" in focus, *wh*-, and relative constructions. Most treatments, however, ignore its key narrative-tracking function. Bagari (1987: chap. 4) and Schubert (1971/72:270-73) discuss environments where the two sets contrast in meaning, e.g., in subordinate clauses, but neither proposes a uniform compositional meaning which would generalize to all occurrences, i.e., including narrative sequences.

Schuh (n.d.a), responding to a term ("Relative Perfective") he considered narrow and misleading, proposed a semantic/pragmatic characterization. He used the label "Definite Perfective" to capture the semantic generalization that it "represents events understood as specific to a time and/or place and already instantiated" (p. 14). Following Bagari (1976, 1987: chap. 4), he also claimed that in *wh*-/focus/relative environments the event is pragmatically "presupposed" in the sense that it "is taken as given by speaker and hearer" (see also Creissels 1991). This definition is on the right track, but close examination reveals some weaknesses. In the first place, if we look at how linguists such as Quirk et al. (1985:183ff.) appeal to the semantic notion of "definiteness" to explain the distribution of the simple Past Tense in English, it turns out that almost all the past-time contexts they exemplify would in fact require a *General* Perfective in Hausa, not a "Definite Perfective". Another drawback relates

to the fact that although pragmatic presupposition does represent information which is "given", "taken for granted", "old", etc., the standard view of presupposed information is that it is "backgrounded" as "something that is not currently at issue" (Huddleston & Pullum 2002:41-42, 1007ff., 1414ff.). The problem is that the Hausa "Definite Perfective" is normally used to highlight and assert elements which are *"foregrounded"* as informationally prominent and addressee-new, i.e., fronted focus and *wh*-constituents and foregrounded past-time narrative events, not "backgrounded" information which is not at issue (see also Bearth 1993:92).

In Jaggar (1998, 2001:161ff.), I adopted the term "focus" for the special inflectional categories of the Perfective (and Imperfective) tense-aspects used in *wh*-/focus/relative environments, and appealed to the superordinate notion "semantic specificity" to explain its distribution in these environments in addition to narrative discourse. The criterion "specific" is certainly applicable in some cases, but it fails to provide necessary and sufficient conditions for the occurrence of the Focus Perfective. On the other hand, the cover-term "prominent" is preferable because it has a more general information-packaging range (especially as regards the syntactically associated movement constructions). Whatever the merits of these earlier attempts by Schuh and myself at a unified semantic characterization, they reflect our shared view that the alternation between the two Perfective tense-aspects is not simply a matter of syntactic conditioning, but that the selection of one or the other is also motivated by semantic and pragmatic factors.

4. The Hypothesis

My core claim is that the use of the "Focus Perfective" in fronted focus/*wh*-constructions and the pivotal foregrounded portions of past-time narratives is a function of the fact that they all supply the most communicatively PROMINENT and focal NEW information and so achieve the same *discourse-pragmatic* goals. This is the key semantic/pragmatic link without which these distinct constructions have only an arbitrary relationship and appear to be functionally dissimilar. The psychological focus of attention is therefore syntactically signalled by the special focus tense-aspect. In focus/*wh*-constructions at the level of sentence grammar, it morphologically flags preposed focal elements, typically NP constituents which are given prominence via fronting, and this will represent unpredictable, addressee-new information focus in response to a *wh*-question. In foreground narrative, as pointed out by Hopper (1979), it is the chains of discrete events expressed in verbal predicates which are most frequently highlighted by special TAMs (such as the Focus/Narrative Perfective in Hausa) as the pivotal new intersentential information,

and the syntactic subject (topic) is typically presupposed and addressee-old information.[2] All these related constructions, moreover—focus/wh- and event-line predicate focus—involve *foregrounding* or highlighting of an unpredictable element as the most informative element in the clause—cf. Dorfman's (1969:5) reference to "central or core incidents, whose function is to serve as the *central focus* [my italics] or core of the larger episode..." (cited in Hopper & Thompson 1980:281). Grounding, therefore, is a function of speaker choices at sentence-level and also across discourse. Relative clauses are more problematical in that they do not always manifest these co-varying properties, but they do share one important semantic feature with focus/*wh-* and narrative event-clauses—the use of the Focus Perfective serves to restrict and so highlight the denotation of the fronted head nominal modified by the relative clause.

For the specific purposes of this paper, I will continue to use the term "Focus Perfective" when referring to the occurrence of this TAM in clause-level focus/*wh-*/relative environments, but will switch to "Narrative Perfective" when discussing its intersentential narrative-tracking role, with the understanding that this narrative function is simply a related discourse-level manifestation of the semantic content inherent in the Focus Perfective.

In order to validate the hypothesis, I bring together supportive evidence based on distinctive grammatical characteristics and meaning. I investigate declarative main clauses and subordinate clauses, looking at structural contexts where: (1) the two paradigms are in complementary syntactic distribution, e.g., where *wh-* and focus-fronting require the Focus Perfective, whereas *yes/no* questions and topicalization occur with the General Perfective (§5); (2) both Perfectives are attested, e.g., historical narratives where prominent foregrounded event-clauses carrying the story-line require the Focus/Narrative Perfective, but less salient background clauses occur with the General Perfective (§6). The correlations between form and meaning are complex, but significant generalizations are observable (see also Caron 1991, 2000).

5. The Focus Perfective and General Perfective in Complementary Environments

In main clauses relating to past time, the major distinction is that the default General Perfective occurs in canonical declarative constructions which are syntactically basic

[2] Longacre (1990:1-10) also points to a correlation between foreground information and salience and suggests that his own schema for ranking narrative clauses is in fact closely linked to the categories of transitivity set up by Hopper & Thompson (1980).

and pragmatically neutral. The Focus Perfective, on the other hand, is compatible with the derivative non-canonical counterparts which entail syntactic reordering and are pragmatically marked, i.e., focus constructions, interrogatives, and modifying (subordinate) relative clauses.

5.1. Focus Perfective Only: Focus, wh-, and Relative Clauses

Constituent ex situ *wh*-questions, declarative focus constructions and relative clauses in Hausa constitute a family of syntactically allied constructions that entail *wh*-movement and are marked by special inflectional morphology. Generative approaches assume that extracted *wh*-phrases carry an inherent focus feature which enables them to target the same position as focus movement, see, e.g., Schachter (1973), Hyman & Watters (1984), Tuller (1986, and Green (1997). Example (5) illustrates a main clause ex situ *wh*-question (a), followed by a new information focus response (b), and entailing: (1) fronting of the discourse/addressee-new WH-/focus elements to left periphery; (2) special inflectional focus marking on the preverbal Focus-Perfective TAMs; (3) an optional post-focus copula/focus marker:

(5) a. [wàa$_i$]$_{WH}$ kukà (*kun) [ganii ____$_i$] à kàasuwaa?
who 2pl.foc-pfv (*2pl.pfv) see at market
'who did you see at the market?'

b. [yaaròǹkà$_i$]$_{FOC}$ nee mukà (*mun) [ganii ____$_i$]
boy.of.2msg cop 1 pl.foc-pfv (*1pl.pfv) see
'it was your boy we saw'

Even though the obligatory choice of the Focus Perfective is syntactically-determined, these displacement operations have a common semantic-pragmatic property, namely the specific prominence given to the foregrounded pre-TAM element, i.e., the fronted focal *wh*-word 'who?' in (5a), and the fronted new information focal response 'your boy' in (5b).

The one environment where the Focus Perfective does not seem to fit semantically is in syntactically associated restrictive relative clauses, where it occurs obligatorily following movement to clause-initial position, e.g.,

(6) gàa [àbincîn$_i$] dà mukà (*mun) [sayoo ____$_i$]
pres food.dd subord 1pl.foc-pfv (*1pl.pfv) buy
'here is the food that we bought'

Although it is not immediately obvious how the semantic-pragmatic properties "foreground/highlighting/prominence" and "new information" might be extended to

cover such relative clause constructions—subordinate relative clauses and their antecedents can (and often do) specify addressee-old information for example — the information encoded by the headed relative clause might be regarded as "new" in terms of the association between the referent of the antecedent and the proposition concerned. Of greater relevance, however, is their specific identifying function. In (6) the postmodifying (restrictive) relative clause 'that we bought' asserts a property of the fronted NP antecedent 'the food' and so restricts/specifies/delimits etc. its denotation, and the whole clause is closely integrated into the matrix.

Important independent evidence for this form-meaning correspondence comes from the recent discovery that *non*-restrictive relative clauses can differ in their syntactic (TAM-selection) structure. Some speakers, for example, will allow a General Perfective (or Imperfective), as an alternative to the (more common) Focus Perfective in the non-restrictive version (Jaggar 1998), e.g.,

(7) ɗàalìbân, wàɗàndà sun (sukà) gamà aikìnsù, duk sun tàfi
students.dd relpro 3pl.pfv (3pl.foc-pfv) finish work.of.3pl all 3pl.pfv leave
'the students, who have finished their work, have all left'

Compare the corresponding restrictive relative where only the Focus Perfective is licensed:

(8) ɗàalìbân dà sukà (*sun) gamà aikìnsù duk sun tàfi
students.dd subord 3pl.foc-pfv (*3pl.pfv) finish work.of.3pl all 3pl.pfv leave
'the students who have finished their work have all left'

This variation is of real interest and is explicable in semantic-pragmatic terms. Nonrestrictives such as (7) are only loosely connected to surrounding materials and so, like topicalization (§5.2.3), do not restrict/affect the designational properties of the head. The additional information they convey is supplementary and backgrounded ("de-emphasized"), and plays no role in identifying the referent.

5.2. General Perfective Only

5.2.1. Declarative statements in main clauses. In simple affirmative declarative clauses which denote past-time propositions, only the General Perfective occurs, and it overlaps in meaning with both the English Simple Past (Preterite) and Perfect, e.g.,

(9) taa yaĩ dà makullintà
3fsg.pfv lose key.of.3fsg
'she lost her key'

Sentence (9) is equivalent to either a context-dependent 'she lost her key' (Simple Past), or 'she has lost her key' (Perfect) where the action has just been completed in the recent past and is relevant to the time of speaking. The General Perfective can therefore be used to describe the occurrence of events and situations within a time-frame up to 'here-and-now', i.e., situations viewed as the consequence of some (recent) past event. The TAM remains the same even if it occurs in a subordinate clause which is embedded within a matrix clause containing a Focus Perfective, e.g.,

(10) Bàlaa nèe ya gayàa minì taa yaĩ dà makullintà
Bala cop 3msg.foc-pfv tell 1sg.i.o. 3fsg.pfv lose key.of.3fsg
'it was Bala (who) told me she (had) lost her key'

The General Perfective is also used with future time-reference (= English Future Perfect), e.g., (anterior to future),

(11) raanaa yì ta gòobe naa kammàlà aikìn
day like tomorrow 1sg.pfv finish work.dd
'a week tomorrow I will have finished the work'

The pragmatically neutral General Perfective is used in a number of related "timeless" contexts where no specific time is entailed, and where English would use a simple present tense, for example, with most semantically stative verbs such as perceptual, cognitive and entry-into-state verbs:

(12) naa yàĩrda 'I agree'
1sg.pfv agree
(13) mun gaanèe 'we understand'
1pl.pfv understand
(14) naa ƙòoshi 'I'm full (sated)'
1sg.pfv be full

In (12-14) the atelic states are construed as still existing completed wholes, but persisting over an unlimited time (Comrie 1976:48). The same grammatical TAM construction is used with (dynamic) performative verbs, where the action is seen as completed by being stated, and with communicative verbs, e.g.,

(15) naa yi àlƙawãrii zân kaawoo makà
1sg.pfv do promise fut.1sg bring 2msg.io
'I promise I'll bring (it) to you'

(16) maalàminkà yaa gayàa minì kaa ci jaɾ̃ɾ̃àbâawâɾ̃
teacher.of.2msg 3msg.pfv tell 1sg.io 2msg.pfv pass exam.dd
'your teacher tells me you passed the exam'

Linked to its stative usage, the General Completive is also used to express generic events which hold for all time, including proverbs, e.g.,[3]

(17) shiddà taa fi biyu 'six is greater than two'
six 3fsg.pfv exceed two
(18) ganii yaa kòori jîi 'seeing is [has driven away] believing'
seeing 3msg.pfv drive away believing

The General Perfective can also occur in past-time sequences of multiple (two or more) coordinate clauses., e.g.,

(19) yâaraa sun yi aikìi sun gàji
children 3pl.pfv do work 3pl.pfv be tired
'the children (have) worked and (have) got tired'

A timeless General Perfective is used in coordinate stage directions, e.g.,

(20) sun shigoo, sun tuuɓèe tàakàlmii, sun zaunàa
3pl.pfv come in 3pl.pfv take off shoes 3pl.pfv sit down
'they come in, take off their shoes, and sit down'

One of the defining properties of historical narrative event-clauses is that they are linked in sequence. In (19) and (20), the events are sequential but do not relate to a real narrative discourse with discrete time-points viewed in their totality. Such a narrative sequence would require the Narrative/Focus Perfective, and would also typically include a connective adjunct such as *sai* 'then', e.g.,

(21) sukà shigoo, sukà tuuɓèe tàakàlmii, sai sukà zaunàa
3pl.narr-pfv come in 3pl.narr-pfv take off shoes then 3pl. narr-pfv sit down
'they came in, (they) took off their shoes, then (they) sat down'

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[3] Hausa also has a set of forms, equivalent to English *wh*-ever compounds, composed of *koo* 'whether, if' plus a *wh*-word, e.g., *koowàa* = *koowaa* 'whoever'. The *koo*-word is in pre-TAM position and functions as the head NP of a modifying relative clause (§5.1), e.g., *zân bâa koowàa ya zoo* 'I'll give (it) to whoever comes' (fut.1sg give whoever 3msg.foc-pfv come). Although the *koo*-word is semantically non-referential, the Focus Perfective is forced here by the syntax.

The General Perfective is also used in headlines, story titles, and captions, e.g.,

(22) An Hařàmtà Auren Yâaraa 'Marrying Children is/has been Outlawed'
4pl.pfv outlaw marrying.of children

The General Perfective is also common in past-time reportative news contexts, and a string of recent-past situations can all use the TAM in multiple coordinate main clauses, e.g., (Jaggar 2001:157):

(23) wani ɗan-jàřiidàa yaa faɗàa wà gidan řeediyòn BBC cêewaa hařkookin cìnikii sun tsayàa cik à yawancin ƙasâř. An tsai dà yawancin hařkookin cìnikii an kuma rufêe shaagunàa.
'A reporter (has) told the BBC that trading activities (have) ground to a halt in most of the country. Most trading activities have been stopped and shops have been closed.'

The Perfective TAM in (23) assumes the General form because the past situation is viewed as having "current relevance"—hence the Past Perfect English equivalents—and so could comfortably take a present-time adverb such as *yànzun-nàn* 'just now'. Again, however, if the reported events in (23) were being related as a historical narrative sequence, then only the Narrative Perfective would be admissible, i.e., ... *hařkookin cìnikii sukà tsayàa cik à yawancin ƙasâř, akà tsai dà yawancin hařkookin cìnikii akà kuma rufêe shaagunàa* '...trading activities ground to a halt in most of the country, most trading activities were stopped and shops were closed'. Here the focus is on the realization of the temporally-ordered mainline events in the past, not their "current relevance", since the Focus Perfective is indifferent to the temporal distance between the reference time and utterance time. Notice, however, that if a focus/*wh*- or relative construction intervened within a reportative General Perfective fragment, this would force a Focus Perfective TAM, e.g. (in the middle of a news report), ... *dàa jirgin samà nee ya yi hatsàřîn*... '... if a plane had had the accident...' (if plane cop(msg) 3msg.foc-pfv do accident.dd), with a focussed constituent 'plane'.

5.2.2. Yes/no questions. Unlike *wh*-questions which require the Focus Perfective following movement of the inherently focal *wh*-element, *yes/no* questions preserve the declarative structure and only allow a default General Perfective, e.g.,

(24) kin kaawoo ruwaa koo? 'did you bring the water or not?'
2fsg.pfv bring water or

(25) Audù yaa sàyi mootàa? 'did Audu buy a car?'
Audu 3msg.pfv buy car

5.2.3. Topicalization. When a constituent is topicalized in front position with a relevant discourse-old link to other items in the preceding discourse (a rule also known as "non–focus preposing"), only the General Perfective is admissible, e.g.,

(26) a. Àkwai màalàmai dà yawàa à makaɗantaɗmù.
exist teachers many at school.of.1pl
b. [Wasu naa (*na) sanìi], [wasu bàn sanìi ba]
sid 1sg.pfv (*1sg.foc-pfv) know sid neg.pfv.1sg know neg
'There are many teachers at our school. [Some I know], [some I don't know]'

Although left-dislocated topics and focus-fronted constituents occur sentence-initial, a major syntactic difference is the absence of special inflection on the TAM which indicates that topics are base-generated, i.e., not displaced like focus constituents (see Green & Reintges 2005:38ff. for a detailed account of the formal properties). There are also key semantic-pragmatic differences. In topicalized constructions, the topic expression often represents addressee/discourse-*old* information and so is independently specified/ identified. This is in contrast to focus constructions, both new information or exhaustive/exclusive, where the focus expression typically represents the salient addressee/discourse-new information.

5.2.4. Subordinate adverbial clauses. Although the form-function correlations of the two Perfectives are typically complex rather than one-to-one, the distribution of the two sets in subordinate environments is basically consistent with the pervasive structural-semantic correlation that the primary (deictic) use of the Focus Perfective is to signal realis, single-occurrence events which are anterior to the utterance time, and so is much closer to being a tense. When these conditions do not apply, the default General Perfective occurs. (For more supportive data see Wolff (1993: chap. 7), Newman (2000: chap. 70), Jaggar (2001: chap. 6), and especially Bagari (1987) and Schuh (n.d.a, n.d.b).)

One set of constructions that is especially instructive is the conditional. Because conditional clauses entail non-factuality, and are not used to make a positive assertion of any kind, with the partial exception of open conditionals (29), there is a systematic association with the General Perfective. In remote and concessive conditional clauses, the Focus Perfective would be semantically incompatible, and only the unmarked default General Perfective occurs, e.g.,

(27) dàa kin (*kikà) gayàa manà dàa mun (*mukà) shiryàa mikì àbinci
if 2fsg.pfv (*2fsg.foc-pfv) tell 1pl.i.o. then 1pl.pfv (*1pl.foc-pfv) prepare 2fsg.i.o. food
'if you had told us then we would have prepared some food for you'

In (27) the past-time remote (counterfactual) conditional describes an imaginary situation which is different from the real world—we understand that you did not tell us—so only the General Perfective is licensed in both the protasis and apodosis to express this modal remoteness (notice that English would use a modal auxiliary in the matrix apodosis).

(28) kanàa iyà gaanèe shi koo yaa canzà muryàřsà
2msg.impfv can recognize 3msg even if 3msg.pfv change voice.of.3msg
'you can recognize him even if he changes (has changed) his voice'

In (28) the truth of the initial main clause might be considered false in the light of the information in the subordinate concessive clause. The form-meaning correlation is strong but not exceptionless, however. In open *if*-conditional clauses the two Perfectives actually compete and can both be used in contexts without specific reference to present time, e.g.,

(29) ìdan kin/kikà kaawoo aikìn gòobe, zân duubàa shi [future time]
if 2fsg.pfv/2fsg.foc-pfv bring work.dd tomorrow fut.1sg look at 3msg
'if you bring (have brought) the work tomorrow, I'll look at it'

In (29) the time of [you bringing the work] is understood as a future time later (posterior to) than now, but still anterior to [me looking at it]. Speakers seem to have a free choice in open conditionals, i.e., the two sets unusually share syntactic distribution here, and the semantic distinction between the Focus Perfective and General Perfective is breaking (or has broken) down. (Cf. English, where the basically deictic Past/Preterite tense can depart from its past-time primary meaning and be used in a subordinate clause to express a modal remote conditional in the future, e.g., 'if you came tomorrow, that would be better'.)

In subordinate temporal 'when' clauses, the conjunction *dà* 'when' is used with the Focus Perfective to recapitulate a past-time event-clause in foreground narrative (§6.2), e.g.,

(30) sai ya ɗâukee kwàndôn ... dà ya ɗâukee kwàndoo ɗaya ...
then 3msg.narr-pfv take basket.dd when 3msg.foc-pfv take basket one
'then he took the basket ... when he had taken the one basket ...'

In (30) the background clause 'when he had taken the one basket' repeats the event-clause just mentioned and is introduced by dà 'when' + Focus Perfective (this subordinate clause is not part of the narrative sequence and the Focus Perfective is syntactically required here after the (relative) dà conjunction, see §6.2). If the same conjunction is used to introduce a subordinate 'when (as soon as)' clause in the *future*, however, then it takes the General Perfective, e.g.,

(31) dà kaayân sun isoo, zân gayàa makà
when goods.dd 3pl.pfv arrive fut.1sg tell 2msg.i.o.
'when/as soon as the goods arrive (have arrived), I'll tell you'

There are also some paired subordinators with equivalent past-time meaning such as *baayân dà* and *baayan* 'after' where the relative form *baayân dà* (back.the which) takes a syntactically required Focus Perfective and the non-relative counterpart *baayan* (back.of) takes a General Perfective, e.g. (from Bagari 1987:87),

(32) a. sun yi barcii baayân dà sukà ci àbinci
3pl.pfv do sleep after 3pl.foc-pfv eat food
= b. sun yi barcii baayan sun ci àbinci
3pl.pfv do sleep after 3pl.pfv eat food
'they slept after they had eaten'

With future time reference, however, only *baayan* 'after' + General Perfective is licensed in the subordinate clause (the essentially "past time in relation to the here-and-now" Focus Perfective would again be semantically inadmissible), e.g.,

(33) baayan kun gamàa, sai mù tàfi
after 2pl.pfv finish then 1pl.sjnctv go
'after you have finished, then we can go'

As regularly exemplifed throughout, the connective adjunct *sai* 'then' frequently occurs in foreground narrative event-clauses with a following Narrative Perfective, e.g. (non-subordinate clauses, see Appendix B),

(34) sai ya yi karòo dà duutsèe, sai ya faadî dà kèekên,
then 3msg.narr-pfv do collision with rock then 3msg.narr-pfv fall with bike.dd
duk sai mangwàr̃òn ya zubèe
all then mango.dd 3msg.narr-pfv spill
'then he bumped into a rock, then he fell with the bike, then the mangoes all spilled'

Sai can also function as a negative-oriented subordinator '(not) until', indicating a future-time endpoint. In such contexts, however, it takes the neutral General Perfective in the subordinate clause, e.g.,

(35) bàa zân biyaa kà ba sai kaa gamà aikìn
neg fut.1sg pay 2msg neg until 2msg.pfv finish work.dd
'I won't pay you until you have finished the work'

6. The Narrative (Focus) Perfective and General Perfective: Contrastive Functions in Narrative

Past-time narrative is a key domain where both Perfective paradigms are attested but where the on-line selection is based on intrinsic meaning and pragmatics. As already noted, the core function of both the General Perfective and Focus Perfective is to express the temporal notion of *anteriority*, i.e., a time preceding the time-orientation expressed by other elements in the sentence (or the speech context), typically the moment of speaking. Examples (36) and (37) are declarative statements containing General and Narrative Perfective forms respectively, and both locate the time referred to (TR) as *anterior* to (<) the time of speaking (or writing), i.e., the time of orientation (TO), and TR also coincides with the time of situation (TS):

(36) TR/TS < TO yaa mutù [past time]
3msg.pfv die
'he (has) died'

(37) a. … dà ya daawoo,
when 3msg.foc-pfv return

TR/TS < TO b. sai ya mutù [past time]
then 3msg.narr-pfv die
'... when he had returned, then he died'

In both (36) and (37) the time of dying (TR) is coextensive with the time of situation (TS) and is construed as a time-point earlier than the here-and-now time of orientation (TO). Despite this unified semantic property of anteriority, however, there is an important functional difference—whereas use of the General Perfective *yaa mutù* in (36) simply denotes a state (and is translatable with a context-dependent English Past/Preterite 'he died' or Present Perfect 'he has died'), the Focus Perfective *ya mutù* in (37b) is performing its canonical discourse function of tracking a specific occurrence on the past time-axis. This is a prototypical narrative sequence: the initial background subordinate clause (37a) 'when he had returned'

interrupts the narrative flow by repeating the foreground event-clause just mentioned, and is introduced by the subordinator *dà* 'when' and a Focus Perfective (this is syntactically required because *dà* is in fact an ellipted variant of the complex relative NP subordinator *lookàcîn dà* 'the time that'). The narrative is then resumed in (37b) with an event-clause *sai ya mutù* 'then he died' introduced with the connective adjunct *sai* 'then' and a Narrative Perfective. In such contexts the two paradigms are in complementary syntactic distribution—substituting the narrative form *ya* in (36), or the neutral form *yaa* in (37b) would result in ungrammaticality.

Note that because there is no single overt tense-aspect marker of narrative foregrounding in English, an out-of-context sentence like 'she went to university' (simple Past Tense) could occur simply as: (a) a background, marginal event or statement/response in conversation, e.g., '*she went to university* and got a degree', or (b) as one in a series of foregrounded events in a narrative sequence, e.g., '...then *she went to university* and got a degree and became a teacher'. In Hausa, however, the two clauses would be unambiguously distinguished in the syntax because narrative foregrounding is grammaticalized, cf. (38) and (39).

(38) taa jee jaami'àa taa sàami dìgìřîi
3fsg.pfv go university 3fsg.pfv get degree
'*she went to university* and (she) got a degree'

(39) sai ta jee jaami'àa ta sàami dìgìřîi ta zama maalàmaa
then 3fsg.narr-pfv go university 3fsg.narr-pfv get degree 3fsg.narr-pfv become teacher
'...then *she went to university* and (she) got a degree and (she) became a teacher'

We now turn to consider the use of the Focus Perfective to guide the addressee through the fabric of the story by highlighting new, foreground events as expressed in the verbal predicates of past-time narratives. As we have seen (§5.1), these criterial semantic/pragmatic features—foregrounding and addressee-new information status—also characterize fronted focus and *wh*-constructions, and it is this key observation which explains why these intersentential and sentence-internal constructions form a natural class and so are marked by the same tense-aspect morphology.

6.1. The Focus Perfective in Foreground Historical Narrative Sequences

A historical narrative discourse, as defined by Longacre (1990:1-2), is a storyline developed by clauses in which the verbs encode a series of often punctual and

volitional/agential actions in chronological sequence, each of which initiates a new situation, and directed to a climax. A canonical past-time narrative also differs from other discourse types by including what Longacre terms "cohesive" clauses which contribute to the textual cohesion and narrative progression. In Hausa these clauses are usually initiated by connective adjuncts such as (sequential and anaphoric) *sai* 'then (after that)', *sànnan* = *sânnan* 'then' (that time), or (recapitulatory) *dà* 'when' (see exx. above). There are several related semantic/pragmatic properties which together characterize and motivate the Hausa Narrative Perfective in foregrounded narrative main clauses, features which are generally accepted as the important defining characteristics across languages. Thus, the backbone chain events encoded by the Narrative Perfective have the following criterial design features. They must be: (1) anterior to the utterance-time (as specified above); (2) single-occurrence, telic, complete units; (3) linked in sequence by the speaker to specific time-points. (This definition is in fact close to Quirk et al's (1985:183) characterization of the English "Definite Past" tense, minus the sequentiality condition (3).) The verbs in the Narrative Perfective predicates also usually express punctual and conceptually bounded actions (though the link between perfective marking and situations involving telic punctual accomplishments requires another paper).

Cross-linguistic studies also indicate that the distinction between background and foreground clauses is a universal attribute of narrative discourse (see Hopper 1979, 1982 on aspectual markers in narrative). Speakers need to distinguish reference to the main (foreground) actions from supporting (background) information and so exploit tense-aspect to navigate their way through the storyline, often using a specific verbal paradigm for foregrounding. Foregrounded clauses are the backbone of the narrative and assert realis events and results, functioning to move the sequential narrative forward; settings and causes, on the other hand, are interpreted as background, with states usually serving supporting roles. In the prototypical case, and except when a new (agential) subject is introduced, foregrounded pivotal clauses in narrative also contain in their predicates the communicatively *prominent* addressee/discourse *new* information, i.e., each event leads to a new situation. In Hausa this is a key compositional property shared with new information focus (and *wh*-) constructions, and so they attract the same Focus/Narrative Perfective marking.[4] (For various treatments of the universal foreground vs. background

[4] Biber (1984) documents an analogous situation in Central Somali, where clause-level constituent focus and foregrounded narrative clauses use the same focus particle *yaa*. See also Anderson (1979:86ff.) and Hyman & Watters (1984:258) on Aghem, a Cameroonian Grassfields Bantoid

distinction, see Labov (1972), Grimes (1975), Reinhart (1984), Matthiessen & Thompson (1988), Longacre (1990), and especially Hopper (1979, 1982) and Hopper & Thompson (1980).) Fragment (40), taken from the narrative in Appendix B, illustrates a prototypical sequence of foreground, same-subject clauses:

(40) a. Shiikèenan, sai ya [hau kân]...
that was that then 3msg.narr-pfv climb on
b. ya [faarà tuurà kèekènshì],
3msg.narr-pfv begin push bike.of.3msg
c. ya [yi tàfiyàr̃shì].
3msg.narr-pfv do go.vn.of.3msg
'That was that, then he got on ... he started to push his bike, and he went on his way.'

In (40) the verb, as the syntactic predicator and head of the VP, is the principle mechanism for advancing the flow of new information in the narrative. The new events are introduced in the three predicates (a) [got on], (b) [started to push his bike], and (c) [went on his way], and the presupposed subject referent is identical throughout. The discourse status of this new focal information is marked by the recurring affirmative Narrative Perfective subject element *ya*.

Although foregrounded clauses typically refer to the same subject participant performing the sequential narrative actions, i.e., there is continuity of referent, action, time, and place, it is of course possible to get a change of subject, e.g.,

(41) a. Ya yi tàfiyàr̃shì
3msg.narr-pfv do go.vn.of.3msg
b. Tôo, àshee yaa bar̃ hùular̃sà à wurîn dà akà yi karòn,
well but 3msg.pfv leave hat.of.3msg in place.dd subord 4pl.foc-pfv do collision.dd
c. sai wani yaaròo sai ya ga hùulâr̃.
then sid boy then 3msg.narr-pfv see hat.dd
'He went on his way. Well, but he had left his hat where the collision had taken place, then a boy saw the hat.'

In (41c) it is in fact the whole proposition expressed in the event-clause 'then a boy saw the hat' which represents the new foregrounded information (or alternatively the subject + (predicator) verb without the old information complement 'the hat'). Example (42) illustrates another typical narrative device entailing repetitious co-

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language, where the same tense-aspect form expresses both the (narrative) "Consecutive Tense" and (predicate) "Completive Focus".

ordination of a string of event-line clauses each initiated by connective-anaphoric *sai* 'then (after that)'. Temporal *sai* refers to a time closely following the antecedent event in the preceding clause and signals entry into the next new foreground event, each with a Narrative Perfective, i.e., *sai* [event 1] ..., *sai* [event 2] ..., *sai* [event 3] ... etc., with *sai* identifying each subsequent point in the narrative, e.g.,

(42) a. ... sai ƙarfèn tayàa ya kaɾ̃cèe tiitìi,
then metal.of tyre 3msg.narr-pfv scrape road
b. sai wutaa ta yi tàɾ̃tsatsii hakà.
then fire 3fsg.narr-pfv do sparks thus
c. Shiikèenan sai ya tàfi can.
that was that then 3msg.narr-pfv go there
'... then the metal rim scraped on the road, then the fire produced sparks like that. That was that then he (the driver) went off.'

The clause-initial *shiikèenan* 'that was that' in (42c) is another common anaphoric connective in discourse—its antecedent event is signaled by the Narrative Perfective tense-aspect in the preceding clause (b)—and it can in fact combine with *sai* 'then' as here. *Shiikèenan* tends to be more "disruptive" than *sai*, however, and can signal a juncture in the narrative flow, e.g., a theme-switch or transition to a new episode, action sequence, or "idea unit" (Chafe 1980):

(43) a. Mukà jee bìkin wani àbookinmù.
1pl.narr-pfv go party.of sid friend.of.1pl
b. Shiikèenan mun jee can gàban Bàgàuda nèe, à Kanòo.
OK/that was that 1pl.pfv go there beyond Bagauda cop in Kano
'We went to the party of one of our friends. OK/that was that, we had gone way beyond Bagauda, in Kano.'

6.2. TAMs and other Strategies in Background Narrative Clauses

Although it is impossible to do justice to all aspects of the phenomenon of grounding in Hausa narrative discourse, we now turn briefly to consideration of the various non-Narrative Perfective TAMs and other strategies which are commonplace in the background portions of narratives. In historical narratives, as we have seen, speakers distinguish the foreground from the background largely by the use of tense-aspect morphology. The background functions to provide supportive material that elaborates or evaluates the focal events in the foreground, and like subordinate clauses, it often signals causes, reasons, conditions, means, etc. Background may also provide orientation, or explanation and identification, and I

will draw on some of Longacre's (1990:4) terminology to describe the various departures from the linear sequence of event-clauses, e.g., scene-setting, evaluations (author intrusions), etc. The TAMs frequently encountered in background contexts are the General Perfective, the quasi-modal Subjunctive and Future, and the Imperfective (see also Burquest 1991, 1992).

As already noted, the General Perfective encodes a non-deictic past event in background narrative sequences, locating a situation as anterior to an intermediate time referred to which is itself anterior to the time of the utterance, and so is equivalent to a 'had' Past Perfect in English, e.g., (see text Appendix A),

(44) a. na buuɗèe, tôo daree yaa faarà yîi
1sg.narr-pfv open well night 3msg.pfv start do.vn
b. sai ƙarfèn tayàa ya kařcèe tiitìi.
then metal.of tyre 3msg.narr-pfv scrape road
'I opened (the door), well night-time had arrived, then the metal rim scraped on the road.'

In terms of information processing the General Perfective form in clause (44a) maps supportive background information, and contributes to the interpretation of the key foreground events by signalling prior events outside the main sequential time-line. The same TAMs in (45) are evaluative and external to the narrative itself:

(45) a. Na kaasà maa buuɗèe ƙoofàa
1sg.narr-pfv be unable even open door
b. sabòodà naa giggìcee,
because 1sg.pfv panic
c. duk naa zàtaa duk sun rìgaa sun mutù.
all 1sg.pfv think all 3pl.pfv do already 3pl.pfv die
d. Na buuɗèe ....
1sg.narr-pfv open
'I couldn't even open the door because I'd panicked, I thought that they had all died already. I opened...'

In (45) the narrative temporal sequence (45a) is interrupted by a string of General Perfective verbs which provide causal evaluation on the part of the speaker. The subordinate clause (45b) *sabòodà naa giggìcee* 'because I'd panicked' contains a stative (emotion) verb *giggìcee*, followed by evaluative (c) *duk naa zàtaa duk sun rìgaa sun mutù* 'I thought that they had all died already'. Together, they provide an assessment of the speaker's state of mind and motivation at the time, before he then re-enters the narrative flow in (45d).

Future and subjunctive TAMs in background clauses are used to make a prediction about the outcome of an irrealis event (located after the event on the main time-line), e.g. (from Appendix B),

(46) a. Shiikèenan, yaa cikà kwàndoo gùdaa biyu,
OK 3msg.pfv fill basket unit two
b. yaa hau kân mangwàřòn,
3msg.pfv climb top.of mango tree.dd
c. zâi jee,
fut.3msg go
d. don yà tsinkoo mangwàřòn
so as to 3msg.sjnctv pick mango.dd
e. dà zâi cikà kwàndonshì na ƙàrshee,
subord fut.3msg fill basket.of.3msg of last
f. shii kwàndoo na ukù.
3msg basket of three
'(a) OK, he had filled two baskets, (b) he had climbed the mango tree, (c) and he was about to go, (d) so he could pick the mangoes (e) that he would fill his last basket with, (f) the third basket.'

In (46) the narrative is suspended by two flashback General Perfective clauses (a, b), followed by a projective Future TAM (c) and a Subjunctive clause (d) with another Future embedded in the relative clause (e). These elaborative background clauses serve to explain and justify the subsequent narrative action.

The temporal adjunct *dà* 'when', as noted above, is regularly used as a narrative device to initiate a cohesive background clause which anaphorically recapitulates the event in a previous clause, e.g.,

(47) a. ya baa shì, ya cèe gàa hùulařshì.
3msg.narr-pfv give 3msg 3msg.narr-pfv say present hat.of.3msg
b. Shiikèenan, dà ya baa shì hùulâř ...
OK when 3msg.foc-pfv give 3msg hat.dd
'he gave him (the hat), he said here was his hat. OK, when he had given him the hat...'

In (47b) the orientation subordinate clause 'when he had given him the hat' is interpolated to repeat the event in the preceding clause (47a). Notice that because *dà* 'when' requires the Focus Perfective—it is a reduced form of the complex relative NP subordinator *lookàcîn dà* 'the time that', cf. 48c—the formal contrast between

the foreground Narrative Perfective and background (past-in-the-past) General Perfective is neutralized. An identical neutralization is exemplified in (48b):

(48) a. ... mù duubà
1pl.sjnctv see
b. mèe ya fàaru.
what 3msg.foc-pfv happen
c. Àshee lookàcîn dà sukà faaɗàa raamìn,
well when 3pl.foc-pfv fall into hole.dd
d. sai sukà faaɗàa cikin tàɓoo ...
then 3pl.narr-pfv fall into mud
'... to see what had happened. Well, when they had fallen into the ditch, then they fell into some mud...'

Although (48b) *mèe ya fàaru* 'what had happened' is a flashback clause, the presence of the *wh*-word triggers an obligatory Focus Perfective, together with the grammatically required form in (48c) *lookàcîn dà sukà faaɗàa raamìn* 'when they had fallen into the ditch'. Notice how the speaker then initiates another narrative sequence with *sai* 'then' in (48d).

The Imperfective expresses incomplete durative-progressive action, and often occurs in narrative background to express an event simultaneous with the narrative progression. Such orientation clauses provide background information, e.g.,

(49) a. Munàa daawôowaa dàgà lìyaafâa.
1pl.impfv return.vn from entertainment
b. Tôo, àkwai mootoocii wajen goomà dà mukà tàfi dà suu.
OK exist cars about ten subord 1pl.foc-pfv go with 3pl
c. Muu munàa cikin ƙàramaɾ̃ mootàa nee, Daihatsu.
1pl 1pl.impfv in small.of car cop Daihatsu
'We were returning from the entertainment. OK, there were about ten cars that we'd taken. We were in a small car, a Daihatsu.'

In (49a, c) the Imperfective is used to signal the background circumstantial clauses 'we were returning from the entertainment' and 'we were in a small car, a Daihatsu'. These orientational TAMs express ongoing actions which overlap with the mainline narrative events.

Finally, new participants (or props) are typically introduced by deictic function words such as existential *àkwai* 'there is/are' (49b, 50d), presentative *gàa* 'here/there is/are' (47a, 51a), and the copula *nee* (msg/pl), *cee* (fsg) (52a), and all such non-verbal clauses provide descriptive orientation for the ensuing material. The following clause often contains a motion verb, with a Narrative Perfective TAM

if the speaker views it as part of the foreground narrative (52b), or a default General Perfective if the event is perceived as part of the background (50e, 51b). Examples:

(50) a. Shiikèenan sai ya tàfi can.
that was that then 3msg.narr-pfv go there
b. Mun ɗâukee kân mootàa
1pl.pfv take head.of car
c. don kâr̃ mù bugèe shi,
in order neg 1pl.sjnctv hit 3msg
d. can kuma àkwai bàbbar̃ mootàa,
there and exist big.of car
e. taa tahoo.
3fsg.pfv appear
'(a) That was that then he went off. (b) We had changed direction (c) so as not to hit him, (d) and in the distance there was a lorry, (e) it had appeared.'

(51) a. Can à kân hanyàa sai kuma gàa wata yaarinyàa,
there on road then also present sid girl
b. taa tahoo dàgà wani gurii.
3fsg.pfv appear from sid place
'Later on there was a girl, she had appeared from somewhere'

(52) a. Dà farkoo dai wani mùtûm nee,
at first actually sid man cop
b. ya jee...
3msg.narr-pfv go
'First of all actually there's (it's) a man, he went....'

Following the single Narrative Perfective clause in (52b), the speaker then moves off the event-line and sets the scene with a string of ten background clauses before re-entering the narrative (see Appendix B).

7. Summary and Conclusions

The key claim advanced and supported here is that the obligatory occurrence of the Focus/Narrative Perfective TAM in both focus/*wh*-constructions and main clause historical narrative is not accidental, despite the apparent diversity of these phenomena. Various structural, semantic and pragmatic constraints either restrict or favour the variation in the use of the two Perfective paradigms. Thus, in contrast to the unmarked default General Perfective, the Focus Perfective is a specialized inflectional set whose primary use is to encode bounded single-occurrence events and situations which are anterior to the utterance-time. Focus/*wh*-and foreground narratives all involve elements that are highly salient/prominent in the discourse context. Focus/*wh*- expressions entail syntactic fronting/preposing of constituents,

and pragmatically foregrounded event-clauses in narrative sequences are formally marked with the same special tense-aspect morphology. All these related constructions—sentence-level focus/*wh*- and intersentential event-line predicate focus—involve foregrounding or highlighting of an addressee-new element as the most informative element in the clause and so constitute a natural class. Finally, this unified account owes its stimulus to some of Russell Schuh's earlier insights into the Hausa TAM system, where he investigated the distinctive syntactic and semantic features of the various inflectional categories in order to explain their functional distribution in naturally-occurring discourse.

APPENDIX A: *Rân Dà Na Yi Kusan Mutuwàa "The Day I Nearly Died"*
(Note: Single underlining, e.g., ya, indicates (affirmative) Narrative/Focus Perfective; broken underlining, e.g., yaa, indicates General Perfective.)

(1) Wata raanaa nèe dai,	(1) It was one day actually,
(2) mukà jee bìkin wani àbookinmù.	(2) we went to the party of one of our friends.
(3) Shiikèenan mun jee can gàban Bàgàuda nèe, à Kanòo.	(3) OK we had gone way beyond Bagauda, in Kano.
(4) Munàa daawôowaa dàgà lìyaafàa.	(4) We were returning home from the entertainment.
(5) Tôo, àkwai mootoocii wajen goomà dà mukà tàfi dà suu.	(5) OK, there were about ten cars which we had taken.
(6) Muu munàa cikin ƙàramaɾ̃ mootàa nee, Daihatsu.	(6) We, we were in a small car, a Daihatsu.
(7) Shiikèenan àkwai mootàɾ̃ àbookinmù,	(7) OK, there was our friend's car,
(8) tanàa baaya.	(8) it was behind.
(9) Sai ya zoo	(9) Then he came up
(10) ya ficèe mu.	(10) and passed us.
(11) Yaa ficèe mu kèenan,	(11) Just as he had passed us,
(12) sai tayàɾ̃sà ta baaya ta yi bindigàa.	(12) then his back tyre blew out
(13) Shiikèenan, sai ya yi 'jaaaaa' à gàbanmù,	(13) That was that, then he went 'rrrr' in front of us,
(14) mootàa ta yi juuyàa	(14) the car turned over
(15) ta kaɗàa à gàbanmù.	(15) and swerved in front of us.
(16) Yanàa kaɗàawaa,	(16) He was swerving,
(17) tôo daree yaa faarà yîi,	(17) well night-time had come,

(18) sai ƙarfèn tayàa ya kaɾ̃cèe tiitìi,	(18) then the metal rim of the tyre scraped on the road
(19) sai wutaa ta yi tàɾ̃tsatsii hakà.	(19) then the fire made sparks like that.
(20) Shiikèenan sai ya tàfi can.	(20) That was that then he went off.
(21) Mun ɗâukee kân mootàa	(21) We had changed direction
(22) don kâɾ̃ mù bugèe shi,	(22) so as not to hit him,
(23) can kuma àkwai bàbbaɾ̃ mootàa,	(23) and in the distance there was a lorry,
(24) taa tahoo.	(24) it had appeared.
(25) Mun zàci maa	(25) We even thought
(26) mootàa ta baayanmù zaa tà zoo	(26) the car behind us would come
(27) tà haɗàa dà ta gàbanmù,	(27) and collide with the one in front of us,
(28) tà naanèe gàbaa ɗaya,	(28) and crush (it) in one go,
(29) duk mù tàfi.	(29) and we would all die.
(30) Àmmaa Allàh ya kiyàayee,	(30) But God protected us,
(31) sai ita mootàɾ̃ ta yi can	(31) then that car went off
(32) ta faaɗàa cikin wani raamìi.	(32) and plunged into a ditch.
(33) Tôo, kàafîn mù jee	(33) OK, before we could go
(34) mù tsayàa à bàakin tiitìi,	(34) and stand by the side of the road,
(35) duk gàbanmù yanàa ta faaɗùwaa,	(35) we were in a state of shock,
(36) don mun ɗaukàa	(36) because we assumed
(37) waɗàncân sun faaɗàa raamìi	(37) those people had fallen into the ditch
(38) duk gàbaa ɗaya sun mutù.	(38) and had all instantly died.
(39) Akà cêe	(39) I was told
(40) nii ìn buuɗèe ƙoofàa,	(40) I should open the door,
(41) nii dà nakè gidan gàba.	(41) I who was in the passenger seat.
(42) Na kaasà maa buuɗèe ƙoofàa	(42) I couldn't even open the door
(43) sabòo dà naa giggìcee,	(43) because I had panicked,
(44) duk naa zàtaa	(44) I assumed
(45) duk sun rìgaa sun mutù.	(45) they had all already died.
(46) Na buuɗèe,	(46) I opened (it),
(47) mukà yi saurii dà kyaɾ̃ dai,	(47) we moved quickly with real difficulty,
(48) sai wani maalàmii ya buuɗèe mîn ƙoofàa,	(48) then a teacher opened the door for me,
(49) mukà yi saurii,	(49) we moved fast,
(50) mukà jee,	(50) we went,
(51) mukà buuɗèe,	(51) we opened (it),
(52) mù jee	(52) to go
(53) mù duubà	(53) and see

(54) mèe ya fàaru.	(54) what had happened.
(55) Àshee lookàcîn dà sukà faaɗàa raamìn,	(55) Well, when they had plunged into the ditch,
(56) sai sukà faaɗàa cikin tàɓoo,	(56) then they landed in some mud,
(57) sai mootàa ta kafêe,	(57) then the car got stuck,
(58) bà tà juuyàa ba.	(58) and didn't roll over.
(59) Shiikèenan mukà jee,	(59) That was that we went over,
(60) kàafîn mù jee maa,	(60) before we even went (to them),
(61) sun faarà fitôowaa,	(61) they had started to get out,
(62) duk gàbaa ɗaya sukà fitoo.	(62) and they all got out together.
(63) Allàah ya kiyàayee,	(63) God protected them,
(64) bâa wandà ya yi ràunii.	(64) no one was injured.
(65) Shiikèenan mukà jee,	(65) That was that we went,
(66) mukà tsai dà wasu mootoocii,	(66) and we stopped some cars,
(67) mukà taimàkaa,	(67) and we helped out,
(68) akà ɗagà mootàa,	(68) the car was lifted up,
(69) akà fitoo dà ita.	(69) and it was pulled out.
(70) Mukà yi ƙòoƙarii,	(70) We made an effort,
(71) dà mukà jaawoo tà,	(71) when we had pulled it out,
(72) mukà canjà tayàa,	(72) we changed the tyre,
(73) mukà daawoo gidaa laafiyàa.	(73) and we returned home safely.

APPENDIX B: *The Pear Film Narrative*

(Note: Single underlining, e.g., ya, indicates (affirmative) Narrative/Focus Perfective; broken underlining, e.g., yaa, indicates General Perfective.)

(1) Dà farkoo dai wani mùtûm nee,	(1) First of all actually there's a man,
(2) ya jee...	(2) he went
(3) yanàa tsìnkaɾ̃ mangwàɾ̃ònshì.	(3) he's picking his mangoes.
(4) Yanàa dà kwandunàa gùdaa ukù.	(4) He has three baskets.
(5) Shiikèenan, yaa cikà kwàndoo gùdaa biyu,	(5) OK, he had filled two baskets,
(6) yaa hau kân mangwàɾ̃òn,	(6) he had climbed to the top of the mango tree,
(7) zâi jee,	(7) he was about to go,
(8) don yà tsinkoo mangwàɾ̃òn	(8) to pick the mangoes
(9) dà zâi cikà kwàndonshì na ƙàrshee, shii kwàndoo na ukù.	(9) that he would fill his last basket with, the third basket.
(10) Yaa hau can,	(10) He had climbed up there,

(11) yanàa ƙòoƙarin	(11) he was trying
(12 yà tsittsinkoo,	(12) to pick (them),
(13) sai wani yaaròo ya zoo à kân kèekè,	(13) then a boy came on a bike,
(14) sai ya duubà mùtumìn.	(14) then he looked at the man.
(15) Dà ya ga	(15) When he had seen
(16) mùtumìn baa yàa kallonshì	(16) the man wasn't watching him,
(17) sai ya ɗâukee kwàndôn.	(17) then he took the basket.
(18) Dà ya ɗâukee kwàndoo ɗaya	(18) When he had taken the one basket
(19) wandà ya cikàa,	(19) that he had filled,
(20) sai ya ɗooràa à kân kàaɾ̃iyàɾ̃sà,	(20) then he put it on his bike-rack,
(21) sai ya fìta à gùje.	(21) then he left in a hurry.
(22) Yanàa ta gudùu à kân kèekènshì,	(22) He was speeding off on his bike,
(23) yanàa ta gudùu à kân kèekènshì.	(23) he was speeding off on his bike.
(24) Can à kân hanyàa sai kuma gàa wata yaarinyàa,	(24) And then there on the road was a girl,
(25) taa tahoo dàgà wani gurii.	(25) she had appeared from somewhere.
(26) Lookàcîn dà sukà zoo	(26) When they had arrived
(27) zaa sù giftàa.	(27) they were about to pass by.
(28) Sun giftà juunaa,	(28) They had passed each other,
(29) yanàa can	(29) he was there,
(30) yanàa kallon yaarinyàɾ̃,	(30) he was watching the girl
(31) sai ya yi karòo dà duutsèe,	(31) then he bumped into a rock,
(32) sai ya faadî dà kèekèn,	(32) then he fell down with the bike,
(33) duk sai mangwàɾ̃òn ya zubèe.	(33) then the mangoes spilled all out.
(34) Shiikèenan sai ya yi saa'àa,	(34) OK then he was lucky,
(35) gàa wasu yâaraa,	(35) there were some boys,
(36) sun zoo daidai gurîn,	(36) they had come right to the place,
(37) sunàa wàasaa,	(37) they were playing.
(38) Sai yâarân sukà zoo,	(38) Then the boys came,
(39) sukà tàimàkee shì	(39) they helped him
(40) yà tsìntsìnci mangwàɾ̃òn,	(40) to pick up the mangoes,
(41) nii dà nakè gidan gàba.	(41) they collected them for him in the basket.
(42) Shiikèenan, sai ya hau kân...	(42) That was that, then he climbed on...
(43) ya faarà tuurà kèekènshì,	(43) he started to push his bike,
(44) ya yi tàfiyàɾ̃shì.	(44) he went on his way.
(45) Tôo, àshee yaa baɾ̃ hùulaɾ̃sà	(45) OK, but he had left his hat
(46) à wurîn dà akà yi karòn,	(46) at the place where he had crashed,
(47) sai wani yaaròo sai ya ga hùulâɾ̃.	(47) then a boy saw the hat.

(48) Sai ya koomàa mishì dà ita,	(48) Then he returned it to him,
(49) ya jee,	(49) he went,
(50) ya baa shì,	(50) he gave it to him,
(51) ya cèe gàa hùulaɾ̃shì.	(51) he said here is his hat.
(52) Shiikèenan, dà ya baa shì hùulâɾ̃,	(52) OK, when he had given him the hat,
(53) shii kuma sai yaaròn sai ya ɗaukoo mangwàɾ̃ò gùdaa ukù,	(53) then the boy took three mangoes,
(54) dâa maa yâarân suu ukù nee	(54) all along there were three boys,
(55) sai ya baa sù	(55) then he gave them (the mangoes)
(56) sù jee	(56) to go
(57) sù shaa.	(57) and eat.
(58) Yâarân sun kàrɓi mangwàɾ̃òn,	(58) The boys had taken the mangoes,
(59) sunàa tàfiyàa can,	(59) they were going off,
(60) sai sukà bi ta hanyàɾ̃ mài mangwàɾ̃òn nan.	(60) then they followed the road of that mango-man.
(61) A'a shii kuma à lookàcîn yaa saukoo	(61) Well he had climbed down at the time,
(62) yanàa duubàa	(62) he was looking
(63) ìnaa kwàndonsà ɗaya ya faadì,	(63) where his one basket had fallen,
(64) sai ya ga	(64) then he saw
(65) yâaraa kawài sun ficèe,	(65) the boys had just passed by,
(66) sunàa shân mangwàɾ̃ò.	(66) they were eating the mangoes.
(67) Sai ya tsayàa,	(67) Then he stopped,
(68) yanàa tùnàanin	(68) he was thinking
(69) a'a, yàayàa akà yi	(69) hey, how had it happened
(70) yâarân nan sukà sàami mangwàɾ̃òn?	(70) those boys had got the mangoes?
(71) Kàrshen làabaaɾ̃ìi kèenan.	(71) That's the end of the story.

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Philip J. Jaggar
SOAS, University of London
email: pj@soas.ac.uk

8

APOPHONY IN THE VERBAL SYSTEM OF GADANG

Herrmann Jungraithmayr

1. Introduction*

Many Chadic verbal systems are based on the binary aspectual opposition between perfective and imperfective forms marked by vowel change, i.e., ablaut or apophony (Jungraithmayr 1997). (For a general discussion of the Chadic verbal system, see Schuh 1976.) Full fledged apophony is to be found in most far eastern Chadic languages (spoken in the Chad Republic), like Mokilko, Migama, Mubi, Dangaleat, and Sokoro (see Jungraithmayr 1978a, 1990). Most of the near eastern languages, e.g., Zime or Tumak (Caprile 1975), however, have transformed their ablaut systems into oppositions based on tone, i.e., abton or apotony, e.g.,

	Far Eastern (e.g., Mubi)	Near Eastern (e.g., Tumak)
'to drink'	sû / súwáà	hě / hè
'to die'	măt / mùwáat	má / mā

Compare, also, Masa (of Toura) *ci'é / cí'è* 'to drink' and *midá / mídà* 'to die', in contrast to Mokilko *'íɓè* (subjunctive: *síɓè*) / *sóɓò* and *'ìndá / 'ûntó*.

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Those eastern branch languages, that are spoken between "far" and "near", i.e., mainly in the region between the Logone and Chari rivers ("Zweistromland"), generally display relatively weak apophonic opposition patterns, which is certainly due to a gradual reduction process in which the final stage is the replacement of the apophony strategies by those of apotony. Tumak, the southernmost language of this area, which may appropriately be called "Central Eastern", has already reached this stage—of pure apotony—, probably due to its geographic proximity to non-Chadic (Nilo-Saharan) languages which excel in apotony-based verbal systems (cf. Jungraithmayr 1980). It is this central zone within the eastern branch of Chadic to which Gadang, as a member of the Sumray group, belongs.

2. Gadang

Gadang (*gàdàŋ*) is one of the three riverain languages spoken along the river Chari near Bousso extending to the east and southeast of it, the other two languages being Sarwa and Miltu (Gali). The entire area has been under the domination of the Bagirmi kingdom, the headquarters of which was/is Massenya, which lies northwest of Bousso. Today Bousso is the administrative centre of the Préfécture du Chari-Baguirmi.

We owe the first information on the languages in question to the German traveller Gustav Nachtigal (1834–1885), who passed through this region in 1872 and collected a few data on Sarwa and Miltu (cf. Nachtigal, vol. II, 1881, p. 689; Ganslmayr & Jungraithmayr 1977). As to Gadang, he only indicates the name—as "Gandang"—on the map accompanying his text. The only other source for the region is Gaudefroy-Demombynes (1907), who also presents very few lexical items for Sarwa and Miltu only. Thus, information on Gadang is presented in this paper for the first time.

The principal settlements or villages of the Gadang speaking people are—from west to east—the following: Taouan, Gadang Kiao, Djaména, Morio, Balo, Gadang, Gadang-Gougouri, Gadang Haddad Daudi and Madjoum. Bousso lies in the centre of the Gadang speaking area.

3. The Binary Aspect System of Gadang

3.1. Vowels and Tones

Gadang is a 7-vowel language comprising the basic 5 vowels *i, e, a, o, u,* plus 2 central vowels, high *ə* and low *ʌ*. This is in full conformity with its immediate eastern neighbour, Sarwa, as well as with its southern relative, Sibine (Sumray).

As to the tonal structure, Gadang distinguishes three level tones, high *á*, mid (*a* or *ā*) and low *à*, and three tonal glides, high-low (*â, áà*), high-mid (*áā*), and mid-high (*aá* or *āá*).

Both vowels and tones are heavily involved in the formation of the verbal aspect stems. Ninety-three of the 165 verbs do not display ablaut, but distinguish their aspect stems by tone ("abton") and the appropriate suffixes. That is to say, only 72, i.e., less than half of our sample, exhibit some sort of apophony.

As to the change of vowel quality, the general trend in the transition from the perfective to the imperfective stem is a change from a high and central quality *(i, u, ə, ʌ)* to a low or half-low quality (*a, e, o*), i.e., the direction *high* towards *low*. In addition, lengthening of the vowel *a* (→ *aa*) or, instead, geminating of C_2 in a few examples has also been observed. Note that the vowel affected by quality change is V_1 in biradical stems and V_2 in triradical stems.

On the other hand, tonal patterns display the opposite movement from lower to higher, i.e., if the perfective stem has low tone, the imperfective tone is generally mid, and if the perfective stem is mid, the imperfective stem will be high.

3.2. The Formation of the Aspect Stems

3.2.1. The formation of the perfective stem (PST). The PST is made up of the verbal base with an aspect-sensitive vowel (V_1 or V_1 plus V_2) and the suffix *-gʌ*, which carries a mid or a low tone, copying the tone of the base to which it is suffixed; e.g., *mìr-gʌ̄* '(have) died', *'ùsùn-gʌ̀* '(have) known'.

3.2.2. The formation of the imperfective stem (IPST). The IPST is formed by a base the vowel of which is, depending on the verbal class the verb belongs to, either identical with the vowel of the PST or apophonically derived from it. This base is almost always augmented by a suffix which is generally *-a* or *-aa*; it is, however, dropped in front of an object, e.g., *níyà sē náàm* 'I am drinking water'.

3.2.3. Presentation of the verb stem bases. The two aspect stems are composed of the verb base and a suffix, i.e., in the PST *-gʌ* and in the IPST *-a* / *-aa*. Since this paper concentrates on the verb bases and their modification, there is no need to repeat a citation of those suffixes. With regard to the tonal behaviour and the length of these morphemes, it should, however, be noted that the tone of *-gʌ* is a copy of that of the PST base, whereas tone and length of the IPST *-a/-aa* vary considerably obviously depending on the phonotonological shape of the verb base. For example:

	PST	IPST
'to break'	bìy-gʌ̀	bāy-āá
'to envelop'	lìgər-gʌ̄	lígár-ā
'to suck'	lāām-gʌ̄	láam-à

3.3. The Verbal Classes (VCs) According to the Apophonic Relationship between PST and IPST

There are "weak" verbs with no vowel quality or quantity change(s) between the two aspect stems (PST and IPST), and "strong" verbs with vowel quality and/or quantity change(s). Accordingly, the following VCs may be established.

3.3.1. "Weak" verbs. "Weak" verbs display no vowel change but tone change (low to mid or mid to high).

(W1) The *a/a* class	PST	IPST
'to eat'	yā-	yá-
'to stand up'	sàa-	sā-
'to suck'	laam-	láam-
'to lick'	lagany-	lágány-
'to hasten'	nar-	nár-g-[1]
'to return'	ɗayn-	ɗáyn-
'to fall'	nas-	nási-[2]
'to walk'	cà-	cay-[2]
'to turn'	càr-	car-
'to run'	wày-	way-
'to transform oneself'	sar-	sár-g-
'to think' (Ar.)	pagar-	págár-
'to fear'	laany-	láany-
'to pray' (Ar.)	sal-	sál-
'to choose'	hanjar-	hánjár-
'to fry'	jàɓ-	jaɓ-
'to sweep'	sa-	sá-
'to exchange'	kàràŋ-	karaŋ-

[1] The extra /g/ found in some IPSTs is not explainable at this point.

[2] The bases for the IPST seem to be *nasiy-* and *cay-*, respectively; cf. the respective verbal nouns *nási* and *cày* (or even *càay*?).

(W2) The ʌ/ʌ class		
'to breathe'	hʌ̀-	hʌ-g-
'to bite'	hʌ̀d-	hʌd-
'to taste'	gʌ̀s-	gʌs-
'to yawn'	hʌm-	hʌ́m-
'to arrive'	gʌ̀r-	gʌr-g-
'to walk'	lʌŋ-	lʌ́ŋ-
'to pass'	pʌt-	pʌ́t-
'to greet'	wʌy-	wʌ́y-
'to send'	gʌ̀y-	gʌy-
'to offend'	hʌr-	hʌ́r-g-
'to heat'	'ʌl-	'ʌ́l-
'to pound'	'ʌ̀g-	'ʌg-
'to grow'	gʌ̀w-	gʌw-
'to untie'	kʌr-	kʌ́r-
'to cover'	hʌɓ-	hʌ́ɓ-ɓ-
'to age'	wʌ̀n-	wʌn-
'to be heavy'	nʌ-	nʌ́-
'to pass the day'	'ʌlʌm-	'ʌ́lʌ́m-

(W3) The ə/ə class		
'to germinate'	ɓən-	ɓə́n-
'to spit'	ɓəj-	ɓə́j-
'to descend'	jəb-	jə́b-g-
'to plait (hair)'	ləm-	lə́m-
'to moisten'	hə̀ny-	həny-

(W4) The *i*/*i* class		
'to spit' (Bag.)	tiɓ-	tíɓ-ɓ-
'to marry'	bìy-	biy-
'to forget'	nim-	ním-
'to accept'	yiɗ-	yíɗ-
'to slap'	big-	bíg-
'to shave'	yir-	yír-
'to dry' ('wring out')	wid-	wíd-é-
'to swell'	sìy-	siy-
'to belch'	dìs-	dis-

(W5) The *e/e* class		
'to drink'	sè-	se-
'to tickle'	kedˀ-	kédˀ-g-
'to carry'	'è-	'e-
'to pull'	yè-	ye-
'to spin'	tedər-	tédər-
'to plant'	ɗew-	ɗéw-
'to open'	teny-	tény-

(W6) The *u/u* class		
'to urinate'	wùj-	wuj-
'to sit'	wuyny-	wúyny-
'to swim'	buj-	búj-é-[3]
'to creep'	wur-	wúr-
'to hear'	'ur-	'úr-
'to sing'	kùy-	kuy-
'to whistle'	wuy-	wúy-
'to discuss'	wug-	wúg-
'to ask'	hùr-	hur-g-
'to search'	nyun-	nyún-
'to lose'	'ud-ə	'úd-
'to meet'	gubi-	gúbi-
'to take'	ug-	úg-
'to give'	hu-	hú
'to stab'	ɓug-	ɓúg-
'to bend'	ɗuŋ-	ɗúŋ-
'to burn'	kuy-	kúy-
'to sew'	sur-[4]	sú-
'to pierce'	ɓug-	ɓúg-
'to dig'	kuti-	kútí-
'to attach'	kùn-	kun-
'to decay'	'us-	'ús-
'to blow'	wuy-	wúy-
'to measure'	gùsì-	gusi-
'to resemble'	wuni-	wúní-

[3] Cf. the form of the verbal noun, *búję́*.

[4] In light of the verbal noun form *sú*, C_2 *-r-* may be a perfective formative morpheme.

'to shine'	wuliny-	wúlíny-
'to rub'	yud-	yúd-

(W7) The *o/o* class

'to snore'	door-	dóor-
'to enter'	sodɗi-	sódɗí-
'to touch'	'òd-	'od-
'to teach'	doy-	dóy-
'to refuse'	'yoon-	'yóon-g-
'to lift'	bò-	bo-
'to bury'	mò-	mo-
'to dry'	wòy-	woy-

3.3.2. "Strong" verbs. There are three types of "strong" verbs to be distinguished in Gadang depending on the nature and kind of ablaut the verbs undergo:
– Qualitative ablaut ($V_1 \rightarrow V_2$; V_1–$V_2 \rightarrow V_1$–V_3)
– Quantitative ablaut ($V_1 \rightarrow V_1V_1$)
– Mixed or double ablaut ($V_1 \rightarrow V_2V_2$)
– Quantitative consonantal ablaut: ($C_2 \rightarrow C_2C_2$)

3.3.2.1. *Strong verbs with qualitative ablaut.* The following verb classes may be distinguished with regard to the vowel patterning the verbs display:

PST *-i-* / IPST *-a-*	PST *-u-* / IPST *-a-*
PST *-ə-* / IPST *-a-*	PST *-ʌ-* / IPST *-a-*

The apophonic scheme as displayed in these four verb classes is of a "classical" nature. High (*i, u*) and central vowels (*ə, ʌ*) in the perfective are in contrast with low *A* (= */a, e, o/*) in the imperfective.

(S1) The *i/a* class

'to lie down'; 'to kill'	hiy-	háy-
'to get tired'	riny-	rány-
'to break'	bìy-	bay-

(S2) The *u/a* class

'to vomit'	wul-	wál-
'to fart'	wuɗ-	wáɗ-

'to defecate'	wùr-	war-
'to give birth'	hùw-	haw-
'to dance'	kun-	kwán-
'to push'	suŋgur-	súŋgár-
'to wash'	wus-	wás-
'to tear'	gùrùŋ-	guraŋ-

In a few cases, the change from *-u-* to *-a-* has, so to say, not been "mastered" so that the ablaut scheme has remained incomplete, i.e., *-u-* did not go to *-a-* but only to *-o-*. The following verbs display this incomplete *u/A* (*u/o*) ablaut pattern.

The *u/o* subclass		
'to eat (hard)'	hum-	hóm-
'to feel, smell'	ɗuny-	ɗóony-
'to fuck'	wun-	wón-
'to cry, weep'	suy-	sóoy-
'to find'	tuɗ-	tóɗ-
'to chase'	'yur-	'yó-[5]
'to stir'	ɗur-	ɗó-[5]
'to hide'	mus-	móos-
'to dress'	suɗ-	sóɗ-

(S3) The *ə/a* class		
'to jump'	nàn-	nan-
'to see'	gàl-	gal-
'to seize'	ɗəm-	ɗám-
'to envelop'	ligər-	lígár-
'to show'	gər-	gár-
'to divide'	'əs-	'ás-
'to finish'	nyəm-	nyám-
'to beat'	ɓəl-	ɓál-
'to crush'	təs-	tás-
'to light'	nyàm-	nyam-
'to shatter'	dàs-	das-
'to split'	càg-	cag-

[5] Compare the verbal noun forms of the two verbs, *'yóor* and *ɗó*, respectively.

'to cut'	jər-	ja-
'to till'	yəg-	yág-
'to mix'	hawəny-	háwány-
'to talk'	kəɓ-	káɓ-ɓ-

(S4) The *ʌ/a* class

'to fill'	'ʌn-	'án-
'to close'	'ʌbʌr-	'ʌ̀b-b-ár-

3.3.2.2. *"Strong" verbs with quantitative ablaut.* Besides the dominant qualitative ablaut, there are a few verbs which display quantitative ablaut, either solely or in addition to the qualitative ablaut. Here is a short list of these verbs.

3.3.2.2.1. Purely quantitative ablaut

'to swallow'	sar-	sáar-
'to cough'	'as-	'áas-
'to come'	ha-	háa-
'to climb'	'àg-	'aag-
'to yell'	'ar-	'áar-
'to deceive'	làm-	laam-
'to help'	dày-	daay-
'to call'	'ʌ̀r-	'ʌʌr-

3.3.2.2.2. Mixed quantitative/qualitative ablaut

'to feel, smell'	ɗuny-	ɗóony-
'to hide'	mus-	móos-
'to die'	mir-	méer-[6]

3.3.2.2.3. Quantitative consonantal ablaut, i.e., gemination of C_2

'to talk'	kəɓ-	káɓɓ-
'to accompany'	mar-	márr-
'to cover'	hʌɓ-	hʌ́ɓɓ-

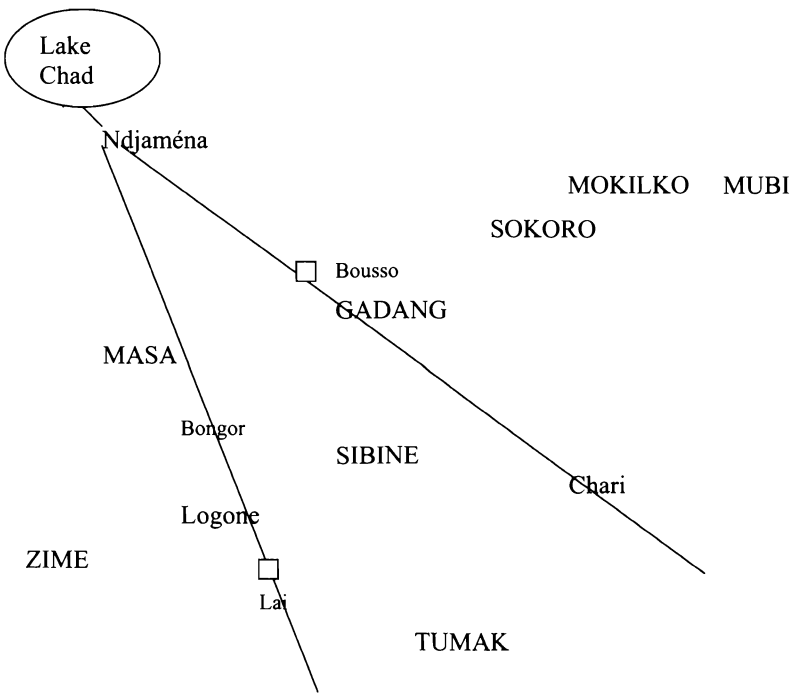
[6] The vowel quality of *-ee-* tends to the open variety, *-ɛɛ-*, a quality which otherwise does not seem to be part of the Gadang phonemic vowel inventory.

'to spit' (Bag.)	tiɓ-	tíɓɓ-
'to close'	'ʌbʌr-	'ʌ́bbár-

The latter example displays three formative features of a Gadang imperfective stem, i.e., (1) qualitative ablaut (of V_2), (2) quantitative consonantal ablaut or gemination (of C_2), and (3) a mid to high change of tone. Iconically, consonant gemination and vowel lengthening (= quantitative ablaut) are only two facets of the same underlying concept, both serving the purpose of marking imperfectivity.

4. Conclusion

Gadang has a verbal system that is still characterized by a basically sound apophonic structural mechanism, although it is already quite on the retreat considering the fact that more than half of our verbs are no longer ablaut-sensitive. This may be compared to Sibine (Sumray) the ablaut system of which is even less distinctive and functional (cf. Jungraithmayr 1978b). Gadang occupies a position between Sibine and Sokoro (Jungraithmayr n.d.), e.g., which still operates a more complex ablaut system. Geographically, Gadang is also situated between Sibine and Sokoro as seen in the following sketch.



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Herrmann Jungraithmayr
Frankfurt University
email: jungraithmayr@em.uni-frankfurt.de

9

PHONOLOGICAL REFLEXES OF EMPHASIS IN KWA LANGUAGES OF CÔTE D'IVOIRE

William R. Leben and Firmin Ahoua

0. Introduction

This paper examines the phonological characteristics of expressions conveying emphasis, insistence, and contrast in some Kwa languages of Côte d'Ivoire. (For the classification of Kwa languages, see Stewart (1989, 2001, 2002)). Our particular interest is to reveal how such phenomena are realized in tonal languages, and we thought it worthwhile to study more than one language yet to confine the study to a closely related group. In this group a variety of phonological strategies are used to mark emphasis, including prosodic devices that have not been widely reported in the literature for Niger-Congo languages, and that may or may not differ from other language groups

For our subject we have avoided the more restrictive term *focus* in favor of the more general term *emphasis* due to the latter's suggestive but open-ended phonological and semantic implications. Some of the constructions examined here correspond to focus as generally used in the literature, notably in Bearth's (1999) survey of focus in African languages. But other cases do not involve focus in the strict sense. For example, some of them are appropriately glossed by adding an expression like "really" or "please" to the word or phrase emphasized. What is interesting is that while the constructions described are quite heterogeneous from a semantic standpoint, they involve many of the same phonological devices.

In a nutshell, our goal is to capture the various phonological means for expressing emphasis in the Kwa languages of Côte d'Ivoire. It is normal to encounter special emphatic particles in these languages, as elsewhere, but there are also specific tonal and intonational effects which apply in the presence or absence of such particles. Also present, and less often described, are cases in

which emphasis interrupts the regular phonological patterns. We capture this disruptive effect with an *emphasis boundary* which creates a new phonological phrase for the emphasized constituent. Cases like these appear to have an analog in other languages, notably Pierrehumbert and Beckman's (1988) analysis of Japanese, where emphasis leads to the formation of new accentual phrases.

The rest of the paper is divided into six sections. Section 1 examines segmental processes and considers independent evidence from tonal processes. Section 2 discusses negation and final particles as contexts for emphasis marking. Section 3 deals with ideophones with emphatic meanings. Section 4 investigates types of emphasis marking by nominalization of the verb. Section 5 illustrates some types of prosodic marking of emphasis by register raising. Section 6 summarizes the results of the paper.

The language for which we have the most detail is Standard Baule, which is the most widely spoken of the group and one spoken natively by one of the authors. We add data from a second Baule dialect, Kode, and from neighboring Kwa languages Adioukrou, Eotile, and Akye. Our analysis is based on data from Leben and Ahoua (2002), the first volume of a comparative study of the phonology of Kwa languages of Côte d'Ivoire currently in progress.

1. Domains of Emphasis: Tests with Elision and Tones

1.1. Blocking of Elision

Baule has a number of multi-word constructions that function phonologically as single prosodic words: proper names, compound nouns, noun-adjective constructions. See Leben and Ahoua (1997) for the analysis. Emphasis on one of the elements of a multi-word prosodic word unit breaks the complex up into two constituents, a non-emphasized portion and an emphasized one. The evidence in 1.3 below will suggest that the emphasized constituent becomes a new phonological phrase.

For example, the first and last names in a proper name ordinarily comprise a single prosodic word (see Leben and Ahoua 1997). One sign of this is the applicability a rule of elision deleting one of two adjacent vowels. This rule applies only within prosodic words, as illustrated in (1a) below, and never applies across different prosodic words. In example (1b), which emphasizes the second name *àmàní*, elision is blocked.

(1)	*Underlying form*	*Surface form*	
a.	/ djáá àmàní /	[ɟámą̀ní]	'Djaha Amani'
b.	/ djáá | àmàní /	[ɟáá àmą̀ní]	'Djaha *Amani'*

The same effect is found in examples (2), (3), and (4) below. In all cases, emphasis on the final element breaks a constituent into two parts, with the emphasized element heading a *new* prosodic constituent. We represent this change by placing an emphasis boundary (|) before the emphasized word.

Example (2) shows a title of address followed by a person's name. These two elements form a single prosodic word in (2a). Emphasis on the second element again breaks this constituent up into two parts in (2b).

(2)	a.	/ ǹdjá àmàní /	[ǹɟámą̀ní]	'Mr. Amani'
	b.	/ ǹdjá | àmàní /	[ǹɟá ámą̀ní]	'Mr. *Amani'*

Examples (3a,b) are names with titles, like (2a). In (3c) the names after the title are used contrastively. As before, an emphasis boundary is placed before the contrastive elements, and so once again elision is blocked. Contrastive emphasis on both elements of (3c) leads to blocking of elision in both cases, as predicted.

(3)	a.	/ mó ámlą́ /	[mámlą́]	'Mrs. Amlan'
	b.	/ mó àmàní /	[mámą̀ní]	'Mrs. Amani'
	c.	/ mó | ámlą́ nɑ́ /	[mó ámlą́ nɑ́]	'it is Mrs. *Amlan*
		/ mó | àmàní ɔ̀ /	[mó àmą̀ní ɔ̀]	not Mrs. *Amani'*

1.2. Tonal Blocking: Interruption of Upsweep

Leben and Ahoua (1997) discuss a gradual rise in F0 across a sequence of High tones within the same phonological word. This gradual rise is referred to as upsweep (Ahoua 1996, Dafydd Gibbon personal communication).

As seen in 1.1, emphasis on the final element of a phrase causes an emphasis boundary to be inserted before it, blocking elision. Independent motivation for this emphasis boundary is its intonational effects. Compare (4a), which lacks emphasis, to (4b), in which the second element is emphasized:

(4)	a.	/ ákíssí bólí /	[ákísí bólí]	'Akissi Boli' (proper name)
	b.	/ ákíssí | bólí /	[ákísí bólí]	'Akissi *Boli*'

Example (4a) has the melody of the unmarked neutral utterance, with gradual upsweep on successive High tones. The version in (4b) shows emphatic marking of the proper name *Boli.* In this case, the emphasis boundary interrupts upsweep, and tonal register of the whole word is raised. We refer to a High tone in raised register as Super-High and notate it with a double acute. The Super-High sequence *bőlí* is itself subject to upsweep, so that the second Super-High syllable is even higher than the first, but the point of the example is that the emphasis boundary interrupts the normal upsweep pattern.

Now suppose we emphasize the entire expression (4a)? In this case, an emphasis boundary will *not* be inserted within the expression. This in turn predicts that the expression will remain a single phonological word, with a single tonal upsweep pattern. As with the preceding examples, the register will be raised for the emphasized constituent, in this case the entire expression, as shown in (5).

(5) [á kísí bőlí] '*Akissi Boli*' (entire proper name emphasized)

We have also checked for what would happen when only the first word in this expression was emphasized, but consultants consistently rejected that pattern. In fact, our work suggests a general restriction on the placement of emphasis: only phrase-final elements may be emphasized.

1.3. Interruption of Low Tone Spreading.

Baule has a rule of Low Tone Spreading, which applies not only within phonological words but also across phonological words within phonological phrases:

(6) LOW TONE SPREADING: H → L / L ___ H

The symbols H and L here refer to *strings* of one or more High and Low tones, respectively. Examples (7a) and (8b) show that the rule would need to be complicated if these symbols referred only to individual tone-bearing units.

Rule (6) applies within a phonological phrase but not across phrases. In (7) and (8), *nàń* means 'cow' and *nɔ̰́nɔ́* means 'milk.' The unemphasized expressions (7a) and (8a) sound identical. The only difference between them is a structural one. The compound (7a) is a single prosodic word whereas (8a), a possessive phrase, is a phonological phrase consisting of two prosodic words. Compare the (a) cases to the (b) ones, which add emphasis on the final noun.

(7) a. /nà̰nḭ́ nɔ̰́nɔ̰́ / [nà̰nḭ̀ nɔ̰̀nɔ̰́] ‘cow milk’
b. /nà̰nḭ́ | nɔ̰́nɔ̰́ / [nà̰nḭ́ nɔ̰̋nɔ̰̋] ‘cow *milk*’

(8) a. /nà̰nḭ́ nɔ̰́nɔ̰́ / [nà̰nḭ̀ nɔ̰̀nɔ̰́] ‘cow’s milk’
b. /nà̰nḭ́ | nɔ̰́nɔ̰́ / [nà̰nḭ́ nɔ̰̋nɔ̰̋] ‘cow’s *milk*’

In the (b) cases, the emphasized second word causes the phonological domain of Low Tone Spreading to be interrupted. Thus, an emphasis boundary in (7b) and (8b) must create not just a new prosodic word but a whole new phonological phrase. The same, of course, must apply to examples (1) through (6). Thus, the conclusion from this section is that an emphasis boundary is placed before an emphasized element, creating a new phonological phrase for that element.

2. Constructions and Particles that Signal Emphasis

In this section we describe utterances containing an emphatic particle. We begin with negative constructions. The negative marker *ma̰̋* behaves as if it is inherently emphatic because it conditions a raising in tone that is characteristic of emphatic expressions.

2.1. Negation and Emphasis

To understand what happens in negative utterances, it is first useful to see how positive assertions are expressed, as in (9).

(9) ɔ̀ kɔ́ ‘he/she goes’
ɔ̀ bá ‘he/she comes’
ɔ̀ dí ‘he/she eats’

Such assertions are negated by adding *má̰* to the main verb and raising the tone of the verb to a Super-High tone:

(10) ɔ̀ kɔ̋ ma̰̋ ‘he/she doesn’t go’
ɔ̀ bа̋ ma̰̋ ‘he/she doesn’t come’
ɔ̀ dı̋ ma̰̋ ‘he/she doesn’t eat’

Next consider the case where the scope of negation is restricted to a single constituent of a sentence. An emphasized noun N can be negated to express ‘it isn’t N’ by prefixing *ná̰* to the noun, raising the noun’s first tone to Super-High,

and raising any following High to Super-High as well. As we see in (11) and (12), this raising neutralizes the contrast between the High and Low of the first syllable of *bólí* and *nà̰nḭ́*:

(11) bólí 'goat'
ná̰ bő́lí̋ ɔ̀ 'lit. Neg. -goat- Final particle' 'it isn't a *goat'*

(12) nà̰nḭ́ 'cow'
ná̰ nā̰́nḭ́̋ ɔ̀ 'lit. Neg. -cow- Final particle' 'it isn't a *cow'*

2.2. The emphatic particles è, dɛ́, and ó

There are at least ten particles in Baule that serve to mark emphasis on a preceding or a following word, each with its own meaning. Particles with similar function are studied in detail by Ameka (1992) in another Kwa group, Akan, where they have a similar phonetic form. In Baule the suffixed particles *è*, *dɛ́*, *ó* raise the tone of the syllable immediately preceding them to Super-High. They may also raise the whole prosodic word, as noted for *è* by Creissels and Kouadio (1979) as a "particule d'insistance." Examples of each are given in the subsections below.

2.2.1. The emphatic particle è. The particle *è* is principally used after a verb or a noun. In (13) we can interpret it as 'why don't you?' or 'please.'

(13) a. mɛ̰́ 'swallow (imperative)' b. mɛ̰̋ *è* '*swallow*, please'
c. dí 'eat (imperative)' d. dí̋ è '*eat*, please'
e. nɔ̰́ 'drink (imperative) ' f. nɔ̰̋ è '*drink*, please'

Figure 1 compares typical measurements for (13a,b) as uttered by a male speaker. The F0 of (13a) rises to a maximum around 184 Hz. Adding a Low-toned *è* in (13b) raises this maximum to around 222 Hz in (13a). As with the cases seen earlier, (13a) occurs in normal register while (13b) occurs in raised register. By contrast, a High tone before Low in a non-emphatic environment is pronounced in a normal register (Ahoua 1996, citing Quaireau 1981).

Surprisingly, the Super-High imposed by the emphatic particle *è* extends leftward to the beginning of the emphasized expression, including even phonological Low tones in its path. As a result, the contrast between Low and High tone is neutralized. In figure 2, the pitch curves on the right are nearly identical for /gbà̰flɛ̰̀ nɔ̰́nɔ̰́ è/ 'young man's milk' and /bólí nɔ̰́nɔ̰́ è/ 'goat's milk.'

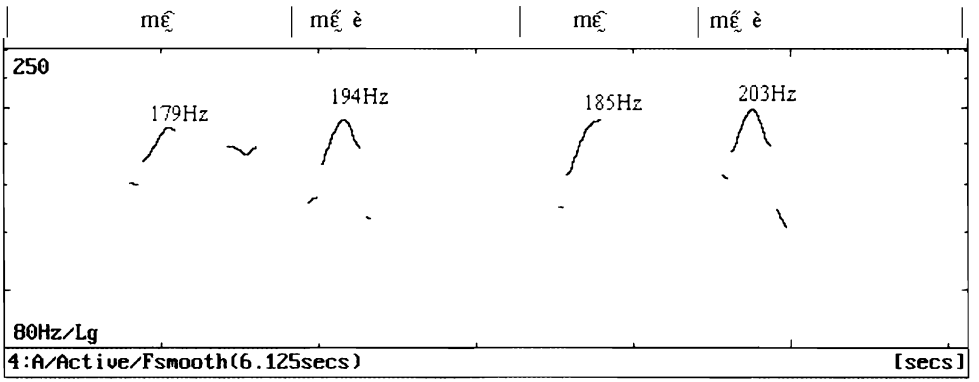

Figure 1: Monosyllabic utterance with and without emphatic è.

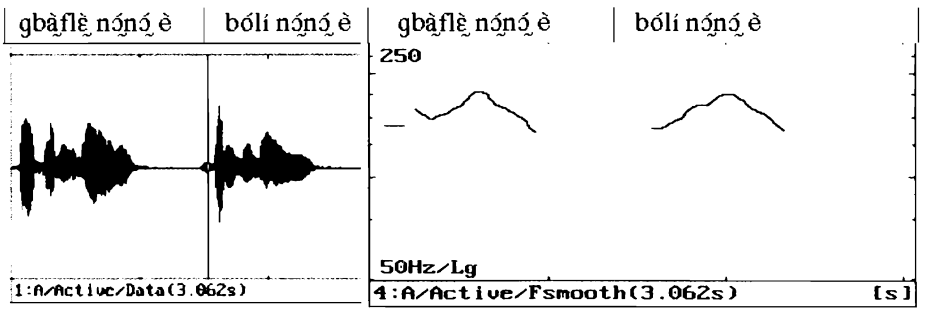

Figure 2: Two polysyllabic utterances tonally neutralized before emphatic è.

The neutralization appears to extend over arbitrarily long sequences of High and Low tones. Thus, when / kòfí nàní / 'Koffi's cow' appears before particle *è* both the initial Low of *kòfí* and the initial Low of *nàní* are pronounced no differently from the High tones of *bólí nɔ́nɔ́ è*. That is, before *è* the tones of the entire expression become Super-High.

2.2.2. The emphatic particle ő. The particle *ő* can generally be paraphrased by 'really' or 'indeed.' It can appear after any syntactic category but tends to appear especially after verbs. Notice that it raises the rightmost syllable of the immediately preceding word to Super-High, with no other tonal changes.

(14) ɔ̀ tì bólǐ ő — 'he/she is a real goat!' (an insult, he/she's silly)'
3sg -be-goat-Part

ɔ̀ sì ɟɥé srő ő — 'he/she can sing songs very well!'
3sg -can-song-sing -Part

ɔ̀ nm̨̀ ő — 'he/she really drinks!' (he/she is a drinker)'
3sg -drink- Part.

ɔ̀ dǐ ő — 'he/she is greedy'
3sg -eat-Part.

ɔ̀ nàt̨ì nɛ̀dɛ̋ ő — 'he/she can really walk very fast'
3sg -walk-fast-Part.

This particle neutralizes the distinction between Low and High tone, as shown with the words *mlà* 'Wednesday' and *mlą̀* 'sponge' in (15).

(15) ké à kɔ̀lé, fà mlą̀ — 'as you go, choose a sponge'
if -2sg -go-there-, take -sponge

ké à kɔ̀lé, fà mlą̋ ó — 'as you go, choose just a sponge'
if -2sg -go-there-, take -sponge-Part.

ké à kɔ̀lé, fà mlà — 'as you go, choose Wednesday'
if -2sg -go-there-, take -Wednesday

ké à kɔ̀lé, fà mlą̋ ó — 'as you go, choose Wednesday only, nothing else!'
if -2sg -go-there-, take -Wednesday-Part.

2.2.3. The emphatic particle dɛ̋. In Baule, the particle *dɛ̋* serves to mean 'actually.' In contrast to the particle *ő*, which raises only the preceding syllable to Super-High, before *dɛ̋* both the verb and the following negative particle *mą̋* raise to Super-High. This is as expected, since as noted above in (10) the negative particle *mą̋* raises the verb to High.

(16) ɔ̀ kő mą̋ dɛ̋ — 'he/she doesn't (actually) go!'
3sg -go-Neg-Part.

ɔ̀ bấ mą̋ dɛ̋ — 'he/she doesn't (actually) come!'
3sg -come-Neg-Part.

ɔ̀ dǐ mą̋ dɛ̋
3sg -eat-Neg-Part. — 'he/she doesn't (actually) eat!'

Particles in another Baule dialect, Kode, and in other very closely related Kwa languages serve similar functions. A few examples are given below. We are not

sufficiently familiar with the tonal and intonational systems of these languages to know whether the tonal register is raised as in the Baule cases we have described above.

Kode:

(17)	n̄ bă	'I'm coming'	n̄ bă ō	'I'm coming, already!'
	ɛ̄ fī dą̀	'it's big'	ɛ̄ fī dą̀ ō	'is it ever big!'
	flɛ̄ ɲ̀są́	'call N'guessan'	flɛ̄ ɲ̀są́ kɛ̄́	'please call N'guessan'
	kɔ̌	'leave'	kɔ̌ ɛ̄ɛ̀	'leave, already!'

Adioukrou:

(18)	lɔ̀tú	'he/she is strong'	lɔ̀tú gbɛ́	'he/she is really strong!'
	òw	'come!'	òw ɔ̀	'please come'
	òw	'come!'	òw ɔ́	'come, already!'

Akye:

(19)	mą́ lɤ́ zē	'don't go there'	mą́ lɤ́ zē ō	'don't go there (warning)'
			mą́ lɤ́ zē ā	'please, don't go'
	àpō	'Apo' (name)	àpō ē	'Apo! (calling with insistence)'

In Eotile, the emphatic final particle is an unspecified vowel that merely copies the tone and the vowel quality of the last vowel of the adjectives or the emphasized word:

Eotile:

(20)	wó gbà	'he/she's good'	wó gbà à	'he/she is *good*'
	3sg -good			
	wó pl(ò) àmí	'he/she's ugly'	wó pl(ò) àmì ì	'he/she's *ugly*'
	3sg- ugly			

In Aboure, the emphatic marking is expressed by *kúwé bá* or only the first item, or optionally with the particle *ó*:

Aboure:

(21) àmṵ̀ (that's) a dog'
àmṵ́ kúwé '(that's) actually a dog'
àmṵ́ kúwé bá '(that's) actually a dog'
àmṵ́ ó '(that's) actually a dog'

kòfí '(that's) Koffi '
kòfí kúwé '(that's) actually Koffi '
kòfí kúwé bá '(that's) actually Koffi '

To summarize, in Baule register raising is associated with the emphatic particle, though each particle has its own pattern of raising. *è* causes the entire emphasized expression to be raised to Super-High, regardless of whether the underlying tones are High or Low. *ó́* raises only the immediately preceding syllable. *dɛ́́* raises an unbroken string of preceding High tones to Super-High but does not affect Low tones. While we have data on particles for the Kode dialect of Baule and for a number of other languages of the same group, we are unable to judge whether these particles are associated with register raising in these languages.

3. Ideophones

The ideophone *lɛ́tɛ́tɛ́́* is used to mean 'without stopping' or 'so much.' It serves to express the degree of intensity of an action. It is generally added after verbs. The syllable *tɛ́́* can be reduplicated indefinitely. *lɛ́tɛ́tɛ́́* is pronounced with a Super-High tone, but without raising the register for the following or preceding words. Below are two examples.

(22) ɔ̀ dɪ̀ ɲɪ̀ bòlí lɛ́tɛ́tɛ́tɛ́tɛ́́ bòsú
3 sg - eat - Past - goat - Ideophone (long) - exceed
'he/she ate goat until he/she couldn't any more'

ɔ̀ ɟrà lɛ́tɛ́tɛ́tɛ́tɛ́tɛ́́ nà wà kò tràsé
3 sg - stand - Ideophone - then – 3sg- past- go- sit- down
'he/she stood very long before he/she went to sit down'

Several other Baule ideophones behave similarly: *làlàá, cyekéé, màn, wù, ó.*

4. Emphasis on Verbs

To emphasize a verb, the main verb with its complements is repeated at the very beginning of the sentence. The verb changes to a nominal, e.g., from *di* to *dílɛ̀*, by adding the nominalizing suffix *-lɛ̀*. For a serial verb, only the second verb form is repeated. Compare the unemphasized (a) cases below with the (b) cases in which the verb is emphasized.:

(23)	a. ɔ̀ dì nànɪ́	[ɔ̀ dì nànɪ́]	'he/she eats beef'
	b. nànɪ́ dílɛ̀ jɛ̀ ɔ̀ dí á́ ó	[nànɪ́ dílɛ̀ jɛ̀ ɔ̀ dí á́ ó]	'he/she eats only beef'
(24)	a. ɔ̀ dí	[ɔ̀ dí]	'he/she eats (it)'
	b. dílɛ̀ jɛ̀ ɔ̀ dí á́ ó	[dílɛ̀ jɛ̀ dí á́ ó]	'he/she only keeps eating'
(25)	a. ɔ̀ kʊ̀nɪ̀ mɪ̀	[ɔ̀ kʊ̀nɪ̀ mɪ̀]	'he/she killed me'
	b. kuńlɛ̀ jɛ̀ ɔ̀ kʊ̀nɪ̀ mɪ̀ á́ ó	[kʊ́lɛ̀ jɛ̀ ò kʊ̀nɪ̀ mɪ̀ á́ ó]	'he/she only killed me'

Comparing the underlying forms in the (b) examples above with the realizations in phonetic brackets to their right, we see the effects of topic position on tone. For example, in (23), the underlying high tone of the verb in *dílɛ̀* is realized with Super-High as *dílɛ̋*. Furthermore, Low Spreading is blocked in this position.

Some other languages of this group emphasize verbs in a similar way. In Eotilé, the emphasized verb appears in topic position in nominalized form, followed by the topic marker *cɛ́* and the full sentence, including the verb. Another emphasis marker *ɛ̀* is added to the right. In the example below, *àbá* is the nominalization of *bà* 'come.'

(26)	a. wɔ́ bà lɛ̀ 3sg come-Past' 'he/she has come'	b. àbá cɛ́ wɔ́ bà lɛ̀ ɛ̀ Prefix-come-Rel-3sg-come-Past Emph. 'he/she has (actually) *come*'

5. Register Raising

In Baule, the gradual raising of High tones for upsweep discussed in section 1.2 is distinct from the Super-High tone of emphasis. Tones that undergo upsweep are raised even higher for emphasis. And indeed we have noted that the two effects can occur together: Super-High tones in sequence exhibit upsweep. Thus, in (4), repeated here, both of the High tones of *bóli*, when emphasized in (4b), are higher than the corresponding tones in (4a), and the second syllable of the emphasized word is higher than the first.

(4) a. / ákíssí bóli / [ákísí bólí] 'Akissi Boli' (proper name)
b. / ákíssí | bóli / [ákísí bólí] 'Akissi *Boli*'

This is different from the situation in Hausa, as described by Inkelas and Leben (1990), where emphasizing a tone that is already Super-High does not raise this tone any higher. The fact that emphatic raising applies in this way leads us to suggest that emphasis creates a new, raised, tonal register. This view is supported by the fact that emphatic raising applies not just to High tones but also to Low tones. This is informally illustrated by the F0 pitch track below in figure 3. Here the all-Low tone utterance, *gbə̀flɛ̀ gbògbò kèklè* 'the solid bread basket of the young man,' is spoken first normally, then emphatically. As one can see, there is an overall falling pitch contour in both cases. However, there is a difference in register: the emphatic sentence is realized with higher tones.

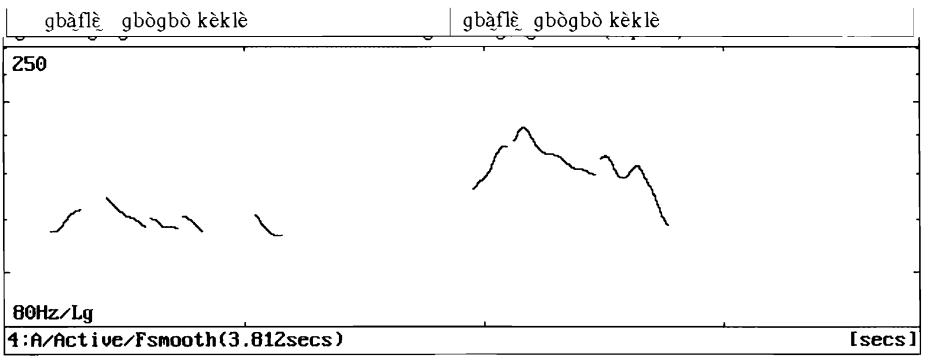

Figure 3: Normal vs. emphatic intonation.

The same holds true for upsweep. As can be seen in Figure 4, the upsweep observed on the left in the non-emphatic version of the utterance *bé bɔ́lí nį́ blú* (every syllable bearing a High tone) 'the goats, their ten mothers' is preserved but at a raised level, in the emphatic version on the right.

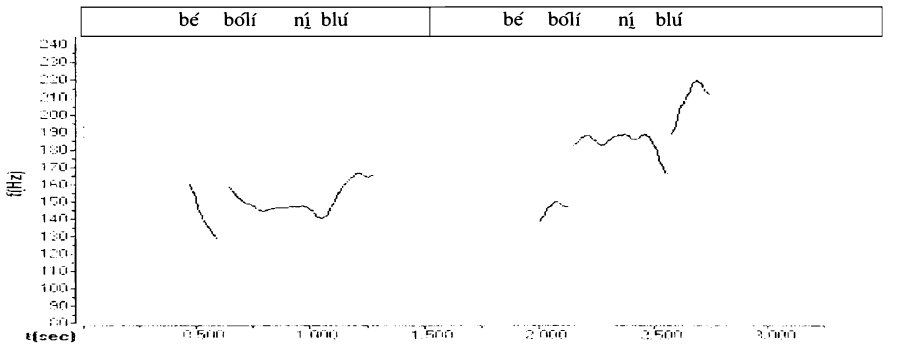

Figure 4: Upsweep in normal and in emphatic intonation.

A final sign that emphasis uses a new, raised register is that syllables following an emphasized word in the same phrase also must have their tone raised.

6. Conclusion

In this paper we have surveyed emphasis marking in several Kwa languages, collecting phonological reflexes of emphasis that go beyond the emphatic particles and raised intonations that are most frequently cited. Among the devices that signal or accompany emphasis are new boundary formation, blocking of phonological rules, and neutralization of phonological or semantic contrasts. We have also seen some signs of interactions with sequence structures, in which a non-emphasized tone in the same phrase will be raised to the same register level as the emphasized tone itself. Finally, this paper has shown that the raising of the register for emphasis co-exists with other intonational phenomena including downdrift and upsweep.

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William R. Leben
Stanford University
email: leben@stanford.edu

Firmin Ahoua
Université de Cocody
email: fahoua2003@yahoo.fr

10

BILABIAL AND LABIO-DENTAL FRICATIVES IN EWE

Ian Maddieson

1. Introduction*

A voiceless labio-dental fricative, /f/, occurs in the phonological inventory of many (roughly 40%) of the world's languages. A voiceless bilabial fricative, /ɸ/, occurs in considerably fewer—in only about 7% (Maddieson 1984). Although close to half of the languages have one or the other of these two segments, the number of languages that have a contrast between them is quite limited. A contrast between the voiced counterparts of these segments, namely /v, β/, is also relatively unusual. To most phoneticians the acoustic difference between these pairs is quite subtle and some expect such subtle contrasts to be avoided. However, based on the separate frequencies of /f/ and /ɸ/ only a small proportion of languages (about 3%) would be expected to have both if their occurrences were quite independent of each other. It is therefore not clear that a contrast between bilabial and labio-dental fricatives is actually avoided in the consonant inventories of languages. In any case, it is interesting to examine the production of these segments in a language with both, as this may be generally instructive about how phonetic contrasts of a more subtle than average degree are realized. Moreover, although the movements of the lips have been quite widely studied in the production of labial stops and nasals (e.g. Fujimura 1961, Lubker & Parris 1969, Sussman et al 1973, Dunn 1993, Smith 1995, Löfqvist & Gracco 2002, Löfqvist 2005), there is much less data on their

* The occasion of a joint field trip to Ghana in 1994 with Russ Schuh enabled further visual data to be collected on the topic of this paper. I would like to thank Russ for the cameraderie that we enjoyed on that trip, as well during the countless miles we covered together on Stone Canyon, the OJ run, in Franklin Canyon, on Casiano, Linda Flora, and many other spots. The articulographic data discussed in this paper were collected at MIT under a protocol approved by the MIT IRB. The assistance of Joseph Perkell, Melanie Mathies, and Joseph Svirsky is gratefully acknowledged. This research was supported in part by an NSF grant.

action in fricatives. West Africa is one area of the world where a contrast between bilabial and labio-dental fricatives occurs and the production of both by the same individuals can therefore be studied. The contrast is particularly well-known from Ewe and some neighboring languages such as Logba (Ladefoged 1964) and Avatime (Schuh 1995), which may have been influenced by Ewe. Issues of interest include how different the movements of both the upper and lower lips are in the two kinds of labial fricatives, whether the two lips interact with each other, if the required positions for the production of these fricatives are achieved by essentially independent movement of the lips or include a major component of activity by the jaw to raise the lower lip, and whether there is any influence of voicing on the articulations.

A further question concerns whether evidence of phonetic "enhancement" can be found in the production of the bilabial/labio-dental fricative contrast. Enhancement theories are of two general types. In one (e.g., Stevens & Keyser 1989), subsidiary phonetic properties are seen as normally co-occurring with primary properties to enhance the effectiveness of those primary properties, as in the occurrence of rounding with non-low back vowels. In the other (e.g., Keating 1984, Padgett & Zygis 2003), enhancement is seen as dependent on the phonological system of a given language, as suggested for voicing categories in obstruents. The occurrence of enhancement in accord with both these types of ideas has been held to occur in the production of labial fricatives. In an observation first published in the *Phonetic Study of West African Language*s (1964), Ladefoged suggested that languages with both labio-dental and bilabial fricatives in their consonant inventory display a different articulation for their labio-dentals from that found in a language which does not contrast them with bilabials. Ladefoged (1990, see also Ladefoged 1993) later elaborated on this point based on video of the well-known Ghanaian linguist Gilbert Ansre, a speaker of the Ewe language as spoken in parts of the Volta Region of Ghana around Kpando. The specific proposal is that the upper lip is actively raised in production of labio-dentals in languages with this contrast. This idea thus falls within the family of proposals suggesting that the structure of a system of phonological contrasts permits some predictions to be made about the articulatory or acoustic realizations of the segments it contains, and in particular that some of these predictions can be explained by the hypothesis that speakers make efforts to enhance the perceptibility of contrasts. An active gesture of upper lip raising would certainly contribute to making the visual recognition of the segmental distinction in question clearer—and the important role played by visual cues in the perception of language has been more clearly recognized in recent years (see, e.g. Massaro 1997). It is less

clear that such a gesture would effectively enhance the acoustic difference between the segments. The other type of enhancement is suggested by Pulleyblank (2003: 731) who asserts that "labiodental fricatives typically involve some protrusion of the lower lip" and that "languages like Ewe...oppose [-round] bilabials to [+round] labiodentals." These ideas can be examined with precise data on the production of bilabial and labio-dental fricatives.

2. Methods and Data

The materials analyzed in this report are electromagnetic articulography records from two speakers, designated M and V, of the Kpando dialect of Ewe. These data were obtained using the MIT EMMA system described by Perkell et al. (1992). Electromagnetic articulography enables the position of specific points on a number of articulators to be tracked over time. Small receiver coils are attached to the articulators of interest using dental adhesive. These receiver coils receive signals generated by three transmitter coils producing alternating fields of magnetic flux at different frequencies. The transmitters are located near the chin, the crown of the head, and the nape of the neck. The relative strength of each different frequency signal at a receiver coil is proportional to the distance of the receiver from the transmitter coil. By triangulation the position of the coil can thus be determined. In this experiment, five receivers were placed on moveable articulators—two on the lips, on the outer surfaces of the upper and lower lip; two on the tongue, one on the front toward the back of the blade and one further back below the velum; and one attached at the base of the lower incisors to indicate movements of the jaw. Two further receivers were placed on the bridge of the nose and the upper incisors to provide fixed reference points on the skull to which the movements of articulators can be related. Although the speaker's head is stabilized by the helmet-like device on which the transmitters are mounted, these fixed reference points enable a correction to be applied in the case of unexpected movement of the head within the flux field. The position of each coil is sampled at a frequency of 312.5 Hz, with location values reported in a two-dimensional sagittal plane with horizontal (x) and vertical (y) vectors. At the same time a digital audio signal is recorded at 10 kHz. Since the EMMA system is quiet the quality of the audio recording is good. For the articulatory signals measurement precision is estimated to be at least on the order of 0.5 mm. The movement signals are quantized in 0.1 mm steps.

Each speaker was prompted from written cues, primarily showing target words in short carrier phrases. The target words were grouped in two sets, the first

designed to investigate labial-velar and simple bilabial and velar stops, and the second to investigate labial fricatives. Within each set the order of repetitions was randomized. The word-list for fricatives included the following quadruplet contrasting voiced and voiceless bilabial and labio-dental fricatives between /e/ vowels:

[efe] **efe** 'nail; debt'
[eve] **eve** 'two'
[eɸe] **eɸe** 'year'
[eβe] **eve** 'Ewe people'

These words were pronounced in the carrier phrase [*ɖo be* ___ *ni mama ni se*] 'Say ___ for grandma to hear'. Data from the pronunciation of these words will be the focus of this report. The intent was to obtain at least 10 repetitions of these and the other words on the list. Because of occasional misreadings, technical problems with the equipment, and data-handling errors, the number of usable repetitions per speaker actually obtained varies between 9 and 12. Using a display of the audio recording obtained simultaneously with the articulatory data, the mid-point of each fricative's acoustic duration was marked (this point being more readily identified than a precise onset or offset time) and an 800 ms long window of data beginning 500 ms before the marked point was downloaded to a separate file for each token. The repetitions of a given word can thus be examined in close time-alignment and average contours for the articulatory movements in the two planes can be calculated.

In addition to the articulographic data, video recordings of lip position have also been consulted. Two sources of this material were available. The first is the recording of Gilbert Ansre used in the preparation of Ladefoged (1990), and generously made available by Peter Ladefoged. The second are video recordings of seventeen speakers that I made in Accra in 1994. In the first video a mirror is placed to the side of the lips and thus simultaneous frontal and lateral views of the lip position are captured. In the second set of video data, separate recordings were made of frontal and lateral views of the lips.

Some of this data has been described in two conference papers (Maddieson 1993, 1995), but none of the articulographic results from the second speaker have previously been published. One reason for this is that the original post-processing of the data from this speaker seems not to have oriented the vertical and horizontal vectors correctly. Based on an examination of two palate traces, obtained at the end of the recording session, it was estimated that it was appropriate to rotate the

axes 20° clockwise. The palate traces are made by running one of the receiver coils, attached to the tip of one of the experimenter's fingers, over the speaker's hard palate. This procedure registers the contour of the palate in the same coordinate space as that in which the articulator positions are shown. The rotation orients the back of the hard palate horizontally, which is its typical orientation in a subject seated upright. This correction has been applied to all results reported below. In the uncorrected data the palate appeared to be sloping steeply upwards, and a falsely exaggerated displacement of the articulators in the horizontal plane was registered.

3. EMMA Results

The averaged movement trajectories of the three coils on the upper lip, lower lip, and lower incisor for the four words cited above are given in figures 1 and 2 for Speakers V and M respectively. The speaker should be pictured as facing to the left. Each panel in these figures represents the mean of the X and Y values of these coils over the 9-12 individual repetitions of the word shown, time-aligned at the center of the acoustic duration of the fricative. Labio-dental fricatives are shown in the left-hand panels of these figures, bilabials on the right. Voiceless fricatives are in the upper panels, voiced ones in the lower panels. For Speaker V, the movement shown covers the time interval from 150 to 750 ms of the 800 window for each token, and for Speaker M, who speaks a little more rapidly, the interval from 200 ms to 750 ms. These points correspond well to the onset and end of the lip movements for production of the consonants in question. Distances on the horizontal and vertical axes are shown in cm on the same scale from an origin at the midpoint of the space enclosed by the transmitter coils. Arrows have been added to help clarify the path of movement of the lips in those words which have substantial movements that do not follow the same trajectory during their upward and downward excursions.

The overall patterns of movement have many similarities for the two speakers despite a certain number of differences. The main trends are the following: The upper lip makes minimal movements in labio-dental fricatives, but shows a consistent downward excursion in bilabials. The lower lip makes a substantial upward movement for all of the fricatives, but the displacement is greater for the labio-dentals than for the bilabials. The jaw makes only a small contribution to the upward movements of the lower lip. Voicing status has little impact on movement patterns — the voiceless and voiced counterparts are quite similar to each other.

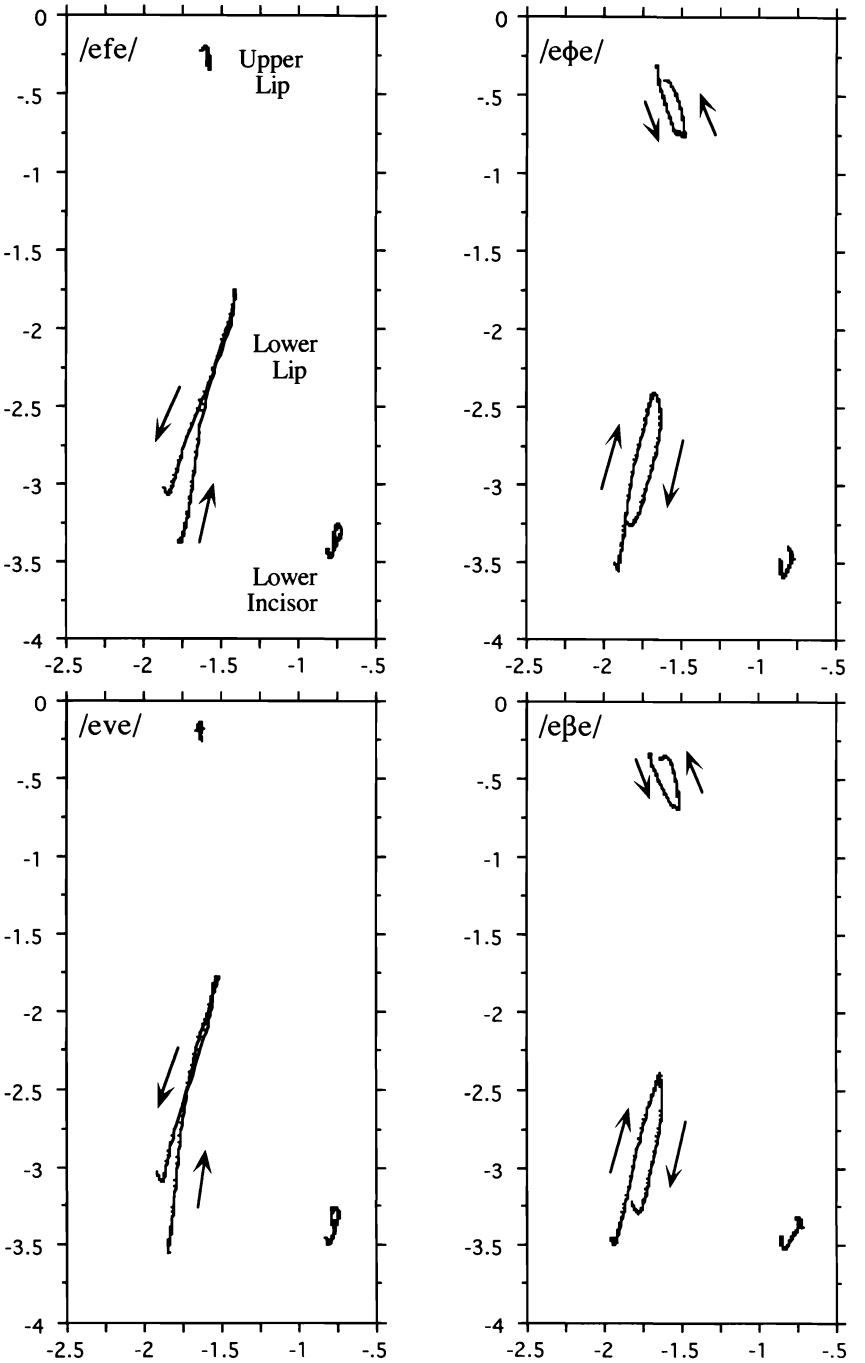

Figure 1. Lip and jaw movement trajectories for Speaker V.

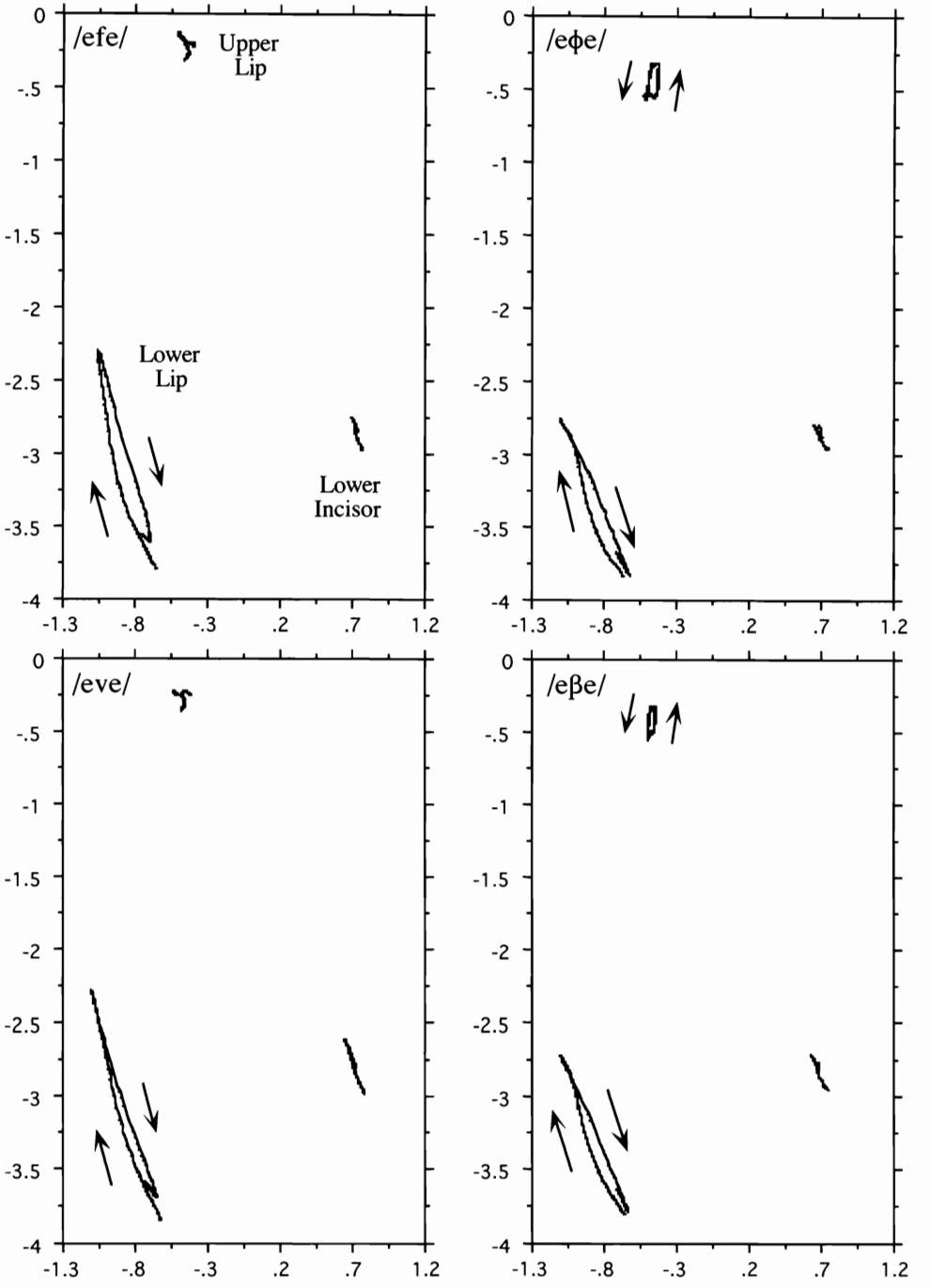

Figure 2. Lip and jaw movement trajectories for Speaker M.

A major difference between the two speakers concerns the angle of the lower lip movements, which are upwards and backwards for Speaker V, but upwards and forwards for Speaker M. The upper lip also moves backwards for Speaker V and forwards for Speaker M in bilabials. Both lips display a backwards looping motion for the bilabials in Speaker V's production, unlike the more linear movement seen for the labio-dentals. There is no parallel difference between bilabials and labio-dentals for Speaker M.

In the next paragraphs, a more detailed look will be taken at individual aspects of the production of these segments, with statistical analysis where this seems appropriate. The maximum elevation, vertical displacement and horizontal positioning of the lower lip, as well as the movements of the jaw and upper lip will all be examined.

The mean values of the peak vertical height of the lower lip (the maximum value of the lower lip coil in the Y dimension measured down from the origin of the coordinate system) for the four fricatives are graphed in Figure 3. The mean difference between bilabials and labio-dentals is about 5.7 mm, with Speaker V showing a larger difference (6.4 mm) than Speaker M (4.7 mm). In a three-way analysis of variance with place, voicing, and speaker as main effects, this difference is statistically significant. There is also a significant difference between the speakers (presumably mainly due to individual physiological differences which *inter alia* affect where the origin of the coordinate system falls) and a significant place/speaker interaction. There is no difference in the lower lip elevation between the voiced and voiceless counterparts.

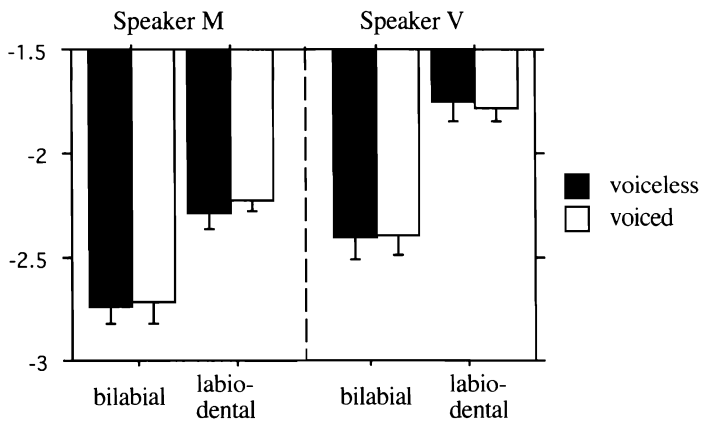

Figure 3. Maximum vertical elevation in cm of the lower lip, by speaker, place and voicing. Error bars are one standard deviation.

The total displacement of the lower lip in the vertical dimension, measured as the difference between the height of the receiver coil at the onset of upward movement in the preceding vowel and its maximum elevation, is also significantly greater for the labio-dental (1.67 cm) than for the bilabial fricatives (1.14 cm). This is not due to a lower starting position for one than for the other, but entirely to a higher ending position. As shown in figure 4, the difference in displacement is slightly greater for Speaker V than for Speaker M, and Speaker V shows a trend for the voiced fricatives to have greater displacement than their voiceless counterparts. However the difference between the speakers is not statistically significant, and there are no significant interactions between place, speaker and voicing.

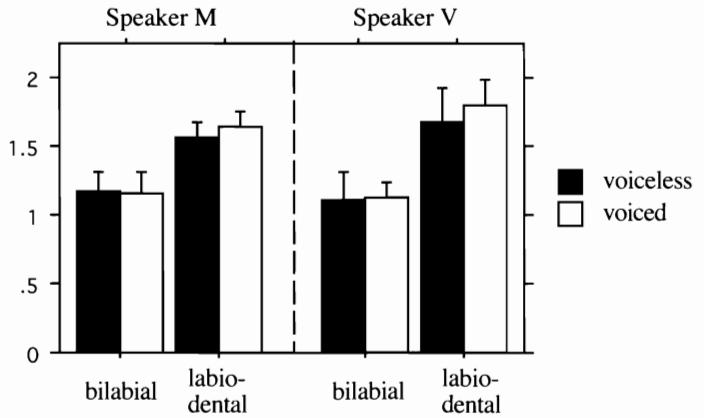

Figure 4. Vertical displacement in cm of the lower lip, by speaker, place and voicing. Error bars are one standard deviation.

In figure 5, the lower lip vertical displacement is broken down into the component attributable to jaw raising (difference in height of the receiver on the lower incisor) and the residual displacement of the lip itself, usually referred to in the literature as its net displacement. The jaw movement on average only accounts for about 17% of the total lip movement, hence its contribution is relatively small. However, there is significantly greater jaw displacement for labio-dental than for bilabial fricatives, so jaw movement is assisting in reaching the higher elevation required for labio-dental constriction. There is also significantly more jaw displacement for voiced than for voiceless fricatives. The pattern, particularly for Speaker M, suggests a weak trading relationship exists between jaw and lip movement associated with the voicing contrast, with the jaw doing a greater proportion of the work to raise the

lip in voiced cases than it does in voiceless one. There are small but non-significant negative correlations between vertical jaw displacement and net displacement of the lower lip across each of Speaker M's bilabial and labio-dental sets of tokens considered separately.

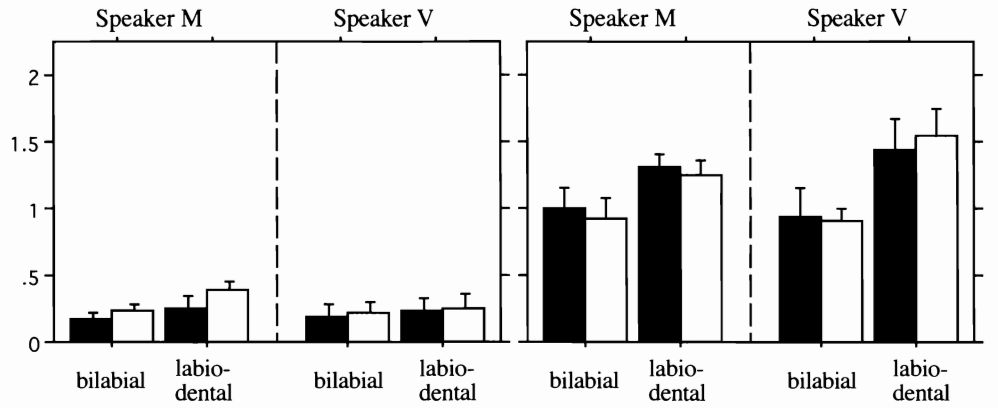

Figure 5. Mean vertical displacement in cm of jaw (left panel) and net displacement of lower lip (right panel), by place, speaker and voicing.

The upper lip shows a noticeable downward movement for bilabials. For Speaker V the mean downward displacement (the difference between the starting height during the preceding vowel and the lowest position reached during the fricative) is 5.2 mm in /ɸ/ and 3.8 mm in /β/; for Speaker M it is 2.7 mm in /ɸ/ and 2.5 mm in /β/. This movement is apparently arrested by the upward movement of the lower lip, more noticeably so for speaker M than for speaker V. The upper lip seems to be pushed back up until the lower lip begins to lower, at which point the upper lip resumes its downward movement for a while. This pattern results in a double negative peak in the upper lip movement. Individual tokens vary as to whether the first or second of these points is lower, but it is more often the first for Speaker M and the second for Speaker V.

Averaged vertical movement traces over time for the upper and lower lip coils for the bilabial fricatives produced by Speaker M are shown in figure 6. Values for 10 repetitions of /eɸe/ and for 9 repetitions of /eβe/ were aligned at the mid-point of the frication duration (500 ms) and the mean calculated. This procedure naturally smoothes the curves, and obscures token-to-token variation, but retains any robust features of the pattern. Since the displacement of the upper lip is considerably smaller than that of the lower lip, different scales are used in this

figure for the upper and lower lip traces, with the magnitude of the upper lip movement (left-hand scale) shown four times greater than that of the lower lip (right-hand scale). Both scales show distances in cm.

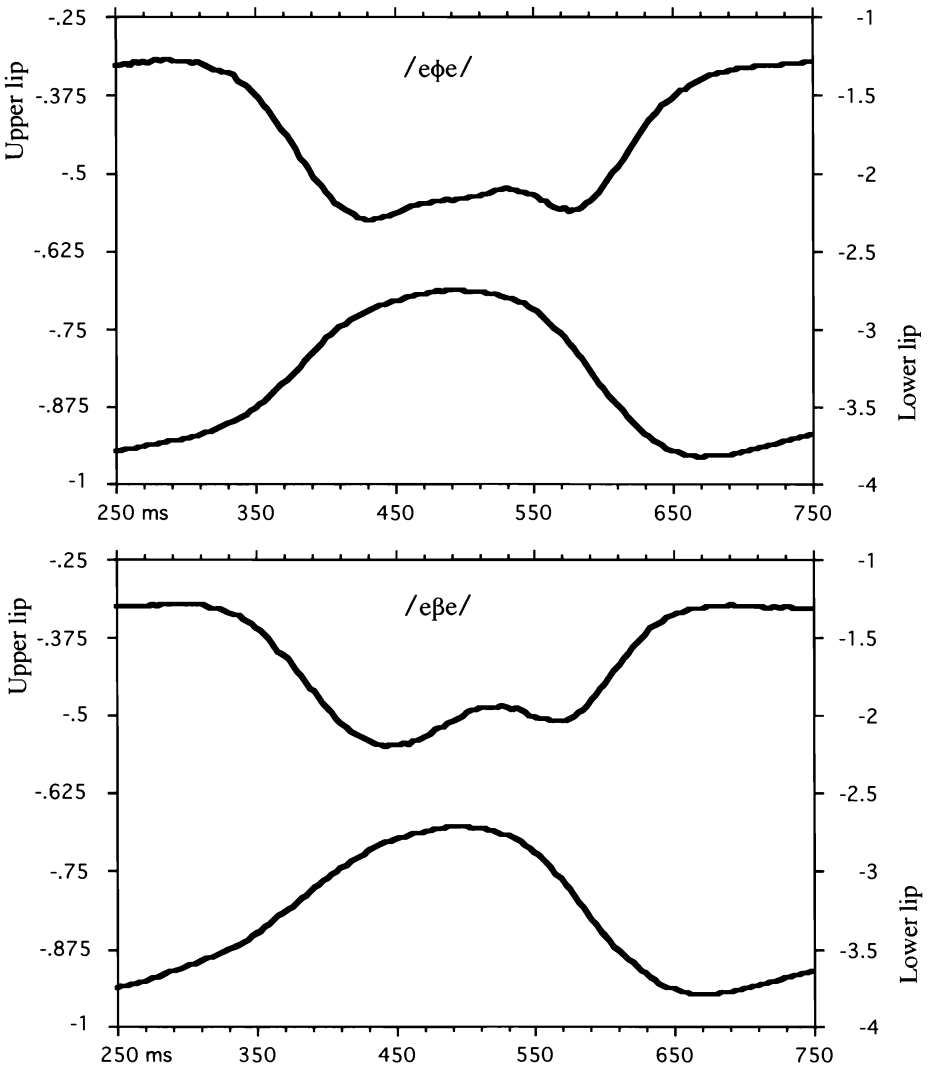

Figure 6. Averaged upper and lower lip vertical movements over time in bilabial fricatives of Speaker M.

Some aspects of the movements shown in these averaged traces are a little puzzling. The upper lip continues to move upwards for a short while *after* the point of maximum elevation of the lower lip, then lowers a little before finally raising to the position for the vowel. Examination of individual tokens makes clear that this is not an artifact of the averaging procedure, but is the typical pattern. This issue will be revisited in the discussion section of the paper.

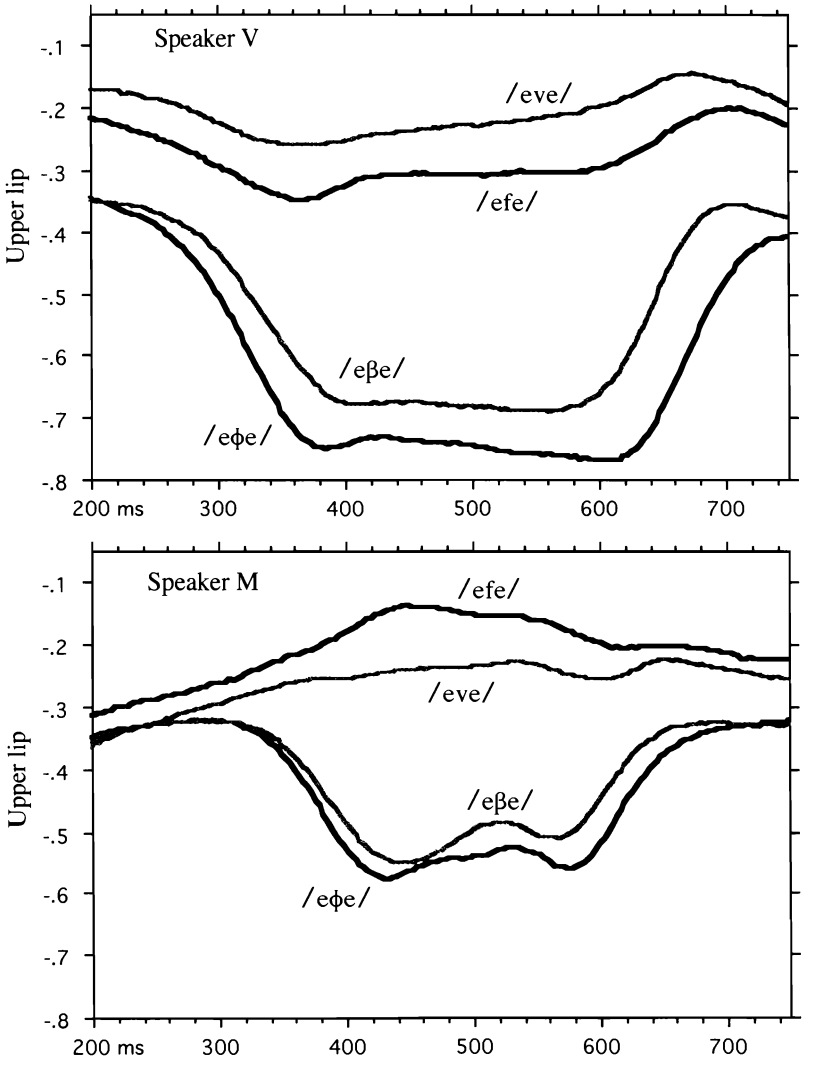

Figure 7. Averaged upper lip vertical movement traces over time for bilabial and labio-dental fricatives, by speaker.

Upper lip movement in the labio-dental fricatives is of much smaller magnitude than for the bilabials and is inconsistent in direction between the two speakers. The averaged upper lip vertical movement traces for all four fricatives are compared in figure 7 for the two speakers separately. Both speakers have fairly marked downward movements during the bilabial fricatives, which appears to be checked by the upward movement of the lower lip, as discussed above. In the labio-dental fricatives, Speaker V shows small downward movements, and Speaker M small upward movements. In all cases the voiceless member of the fricative pair displays a slightly larger excursion than the voiced member. Figure 7 also demonstrates that the duration of the upper lip's lowering movement in bilabials is clearly shorter in the voiced fricative than in the voiced.

The most extreme location in the horizontal dimension for the lower lip for all the fricatives is shown in Figure 8. Recall that for Speaker V the lower lip movements are backward, whereas for Speaker M the movements are forward, so that this figure shows the most backward position reached by the lower lip for Speaker V, and the most forward position reached by the lower lip for Speaker M. For Speaker V there is a significant difference between the places in the culminating horizontal position of the lower lip, with the bilabial fricatives having a further forward position. There is a minimal difference in the same direction between the fricatives for Speaker M. Voicing has no significant effect on the horizontal location.

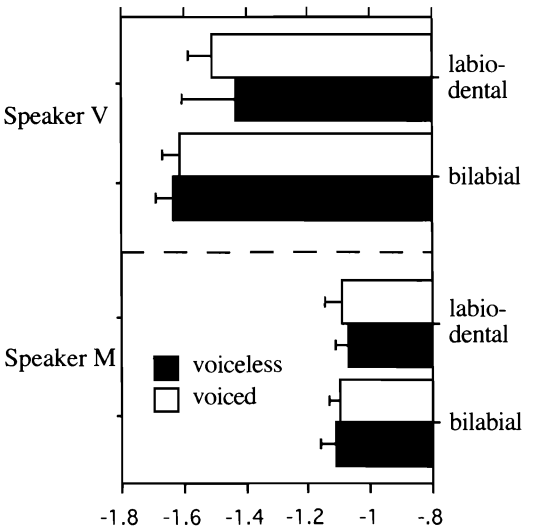

Figure 8. Culminating horizontal position of the lower lip by place, speaker and voicing.

4. Discussion

In the Ewe EMMA data there are, as expected, obvious differences in upper and lower lip movements related to the place of articulation. No differences in movement extent (lower lip height, frontness or displacement) were found related to the voicing distinction between the fricative pairs. This agrees with the trend in studies of bilabial stops, where the articulatory magnitudes for voiced and voiceless counterparts have been found not to show any reliable differences either in nonsense utterances (e.g. Smith 1995, Löfqvist & Gracco 1997) or in real words from several languages (e.g. Maddieson 1993, Löfqvist 2005). However, there is a difference between the voiced and voiceless fricatives in the duration of the articulation, with the voiced counterparts being shorter than the voiceless. The shorter acoustic frication duration of the voiced members of the pairs is therefore due, or due at least in part, to a shorter duration of the movement creating the fricative constriction, rather than being (solely) due to aerodynamic factors, such as the effect of reduced transglottal air-flow decreasing air-flow past the fricative constriction, and hence reducing the duration of audible frication.

It was suggested above that bilabial fricatives have sufficient contact between the lips that the upper lip is displaced upwards by the lower. This follows the interpretation offered by Löfqvist & Gracco (1997) of similar movements observed in the production of bilabial stops. These authors further argue that this pattern provides evidence that the target position for the bilabial closure is above the maximal height reached by the lower lip, that is, there is a "virtual target" for the lower lip that is located above the position of the lower lip. This suggestion simplifies the assumptions required concerning the control strategy for achieving closure, since factors like the starting lip configuration can be ignored. The finding that there is a similar kind of lip interaction in the production of Ewe bilabial fricatives casts some doubt on the strength of this argument. Since producing a fricative requires a rather precise degree of constriction short of closure, it seems unlikely that the lower lip target is above the upper lip position, since nothing would impede continuing upward movement of the lower lip to form an inappropriate complete closure. It may therefore be the case that the upward movement of the upper lip during the middle portion of the bilabial fricatives is an active gesture that is necessary to maintain the appropriate lip aperture for the fricative. This hypothesis is also more consistent with the anomaly in timing between the lower and upper lip movements noted in connection with figures 6 and 7 above. If the upper lip is actively raised, then there is no reason to expect this movement to coincide with the maximum elevation of the lower lip. Löfqvist

(2005) does not include any discussion of lip interaction in fricatives in a paper primarily devoted to examining production of long and short bilabial stops and nasals, but this is probably because there was none to be observed. His data does include tokens of the Japanese loanwords romanized as *tofuru* ('the TOEFL exam') and *daffuru* ('duffle') containing the allophone of /h/ which occurs before the vowel /ɯ/ (romanized as <u>). This allophone is usually described as a voiceless bilabial fricative, and is so described by Löfqvist, but it is not comparable to the truly fricative segment /ɸ/ in Ewe. It is produced by many Japanese speakers as an approximant. For example, Uehara & Kiyose (1974: 2) note that it "should be pronounced in the same way as the "wh" in "who" with a noticeable spreading of the lips." For three of the four speakers Löfqvist studied there is almost no movement at all for the upper lip in the *daffuru* tokens. In *tofuru* two of the speakers show a backward and lowering movement of the upper lip which is almost certainly associated with the unrounding gesture in the transition from /o/ to /ɯ/ rather than with the articulation of the intervening consonant. In no case is there a lowering then raising of the upper lip of comparable magnitude to that seen in the bilabial fricatives of the Ewe speakers. Nor can such movements be seen in the optically tracked movement traces published by Gomi et al (2002, Figure 4). Of course, it should be remembered that the movements tracked with the EMMA system are those of the receiver coils. In the case of the lips, these are attached at the outer surfaces of the lips near the vermilion border. Because their movements may include "rotational" components of the outer lip surfaces which are to some degree independent of the degree of proximity of the more inward surfaces where labial contact occurs, some caution must always be exercised in interpreting what these movements mean.

As for the suggestion that labial fricatives are subject to phonetic "enhancement", the present data indicate that both proposed types of enhancement are absent. As figure 7 showed, the upper lip movements are minimal in /f/ and /v/, and in conflicting directions for the two speakers. The video recordings of multiple speakers referred to earlier showed no visible distinction between the position of the upper lip during consonants which involve no labial activity such as the velar stops /k/ and /g/ and that in the labio-dental fricatives. There is absolutely no evidence that labio-dental fricatives are habitually produced with rounding or protrusion, as suggested by Pulleyblank (2003). The most forward position of the lower lip in labio-dentals is behind that in bilabials for both speakers.

The present data has shown that the articulatory differences between bilabial and labio-dental fricatives involve clearly distinct configurations and control strategies. In bilabials both lips are active, and the upper lip may be playing a

crucial role in maintaining an appropriate constriction degree. In labio-dentals the upper lip is essentially uninvolved, and the jaw is recruited to a greater degree to assist the lower lip in reaching a more extreme position. From a speaker's point of view, then, the differences between these segments are not especially subtle. It may well be the case that, despite the fact that any difference in the spectrum of the fricative noise between bilabial and labio-dental fricatives is subtle, the complex of cues available from formant transitions (particularly a lower F1 adjoining bilabials) and the visual distinctiveness of the lip configurations make this difference not so difficult for listeners to recognize after all.

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Ian Maddieson
University of California, Berkeley
e-mail: ianm@berkeley.edu

11

CHANGES IN FOLKTALE SOCIALIZATION IN AN URBAN FULBE COMMUNITY

Leslie C. Moore

Thirty years ago, linguist, folklorist, and missionary Dominique Noye (1971) argued that the oral traditions of the Fulbe of Maroua, Cameroon—folktales, riddles, and tongue twisters—were a significant force for the maintenance of their conservative dialect of Fulfulde (known variously throughout West Africa as Fulani, Fula, Peul, Pulaar, etc.). He also predicted their imminent demise under the pressure of schooling, mass media, and urbanization. I found that the folktale tradition endures but that folktale socialization patterns are changing.

Traditionally, a Fulbe child learned folktales (*taali*) by observing performances by experts, typically older women of the family. A child would observe multiple tellings of the same tale during her childhood before ever attempting her own telling in public. By public, I mean an informal nighttime gathering (*hiirde*) of women and children in a family compound. In the past decade or so, a new way of teaching and learning folktales has become increasingly common in Maroua. This new socialization routine closely resembles those that dominate public and Koranic school interactions, a pattern I call Guided Repetition (Moore 2004).

Guided Repetition is a social practice for teaching and learning new skills that involve (i) modeling by an expert, (ii) imitation of that model by a novice, followed by (iii) rehearsal and (iv) performance by the novice. In each of these four phases, the expert supervises the novice and may assist, evaluate, and correct her efforts. The goal is that the novice masters the new skill.

In most instances in Koranic and public schooling, Modeling and Imitation are so intertwined on a turn-by-turn basis as to constitute one phase, as can be seen in transcripts 1 and 2. Video recordings were transcribed using the following conventions:

.	falling intonation contour
,	falling-rising intonation contour
?	rising intonation contour
°	talk it precedes is low in volume
:	lengthening of immediately preceding sound
-	sudden cut-off of current sound
=	no interval between the end of one turn and the start of the next
> <	talk within produced more rapidly
(1.0)	silence, marked in seconds and tenths of seconds
[	point at which current talk is overlapped by talk by another
( )	transcriber is uncertain about hearing of material within
(( ))	paralinguistic comments
CAPS	increased or very loud volume
bold italics	some form of emphasis (changes in pitch and/or amplitude)

Transcript 1: Modeling and imitation in Koranic school (T = Teacher, S = Student)

1	T:	Alheekum takasuru ((following with pen))
2	S:	Alheekum takafuru
3	T:	***Alheekum takasuru*** ((following with pen))
4	S:	Alheekum taka(s/f)uru
5	T:	Hatta zurtu min ma qa'bira ((following with pen))
6	S:	Hatta zurtu min ma ka'bira
7	T:	Kalla sawfa tala muuna ((following with pen))
8	S:	Kalla sawfa tala muuna

Transcript 2: Modeling and Imitation in public school (T = Teacher, C = Class)

1	T:	BONJOUR PAPA. REPETEZ?
2	C:	BONJOUR PAPA.
3	T:	BONJOUR PAPA.
4	C:	BONJOUR PAPA.
5	T:	BONJOUR MON FILS.
6		((Silence, 1.0))

7 T: ALLEZ-Y?

8 C: BONJOUR MON FILS

9 T: Très bien. ENCORE?

Guided Repetition is emerging as a new practice for socializing children into the telling of folktales. In addition to telling folktales to an audience of children and women, expert tellers are explicitly teaching folktales to children. For their part, children, are assuming more vocal, active roles in the learning and telling of folktales at a much earlier age than in traditional folktale socialization. The same asymmetric, alternating interactional structure that is characteristic of Koranic and French language socialization has diffused into the home setting, as Transcript 3 illustrates. The expert models the folktale segment by segment, and the novice reproduces each segment after the expert, subject to assessment and correction by the expert. Here, Goggo Indu (GI) proposes to Muniira (M) that Goggo Indu will model a folktale (line 1) and Muniira will "follow" (*tokkaago*) (line 2), i.e., repeat after her. Muniira agrees, and Goggo Indu launches the tale of The Little Gazelle (line 4). When Muniira's cousin Ladiifa (L) joins in, Goggo Indu questions her vocal participation.

Transcript 3: Modeling-Imitation of a Folktale

1 GI: Haa mi taala kadi
I'll tell a folktale then

2 Tokko ɗa an boo
As for you, you follow

3 M: Iyo,
Okay

4 GI: Lele ngel [heɓi] nyebbe laamɗo.
This little gazelle found the beans of the chief

5 M: [nm:::.]
6 [Iyo:]
Okay

7	L:	[A'a?] What?
8	GI:	***Nbii-ɗa an boo?*** You, you say it too?
9	M:	Iyo. Lele [ngel] Okay. This gazelle
10	L:	[Lele] ngel This gazelle
11	GI:	A munya le, You wait
12	M:	I- Lele ngel O- This little gazelle
13	GI:	Heɓi nyebbe laamɗo. Found the beans of the chief
14	M	Leeɓi (yebbe) laamɗo. Butters ( ) of the chief
15	All:	((laughter))
16	GI:	Kadi boo a anndaa koo wolwugo. Again you don't even know how to speak
17		An ekkitinii na, You, teach
18	F:	((slowly)) Heɓti nyebbe laamɗo. Found again the beans of the chief
19	GA:	Nyebbe boo a anndaa na? Even beans, you don't know?
20	GI:	Heɓi nyebbe laamɗo found the beans of the chief

21 M & L: Heɓti nyebbe laamɗo
found the beans of the chief

22 GI: ɗon 'yakka, ɗon 'yakka,
was munching, was munching

23 M & L: ɗon 'yakka, ɗon 'yakka,
was munching, was munching

In lines 7-10, there is some confusion as to who is repeating after Goggo Indu: Muniira, Ladiifa, or both. Goggo Indu tells Ladiifa to wait (line 11), which the girl does, but then she joins in again 10 lines later (line 21). In Koranic school, Modeling-Imitation is a focused one-on-one encounter between expert and novice, while in public school this phase is usually accomplished chorally. Like all the other expert adult folktale tellers in my study, Goggo Indu had attended Koranic school but not public school. And like the other experts, she preferred to lead (*tokkingo*) only one child at a time through a folktale. The children, on the other hand, often engaged in these interactions chorally, both with experts and amongst themselves.

Muniira then reproduces (for the second time) the first part of the first segment modeled by Goggo Indu (line 12). Goggo Indu re-models the second part (line 13), and Muniira makes an unsuccessful attempt to repeat after her (line 14). There is general laughter, and Goggo Indu teases Muniira (line 16), chiding her for her lack of competence in speaking. Goggo Indu then invites Muniira's teenage sister Fadi to take over teaching the folktale (line 17). Enunciating carefully, Fadi models the second part, changing the verb slightly from *heɓi* ('found') to the now more frequently used *heɓti* ('found again') (line 18). The girls' visiting great-aunt asks Muniira if she does not know beans (line 19), and Goggo Indu resumes the role of teacher, re-modeling the second part of the first segment (line 20). Muniira and Ladiifa both repeat after her (reproducing, however, the verb form modeled by Fadi).

In this excerpt, Muniira's failure to reproduce Goggo Indu's model accurately was publicly constructed by her aunt and great-aunt as a lack of linguistic and sociocultural competence. Her lack of competence is, however, accommodated by her aunt and her sister. In the new form of folktale socialization, experts simplified the task of learning for the child by breaking down the folktale into short segments for the child to repeat. When a child had trouble reproducing the model, experts repeated the segment, often enunciating it more slowly and

clearly, and/or breaking it down into even smaller segments. In some families, experts further simplified the task by using less complex vocabulary and morphosyntax in these teaching/learning routines than they did when performing a folktale.

Earlier in the session, Goggo Indu elicited from Muniira performance of a folktale that they had "told together" (Modeling-Imitation) on a previous evening.

Transcript 4: Performance of a Folktale

1	GI:	Taala le kadi, jey taalu-noo-ɗen-ngol Tell a tale then, the one we told
2	L:	Jey jiire The one about squirrel
3	M:	Taalel taalel Little tale little tale
4		gombel gombel little millet stalk little millet stalk
5		tuggere ngel little millet stalk stump
6		Jiire ***oo*** (.) ɓe ɗon dilla This squirrel, they were leaving for
7		hiirde the evening get-together
8		Sui kadi mm mm And then mm mm
9		o yecci o yecci o yecci he told he told he told
10		o yecci [o yecci- he told he told
11	GI:	[***O wi' yoo***, nbi'at-a [o ***yecci*** yoo He said, you said he told that
12	M:	[O wi' yoo o wi' yoo He said that he said that
13		ndill-en hiirde let's go to the evening get-together

14		O yecci toy keɓɓet-en He told where do we find
15		haa toy keɓɓet-en gaaraaji? where at do we find thread?
16		O yecci haa Maruwa ɗo ɗon He told right here in Maroua
17	GI:	Haa Maruwa nii? In Maroua like that?
18	D:	((laughs))
19	GI:	A'a::. [Naa haa Maruwa No. Not in Maroua
20	D:	[Taal Ladiifa Tell a tale Ladiifa
21	GI:	ɓe kiiroy (.) They who passed the evening
22		ɓe tawi maayo waddi they found the river swollen

Muniira performs the opening formula (lines 3-5) and the setting of the scene (line 6) without difficulty. She has trouble, however, with reporting speech (line 9), repeating the same phrase five times (lines 9 and 10). Goggo Indu interrupts to correct Muniira, modeling the correct verb of saying (*wi'go*) and telling her what she said that was incorrect (line 11). I have translated *o yecci* as 'he told', but I might have translated it as 'he was like', for this use of the verb *yeccugo* ('to tell') is common among Maroua Fulbe children (and non-native speakers of Fulfulde) and abhorred by many adult Fulbe. Muniira twice repeats the phrase modeled by Goggo Indu (line 12) and resumes her telling. One line later, however, she uses *yeccugo* again to introduce reported speech (line 14), and again in line 16.

Goggo Indu does not correct the linguistic error. Rather, she responds to Muniira's violation of a convention of the genre. One characteristic that distinguishes folktales (*taali*) from other narrative genres among the Fulbe is that they take place in an imaginary domain. *Gecci* (accounts, legends, traditions of the Prophet), in contrast, are about events that actually took place, involving real places and people (Baumgardt & Addi 2000). Muniira blends the two genres by

naming Maroua in her telling of the folktale (line 16), and Goggo Indu questions and corrects her on this point (lines 17 and 19).

Several adults complained of children's penchant for "mixing" (*jiilgo*) folktales. There were three types of mixing that Fulbe adults found objectionable: (i) the merging of two or more folktales, (ii) the insertion of modern elements into folktales (e.g., cars, policemen, restaurants), and (iii) the fusing of folktales with real events. Several parents described these latter two types (which often entailed the use of French words) as *pewe* ('lies'). Adults labeled tellings with any type of mixing as inauthentic (*kilaama*).

In Maroua, a linguistically and culturally heterogeneous urban setting, many Fulbe are concerned that their children are not learning to speak *Fulfulde laamnde* ('pure, clear Fulfulde') and that they are ignorant of many Fulbe traditions, including folktales. These concerns are not unfounded. Fulfulde is the lingua franca in northern Cameroon. As such, it is undergoing significant simplification of its phonology, morphology, syntax, lexicon, and pragmatics (Fagerli 1997, Métangmo-Tatou 1999, Noss 1979). The Diamare dialect spoken by Maroua Fulbe is conservative in comparison to the dialects spoken further south. Many younger Fulbe in Maroua, however, do not speak this *Fulfulde laamnde* but rather *Fulfulde d'elemre* ('Fulfulde light'). Participants attributed this to exposure to the Fulfulde spoken by non-natives (*Bilkiire*) and to French through government schooling and mass media. As the two transcripts show, Guided Repetition folktale socialization provided opportunities for adults to negatively assess and correct children's less than "pure" Fulfulde. Such opportunities were not always taken, however, nor did corrections appear to have a lasting effect on children's language use.

As for the oral traditions, it is not clear if they are in decline. Many of the young Fulbe in my study, carried out in 1999 and 2000-2001, knew several folktales and identified one or more expert tellers from whom they learned. When asked if folktales were told in their household, however, many adults said that folktales were told only in villages. Older womenfolk expressed concern and regret that children were not learning folktales. Most children, adults explained, were more interested in television and soccer, or they were too busy with or too tired from their Koranic and/or public school studies.

Fulbe participation in both types of schooling has increased significantly in recent years. Over the past four decades, Koranic schools have expanded rapidly as the education of girls has become more widely accepted and children of both genders pursue their studies further (Santerre 1973, Seignobos & Nassourou 2000). Fulbe participation in government schooling began to rise in the mid-

1980s (when the Fulbe president of Cameroon left office and was replaced by a Christian from the south) and an increasing number of Fulbe children participate in both types of schooling (Iyébi-Mandjek 2000, Tourneux & Iyébi-Mandjek 1994). Consequently, they have less time for recreation. Thursday evenings, when children did not attend Koranic school, were for many families the only occasions for *hiirde*. Even then, television often won out over folktales.

Judging by participants' retrospective self-reports and the absence of any mention in the extensive work on Fulbe folktales in Cameroon by Baumgardt (1988, 1994), Baumgardt & Addi (2000), Eguchi (1974, 1978, 1980, 1982, 1984, 1993, 1994), and Noye (1971, 1976, 1982), Guided Repetition has seeped into the folktale socialization over the last 10 to 15 years. Why now? There are two likely factors: perceived peril to the oral tradition, and shifting expectations regarding the role of younger children in language centered activities.

Guided Repetition is well suited to teaching a fixed body of knowledge (cf., Wagner 1983). Moreover, it is a practice with which nearly all Maroua Fulbe are well acquainted through Koranic schooling. Aware that children today are not immersed in folktales as in the past, Fulbe women may be using a familiar and highly effective socialization practice from one genre (Koranic recitation) to teach another genre they perceive as being neglected and distorted.

The emergence of this new model of folktale socialization is contemporaneous with increased Fulbe participation in Koranic and public schooling, and Guided Repetition dominates in both institutions. Its use in the home setting may reflect changing beliefs among adults and children about how children best learn oral texts and the point at which they may appropriately assume the role of teller. In Guided Repetition interactions with adults and with their peers, young children actively claim tellership (Ochs & Capps 2001) in an activity in which formerly they played a more passive role as recipient until puberty. This precocious tellership is highly scaffolded by more expert tellers, who encourage children to co-tell folktales before they have learned them by observing multiple expert performances.

Increasingly, children learn folktales from other children, and they often use Guided Repetition amongst themselves, as Transcript 5 shows. Here, Hajja teaches her cousins Faariku and Adiilu a story she calls a folktale (*taalol*). This excerpt of Hajja's tale contains some features that are typical of those told by younger children. She mixes in elements of modernity (*mota* in lines 5, 6, and 7) and she does not follow conservative norms of noun class marking, referring to Older Sister with the neutral pronoun *d'um* rather than the third person singular pronoun *mo* (line 6).

Transcript 5: Peer Modeling-Imitation of a Folktale

Hajja:	O metti non, He got angry like that
F & A:	O metti non, He got angry like that
H:	O wi' ush ush ush He said ush ush ush
F & A:	O wi' ush ush ush He said ush ush ush
H:	Adda kam mota- As for Older Sister the car Adda kam mota yaaɓi ɗum. Older Sister the car ran over her.
F & A:	Adda kam mota yaa i um. Older Sister the car ran over her.
H:	Sui, Finished
F & A:	Sui, Finished
H:	Kadi. Then.
F & A:	Kadi. Then.

Child-child folktale socialization often took place during daylight hours, a violation of the traditional restriction that folktales be told only at night. Several older children told me that they had taught and learned folktales at Koranic school when the mallum was not present. Such sites of clandestine peer socialization may be where the diffusion of Guided Repetition into the folktale domain began; they are certainly sites where the transfer is reinforced.

Contrary to Noye's dire prediction, the Fulbe of Maroua continue to teach and tell folktales to their children. Increased participation in schooling may pose a threat to oral traditions by filling children's days and minds. Yet school patterns of language socialization have been adopted and adapted by children and adults for the learning and teaching of folktales. By expanding their repertoire of language socialization practices and applying practices from one domain to another, one genre to another, Maroua Fulbe have transformed and sustained the folktale tradition.

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Leslie C. Moore
University of California, Santa Cruz
email: lesmoore@ucsc.edu

12

COMPARATIVE CHADIC REVISITED

Paul Newman

The year 2006 marks the 65th birthday of Russell Schuh, a very well-liked and much admired scholar who has established himself as one of the world's leading Chadicists. The year also marks the fortieth anniversary of the publication of Newman and Ma's "Comparative Chadic" (1966), a paper that, as it turned out, played an important role in the development of Chadic linguistics. And looking at milestones, this is the seventieth anniversary of Lukas's seminal paper (1936), which can be said to mark the true beginning of Chadic studies. It thus seems appropriate to use this occasion to step back and see where we stand as far as our knowledge of Chadic is concerned (see Schuh (2003) for a concise overview of the family, and Pawlak (1994) for a fuller study of comparative morpho-syntax). The question is, what do we know with some degree of certainty and what is it that we still do not know?

We certainly ought to understand more about Chadic than we did forty years ago for no other reason than because of the impressive quantity of scholarly research on Chadic since that time. Excluding Hausa—which, strictly speaking one should not since it has always played a major role in our understanding of the family—the scholarly literature contains over 1,000 publications on Chadic. (For a thorough list as of a decade ago, see Newman 1996.) Of these publications, only 10% were published in the century and a half up to 1966 whereas the other 90% were published between then and the present. These modern-day publications include descriptive studies of individual Chadic languages, e.g., Schuh's (1998) comprehensive grammar of Miya, comparative works, e.g., his insightful analysis of Chadic determiners (Schuh 1983), and lexical reconstructions, e.g., his careful treatment of West Chadic verbs (Schuh 1977).

My intention here is to provide a personal assessment of the current situation in comparative Chadic drawing on my years of experience in this field. Hopefully

most of what I say can be considered to be fair and reliable, although naturally not everyone will agree fully with everything that I have to say. The presentation will be in the form of plainspoken, straightforward statements, sometimes with illustrative examples, but without the kind of extensive supporting evidence that would be required if the goal were to "prove" that all of the claims were valid. Some of the statements are presented as "facts". Most (or at least many) of these are generally accepted by almost all Chadicists. Others of these "factual" statements relate either to matters that are less well known or where I personally am prepared to make a strong claim even though other scholars possibly hold alternative views. Where factual statements are not possible, I have either offered hypotheses requiring verification or refutation or else have simply posed questions, i.e., admitted that we are dealing with an aspect of Chadic linguistics about which we as yet know very little.

1. Classification

1.1. Chadic is a valid family, i.e., all (± 130–150) Chadic languages are genetically closer to one another than they are to any language outside of Chadic. Chadic is thus unlike Cushitic, which in its earlier broader conception included groups like "West Cushitic" (= Omotic) and Beja, some of which various scholars now view as independent Afroasiatic families rather than as branches within Cushitic (see Hetzron 1980, for example).

1.2. Chadic is a member of the Afroasiatic (AA) phylum. Whatever doubts may have existed about this even into the 1980s (see Newman 1980 and the review by Cohen 1984), the relationship can now be accepted as fact. (By fact I mean as certain as the inclusion of Iranian, for example, in Indo-European.)

1.3. Where Chadic fits into the AA tree, on the other hand, remains unascertained. Two reasonable hypothesis stand out, although there are others that could be explored. The first is that Chadic is a very early offshoot from AA, either the earliest (if Omotic is not the first—either because it is not AA or because it properly belongs within Cushitic) or the second offshoot after Omotic. The other is that Chadic forms a group with Berber, a relationship that is not immediately evident because of the enormous secondary influence of Semitic on Berber and because of the direct and areal influences of sub-Saharan African languages on Chadic extending over millennia. This latter alternative is my own hunch, but at present that is all it is, namely, a hunch.

1.4. The best starting point for Chadic internal classification is Newman (1990), which divides Chadic into four major branches: West, Biu-Mandara (= Central), East, and Masa.

1.4.1. The Masa group, which consists of a small number of very closely related languages, is most likely an independent fourth branch of the family. The evidence for including it within Biu-Mandara, as has been suggested by a number of scholars, is unconvincing.

1.4.2. The West and East branches are coherent groups. Biu-Mandara (Central Chadic), by contrast, is much more heterogeneous, the inclusion of Kotoko, and the subgrouping position of Gidar being particularly problematic.

1.4.3. The basic division of the West branch into subbranch A (which includes Hausa) and subbranch B (which includes Bade) is solid. The main subclassication question that needs to be addressed is the position of the Zaar (= "South Bauchi") language group. Although these languages have been classified in subbranch B, and at one time were thought to have a particularly close relationship to the Warji ("North Bauchi") group, they have features that look very A-like. Thus, the Zaar languages possibly need to be extracted from West-B and either placed within West-A, coordinate with the other West-A groups taken as a whole, or else be treated as a third subbranch (West-C) within West Chadic.

1.4.4. Subbranch A of West Chadic has been classified internally as containing four separate groups: Hausa, Angas, Bole, and Ron. The subgrouping relationship of these groups has not been delineated. The hypothesis that strikes me as most likely is that the first cut is Hausa-Angas-Bole vs. Ron, and that the next grouping combines Hausa-Angas as opposed to Bole.

2. Phonology

2.1. Proto-Chadic (PC) had a rich consonant system with 3 phonation types (voiceless, voiced, glottalized) and at least three, and probably four, distinctive positions of articulation, namely labial, alveolar, velar, and possibly palatal. In many languages (e.g., Hausa) the palatals constitute partially conditioned variants of corresponding alveolars (or velars in the case of some languages) as well as being contrastive phonemes in their own right. This was possibly the case in PC as well. PC probably also made use of palatalization (e.g., k^{y}) and labialization (e.g., k^{w}) as secondary articulations.

The following table presents common Chadic consonants found throughout the family (ignoring secondary palatalization and labialization). This inventory can serve as a reasonable starting point for reconstructing the PC consonant

system. (Comments, both about what is included and what is not, follow the table.)

Table 1: Common Chadic consonants

p	t	č	k
b	d	j	g
ɓ	ɗ	ɗʸ	gˀ/ƙ
	ts		
	dz		
f	s	š	x
v	z		ɣ
	ɬ		
m	n	(ɲ)	ŋ
	r		
	l (= [ɮ] ?)		
w		y	

2.1.1. In addition to a full set of stops and fricatives, PC probably had alveolar affricates /ts/ and /dz/, and a voiceless lateral fricative /ɬ/.

2.1.2. We do not know whether PC distinguished bilabial stops from fricatives, i.e., /p/ from /f/ and /b/ from /v/. Some languages, e.g., Tera, have all four, whereas others, e.g., Hausa, have only two, namely, a voiceless labial, with variant phonetic manifestations, and /b/. My guess is that PC had more than just two, i.e., that it either had all four (/p, f, b, v/) or at least three (/p, b, v/).

2.1.3. PC probably had a full set of nasals (/m, n, (ɲ), ŋ/) matching the stops and fricatives. These nasals would have only functioned consonantally and not as syllabic nasals.

2.1.4. Whether PC had a set of prenasalized consonants (/mb, nd, nj, ŋg/) is uncertain. Evidence points in both directions. These consonants are extremely common, almost ubiquitous, in current-day Chadic languages and occur widespread across all branches of the family, thus suggesting that they derive from the proto-language. On the other hand, correspondences between these sounds are erratic and reliable reconstructions containing them lacking. My own guess is that they were *not* present in the proto-language, but if I turned out to be wrong, I would not be surprised.

2.1.5. Chadic languages typically have two liquids, /r/ and /l/. A number of languages (e.g., Hausa) distinguish between two different R sounds, a flap and a roll, but this is invariably the result of independent parallel innovations. Although /ɮ/ is phonetically the voiced counterpart of /ɬ/, and in some languages functions as its pair, its historical connection is probably with the liquid /l/. That is, from a historical perspective, /ɮ/ should be thought of as a liquid, albeit with fricative articulation, as contrasted with /ɬ/, which should be thought of as a fricative related to /s/ and /š/, albeit with lateral articulation.

2.1.6. The glottalized/laryngealized "implosives" /ɓ/ and /ɗ/ are found throughout the family and generally appear as such. Glottalized palatals appear variably as /ɗʸ/ or /'y/, or as ejective /c'/. Glottalized velars in Chadic are much less common, but they do occur. They appear as an implosive /ɠ/ (Tera), an ejective /ƙ/ (Hausa and some varieties of Kotoko), and as glottalized /'w/ (Margi), the original Proto-Chadic form being undetermined. Other glottalized consonants, e.g. /ɬ'/ or /t'/ (Warji) are sporadic. Languages belonging to the Goemai subgroup of West Chadic are reported to have an ejective consonant series (/p', t'/, etc.) that contrasts with the normal "implosive" series (/ɓ, ɗ/, etc.). This is a recent innovation without broader historical significance.

2.1.7. PC did *not* have glottal stop /ʔ/ in its phonemic inventory nor did it have /h/ (see Newman 1976). The presence of glottal stop in current-day Chadic languages is typically a secondary development, emerging from an allophone of /'y/ or /'w/ or representing a non-distinctive phonetic feature of word onset. Quite often, it is just a linguist's "invention", i.e., the unjustified postulation of a non-existent phoneme based on preconceptions drawn from Arabic. Similarly, the /h/ that appears in various languages invariably represents a secondary innovation, e.g., a development from /f/ or from /x/ (or from merger of /x/ and /ɣ/) or from nothing, i.e., from a phonetic characteristic of word onset articulation.

3. Vowels

3.1. Current-day Chadic languages are found with as few as two vowels (/a/ and /ə/) and as many as nine vowels plus vowel length. Although we lack a good picture of what the PC system looked like, we can, nevertheless, make some negative statements with a reasonable degree of certainty. For example, we can be sure that PC did *not* have a balanced /i, e, ɛ, a, ɔ, o, u/ 7-vowel system such as is found in numerous East Chadic languages. We can also be sure that PC did not have ATR-type vowel harmony, attested, inexplicably, in Tangale. Finally, PC did not have distinctive nasalized vowels nor did it employ syllabic nasal consonants.

3.2. My current hypothesis—which is different from the one I held ten years ago (and probably the ten years before that)—is that PC had 3 vowels (/i, u, a/), although there may have been only a two-way contrast (i/u vs. a) in word-initial position. The /ee/ and /oo/ that one finds in many present-day West and East Chadic languages probably developed independently, either from diphthongs /ai/ (< /ay/) and /au/ (< /aw/) or from lowering of original /ii/ and /uu/.

In word-medial position the three vowels could all occur both long and short. There was no length contrast in word-initial position, where the vowels were short, nor in word-final position, where the vowels were also short except for /a/ which may have been long in CV words, e.g., *saa* 'drink', *ɬaa* 'cow'. The four-vowel system typical of Biu-Mandara, namely /i, u, ə, a/ without length, could easily have arisen from an original 3-vowel system with length by means of a diachronic scenario such as the following: **i* and **u* merged to /ə/, **ii* and **uu* lost vowel length and changed to /i/ and /u/, and **aa* and **a* merged to /a/.

4. Tone

As far as we are aware, all current-day Chadic languages are tonal, both two tone levels (e.g., Bole) and three tone levels (e.g., Tera) being common, sometimes accompanied by downstep. Falling tones are common whereas rising tones, such as are found in Margi, are uncommon. At present we have no idea at all about tone at the PC level. Tone ought to be reconstructable at the level of the major groups and branches but it has not been done yet: this is research crying out to be done. Whether tone can be reconstructed all the way back to PC or whether PC was characterized by stress or pitch-accent is an open question.

5. Syllables and Words

Chadic languages are remarkably similar in their syllable structure pointing to the following as features reconstructable for the PC stage.

5.1. PC did not have consonant clusters, i.e., CC functioning as complex onsets or codas. PC almost certainly *did* have abutting consonants C.C, i.e., a coda consonant closing one syllable followed by a consonant beginning the next syllable (e.g., Hausa *gul.bii* 'stream'). In monomorphemic words, the two C's probably had to be different, i.e., geminates were not allowed, although geminates very possibly did occur as a result of morphological/grammatical processes.

5.2. Overheavy syllables consisting of long vowels (or diphthongs) in closed syllables, i.e., CVVC, were not allowed.

5.3. Word-final consonants, including a range of obstruents, were probably more prevalent in PC than they are in many current-day languages. Thus a PC word such as 'fish', for example, could just as easily have been **kirif* as **kirfi*.

5.4. Vowel-initial syllables *were* allowed at the beginning of words, e.g., **am* 'water'. The requirement that words begin with a consonant, such as exists in Hausa, has been introduced independently a number of times in different Chadic languages, representing a Chadic "drift" rather than a retention from proto-Chadic. (In the canonical patterns in the next paragraph, the convention is that the initial C can be zero.)

5.5. Words typically were either monosyllabic, CV or CVC, or disyllabic, CVCV, CVCCV, CVCVC (and CVCCVC?). Underived monomorphemic words were rarely trisyllabic or longer.

6. Gender

6.1. PC had grammatical gender as part of its Afroasiatic inheritance. Current-day Chadic languages that lack gender have all lost it at one level or another. The typical Chadic gender pattern is to distinguished two genders only, masculine and feminine. This gender distinction was restricted to the singular. Plurals represent a third category that is impervious to gender. The oft-cited statement about Hausa, which is often extended to other Chadic languages, that plurals are all masculine

is an inaccurate characterization of the facts. It is true that plural and masculine singular nouns in Hausa use the same linking particle */na ~ -n/* as opposed to the feminine particle */ta ~ -r̃/*; but with other categories such as demonstratives, pronouns, and adjectives, the plural and the masculine singular remain distinct, e.g., *farii* (m.), *faraa* (f.), *faràaree* (pl.) 'white'.

6.2. The most pervasive gender marker, one that is found in demonstratives, pronouns, and various grammatical morphemes, is the feminine **t*, almost certainly a PC feature retained from proto-AA. The two most common masculine grammatical markers are **n* and **k*.

6.3. Adjectives typically agree in gender and number with the nouns they modify.

6.4. Pronouns typically distinguish gender in the second person (singular) as well as in the third person, e.g., Hausa *ka/ki* 'you (sg.) m/f', *shi/ta* 'him/her'.

7. Plurality (Nominal and Verbal)

7.1. A striking feature of Chadic languages is the multiplicity of means employed in forming noun (and adjective) plurals, including (i) a number of suffixes (but rarely prefixes!), e.g., *-n, -ki, -ai/-ay,* (ii) internal vowel ablaut, including "internal /a/", (iii) gemination, and (iv) reduplication. The first two likely go back to PC; gemination and reduplication are probably more modern developments.

7.2. Chadic languages typically contain pluractional verbs, namely verb stems indicating multiplicity of action in time or space or actions affecting a number of objects of transitive verbs or subjects of intransitive verbs. (Pluractionals are also common in Niger-Congo languages of Nigeria such as Kaje and Efik; see, e.g., Wolff & Gerhardt 1977). In Chadic, pluractional usage is usually optional and expressive rather than being required by agreement rules.

Although the presence of pluractionals in Chadic is standard, the morphological formation varies widely from language to language, ranging from simple affixation (e.g., *-n*) to total suppletion. Commonly found formatives include partial reduplication (sometimes prefixal, sometime suffixal, occasionally infixal), gemination (probably representing reduced reduplication), and internal vowel ablaut (often internal /a/).

7.3. Grammatical number agreement between verb and subject such as exists in many European nominative-accusative languages is unusual in Chadic, but it does occur. It is found in the Bole subgroup (West Chadic), e.g., (Bole) *isi pata wo* 'he went out' vs. *mate peten go* 'they went out' (tone not indicated), as well as in Gisiga and Gidar, more distantly related Biu-Mandara languages. (Bole itself is unique in having feminine agreement as well.)

8. Pronouns

A typical Chadic pronoun paradigm contains at least eight pronouns indicating person, number, and gender. In the first person plural there is a widespread, though not ubiquitous, inclusive vs. exclusive distinction. This was probably a PC feature and thus nine rather than eight pronouns constitute the norm. (One also finds a dual in some languages, but this is less common.) The following table can be taken as a reasonable starting point for reconstructing PC pronouns.

Table 2: Common Chadic pronouns

	sg.	pl.
1	ní	mun (incl.), na (excl.)
2m	ka	
		kun
2f	ki(m)	
3m	nì	
		sun
3f	ta	

8.1. Absent in the above list is an impersonal subject pronoun. Pronouns comparable to Hausa *an/a* 'one, they', are not common in Chadic. In many languages the impersonal marker tends to be derived from the noun 'person'.

8.2. In PC, the second person feminine would have been distinguished from the corresponding masculine by /i/ vs. /a/ and in some functions by the presence of a final consonant /m/ as well. A characteristic of the plural pronouns is the final *-n*, presumably related to the plural marker *-n*.

8.3. It is typical of Chadic to employ different pronoun paradigms in different cases/functions. The forms of individual items often differ only in vowel length or tone, or, in the case of the plural pronouns, the presence or absence of final /-n/. However, two pronouns display greater variation in their case forms, namely the first person singular with **na/ni* and **(w)a*, and the third person masculine singular, with **sa/shi*, **ya*, and **nì*. (In Hausa this archaic **ni* is preserved only in the masculine singular determiner *wani* 'some', cf. the corresponding third person feminine singular form *wata* (containing *-ta* 'her') and the third person plural form *wasu* (containing *-su* 'them').)

8.4. A widespread feature of Chadic, presumably inherited from PC, is the use of "intransitive copy pronouns" (ICPs). This pronoun paradigm, which is often similar to that of possessive or indirect object pronouns, is suffixed directly to intransitive verbs, e.g., (Kanakuru) *na yilo-no* 'I got up', cf. *mə yilo-mu* 'we got up'. The exact semantic contribution of ICPs is unclear, but it is fairly certain that their role was semantic/thematic rather than narrowly grammatical/obligatory (see Frajzyngier 1977).

9. Reflexives and Reciprocals

9.1. The two most common reflexive formations in Chadic are 'body' + possessive pronoun (e.g., Tera *va-mi* 'ourselves' lit. 'body-our'), and 'head' plus possessive pronoun (e.g., Kanakuru *ko-mu* 'ourselves', lit. 'head-our'). Some languages, e.g., Bole, allow both formations.

9.2. We have less information about reciprocals, but it appears that the formation is much more varied, including 'body' (but generally not 'head') + pronoun or else a distinct formative.

9.3. What the situation was like in PC is not known. The hypothesis that I would propose is that PC used "body" to form both reflexives (with a pronoun) and reciprocals (perhaps with a suffixal particle). Fairly early on, reflexives with 'head' were introduced, this formation spreading (and continuing to spread) throughout the family, either driving out the 'body' formation or restricting its function to reciprocals.

10. Possessives

10.1. The (almost) exclusive word order for Chadic possessives is possessed + possessor, e.g., (Hausa) *gida-n Muusaa* 'Musa's house', lit. house-of Musa.

10.2. Chadic languages (but not Hausa) typically distinguished alienable vs. inalienable possession, the latter generally being used for body parts and some kinship relations. Regular alienable possession typically involves the use of an overt genitive particle; inalienable possession is indicated by direct juxtaposition of the two nominals, sometimes with a different pronoun set, e.g., (Tera) *kaskar ɓa-ŋa* 'my sword', lit. 'sword poss.-my' vs. *xar-a* 'my hand' lit. 'hand-my'; *ɮinndə ɓa-nu* 'your (pl.) teeth' (that you bought in the market) vs. *ɮinndə-nu* 'your (pl.) teeth' (in your mouth).

11. Verbal Extensions

11.1. Chadic languages typically have numerous affixal verbal extensions indicating categories such as ventive/ingressive (**-aw-*), totality (**-any-*), completive, partitive, applicative, efferential/egressive, etc. It remains to be determined exactly how many extensions can be reconstructed for PC and what their precise forms were.

11.2. Most likely PC did *not* have a morphological causative extension per se. (The similarity between the Hausa *-s* grade 5 efferential suffix (formerly termed "causative") and a similar formative in Semitic is accidental and of no historical significance.) Rather, causatives were expressed *syntactically* by sentences of the type X caused Y (that) Y do Z (where 'caused' would be a expressed by a verb such as 'to put').

12. Tense/Aspect/Mood

TAM marking in Chadic is accomplished by the use of overt TAM markers combined with distinct preverbal pronoun paradigms, sometimes accompanied by inflection in the verb form itself (see Wolff 1979). Also common is the use in certain tense/aspects of a verbal noun in place of the finite verb.

12.1. TAM markers typically occur between the subject and the verb, often fused with or closely tied to a weak subject pronoun, e.g., (Tera) *Ali wa masa koro* 'Ali

(perf.) bought a donkey', *taa* (< *to* + *wa*) *masa koro* 'You (perf.) bought a donkey'. (Examples of Tera TAM markers are *wa* 'perfective', ∅ [zero] 'relative perfective', *nə* 'negative perfective', *a* 'continuous', *ka* 'future'; *kə* 'subjunctive', and *tə* 'sequential'.) Much less common, but still far from rare, is the use of post verbal TAM particles, either immediately after the verb or after the VP including objects. Examples from widely distant languages are *ko* in Gidar (Biu-Mandara) and *ko/wo* in Kirfi (West Chadic).

12.2. Different TAMs often make use of different subject pronoun paradigms, e.g., (Hausa) 'they': *sun* (completive) vs. *sù* (subjunctive and aorist); (Kanakuru) 'she': ∅ [zero] (perfective) vs. *shèe* 'continuous'.

12.3. In some languages (e.g., Hausa and Tera), the verb itself is invariant as far as TAM is concerned, the specification being done by an overt TAM marker and/or by the form of the subject pronoun. In others, especially in West and East Chadic, verbs undergo stem modification in different TAMs. In some cases, there are only two different stem forms, often referred to as perfective vs. imperfective, one or the other of which might be basic and other marked. But equally often there are three or ever four different stems, that is, the verb displays different forms depending on whether the stem is, for example, the basic unmarked form (Grundstamm), the perfective stem, the imperfective stem, or the subjunctive stem. The various stems typically differ in terms of vocalization (qualitative and/or quantitative, internal and/or suffixal) and/or tone.

12.4. Whatever the general TAM marking system that exists, many Chadic languages have a special distinct imperative verb form indicated by final vowel change and/or tone, e.g., Kanakuru *-u* (e.g., *kàpu* 'plant!' cf. *kapè* 'to plant'), Hausa L-H tone (e.g., *tsàyaa* 'stop!' cf. *tsayàa* 'to stop'). This imperative form is normally used without an overt subject pronoun. Many languages also have a distinct plural imperative, e.g., Tera *ja* 'to break', *jo* 'break!' (you (sg.)), *ja-ma* 'break!' (you (pl.)). This system almost certainly goes back to PC. Less certain, but still quite possible, is the reconstruction for the proto-language of the phonological shape of the suffixes, namely **-i* (sg.) and **-ma* (pl.).

13. Syntax

13.1. With noun arguments, the most common basic word order throughout Chadic is S-V-O. (Pronouns often appear as verb clitics in different positions.)

This almost certainly represents the word order of PC. V-S-O, which occurs in a handful of Biu-Mandara languages spoken in the Nigeria-Cameroon border area (e.g., Gude and Ga'anda), is almost certainly an areal innovation.

13.2. A widespread Chadic pattern, probably inherited from PC, is to have two different word orders for indirect objects depending on the nature of the object. If the IO is a pronoun, then it appears as a clitic attached to the verb before the DO (something like, "He told her a story."). If the IO is a noun, it appears as a prepositional-type phrase after the DO (something like, "He told a story to his mother.")

13.3. Chadic languages are invariably prepositional. In genitive (possessive) constructions, the usual pattern is N_1 of N_2, e.g. horse of chief = 'chief's horse'. Adjectives follow the modified noun as do numerals and determiners.

13.4. Many Chadic languages have double, discontinuous negative markers, where the neg_1, which is pre-verbal, and the neg_2, which is clause final, are sometimes identical (or nearly so), e.g., Hausa *bà ... ba*, and sometimes different, e.g., Bura *ad'i ... wa*. More common, however, is to have a single negative marker at the end of the sentence, this undoubtedly being the situation in PC.

14. Lexicon

There are two readily available reconstructions of PC lexicon, namely Newman (1977) (building on the earlier Newman & Ma (1966)), and Jungraithmayr & Ibriszimow (1994) (building on the earlier Jungraithmayr & Shimizu (1981)). Newman (1977) suffers from a paucity of supporting data, a somewhat simplistic approach to reconstruction, and a neglect of possible PC words that are well attested in one branch of the family only. Jungraithmayr & Ibriszimow (1994) suffers from the presentation of too many alternatives, thereby creating excessive scientific "noise", the tendency to be influenced by preconceptions about what PC ought to look like (specifically the misguided search for mystical triliteral roots), and the failure to provide adequate consideration of vowels. (We know that vowels were lexically significant in PC and that they can be reconstructed, at least in some crude fashion, e.g., **wa* 'who?' vs. **mi* 'what?', **sa(a)* 'drink' vs. **ti* 'eat', **ba(a)* 'mouth', vs. **zi* 'body'.) The main weakness of both works is that the number of reconstructions is so small, barely over 150 items. When originally presented, these first stab reconstructions served a useful purpose; but Chadic

really needs a more extensive, properly-done reconstruction of the proto-language, one that could serve as a point of reference for the next generation of scholars. Independent of or in conjunction with PC reconstruction, Chadic could also benefit greatly by detailed lexical reconstructions of the four branches of the family approached from within those branches.

15. Conclusion

The above sketch provides a picture of Chadic linguistics as it exists at this point in time. In some respects, we can be proud of what we have accomplished; in others, we have to admit that our ignorance is still greater than we would have liked. Nevertheless, due to the work of prolific Chadicists such as Russell Schuh, our knowledge of this family has progressed a long way over the past forty years. Let us hope that a new generation will take up the challenge and in the next forty years we will witness even greater strides than we were capable of in the past.

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Paul Newman
Indiana University
email: pnxxpn@indiana.edu

13

VOWEL HARMONY IN WOLOF LOANWORDS

Mariame I. Sy

1. Introduction

When one language borrows words from another, speakers of the borrowing language typically come upon sounds or sound sequences that are unattested in their native language. These foreign sounds usually undergo a process of adaptation to conform to the phonology of the borrowing language. Such is the case of French words borrowed into Wolof.

Wolof (Niger-Congo) is spoken either as a first or second language by the majority of people in Senegal and Gambia, and also as a minority language in neighboring countries such as Mauritania, Mali, and Guinea. Wolof has been subject to constant and large-scale borrowing of lexical items from French for a great number of years. Over 100 of the 1,500 most frequently used words in modern Wolof are French loans (Dialo 1983: 4-9). In fact, Wolof has borrowed so much from French that younger native speakers in urban areas are unaware of the existence of native words equivalent to the "Wolofized" French terms they use every day. Borrowings have been nativized in spelling, pronunciation, and sometimes meaning. While some older borrowings have been transformed beyond recognition, most remain close enough to the original French words to allow one to observe systematic changes that conform to phonological rules of the borrowing language. These changes involve segmental adaptation as well as syllabic repairs such as cluster resolution by epenthesis. The present paper focuses on how vocalic segments are adapted into the vowel harmony system of the language.

The paper is organized as follows. Section 2 presents an overview of the native harmony system while section 3 discusses loanword harmony patterns that conform to native harmony rules. In section 4, I consider patterns of systematic

modification that appear to conflict with what we find in native words. These patterns indicate that there is greater faithfulness to the harmonic feature of long segments, as well as greater markedness for disagreement of mid-vowels. In the analysis presented in section 5, I propose that such patterns arise as a result of interactions between universal faithfulness conditions and the underdetermined nature of specific agreement constraints the hierarchy of which reflects the asymmetry found in the different classes of vowels with regard to their degree of participation in the harmony process.

2. The Native Harmony System

Wolof exhibits a pattern of vowel harmony which involves the categorization of all the vowels in the language into two harmonic groups with regard to the feature [ATR] (advanced or retracted tongue root). This feature determines two mutually exclusive sets of vowels.

(1)

+ATR				-ATR				
i	*iː*		*u*	*uː*				
e	*eː*	*ə*	*o*	*oː*	*ɛ*	*ɛː*	*ʌ*	*ɔ* *ɔː*
						a	*aː*	

Note that the high vowels have no [–ATR] counterparts and the low vowels no [+ATR] counterparts. This limits the set of alternating vowels to mid vowels.

As described by Ka (1988) and others, harmony in Wolof is a progressive (left-to-right) process. All vowels trigger harmony in initial position. (By "initial" I mean the first vowel in a word whether preceded by a consonantal onset or not.) The examples below show the vowel of the benefactive suffix *-ʌl* surfacing as [+ATR] when following a [+ATR] root vowel (see 2a), and as [–ATR] after a [–ATR] root vowel (see 2b).

(2) a. [+ATR] Root

liːt-əl	'to play the flute for'
tuːr-əl	'to spill for'
lett-əl	'to braid for'
bətt-əl	'to puncture for'
foːt-əl	'to do laundry for'

b. [–ATR] Root

ja^{n}g-ʌl	'to read for'
jaːy-ʌl	'to sell for'
sɛːt-ʌl	'to look for'
fʌtt-ʌl	'to cover a hole for'
bɔːt-ʌl	'to carry on one's back for'

Within a fully harmonic tongue root system, one expects to find only vowels that bear the same value for the harmony feature [ATR] to occur within the same domain (or word) as shown in the disyllabic roots in (3). Those are the configurations generally found in Wolof disyllabic roots, sometimes forming minimal or near minimal pairs.

(3)

a. [+ATR] Roots		b. [-ATR] Roots	
teːre	'book'	tɛrɛ	'to forbid'
bəre	'to wrestle'	bʌrɛ	'to be a lot'
coːlo	'vapor'	cɔːnɔ	'tiredness'
bukki	'hyena'	bakkaːr	'sin'

While words containing exclusively mid vowels (e, ɛ, ə, ʌ, o, ɔ) always surface as fully harmonic forms, those containing high vowels /i/ and /u/ or the low vowel /a/ in medial position may surface as disharmonic forms. This state of affairs stems from the asymmetry in the system, namely the fact that high vowels and low vowels have no counterparts with the opposite tongue root value, and therefore remain advanced or retracted respectively. Although high and low vowels both contribute to producing disharmonic forms, they do so in quite different ways.

2.1. High Vowels: Transparency

Initial high vowels /i/ and /u/ trigger harmony on the vowels to their right. When occurring in medial position, however, these high vowels are transparent to harmony: they neither trigger nor block the process.

(4)

a.	damina-ʌl	→	daːminaːl	'to embroider for'
	taːxuran-ʌl	→	taːxuranʌl	'to sing for'
	ʌsiːrɛ-ʌl	→	ʌsiːrɛːl	'to insure for'
	ʌniːn-ʌl	→	ʌniːnʌl	'to put make up for'
b.	sɔpp-i-ɔːn	→	sɔppiwɔːn	'changed'
	sɛpp-i-ɔːn	→	sɛppiwɔːn	'took out of a liquid'
	tɛːr-u-ɔːn	→	tɛːruwɔːn	'welcomed'
	daːn-u-ɔːn	→	daːnuwɔːn	'fell'
	fʌl-u-ɔːn	→	fʌluwɔːn	'came to power'

Such behavior is apparent both root-internally and across morphemes. The examples in (4a) show that the medial high vowels inside the root forms neither incur harmony effects from the initial [-ATR] vowel, nor do they trigger harmony on either the final vowel of the root or the vowel of the benefactive affix. Similarly, in the derived forms in (4b) the affixes *-i* (reversive) and *-u* (transitivizer) fail to trigger harmony on the following past tense suffix *-(w)ɔ:n* which surfaces with the same [-ATR] value as the initial vowel of the root.

2.2. Low vowels: Opacity

All vowels in root-initial position trigger harmony to their right, and low vowels are no exception. In medial position, on the other hand, they do not harmonize with a preceding vowel and, unlike the high vowels, they block the spread of the ATR feature through them to the vowels immediately to their right.

(5) Root + 'iterative'-a:t + 'benefactive'		Root + 'iterative'-a:t + 'past tense'	
a. bi^{n}d-a:t-ʌl	'write again for'	b. bi^{n}d-a:t-ɔ:n	'wrote again'
do:r-a:t-ʌl	'hit again for'	do:r-a:t-ɔ:n	'hit again'
je:m-a:t-ʌl	'try again for'	je:m-a:t-ɔ:n	'tried again'
mu:r-a:t-ʌl	'cover again for'	mu:r-a:t-ɔ:n	'covered again '

The examples in (5a) show the low vowel /a/ following initial [+ATR] vowels without incurring any harmony effects from the latter. Furthermore, although the vowel of the benefactive suffix surfaces as [+ATR] when it directly attaches to [+ATR] roots, as in (2a), it fails to harmonize in (5a), in which it is separated from the same root forms by the affix containing the low vowel. The same pattern can be observed with the past tense suffix in (5b).

2.3. Basic Assumptions about the Wolof System

A number of proposals have been made within Optimality Theory to account for patterns of progressive harmony such as the one displayed in the Wolof system. Earlier OT accounts of Niger-Congo languages (Archangeli & Pulleyblank 1994, Pulleyblank 1994, Akinlabi 1997) are based on the premise that harmony is a result of feature alignment. Later proposals, however, argue that vowel harmony and other types of assimilation are driven by the markedness constraint AGREE F which requires two articulatorily adjacent segments to have the same specification for a given feature (Bakovic 2000).

Following this proposal, we assume that Wolof harmony is driven by AGREE (ATR), one of the various AGREE (F) constraints which refer to segmental features,

see (6). Since the initial vowel of root forms generally determine the harmonic feature of a word, we also assume that there is a positional faithfulness constraint to the harmonic feature of word-initial vowels, see (7).

(6) AGREE (ATR): All vowels in a given word must bear the same [ATR] specification.

(7) IDENT (ATR σ1): The [ATR] specification of the initial vowel of a word is preserved in the output.

Second, we consider the behavior of high and low vowels within the harmony process in Wolof to be related to universal acoustic and articulatory enhancement relations between lowness and retraction of the tongue root, and, conversely, highness and advancement of the tongue root (Ladefoged 1972, Archangeli & Pulleyblank 1994). Such behavior is, in fact, not uncommon in tongue root harmony languages. Yoruba (Niger Congo, Pulleyblank 1996), for example, lacks both low [+ATR] and high [–ATR] vowels; Diola Fogny (Niger Congo, Bakovic 2000) and Maasai and Turkana (Nilotic, Bakovic 2000) all lack low [+ATR] vowels. These conditions have been translated in Optimality Theory terms as multiple-feature markedness constraints against segments with the opposite harmonic feature. In the case of Wolof, such constraints may be stated as follows.

*(8) * [HI, -ATR]: A high vowel may not bear the feature [-ATR]*

*(9) * [LO, +ATR]: A low vowel may not bear the feature [+ATR]*

3. Loanword Harmony

Traditionally, the main concerns of loanword phonology research have been whether the adaptation process is governed by generative rules or constraints, and whether or not these constraints are universal (Paradis & Lacharité 1997). More recently, proposals have been made within OT claiming that loanwords are subject to the same hierarchy of constraints as native words, with a possible promotion of faithfulness in the foreign-word hierarchy (Ito & Mester 1998). One implication of such an approach is that in adapting these foreign words, speakers apply their implicit phonological knowledge so that the adaptation process conforms to the native phonological system. However, in case it doesn't and we find patterns that appear to contradict the native system, we expect such emergent

patterns to reveal aspects of the grammar that are not evident from looking at the native phonology alone. Patterns of this kind are likely to arise when the languages involved have substantially different phonologies.

If we consider loanword adaptation processes to follow from well-formedness constraints on output forms, then we might consider OT (McCarthy & Prince 1993, Prince & Smolensky 2004) an adequate tool for describing such processes, given its output-oriented character. In what follows, we argue that vowel adaptation in Wolof loanwords from French result from such well-formedness constraints, namely those constraints that militate against disagreement of any vowels within the same word with regard to the feature [ATR]. Moreover, it is argued that this adaptation process is subject to faithfulness constraints that arise due to a direct correlation between tense/lax values in the source language and tongue root advancement/retraction values in the borrowing language.

3.1. Vowel Correspondences

Consider the following data.

(10) a. French	Wolof		b. French	Wolof	
/pnø/	[pənə]	'tire'	/afɛr/	[ʌfɛːr]	'business'
/fœtr/	[fəːtər]	'felt'	/mɛtr/	[mɛːtʌr]	'meter'
/bœr/	[bəːr]	'butter'	/ɛlɛv/	[ɛlɛːw]	'pupil'
/pʏr/	[piːr]	'pure'	/pɛr/	[pɛːr]	'pair'
/pir/	[piːr]	'worst'	/pɔr/	[pɔːr]	'harbor'
/moto/	[moto]	'motorbike'	/bɔr/	[bɔːr]	'edge/side'
/de/	[deː]	'thimble'	/trɛ/	[tɛrɛ]	'line'
/pəti/	[pəti]	'small'	/pɔmdətɛr/	[pɔ^{m}bitɛːr]	'potatoes'

Comparing the French forms to their Wolof counterparts we find systematic vowel correspondences that reflect the types of changes that French vowels undergo to conform to Wolof phonology. First, certain contrasts in French are neutralized in Wolof. The French front high rounded vowel /ʏ/ (= ü) (which Wolof does not have) and its unrounded counterpart /i/ are both realized in Wolof as front high unrounded /i/. Wolof also lacks mid front rounded vowels, so the distinction between the French mid front rounded vowels /ø/ and /œ/ and the mid central vowel /ə/ is neutralized: all three vowels surface in Wolof as /ə/, e.g., [bəːr] 'butter'.

Second, although length is not contrastive in French, some contextual lengthening occurs in stressed vowels in word final position and in closed

syllables. Lengthened vowels of these types are always realized long in Wolof, even when the resulting segment is not attested in the native phonology as in the case of /əː/.

The third important fact to be noted from (10) is the mapping of French tense and lax vowels to [+ATR] and [-ATR] vowels in Wolof respectively.[1]

In light of these facts, one might be drawn to the conclusion that an account of harmony in Wolof loanwords must necessarily include input to output correspondence constraints relating tenseness and laxness in French input vowels to [ATR] values in Wolof output vowels.[2] However, assuming that foreign sounds are perceived as underlying forms (Hyman 1970), one might rather claim that the borrowed forms that constitute the input to the speaker's grammar have already been mapped to Wolof vowels, that is, the input tense vowels are heard as [+ATR] vowels and lax ones as [-ATR]. Such an approach adequately eliminates the complexity that mapping constraints would bring to the grammar while allowing a single ranked hierarchy of constraints. The following section motivates this approach.

3.2. Native-like Patterns

Certain loanwords display exactly the same patterns of harmony found in native words. For example, disyllabic French words which contain mid vowels contrasting with respect to tenseness are adapted into Wolof as perfectly harmonic roots the [ATR] feature of which is determined by the initial vowel of the word. But before we consider these forms let's first examine monosyllabic French forms which are adapted as disyllabic roots by vowel epenthesis.

3.2.1. Epenthetic vowels. Wolof does not allow consonant clusters in syllable-initial position, and very few clusters are tolerated in coda position. French loanwords containing clusters are therefore repaired via epenthesis, either by prothesis where there is an sC cluster (see 11b) or else by insertion (see 11a).

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[1] The question was brought to my attention whether the Wolof distinction is not simply tense/lax. Experimental data (Sy n.d.) show that the acoustic properties of Wolof vowels closely parallel those of Akan vowels (Lindau 1975, 1979) with the distinction between the two sets of vowels mainly reflected in their first formant values while second formant values show no significant difference. Acoustic studies of tense/lax opposition in English, for example (Halle & Stevens 1969, Ladefoged et al. 1972), have found greater differences in tongue dorsum height (and hence second formant values).

[2] This approach was taken in an earlier version of this research presented at SWOT 8 (Southwest Workshop on Optimality Theory) 2003, University of Arizona.

(11)	French		Wolof		French		Wolof
a.	/trɛ/	'line'	[tɛrɛ]	b.	/spɔr/	'sports'	[ɛspɔːr]
	/pli/	'fold'	[pili]		/statʏ/	'statue'	[ɛstʌti]
	/brəvɛ/	'HS diploma'	[bərəwe]		/staʒ/	'internship'	[ɛstaːs]
	/bluz/	'smock'	[buluːs]		/steno/	'stenographer'	[esteno:]
	/drɔg/	'drugs'	[dɔrɔg]		/stilo/	'pen'	[estiloː]

The epenthetic vowel inserted in initial clusters is identical to the following vowel (except that /ʌ/ normally appears instead of /a/). By contrast, the prothetic segments are all mid front vowels conditioned by harmony. The tongue root value of the prothetic vowel is determined by that of the initial vowel of the input form. Thus, the vowels /ɛ/ and /e/ in [ɛspɔːr] and [estiloː] contrast with respect to [ATR] value because the initial vowels /ɔ/ and /i/ in the corresponding input forms contrast with respect to tenseness value.

The working of harmony in epenthetic segments can also be seen in the treatment of final clusters. In such forms, mid central vowels are inserted. These alternate to harmonize with the vowel of the root. The epenthetic mid central vowels in (12) display the same pattern as the prothetic mid front vowels in (11), i.e., they surface as [-ATR] /ʌ/ in forms with lax input vowels, but [+ATR] /ə/ in those with tense input vowels.

(12)	French		Wolof	French		Wolof
	/lɛtr/	'letter'	[lɛːtʌr]	/litr/	'liter'	[liːtər]]
	/tabl/	'table'	[taːbʌl]	/fœtr/	'felt'	[fəːtər]
	/mɔ̃tr/	'watch'	[mɔntʌr]	/livr/	'pound'	[liːbər]]
	/tabl/	'table'	[taːbʌl]	/pudr/	'powder'	[puːdər]

3.2.2. Non-epenthetic vowels

3.2.2.1. *Mid vowels: full participation.* Loanwords containing only mid-vowels display perfect harmony, regardless of the fact that they may contain vowels with opposite tenseness values in French. This behavior parallels that of native forms of the same type. As can be noted from the data in (13), all these disyllabic roots contain a tense and a lax vowel in the source language. Nonetheless, every one of these forms surfaces in Wolof as a perfectly harmonic root with all vowels bearing the same [ATR] value as the initial vowel of the word. This is in accordance with the left-to-right spreading observed throughout in the system.

(13)

French		Wolof
/bato/	'boat'	[bʌtɔ]
/kado/	'gift'	[kʌdɔ]
/ɛ̃po/	'tax'	[lɛmpɔ]
/delɛ/	'deadline'	[dele]
/sɛre/	'to tighten'	[sɛːrɛ]

Similarly, derived forms from this type of borrowed root remain harmonic showing spreading of the harmonic feature of the initial vowel onto the vowel of the suffix. The data in (14) illustrate such cases with the benefactive suffix.

(14)

French		Wolof + 'benefactive' -ʌl ~ -əl		
/arɔze/	'to water'	arɔːsɛ-ʌl →	[arɔːsɛːl]	'to water for'
/sɛre/	'to tighten'	sɛːrɛ-ʌl →	[sɛːrɛːl]	'to tighten for'
/bœr /	'butter'	bəːre-əl →	[bəːreːl]	'to butter for'
/dɔre/	'golden'	dɔːrɛ-ʌl →	[dɔːrɛːl]	'to golden for'
/pudr/	'powder'	puːdər-əl →	[puːdərəl]	'to powder for'
/mœbl/	'furniture'	məːbəle-əl →	[məːbəleːl]	'to furnish for'

3.2.2.2. *High vowels: transparency.* In some loanwords, high vowels display the same behavior as in native words, i.e., they induce harmony in root initial position, and are transparent in non-initial position.

(15)

	French		Wolof		French		Wolof
a.	/sirɛ/	'to polish'	[siːre]	b.	/ɔpital/	'hospital'	[ɔpitaːl]
	/uvɛrtʏr/	'opening'	[uwetiːr]		/sɛrpiyɛr/	'floorcloth'	[sɛrpiyɛːr]
	/biyɛ/	'ticket'	[biye]		/pɔmdətɛr/	'potatoes'	[pɔ^{m}bitɛːr]
	/pikɛ/	'peg'	[pikket]		/kalite/	'quality'	[kʌlitɛ]
	/brikɛ/	'lighter'	[birike]		/kraʃwar/	'spittoon'	[kʌraːsuwaːr]
	/priyɔrite/	'right of way'	[piryorite]		/ardwaz/	'slate'	[ʌrduwaːs]

Initial high vowel French forms are adapted in Wolof as harmonic [+ATR] roots, regardless of the tense value of the source non-initial vowels. Forms such as /biyɛ/ and /pikɛ/, which contain a tense initial high vowel and a lax final vowel (which should be adopted as [-ATR]), surface in Wolof as perfectly harmonic [biye] and [pikket]. In (15b) medial high vowels remain advanced while the vowels on each side of them are retracted, thus displaying the typical transparent behavior found in the native harmony system.

3.2.2.3. *Low vowels: opacity.* In a number of loanwords low vowels conform to the native harmony pattern as well; they remain systematically retracted, and induce harmony to their right.

(16)	French		Wolof		French		Wolof
a.	/siraʒ/	'shoe polish'	[si:ra:s]	b.	/bulãʒe/	'baker'	[^{m}bula:ɲsɛ]
	/limɔnad/	'soda'	[limona:t]		/depãse/	'to spend'	[dɛppa:ɲsɛ]
	/bwat/	'box'	[buwa:t]		/pɔrtmãto/	'coat rack'	[pɔrtʌma:ntɔ]
	/teyatr/	'theater'	[tiya:tʌr]		/derãʒe/	'to bother'	[dɛra:ɲsɛ]
	/istwar/	'story'	[istuwa:r]		/kɔ̃dane/	'to board up'	[kɔ^{n}da:nɛ]
	/viraʒ/	'turn'	[wi:ra:s]		/pulaye/	'chicken coop'	[pula:yɛ]

In the above data, forms such as [bulãʒe] in which the final vowel is a tense mid vowel and therefore should be adapted as [+ATR], surface with this vowel carrying the [-ATR] feature of the preceding low vowel /a/, not that of the root-initial [+ATR] vowel.

Summarizing so far, we have shown that loanwords display native-like harmony patterns, showing left to right spreading of the harmony feature of word-initial vowels, as well as the particular characteristics of high and low vowels in medial position, i.e., transparency vs. opacity. In loanwords containing epenthetic vowels that are not exact copies of the root vowel, the harmonic feature of the epenthetic vowel is determined by that of the root vowel. Furthermore, when a particular input form contains a disharmonic mid-vowel (that is when its first vowel has a tongue root value opposite to that of a following mid vowel) the non-initial mid vowel is further repaired to conform to the fully harmonic behavior of its class in the native system. However one unexpectedly finds borrowings in which the same class of vowels appear to be in violation of harmony constraints, words with mid vowels that do not undergo repair to agree with a preceding vowel, but rather remain faithful to their input feature value. We turn to those patterns now.

4. Non-Native-like Patterns

4.1. High Vowels: Lack of Transparency and "Triggerancy"

In some loanwords high vowels behave most unexpectedly: they neither trigger harmony when occurring in the initial syllable, nor do they allow the opposite tongue root feature to spread through them when they appear in word-medial position.

(17)	French		Wolof	French		Wolof
	/pʏlɔvɛr/	'sweater'	[pilɔwɛːr]	/friʒidɛr/	'refrigerator'	[firisidɛːr]
	/byɛr/	'beer'	[biyɛːr]	/amitye/	'friendship'	[amiceː]
	/primɛr/	'primary'	[pirimɛːr]	/uvɛrtʏr/	'opening'	[uwɛːrtiːr]
	/lwidɔr/	'gold coin'	[libidɔːr]	/klimatizœr/	'AC'	[kilimatisəːr]
	/pʏnɛz/	'thumbtack'	[pinɛːs]	/guvɛrnœr/	'governor'	[guwɛːrnəːr]

The Wolof forms in (17) are disharmonic because the high vowels fail to induce harmony on one of the following mid vowels. Native forms of this shape are not attested. Moreover, as previously discussed, mid vowels in non-initial position normally do undergo repair to harmonize with the vowel that precedes them (e.g., /pikɛ/ → [pikket] vs. /primɛr/ → [pirimɛːr]). While the reason for such behavior may not be immediately apparent, a comparison of the data set in (17) to one seen in (18) reveals a pattern which indicates that the difference between the two types of vowels involved in these structures may be of consequence.

(18)	French		Wolof	French		Wolof
	/kalite/	'quality'	[kʌlitɛ]	/pikɛ/	'peg'	[pikket]
	/biyɛ/	'ticket'	[biye]	/brikɛ/	'lighter'	[birike]

The forms in (18) are those in which, by virtue of harmonizing with a preceding vowel, an input French mid vowel ends up surfacing in Wolof with the opposite tongue root feature from that expected given the tenseness of its source. In other words, these mid vowels, all of which are short, violate faithfulness to satisfy harmony markedness requirements. By contrast, the vowels in (17), which satisfy faithfulness to their input value but violate harmony constraints, are all long. This suggests that there is a condition requiring faithfulness to the tongue root specification of long vowels which outranks the basic harmonic markedness constraints. Although such condition is not apparent in native words, it is very much alive in loanwords, forcing non-native-like behavior both in mid and in low vowel forms.

4.2. Low Vowels: Lack of Opacity

The loanwords in (19) display a pattern similar to that of the high vowel forms discussed above in that their low vowels fail to trigger harmony in the vowels located to their right as would be expected given the usual behavior of this class of vowels in native forms.

(19).	French		Wolof
	/ɔrdinatœr/	'computer'	[ɔrdina:tə:r]
	/vãtilatœr/	'fan'	[wantila:tə:r]
	/sɛnatœr/	'senator'	[sɛna:tə:r]
	/drapo/	'flag'	[dʌra:po:]
	/flãbo/	'torch'	[fʌla^{m}bo:]
	/plato/	'tray'	[pʌla:to:]
	/klimatizœr/	'air conditioner'	[kilimatisə:r]

As in the disharmonic cases described in (17), the disagreeing vowel to the right in the forms in (19) is a long vowel. The harmonic vowels in the same position in (16) are all short mid vowels. These facts further support the claim that there is a constraint that militates against altering the [ATR] specification of long vowels.

4.3. Mid Vowels: Regressive Harmony

Among loanwords that do not conform to the native harmony pattern, those containing exclusively mid vowels display the most non-native-like behavior considering that they seem to have created regressive harmony of their own. The forms in (20a) show that non-final mid-vowels that are tense in French and therefore should be adapted as [+ATR] in Wolof harmonize with the [–ATR] vowel in word final position by means of right-to-left spreading, a pattern that is not attested in native words, nor any other type of borrowed words.

(20)	a. French		Wolof	b. French		Wolof
	/sekretɛ:r/	'secretary'	[sɛkkɛrtɛ:r]	/degaʒe/	'to clear'	[dɛga:sɛ]
	/seminɛr/	'seminar'	[sɛminɛ:r]	/drɛse/	'to train'	[dɛrɛ:sɛ]
	/elikɔptɛr/	'helicopter'	[ɛlikɔptɛ:r]	/brɔde/	'to embroider'	[bɔrɔ:dɛ]
	/elɛv/	'pupil'	[ɛlɛ:w]	/debɔrde/	'to overflow'	[dɛbɔ:rdɛ]
	/sɛ̃tʏr/	'belt'	[se^{n}tu:r]	/fønɛtr/	'window'	[fɛnɛ:tʌr]
	/sɛrʏr/	'lock'	[sellu:r]			

c.	French		Wolof
	/vinɛgr/	'vinegar'	[binɛ:gʌr]
	/trɛne/	'loiter'	[tɛrɛ:nɛ]
	/matɛrnite/	'delivery ward'	[matɛ:rnitɛ]

Considering the above more carefully, we find that whether we get progressive, regressive, or bidirectional harmony depends on the position of the long vowel

vis-à-vis the would-be-disharmonic vowels. Thus, in cases such as (20a) in which the long vowel is the rightmost vowel and all disharmonic input vowels precede it, right-to-left spreading obtains. Conversely, if the long vowel is to the left of the target disharmonic input vowel as in (20c), harmony proceeds in the reverse direction. By the same logic, we get harmony in both directions, i.e., left-to-right and right-to-left spreading, if the long vowel is medial and is flanked by disharmonic vowels on each side as in (20b). The choice of which vowels get altered is conditioned by the faithfulness constraint to the [ATR] feature of long vowels. This condition, formalized in (21) ensures that the long vowel becomes the harmony trigger regardless of its position within the word.

(21) *IDENT [ATR]LG: The [ATR] specification of a long vowel must be preserved in the output.*

The crucial point is that all observed non-native-like patterns result from greater faithfulness to the tongue root feature of long vowels.

One interesting fact that should be noted is that the vowels that are adapted as long segments in Wolof correspond in the French word to either lengthened vowels in closed syllables or final stressed vowels. This suggests that the failure of long vowels to harmonize is due to universal conditions of inalterability of salient segments. The effects of such conditions in Wolof loanwords are similar to what is found in Tigre (Steriade 1987), where rounding harmony fails to apply to long vowels. Such resistance to harmony has been analyzed in terms of interactions between a positional faithfulness and a constraint that induces rightward harmony (McCarthy & Prince 1993). This positional faithfulness presumably reflects the greater perceptibility of vowel quality distinctions in long vowels (Kaun 1994). Beckman (1999) points to asymmetries in phonological systems which can be related to positions in structure, suggesting that some positions are privileged, others non-privileged. In privileged positions contrasts are maintained and segments resist modification and act as triggers; in non-privileged positions contrasts are neutralized and segments are vulnerable and become targets. Examples of privileged position reflecting such characteristics are root vs. affix, onset vs. coda, and stressed versus unstressed syllable. Beckman argues that these positional differences are the effects of salience (psycholinguistic or perceptual). These conditions can be implemented in Wolof by separating out from the general IDENT (F)-SALIENT, a positionally-specified sub-case IDENT (ATR)-LG.

The question now arises as to why this condition forces bidirectional harmony only in one class of vowel, namely mid-vowels. I suggest that these facts follow from the underdetermined nature of harmony constraints in Wolof as a consequence of the asymmetry in the system.

5. Analysis

5.1. Emergence of Underdetermined Harmony Constraints

The faithfulness requirement to the tongue root feature of long vowels seems to force different patterns of harmony depending on the type of vowels involved in the structure. While in words containing vowels of different height the occurrence of a long vowel may result in a disharmonic form, in words containing strictly mid-vowels disharmony never results; instead such words surface as fully harmonic forms bearing the [ATR] specification of the long vowel, regardless of the fact that the short vowels involved may have been of opposite tenseness values than the long vowel.

If the constraint in (21) were the only condition to be satisfied, nothing would prevent a form such as French [sekretɛːr] to surface as Wolof suboptimal *[sekretɛːr] which in terms of faithfulness to the input incurs less violations than optimal [sɛkkɛrtɛːr]. In fact the optimal form [dʌraːpoː] in (19) is exactly like *[sekretɛːr]: its final long vowel simply remains faithful to the input harmonic feature without causing the initial mid vowel to harmonize with this feature. The only difference between these two forms is that the former contains only mid vowels while the latter contains a low vowel. These facts suggest that there must be some other condition requiring mid-vowel forms to be fully harmonic. Such condition is not evident in the native phonology because mid-vowels are the only class of vowels that fully comply with harmony requirements in the Wolof system. Roots, as well as derived forms that contain only mid vowels always surface as fully harmonic forms; and all disharmonic forms in Wolof either contain a high transparent vowel or a low opaque vowel. Consequently, it is never the case that Wolof speakers are faced with either a disharmonic mid-vowel root or a disharmonic input containing exclusively mid-vowels in the native lexicon. Hence, there is no evidence of such constraint in action.

However, given the fact that some French input forms contain contrasting vowels with regard to tenseness which are mapped to contrasting [ATR] values in Wolof, disharmonic mid-vowel forms occur in loans. Such forms have to be repaired to conform to the harmony system. In this repair process, universal conditions as well as underdetermined grounding conditions emerge to resolve

conflicts in input structures from loans that are unattested in the native phonology.

Considering the make-up of the Wolof system, it is reasonable to assume that there is a family of agreement constraints which refer to vowel height, the ranking of which reflects the asymmetry found in the harmony system regarding the participation of each set of vowels. Among these constraints, the highest ranked is the one referring to mid vowels, *AGREE (MID,ATR)*. Mid vowels being the only vowels which fully participate in the harmony system, a disharmonic string containing such vowels exclusively is more marked than disharmonic strings containing either high or low vowels. Thus mid vowels are subject to greater markedness conditions with respect to disagreement than high and low vowels. For the purpose of this paper, however, we will not be concerned with the irrelevant non-emergent *AGREE (HIGH, ATR)* and *AGREE (LOW, ATR)*. (MID, ATR) requires that a harmony domain containing mid vowels be fully harmonic with respect to the feature [ATR].

(22) AGREE (MID, ATR): Mid vowels within the same domain must be fully harmonic.

With these assumptions at hand we can now proceed to demonstrate the interaction of this harmony constraint with the universal faithfulness condition in (21) and the more general conditions of Wolof vowel harmony.

5.2. Constraints Interaction

The two types of constraints that have emerged from the Wolof loanword data fall into the two broad categories of universal constraints as defined in Optimality Theory: Markedness and Faithfulness. Crucially, while in native words universal markedness conditions such as * *[HI, -ATR]* and * *[LO, +ATR]* dominate both the faithfulness constraint which requires preservation of the tongue root value of initial vowels (*IDENT [ATR σ1]*) and the general feature agreement constraint (*AGREE [ATR]*), the loanword adaptation process requires both universal faithfulness (*IDENT [ATR] LG*) and the vowel-specific markedness condition on feature agreement (*AGREE (MID)*) to dominate the more general makedness and faithfulness conditions.

(23) IDENT [ATR ,LG], AGREE (MID) >> IDENT [ATR σ1], AGREE [ATR]

Ranking the more general harmony constraints *IDENT [ATR σ1]* and *AGREE [ATR]* over the more specific *AGREE (MID)* and *IDENT [ATR, LG]* results in deriving fully harmonic, but sub-optimal candidate [sekkerteːr] as the winner while the optimal candidate [sɛkkɛrtɛːr] loses by virtue of not preserving the [ATR] feature of the initial input vowel. The reverse ranking, on the other hand derives the correct output form because it allows harmony to be determined by the long segment. Other possible disharmonic candidates, even if they faithfully preserve the harmonic feature of the long segment would be ruled out by the markedness constraints requiring harmony.

Furthermore, within the specific constraints, faithfulness must dominate markedness (*IDENT [ATR,LG] >> AGREE (MID,ATR)*), otherwise optimal candidates such as [guvɛːrnəːr] would lose to sub-optimal but fully harmonic [guvəːrnəːr] which fares worst only because it fails to preserve the harmonic feature of one of its long segments. In addition, this ranking also allows cases such as [dʌraːpoː] in which a short mid vowel and a long mid vowel disagree to emerge as optimal.

(24) IDENT [ATR ,LG] >> AGREE (MID,ATR) >> IDENT [ATR σ1], AGREE [ATR]

Finally, the universal markedness constraints * *[HI, -ATR]* and * *[LOW, +ATR]* must necessarily rank above all constraints since they are never violated in Wolof, and thus remain undominated. These rankings give us the complete hierarchy in (25) below.

*(25) *HI [-ATR], *LOW [+ATR] >> IDENT [ATR ,LG] >> AGREE (MID,ATR) >> IDENT [ATR σ1 >> AGREE [ATR]*

6. Conclusion

This paper has provided evidence in support of the claim that loanword adaptation is subject to the same hierarchy of constraints available in the native phonology. The Wolof data indicate that emergent patterns that appear to contradict the native system arise as a result of interactions between universal conditions and facets of Wolof harmony grammar that are underdetermined by the native-language learning data. These emergent patterns have unveiled some important facts about the make-up of the vowel harmony system of Wolof. The first is that there is greater faithfulness to long segments, a condition that is not evident from looking at native words alone. We have argued this condition to arise as a result of universal constraints on inalterability of salient segments. The

second fact is that the harmony system imposes greater disharmony markedness in mid vowels, a condition that is a consequence of the asymmetry in the system. Because mid vowels are always fully harmonic, and high and low vowels never alternate, there is no evidence of the effects of such constraint in the native language data. However, the introduction of disharmonic inputs that would otherwise never arise in the native phonology has triggered the emergence of these constraints, and thus provided important insights into the finer structure of the Wolof harmony system, i.e., one in which both markedness and faithfulness dominate the basic harmony conditions.

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Mariame I. Sy
UCLA
email: misy@humnet.ucla.edu

14

ENCODING TOPOGRAPHY AND DIRECTION IN THE VERBAL SYSTEMS OF LAMANG AND HDI (CENTRAL CHADIC)

H. Ekkehard Wolff

1. Introduction*

In some Chadic languages of northeastern Nigeria and northern Cameroon, in what would appear to be a fairly restricted geographical area, we are likely to find the mapping of salient TOPOGRAPHIC FEATURES of the habitat of the speakers into the grammar of their language. Speakers tend to explicitly and almost consistently indicate, by morphological and/or syntactic means, the DIRECTION of movement of action as either UPHILL or DOWNHILL or as on the SAME LEVEL OF ELEVATION. Also, they have a choice of looking at it from either the SOURCE/ORIGIN or the GOAL/TARGET of the movement, and this can also be encoded in the verb. Speakers of these languages also like to encode movement of the speaker or some protagonist TOWARDS a certain location (often called ALLATIVE), or movement FROM a certain deictic point of reference towards the speaker or protagonist (usually called VENTIVE), or movement away from the speaker or another point of deictic reference (ABLATIVE or EFFERENTIAL), distinct from other locative-directional concepts such as movement into (ILLATIVE) and out of (ELATIVE). In such systems it could be expected that the speakers also have a choice to indicate that the deictic centre of the discourse has shifted to some location not identical with that of the speaker or some protagonist (a concept referred to as

* Parts of this paper were presented at the 31st Conference of the Berkeley Linguistic Society in February 2005 in the Special Session on Languages of West Africa in the presence of Russell G. Schuh to whom it is dedicated on the occasion of his 65th birthday. Working on Chadic languages would have been much less intellectually fun over the last 30 years without the stimulating contact with Russ and his rich and always challenging output.

ALTRILOCALITY). Some of these directional concepts have wider distribution cross-linguistically, beyond the confines of the Chadic language family; but the mapping of topography into grammar appears to be a striking feature of a few Central Chadic languages only (cf., for instance, the descriptions of such languages as Margi (Hoffmann 1963), Higi (Hoffmann 1967), Wandala (Mirt 1970/71), Dghwede (Frick 1978), Podoko (Jarvis 1989), and Malgwa (Löhr 2002, 2003), and de Colombel (2003), which provide evidence for similar elaborate verbal derivational systems in the immediate vicinity of Lamang-Hdi).

For readers who are more or less familiar with Hausa, the best-known and best-described language of the Chadic family (cf. Wolff 1993, Newman 2000, Jaggar 2001), some of the concepts to be discussed have counterparts in the grade system of the Hausa verb: the "ablative/efferential" idea as encoded in grade 5, the "altrilocal/ventive" idea as encoded in grade 6, and "source-orientation" as encoded in grade 7. In addition, "away" readings (displacive/separative) are at least implied with a number of verbs operating grades 2 and 4, as are "goal-oriented" readings with certain verbs operating grade 1. As in the two Central Chadic languages discussed in this paper, DIRECTIONALITY would also appear to be a salient semantic feature in verbal derivation for Hausa, which belongs to the West Chadic branch of the family. (There is, however, no encoding of topographical features in Hausa.) In light of this background, a detailed contrastive look at two Central Chadic systems should help to gain deeper insights into fundamental principles governing the encoding of directionality in Chadic verbal derivation in general.

North of the River Benue and south of Lake Chad, the Mandara Mountains cut through the savannah plains in a north–south direction. The foothills and mountains testify to long periods of human settlement surrounded by elaborate terrace farming (even though many of the terraces and settlements are now abandoned–and have been for some time). *Lamang* speaking groups are spread out over various settlements in the western plains on the Nigerian side of the border with Cameroon, largely having abandoned previous habitats on the foothills for ease of farming in the plains. The *Hdi*, on the other hand, reside in basically one location, Turu (= Tourou), on a mountain plateau on the eastern side of the Cameroon border. The present, and possibly quite ancient, habitat of the speakers of the languages under consideration is characterized by remarkable topographic profiles in terms of plains, foothills, sharp mountain escarpments, and extended mountain plateaus (cf. schematic representation in fig. 1). Living and moving around in the area meant, and still means for those who remain settled there, either strenuous and breathtaking climbing and descending along steep and rocky mountain paths overcoming up to several hundred metres of

elevation, or moving more comfortably on a plateau and along the mountain edge on basically the same level of elevation. A schematic cross-section in a west-east direction would look something like the following:

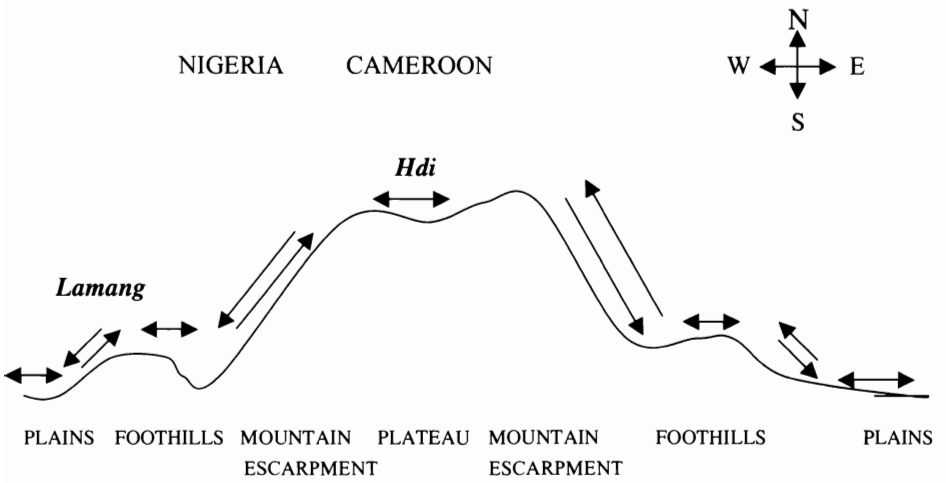

Figure 1: Schematic topographic profile of the Mandara Mountains, indicating necessary uphill, downhill, and equi-level movements, and roughly locating the speakers of Lamang and Hdi in terms of topographic environment

In the absence of donkeys and mules, not to speak of horses, that would be able to climb and descend and carry loads, it is the people themselves that have to carry their goods—a fact that physically sensitizes one to topographical features (as the author knows from painful experience during field work expeditions)! It is not unlikely that here lies one of the non-linguistic motivations for why speakers would tend to indicate topographical specifications excessively in their language use.

For purely practical reasons of limitation and convenience of reference, the term "topographic extension" shall refer to such morphological elements of verbal derivation that relate to and are used for, encoding the topographic profile of the speakers' habitat on and along the Mandara Mountains, i.e., either

- uphill/upward movement (not to be confused with other locative/directional categories like, for instance, 'onto, on top'), or
- downhill/downward movement, or
- movement along same level of elevation.

We shall discuss such topographic extensions as part of a more general system of encoding directionality in the verbal grammar of Hdi and Lamang.

Lamang and Hdi, together with practically unresearched varieties called Mabas and/or Vemgo, appear to form a language continuum with, however, rather low intercomprehensibility (cf. Stalder 1993) within what is called the Wandala-Lamang Group (aka Mandara Group, cf. Newman 1990).

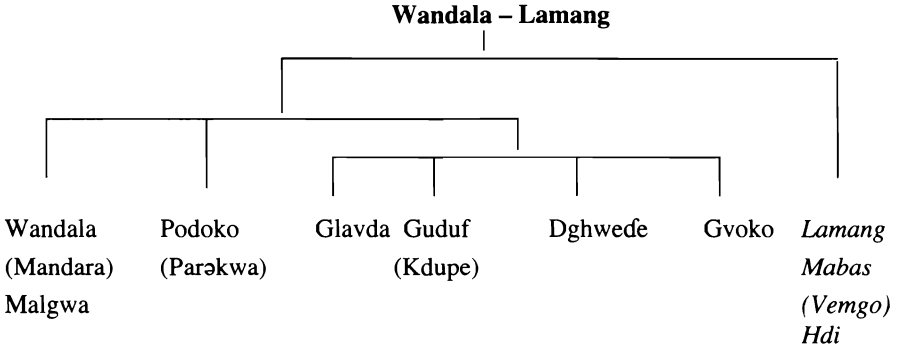

Figure 2: The Wandala-Lamang Group

Both Lamang (Wolff 1983) and Hdi (Frajzyngier & Shay 2002 [henceforth F/S]) have been the subject of monographic grammatical descriptions.[1] This paper will discuss morphological coding strategies with regard to thematic derivation of verb stems only. Concomitant or complementary syntactic manifestations of these features by frequent use of some kind of adverbial constructions involving topographically specified so-called motion verbs will not be treated here.

2. Alternative Descriptive Accounts of Coding Strategies in Hdi

The language possesses several extension suffixes which denote direction and/or location, but not all of them pertain to topography. Some of these suffixes take 1st or 2nd postradical position in the suffix chain to the right of the verb base and thereby precede the slot for object pronouns, while some extension suffixes take a postradical position further to the right, i.e., follow the object pronouns. Extension suffixes of different positions in the postradical chain may combine. Note that the systematic description suggested here is at variance with the description provided by F/S (141ff; cf. Wolff 2004), allowing for a total of five

[1] For a critical assessment of Frajzyngier and Shay's grammar of Hdi from the point of view of Lamang and received wisdom based on other Central Chadic languages, cf. Wolff (2004, in press).

postradical slots for extension suffixes (disregarding the functional slot for object pronouns that systematically become inserted between positions 2 and 3). We will look at non-topographic extension suffixes in Hdi first. Reference to F/S, the major source, is simply by page numbers which are given in parenthesis.

-d(á)	Allative (ALL) Grammaticalized preposition: *dá ~ dà* 'movement to or from a place' (213)	1st post-radical ext position
-g(á)	Inner space (INN) (at times confused with "ventive' [VENT], cf. 240f) Grammaticalized prep.: *gà* 'inner space' (229)	
-í	Movement away (AWAY) or under; affected object integrity	2nd post-radical ext position
-m(à)	Movement in/into (IN) Grammaticalized prep.: *mà* 'in' (230)	3rd post-radical ext position
-k/-g	? Ventive (VENT) ?	
-ú(́)	Source-orientation (SO); subject-affectedness Grammaticalized noun: *wi* 'mouth'	4th post-radical ext position
Low tone on 'distal' extension	altrilocal-ventive (ALT)	

Table 1: Non-topographic locative-directional extension suffixes

Note that tone plays a contrastive role in coding direction with regard to the "distal' extension: "With the high tone the movement is seen from a point of view other than that of the goal... With the low tone the movement of the object is represented from the point of view of the goal" (248, also 245 and elsewhere). I assume that the most widespread extension category in Chadic, the so-called "altrilocal-ventive", which is conspicuously absent in terms of a separate segmental extension suffix in F/S's description (but cf. below), is here coded by tonal means, i.e., low tone in combination with the distal extension. It is worth rereading the following description in this sense under the proviso that the deictic centre of reference is altrilocal (altrilocality is quite often a concomitant feature of the ventive category in Chadic), i.e., is not identical with the position of the speaker: "The goal oriented extension has high tone when it codes movement toward the goal from a point of view other than the goal, and low tone when it codes movement toward the goal from the point of view of the goal" (245). I shall henceforth refer to this extension under the term "altrilocal-ventive" (ALT) and distinguish it from the non-source oriented "ventive" (VENT) marked by the suffix *-k/-g* in Hdi, for which only very few examples are provided by F/S who

unconvincingly treat this suffix as an allomorph of the *-gá* 'inner space' extension. Let us now look at the topographic extensions in Hdi.

-(a)ghá	Movement on same level (112) Distal (DIST)	3rd post-radical ext position
-(a)ghà *-(a)ghú*	Distal (DIST) + altrilocal-ventive (ALT) Distal (DIST) + source-orientation (SO)	3rd + 4th post-radical ext positions
-xà	Movement down (DOWN)	3rd post-radical ext position
-f(à)	Movement up (UP)	3rd post-radical ext position
-b/-p	Movement out (OUT) – ? same level ?	3rd post-radical ext position

Table 2: Topographic locative-directional extension suffixes

The 'distal' extension (I shall maintain some of F/S's terminology for practical reasons), with its assumed combinations with categories such as altrilocal-ventive and source-orientation, is the most interesting topographic extension in Hdi. Its etymological origin quite likely is the same as in Lamang, i.e., a largely defunct noun **t[ə]gha* with the meaning 'home, residential compound', even though F/S claim that they "have no information about the possible source of the distal extension *gh*" (269). There are, however, reflexes of this noun in lexicalized expressions like the following, found in another source on Hdi:

(1) mitgha 'dans la maison' (Eguchi 1971: 263)
watgha 'porte' (Eguchi 1971: 271); lit. 'mouth-of house'
witgha 'porte de la case' (Eguchi 1971: 271); lit. 'house mouth'

Further, Hdi uses a word translated as 'home', i.e., *dzághà,* which incidentally has the same shape as the Lamang motion verb *dza-* 'go' plus extension *-ˊghà*, i.e., *dzághà* 'go home, go into/towards a populated or sacred place' (Wolff 1983: 111). The following example is from F/S (185, with slightly modified interlinear translation; note that 3rd pers. sg. subject is zero in certain verb forms like the following):

(2) klà -dá -ghá -ghà -klà dzághà

take-ALL-2SG-DIST+ALT-take (3SG) home
'he brought you home'

First of all, this extension codes "movement on a level", just like in Lamang. Strangely, this important piece of information is somewhat hidden away in F/S's description (112) and is not repeated in the subchapter devoted to the distal extension (243-252)! Unlike Lamang, however, the 'distal' extension in Hdi allows further and specific combinations with two other directional extensions which, for system-internal reasons, are attributed 4th postradical ext(ension) position:

3rd postradical ext position: 'distal'	4th postradical ext position: (a) 'altrilocal-ventive' (b) 'source-orientation'	Phonetic shape	Meaning
-(a)ghá	---	[-(a)ghá]	Moving (without necessarily arriving)
	(a) LOW TONE	[-(a)ghà]	Moving and arriving at another place
	(b) *ú(́)*	[-(a)ghú́]	Departure from a place

Table 3: The subsystem of the distal extension in Hdi

F/S provide some evidence for analysing the suffix *-(a)ghá* 'distal' to begin with a vowel based on the observation that the "1st pers. dual (incl.)" (DU) object pronoun *-úú-* ([sic] (135), but given with L-H tone melody on p. 243!) undergoes automatic "assimilation" to [-ù'wá-] when followed by the distal extension; this claim is made in addition to the generalisation that "like all spatial extensions, the extension *gh* must be preceded by the goal oriented marker *a*" (243). For the following example, for instance, F/S provide a morphological analysis that postulates double occurrence of a so-called "point of view" marker (in this case: "goal-orientation" identified with the vowel *á*, i.e., PV:G = "point of view of goal", and D:GO = "distal extension: goal orientation").

[hl-ù'wá-ghá-hlà] /hl - ù'ú -á -ghá -hlà/
find-1 DU-PV:G-D:GO-find
'he found the two of us' (243)

I consider postulated multiple occurrences of same markers in one verb form to be instances of over-analysis (cf. below for a discussion of the category goal-orientation in Hdi) and would rather reanalyse the above example as follows:

[hlù-'w-ághá-hlà] (/hla -`w´ -aghá -hlà/)
find-1DU-DIST-find
'he found the two of us'

Note that tonal issues in F/S's grammar frequently involve mismatches between examples and descriptions. This is also the case with regard to the tonal behaviour of the distal extension and its combinations. The majority of examples indicate that the (reduplicated) verb base following *-(a)ghú-* carries a high tone that might be carried over from the suffix *-ú(´)* in terms of a floating tone (note that such floating tones with extension suffixes are very common in closely related Lamang). This would, however, conflict with the statement by F/S (296 and elsewhere) that the reduplicated forms of the verb end in low tone *à* with zero representation of 3rd pers. sg. subject (which, however, like in one of the examples under (3) below, is not true for many examples throughout the book anyway). Examples (my reanalysis, with 1st and 2nd post-radical ext positions not filled):

(3) mà klá -ghá -ká
PROHIBITIVE take-DIST-2SG
'do not take it there' (237)

lá -ghá -` -la → lághàlà
go- DIST -ALT-go
'he arrived [at a place other than the one where the speaker is]' (113)

lá -ghá -ú´ -la → lághúlá
go- DIST -SO-go
'he left [the place where the speaker is]' (113)

Interestingly, the speaker's potential of playing with the deictic centre of utterances is more elaborated in Hdi than it is in its sister language Lamang. Lamang codes the basic direction towards or away from the deictic centre (the default deictic centre would be where the speaker is) by the use of specialised motion verbs, namely 'go' (movement away from the deictic centre) and 'come' (movement towards the deictic centre). The deictic centre can, of course, be shifted away from the speaker or to and from the location of any protagonist in the discourse. Hdi, on the other hand, not only uses the motion verbs 'go' and 'come' in a parallel fashion, but additionally has options to code notions of 'departure' and 'arrival' with both motion verbs and other verbs, and it does so by the use of combined extensions. The language thus has ways and means to distinguish between "goal-orientation" (moving towards a place) and "source-

orientation" (moving from a place) as manifestations of a "point of view" category—in F/S's terms—in addition to the more general notions of "allative" and "ventive" which are lexicalised, for instance, in the motion verbs. F/S and the present author, however, differ drastically in their analysis regarding domains and scope of this "point of view" category: Whereas F/S allow for almost ubiquitous and structurally uncontrolled marking and distribution across the whole verbal complex wherever a contrast between the vowels *a* and *u* can be established, I am inclined to accept the *goal : source* dichotomy as marked by the *a* : *u* contrast only as part of a subsystem with the distal extension. I maintain that, throughout the verbal morphology system of Hdi, we are dealing with an independent extension suffix *-ú´* whose value of "source-orientation / auto-benefactive / subject-affectedness" as an extension suffix in its own right is supported by the observation that, as tends to be generally the case with extensions in Chadic, there is also a reading of "finality, completion, perfectivity" involved, which is referred to in the literature as "particular [vs. general] aspect" (Smith 1969), "specific reference" (Wolff 1983), "referentiality" (Frajzyngier & Shay 2002); inaptly also referred to as "perfective" in Hoffmann (1963). This aspect-like category is often confused by non-initiated linguists and readers with the co-existing category of PERFECTIVE in the inflectional system of the language; cf. F/S's translation of the following example where the reduplication of the verb stem *sá* 'come' marks PERFECTIVE aspect in the inflexional system, and the extension *-ú´* (here following the 'distal" extension) manifests REFERENTIALITY in terms of "finality, completion" in addition to "subject-affectedness":

(3a) sá -gh -ú -sá 'he left the other place and came (for good)' (246)
come-DIST-SO-come

At variance with the analysis proposed by F/S and with the exception of the subsystem of the distal extension, I consider their "goal-orientation" the unmarked default counterpart of marked "source-orientation" elsewhere in the system. Note, however, that in the overall organization of the motion verb *cum* directional extension system of both Hdi and Lamang, goal- vs. source-orientation can indeed be viewed as a semantic and organizational concept (cf. the concluding section of this paper).

From the point of view of its closest sister-language Lamang, this evolution of a subsystem within the domain of the distal extension would appear to be an innovation of the Hdi verbal extension system.

particular (in our case: 'upward') extension—a process one is tempted to refer to as "directional agreement":

(11) kà hliyá -f -tá zvàxw kà ɗáwá-f -tá ntfàn ɗáwá-f -xà -tá dàwrà
SEQ leave- UP-REF bat SEQ ask - UP- REF glue ask - UP- ALSO - REF cloth
'the bat left and asked for glue and also for clothing' (263)

Quite like the 'upward movement' extension suffix *-f*, the 'movement out' extension suffix *-b/-p* also combines freely with non-motion verbs. Its topographic nature cannot be assessed from F/S's description, which fails to indicate whether, like in the case of the 'distal' extension suffix *-(a)ghá*, movement is on the same level. One could only guess at its topographic nature by analogy with Hdi's closest sister-language, Lamang. In Hdi, generally speaking, non-motion verbs tend to use the following:

- *dá* 'allative' for direction away from deictic centre towards a specific locative goal at a distance, and
- *gá* 'inner space', occasionally and misleadingly glossed 'ventive' by F/S, for bidirectionality in terms of movement towards or away from the deictic centre's conceived 'inside'.

The motion verbs *lá* and *sá*, on the other hand and like in other Chadic languages, appear to have developed their own set of extensions, among them

- the special 'distal' suffix *-(a)ghá* (with its altrilocality/source-orientation potential, i.e., additional marking by either L tone or suffix *-ú´*, cf. above) which, however, is also available for non-motion verbs, and
- the still highly restricted extension suffix *-xà* for 'downward movement' for motion verbs only, i.e., in Hdi, the 'distal', the 'upward movement' and the 'movement out' extensions are shared now by all verbs, motion verbs and non-motion verbs alike, 'movement down' is only marked with motion verbs;
- the special allomorph *-b* of the 'movement out' extension for motion verbs, as opposed to *-p* for non-motion verbs.

Compare also the special behaviour of these verbs "with respect to the referential marker in sequential clauses, which is *i* rather than *ta*" (266). All this is clear indication of the existence of a separate subgrammar for these verbs in Hdi also, a point not considered worth mentioning by F/S in their grammar.

3. A Contrastive Look at Coding Strategies in Lamang

Like Hdi, Lamang possesses several extension suffixes which denote location and/or direction, and again, like in Hdi, some of them pertain to topography. There are, however, some major differences between the two languages with regard to topographic and directional extensions. (a) A fundamental distinction between goal- and source-orientation comparable to Hdi as described by F/S in terms of a systematic vowel contrast *a : u* does not exist in Lamang, even though the distinction as such is encoded in more general ways. (b) On the other hand, while Hdi appears not to possess a subgrammar for motion verbs worth detailed description, Lamang has developed such a system in an elaborate manner. The subgrammar of motion verbs is organized in two parallel subsystems, each subsystem characterized by pairs of suppletive verbs stems (*la- : dza-* 'go', *sa- : skwa-* 'come') that combine with specialized topographic extensions based on the marked aspectual dichotomy between IMPERFECTIVE and NON-IMPERFECTIVE (Wolff 1983: 103ff.).

-ù´	Movement away; 'off'; object is removed from original location; with some verbs: intransitive-passive / medial reading (cf. source-orientation / subject-affectedness in Hdi)	3rd post-radical position
-´ŋ`	Location 'inside', direction 'towards within' Grammaticalized preposition: *ŋ´* 'in(to), within' (cf. grammaticalization of preposition mà in Hdi)	
*-úŋ`* < /-´ŋ$^{w}$`/	Movement away may be implied when the action of the verb is carried out to its ultimate stage, even to the point of destruction of object	
-`s´	Idea of adding (from the bottom), increasing (from below) Grammaticalized noun: *sto* 'bottom'	
-´s`	'of/off'; idea of separating part of the effected object matter ? Grammaticalized motion verb: *sa* 'come' ?	
-`vv´ (vowel length)	Idea of location or adding 'on top'	
-´vv´ (vowel length)	Idea of reducing object matter; may indicate or imply movement 'down'	

Table 5: Non-topographic locative-directional extension suffixes

As regards the position of topographic extensions in the post-radical suffix chain of non-motion verbs, they indiscriminately take the 3rd post-radical position, i.e.,

directly follow the fixed slot for object pronouns which is always the 2nd post-radical position. Note that the highly restricted subset of "imperfective motion verbs" (i.e., the roots *dza-* 'come' and *skwa-* 'go') allows for only one post-radical position which is reserved for the topographic extensions which are the only extensions allowed to occur with these roots anyway (for details cf. Wolff 1983: 103-106; 111-125). It will appear that grammaticalization in terms of semantic bleaching, as far as we are able to suggest etymological sources, appears to have progressed further in Lamang in comparison to Hdi. In tables 5 and 6, "meanings" represent rough semantic approximations only.

IMPERFECTIVE motion verbs	other verbs		
-ˊghà	-v́v̀ (vowel length)	Movement on same level (eastward ~ westward); allative ~ ventive (depending on deictic centre through choice of verb 'go' vs. 'come'); cf. "goal-orientation" and DIST (+ ALT) extensions in Hdi Grammaticalization source: *-ˊghà* < *tə́ghà* 'home'	1st and only post-radical position with IMPERFECTIVE motion verbs. 3rd post-radical position with non-motion verbs.
-ˊbè	*-ˊbˋ*	Movement 'out (of), away (from)'; movement on same level (eastward ~ westward) is implied unless change of level is indicated elsewhere in the clause (by "adverbial" use of motion verb); cf. OUT extension in Hdi Grammaticalization source: *bə̀lèkè* 'outer world, the world beyond the compound walls'	
-ˊfé	*-ˊfˊ*	Movement 'uphill, up(ward), eastward'; cf. UP extension in Hdi Grammaticalization source: *fítí* 'sun, sky'	
-ˊdə́	*-ˋgáˊ*	Movement 'downhill, down(ward), westward'; cf. DOWN extension in Hdi ? Grammaticalization source: *-ˊdə́* < *də́mbə̀ke~* 'valley, depression'	

Table 6: Topographic locative-directional extension suffixes

Note that, given the habitat of Lamang speakers, movement uphill implies eastward direction, movement downhill corresponds to westward direction; movement on same level is either in a southward or northward direction. Whether by historical accident or on systematic grounds, change of topographic level corresponds to a tone melody H-H while movement on same level is characterized by a H-L melody.

4. Comparing Coding Strategies in Lamang and Hdi

Based on F/S's description of Hdi, one is surprised by what appear to be major structural differences of verbal morphology between Hdi and Lamang with regard to apparent stunning reflexes in Hdi of the ancient Semitic/Afroasiatic "root and pattern" system involving consonantal roots and vocalized bases or stems. After some necessary demystification, however, Hdi can be accepted as a fairly straightforward type of Central Chadic language that structurally matches its closest genealogical relatives and geographical neighbours.

4.1. Demystification of the "Fundamental Point of View Category"

In order to compare the coding strategies for movement and direction in Hdi and Lamang, we need, first of all, to demystify the highly idiosyncratic analysis and description of Hdi with regard to both the root-and-pattern type system with regard to verb-final vowels which are said to carry semantic movement/direction-related functions, and the postulated category of coding "point of view" in terms of goal- vs. source-orientation through systematic vowel contrast *a : u* across the whole chain of morphemes that make up any complex verbal form.

In Hdi, verb *roots* are said to have two alternative forms "whereby some forms end in vowels *a* or schwa" (99), and where "schwa in verbal forms is an epenthetic vowel" (100). I take this to mean that the verb root either ends in *a*, or its final vowel is deleted, i.e., the verb ends with its final root consonant (with an epenthetic vowel then inserted "whose presence is motivated by syllable structure constraints and by the need to realize the tone of the verb..." [100]).

Simple verb form ending	*Hdi (305, 316)*		*Lamang*	
-a	verb stem	*pghá* 'spread' *xàná* 'sleep'	simple verb stem	*pgha* 'pour' *xina* 'sleep'
-u *-i*	verbal noun	*pgh-ù* 'libation' *xàn-í* 'sleep'	verbal noun noun (lexical)	*pgh-ù* 'pouring' *xini* 'sleep'
Zero [schwa]	dependent IMPERFECTIVE (= verb root)	*tà ksə́-tsí* IMPF touch-3SG 'while he devours'	ITERATIVE DURATIVE (= simple verbal noun with deleted suffix)	*tə́- kə́l -dé* it.dur-take-3SG 'he keeps taking'

Table 7: Verbal endings in Hdi and Lamang

This is, basically, what one would expect from a sister language of Lamang where practically all verb *bases* (= consonantal *root* plus vowels) end in *a*, and so-called simple verbal nouns take a suffix (/-u/) that is often deleted and then triggers the insertion of an epenthetic schwa (see table 7). Since in Hdi "the imperfective form of the verb...has no vowel other than the epenthetic schwa" (101), we may equate this imperfective form with its Lamang counterpart, i.e., the (imperfective) simple *verbal noun* after regular deletion of the verbal noun suffix.

In addition, our major source for Hdi identifies a verb stem-internal derivational subsystem involving (a) "thematic vowels" within the verb root (110), and (b) "a hypothesis concerning verb-final vowels" (111), which the present author tends to consider empirically and analytically unjustified in the light of comparative data from Lamang and other related languages within Central Chadic. Based on three qualities of verb-final vowels (*a : i : u*) and under the assumption that *-í* constitutes a true suffix ('movement away'), F/S postulate a fundamental "point of view" distinction between source-orientation and goal-orientation that relates to the vowel qualities *a : u* of the verbal stem (and elsewhere in the verbal complex): "The terms *source* and *goal* designate clusters of functions. The *source* includes the subject of the clause and for verbs of movement the place from which the movement originates. The *goal* includes direct and objects [sic!] and the place or spatial configuration toward which movement is directed." (111)

- The vowel *u*, whether root-internal (115), verb-final, or elsewhere in the verbal morpheme chain, is indiscriminately analysed as coding source-orientation.
- The vowel *a* is taken to mark goal-orientation.

(Note that elsewhere, and more in line with the present author's understanding, F/S state that "the function of *a* will emerge as an 'everything else' function" (110), i.e., a kind of default vowel, very much corresponding to a treatment in a previous source on the language, namely Eguchi (1971) who "represents all verbs with the final vowel *a*" (110).)

The analysis and description becomes semantically quite implausible and counter-intuitive when we read that verb stems may be marked for both source- and goal-orientation at the same time, i.e., by what would appear to be mutually exclusive categories. The authors use the notion of "lexicalization" as *deus ex machina* device to make the implausible plausible: "The verbal root with a point of view marker constitutes a verbal stem. Such stems have lexicalized to the point that other markers, including point of view markers, are added to them. A lexicalized stem built on the goal oriented marker may have the source oriented

marker added, and conversely, a lexicalized stem built on the source oriented marker can have the goal oriented marker added." (114) The reader is left puzzled as to how to conceive of an action or event that is goal-oriented and source-oriented at the same time! (As a matter of fact, all questionable examples provided in F/S can be accounted for in much simpler and less counter-intuitive ways.)

In Lamang and other closely related languages, including Eguchi's (1971) views on Hdi, verb-final *a* is part of the lexical base without any particular derivative function or morphological value attached. The derivative extension *-u*, on the other hand, is a widespread suffix in the area with indeed source-orientation-like functions such as, for instance, subject-affectedness and auto-benefactive (and which is etymologically related to the word for 'mouth' and, therefore, is the preferred suffix for verbs like 'eat' and 'drink'—in Hdi as much as in the other languages of the group).

On the basis of internal contradictions and in addition to evidence from neighbouring languages, and contrary to the sweeping statement that "the coding of the point of view is a fundamental category in the grammatical structure of Hdi..." (239), I see no reason to accept "goal-orientation" as a valid *morphological* (!) category in Hdi. The notion of a basic distinction of "point of view" in terms of a fundamental source- vs. goal-orientation linked to contrastive *a : u* marking and allowing several occurrences of these markers in the verbal morpheme chain is, in my view, largely a mystification! Rather, I would maintain that the verb system of Hdi, like in closely related languages of the group that it belongs to, is characterised by a default phonological verb class with *a* as final vowel on the one hand, and by use of specialized extension suffixes to encode topography, movement and direction on the other. This does not, however, invalidate the relevance of "goal-" vs. "source-orientation" as relevant *semantic* categories that underlie ABSTRACT LOCATIVE CASE notions, cf. below.

If *a* is indeed the default lexical verb-final vowel, and immediate postradical *-í* is indeed an extension suffix indicating 'movement away', we still need to look at post-radical *u* and its posited function as coding "source-orientation". This involves reanalysis of all the examples containing immediate postradical *u* that are given by F/S who, first of all, identify two allomorphs of this marker (171):

(12) [-ugh] following the vowel /a/, [-u] elsewhere.

This analysis can be challenged on systematic and phonological grounds. The form [-ugh] is most likely a conditioned variant form of the distal extension + source-orientation, normally occurring in the shape *-ghú*. The conditioning factor for what looks like metathesis appears to be, from the few examples provided in

our major source on Hdi, the environment [verb base ___ *-ta*] where the verb base ends in its default final vowel *a*, and the final suffix of the verb form is the referential marker *-ta* (with varying tone, examples from p. 171):

(13) ... klá-úgh-tà ... 'he took it out (and ate it up)'
... dífà-úgh-tà ... 'he (went/entered and) hid himself'
... dvá-úgh-tá ... 'she chose (for herself)'

Note that the subchapter on the distal extension in F/S does not contain a single example of the expected shape *-ghú* preceding the referential marker *-ta*! Our reanalysis is supported, among other arguments, by the "directional agreement" of extensions in multiple verb constructions such as:

(14) kà lá -gh -ú vàzák dífà -úgh -tà

SEQ go-DIST-SO rooster hide- DIST+SO-REF
'and the rooster went and hid himself'

After we have dismissed the form [-ugh] as having anything to do with immediate post-radical marking of source-orientation, we can then proceed to reanalyze forms that appear to display immediate postradical *u* as marker of "source-orientation"/"affectedness of subject", such as the following examples in (15) (see also169f and 111f):

(15) z-ú-zà 'he ate everything, he ate his fill'
s-ù-sà 'he drank everything, he drank his measure'
kà mt-ú-tá dá-nì 'and his father died' (i.e., 'died on him')
dr-ú-drá xàsúù 'the wood burned'
bádz-ú-bádzá lgùt 'the cloth spoiled'
gún-ú-gúná sígà 'the pot opened'
bl-ú-blá xàsú'ù 'the branch broke off'
(cf. bláblà tá xàsú'ù 'he broke off a branch')
hlr-ú-hlrà tá pìtsákw 'he forged himself a hoe'

Identical or at least similar examples could be produced from Lamang (and other languages in the neighbourhood such as Wandala, Margi, Bura) which would illustrate the characteristic use of a widespread extension suffix referred to as "auto-benefactive" or "subject-affectedness", and which is etymologically related to and grammaticalized from the noun 'mouth' (cf. Hdi *wi* 'mouth'). It has a

characteristic concomitant "completive" semantic feature of 'eating up', 'drinking up' when used, for instance, with verbs of eating and drinking, both in Hdi and other languages. Based on Hdi-internal and comparative observations, therefore, it seems safe to suggest that in Hdi

- simple verb stems/bases end in a lexical default vowel /a/ which has no semantic function (i.e., it does not code "goal-orientation" or "subject control" as suggested by F/S);
- there is no fundamental category of coding "the point of view" in terms of almost obligatory alternative choice between "goal-orientation" and "source-orientation" for practically all verbs, as F/S suggest;
- rather, Hdi, like its sister language(s), has an ordinary extension suffix *-ú´* that codes subject-affectedness, auto-benefactive, source-orientation of movement and similar notions, and which may occur alone or in (frequent) combination with the 'distal' extension suffix (*-(a)ghá + -ú´ > -(a)gh-ú´*) and thereby can be used to mark point of 'departure' (in systematic relationship with devices which mark point of 'arrival', cf. below);
- finally, the over-aesthetic view of a "root-and-pattern" system in Hdi in which the three verb-final vowels *a, i, u* have related semantic functions in terms of movement and direction does not stand the test of reanalysis. Rather, *a* remains the only lexical verb-final vowel, both *-í* and *-ú´* are regular extension suffixes which may be separated from the verb root by intervening suffixes, such as the 'distal' extension (in the case of *-ú´*, cf. examples above), and the 'allative' and the 'inner space' extensions (in the case of *-í*), note that the vowel [i] immediately following the verbal root in the examples below represent—in F/S's transcription and admittedly quite confusingly—the epenthetic vowel that elsewhere is given as schwa [ə]; cf.

(16) bí -d -í -dĭ -f -bà tá mùxúl
build-ALL-AWAY-1SG-UP-build OBJ wall
'he built me a wall' (184)

klí -g -í -dá -ghà -klá tá krì
take-INN-AWAY-1SG- DIST+VENT -take OBJ dog
'he brought a dog for me' (185)

4.2. The Postradical Extension Chain in Hdi and Lamang

4.2.1. Fixed positions of extension suffixes. In order to compare the derivative morphology of verbs in Hdi and Lamang, the description available for Hdi has to

be modified with regard to F/S's rather incomplete listing (241), including an adequate description of the tonal contrasts involved in coding direction. The numbering of the groups in the following table refers to their relative position following the verb, which is the leftmost component in the string of morphemes. The table leaves out the "partitive" morpheme *-á*, which is not part of the "regular" post-radical suffix chain but which occurs "infixed" between reduplicated verb bases outside the extension suffix chain (cf. 211). Also, the "tentative" extension *-n, -ŋ* (which has a cognate in Lamang -`*ŋ*ˆ) is omitted for the same reason that the examples provided by F/S (219f) do not allow any analysis as to its relative position with regard to other extensions. F/S mention two occurrences of a suffix *-rə̀* of which they know nothing. Its position, however, can be identified as following Group 3 extensions, i.e., after, for instance, the OUT extension. It could be tentatively classified with Group 5.

Group 1		*Group 2*		*Group 3*		*Group 4*		*Group 5*	
-`gá	inner space	*-í*	movement away	*-aghá*	distal (same level)	*L*	altrilocal-ventive (+DIST only)	*-ndá*	associative
-`dá	allative							*-xà*	'also'
-vá	applica-tive			*-f(à)*	movement up	*-ú*	subject-affectedness	*-rə̀*	(???)
-gla	'again'			*-xà*	movement down				
				-p/-b	movement out				
				-m(á)	movement in				
				-s	inverse				
				-k/-g	ventive (?)				

Table 8: Reanalysis of Hdi verbal extension system ("topographic" extensions shaded)

Note that only true motion verbs, namely *sá* 'come' and *lá* 'go', are allowed to take the extension *-xà* (251). Also, the OUT extension given as *-p* elsewhere tends to be realized as a voiced consonant *-b* only with these two verbs.

For Lamang we can give the following structural representation of positions in the postradical extension chain, keeping distinct the subsystem of motion verbs:

Group 1				*Group 2*		
non-motion verbs		motion verbs		non-motion verbs	motion verbs	
-gà	applicative			-ṽv̀ (vowel length)	*-ǵghà*	allative ~ ventive (same level)
-và	reflexive			*-ǵb̀*	*-ǵbè*	movement out (same level)
		-ŋà	causative	*-ǵf́*	*-ǵfé*	movement up(hill)
				-ǵgá́	*-ǵdɛ̋*	movement down(hill)
				-ṽv́ (vowel length)		reduce, down
				-ù́		remove, away
				-úŋ̀		away, to no further use
				-ǵs̀		separate (& leave some)
				-ǵŋ̀		action into or within
				-ṿ̀v́ (vowel length)		add, increase (on top)
				-ǵś		add, increase (at bottom)
				-úŋ́		benefactive (non-agent/goal)
				-ú́		auto-benefactive (agent/source)
				-ǵŋ́		action done a little

Table 9: Lamang verbal extension system ("topographic" extensions shaded)

4.2.2. Position of incorporated object pronouns. In Hdi, the position of the object pronouns is before Group 3, the REF[erential] marker *-tá* (and the reduplicated verb base in the PERFECTIVE) would follow Group 5 extensions. Note that the descriptive account of "pronouns and the order of extensions" in F/S (141f.) is wrong when they say (with regard to the 1st pers. sg. object pronoun): "The object marker *i* always occurs after the verb and before verbal extensions". Systematic reanalysis shows that all extension suffixes and the object pronouns occupy fixed positions in the postradical suffix chain, just like in the neighbouring languages of the group, and that the object pronoun may be preceded and followed by extension suffixes. Further, F/S tend to confuse the extension *-gà* (called INN "inner space" by them) and the "altrilocal/ventive" *-k/-g* (VENT "ventive", not systematically accounted for by them) which occupy different structural positions in the postradical suffix chain.

In Lamang, the position of the object pronouns is always between Groups 1 and 2; the morpheme *-(ǵ)tá (*corresponding to the Hdi REF[erential] marker) and the reduplicated verb base would follow the Group 2 extensions.

4.2.3. Comparing the extension systems in Lamang and Hdi. Comparing the verbal extensions systems in both languages in terms of postradical position and function, we observe shared structural properties, common categories, and some cognate morphemes. Still, there are some remarkable but rather shallow structural differences. We shall look at the extensions by group, i.e., according to their position in the postradical chain.

Hdi and Lamang Group 1 extensions:

- Both languages share the cognate extension suffix *-va* with clearly reflexive meaning, grammaticalized from the noun *vgha* (Hdi) ~ *ghva* (Lamang; with metathesis affecting C_1 /v/ and C_2 /gh/) 'body'. (Why F/S would call this "applicative" rather than "reflexive", contrary to established Chadic and general usage, is a mystery.)
- The suffix *-gà*, which occurs in both languages in this position, despite deceptive surface similarity, appears not to be a cognate: For Hdi, F/S claim a grammaticalization path from preposition (*gà* 'in') to the function 'inner space'. Lamang *-gà* 'applicative' (Wolff 1983: 122) has two quite different (possibly interrelated) meanings of 'lending a helping hand' and 'intervening by force'; a possible grammaticalization source could be the verb *ga* 'gain, own, rule'.
- There is no "allative" extension in Lamang cognate with Hdi, i.e., the preposition *dá* 'towards' that both languages share has not been grammaticalized in Lamang as a verbal extension (but is rather used in preradical position to mark future tense). The allative function in Lamang (like the ventive) is part of the extension pair *-ˊghà* / -v̋v̀, which formally corresponds to the Hdi DIST (+ ALT) extensions.
- Lamang *-ŋà* 'causative' for motion verbs has no obvious correspondent in Hdi; it appears to be a grammaticalization from a preposition *ŋgà* 'for, to the benefit/because of'. However, Lamang *-ŋà* 'causative' is functionally similar to Hdi *-ná*, which is treated by F/S (albeit somewhat hesitantly) as part of the object pronoun system.[3]
- Hdi *-gla* '(do) again' is obviously an innovative grammaticalization of the particle *gli~guli* 'aussi' (Eguchi 1971: 204, 205; cf. Lamang *gùléŋ(e)* 'also, too').

[3] Note the description of *-ná* as "additional argument marker" (170), which would be appropriate also to describe a function of the suffix *-ŋà* in Lamang! (Interestingly, this suffix has begun to spread into the system of the non-motion verbs.)

Hdi Group 2 with just the AWAY extension in it is missing in Lamang; the general idea of "movement away" is inherent, however, in several extensions of different shapes of Lamang Group 2 suffixes (cf. tables 6 and 9).

Hdi Group 3 largely corresponds to Lamang Group 2 where we find the topographic extensions (four in Lamang, possibly only three in Hdi) plus several other extensions, some of them with locative-directional meanings. Only two of the topographic extensions can be considered cognates, i.e., Hdi DIST and UP extensions *-(a)ghá* and *-f(à)* and Lamang *-ˊghà* and *-ˊf(è)* with fairly transparent and shared grammaticalization paths (from lexical items 'home' and 'sun, sky'). Cf. the following correspondences between Lamang-Hdi verbal extensions in terms of function, some of them clearly cognate morphemes, some not:

Hdi				*Lamang*	
Group 3		*Group 4*		*Group 2*	
-aghá	distal			*-ˊghà*	'home', allative ~ ventive (motion verbs only)
		L	altrilocal/ventive (with 'distal' only)	*-vvˋ*	allative ~ ventive (non-motion verbs)
		-úˊ	source-orientation, subject-affectedness	*-úˊ*	auto-benefactive, subject-affectedness
-f(à)	movement up			*-ˊfˊ ~ -ˊfé*	upward
-p/-b	movement out			*-ˊbˋ ~ -ˊbè*	out, away
-m(á)	movement in < prep *mà* 'in'			*-ˊŋˋ*	into, within < prep *ŋ́* 'in(to)'
-xà	movement down (motion verbs only)			*-ˋgáˊ*	downwards (all verbs)
				-ˊdé	(motion verbs only)
-s	inverse			*-ˊsˋ*	separative
				-ˋsˊ	increase (from below)
-n/-ŋ	tentative			*-ˋŋˊ*	action done a little

Table 10: Lamang-Hdi verbal extension correspondences

Hdi Group 4 and its systematic usage with preceding distal extension of Group 3 in terms of altrilocality vs. source-orientation as such appears to be a Hdi innovation. Note, however, that both Group 4 markers appear to be cognate with Lamang *-úˊ* 'auto-benefactive' (= agent-affectedness/source-orientation) and the

allomorph -v́v̀ of the 'allative~ventive' topographic extension. Obviously, both languages have rearranged common inherited morphological material and formed their own language-specific subsystems. Hdi Group 5 extensions are grammaticalizations of apparently very recent vintage and are absent in Lamang.

5. Conclusion

Both languages under review display elaborate systems of encoding movement and direction in their verbal grammars, including the mapping of salient topographic features of their habitat. The systems can be looked at from various vantage points which would reflect different theoretical and conceptual preoccupations.

In their description of Hdi, F/S for instance, identify a fundamental "point of view" category with a dichotomous distinction between "goal-orientation" and "source-orientation". On this assumption, they are able to describe a highly aesthetic "root-and-pattern" system for Hdi verbs reminiscent of "root-and-pattern" in Semitic scholarship, in which the three qualities that are available for final vowels of verb stems, namely *a – i – u,* relate to and are marked by:

- *a* point of view of goal (= object affected by action/event, with subject in control),
- *u* point of view of source (= subject affected by action/event, not controlling it);
- *i* movement away.

In their analysis, further markers (such as tonal distinctions) can also be seen to contribute to the fundamental functional distinction of "point of view". Their analysis and description, however, can be challenged on systematic and theoretical grounds and, at least in the view of the present author, does not stand the test of neither consistent internal reanalysis nor of contrastive comparison with closely related and neighbouring Central Chadic languages which have highly similar extension systems. The rather idiosyncratic "point of view" analysis has some major theoretical weaknesses and partly, at least, rests on questionable morphological analysis:

1. Theoretically, it relies on functional definitions of "goal" and "source" which add little or nothing to (a) the traditional distinction between transitive and intransitive verbs on the one hand, and verbs indicating movement/dislocation vs. verbs that do not, and (b) the received notion of a category of subject-affectedness in the derivational systems of Chadic verbs (including Hausa verbal grade 7).

2. It excessively expands to the whole verbal grammar a secondary contrast of goal- vs. source-orientation which should be restricted to instantiations of "altrilocality" as part of the "distal" extension subsystem.
3. It allows—*horribile dictu* for a Chadicist—several occurrences of the same markers in different positions in the same verbal suffix chain (which is consistently disallowed in related neighbouring languages with similar extension systems).
4. It also allows, quite counter-intuitively and hard to accept on semantic grounds, the co-occurrence of both goal- and source-orientation markers in the same verb stem (which would be expected to be mutually exclusive notions).

As such, the "point of view" theory as developed from and applied to Hdi constitutes a watertight theory that disallows falsification:

- With maximally only three distinctive vowels available in the language in the appropriate positions, practically every occurring verb form must be said to carry one of these markers (and intelligent semantic interpretation will always find a more or less plausible explanation for their occurrence!).
- A verb in Hdi is either transitive (= goal-oriented) or intransitive (= source-oriented); verbs of movement/dislocation allow either allative (= goal-oriented) or ablative (= source-oriented) readings.

The Hdi system could be analyzed—and profitably so, as I would claim—in much simpler terms that would match the received wisdom among Chadicists of strictly distinguishing between simple verb stems (with lexical final vowels: usually and by default this would be the vowel *a*) and extended verb stems that carry extension suffixes, some of which may be vocalic, and in certain instances (i.e., in the absence of intervening morphemes) may directly follow the verb root or base (such as *-í* and *-ú*). These extension suffixes would then still obey strictly to constraints regarding (a) single occurrence, and (b) fixed structural positions in the postradical suffix chain!

Nevertheless and irrespective of different or even conflicting theoretical and conceptual vantage points, it remains true that various interlocking conceptual categories are encoded in Hdi and Lamang and make up a highly complex system of derivational verbal morphology, in addition to more or less elaborate subsystems of specialized motion verbs that carry the basic meanings of 'going' and 'coming'. Motion verbs and directional extensions (with all verbs, motion and non-motion verbs alike) are used to highlight both actions or events with regard to topographic features of the speakers' habitat as well as to indicate maintained or shifted deictic centres within discourse. The categories that we find

encoded but that are organized, however, in different subsystems in both languages, are the following.

Mapping habitat in terms of topography (cf. fig. 1)

		Lamang		*Hdi*		
		Motion verbs	Non-motion verbs	Motion verbs only	All verbs	
					DISTAL	DISTAL +ALTRILOCAL
Same level of elevation	GOAL	*-´ghà*	-v́v` (vowel length)		*-(a)ghá*	*-(a)ghà*
	SOURCE	*-´bè*	*-´b`*			*-(a)ghú´*
UPHILL		*-´fè*	*-´f´*		*-f(à)*	
DOWNHILL		*-´dě*	*-`gá´*	-xà		

Table 11: Topographic extensions in Lamang and Hdi

Goal-orientation (ALLATIVE AND VENTIVE)

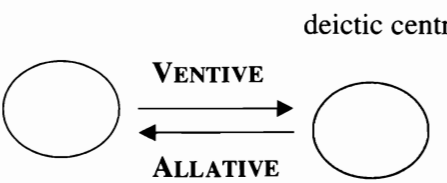

Figure 3: Directionality I (goal orientation): Allative vs. Ventive

(a) Lexicalization: the subsystem of "motion verbs"

	Lamang		*Hdi*
	IMPERFECTIVE	NON-IMPERFECTIVE	
ALLATIVE 'go'	*dza-*	*la-*	*la-*
VENTIVE 'come'	*skwa-*	*sa-*	*sa-*

Table 12: Subsystem of "motion verbs" in Lamang and Hdi

(b) ALLATIVE AND VENTIVE extension (with goal-orientation)

	Lamang		*Hdi*
	Motion verbs	Non-motion verbs	
ALLATIVE (GOAL)	*-´ghà*	-V́vˋ (vowel length)	*-`dá*
VENTIVE (GOAL)			*-k/-g*

Table 13: Goal oriented "allative" and "ventive" extensions in Lamang and Hdi

Source-orientation (ABLATIVE)

Figure 4: Directionality II (source-orientation): Departure (Ablative)

	Lamang	*Hdi*
ABLATIVE	*-ù´*	*-í*

Table 14: Source-oriented "ablative" in Lamang and Hdi

Altrilocal orientation (with additional goal- and source-orientation)

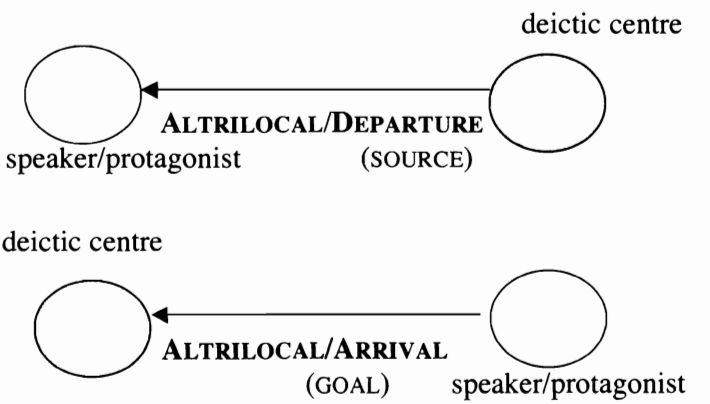

Figure 5: Directionality III: Altrilocality

Source- and goal-orientation: Departure vs. Arrival

	Lamang		*Hdi*	
	Motion verbs	Non-motion verbs	Distal	Distal modification
Source: ALTRILOCAL + DEPARTURE	*(-ˊbè)*	*(-ˊbˋ)*	*(-aghá)*	*-aghúˊ*
Goal: ALTRILOCAL + ARRIVAL				*-aghà*

Table 15: Goal vs. source oriented "altrilocality" in Lamang and Hdi

Note: Lamang does not possess a subsystem comparable to the "distal" category in Hdi. The extensions Lamang uses to convey the idea of "movement away" from a deictic centre are those referred to as "elative" and which correspond to the Hdi OUT extension.

Inner space orientation (INESSIVE, ILLATIVE, ELATIVE)

indicating location within or movement into or from within, a space/deictic centre that is conceived of as having an "inside"

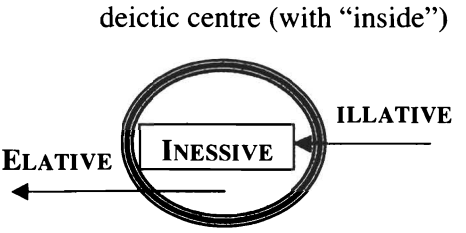

Figure 6 : Direction : Illative vs. Elative; Location : Inessive

	Lamang		*Hdi*	
	Motion verbs	Non-motion verbs	Motion verbs	Non-motion verbs
INESSIVE (be inside)	*-ˊŋˋ*		*-ˋgá*	
ILLATIVE (go/come into)			*-mà*	
ELATIVE (go/come out of)	*-ˊbè*	*-ˊbˋ*	*-b*	*-p*

Table 16: "Inner space" extensions in Lamang and Hdi

Hdi and Lamang share considerable cognate lexical and derivational material with regard to verb roots (motion verbs) and the expression of directionality, some of it testifying to fairly recent and still transparent grammaticalization (from nouns, verbs, and prepositions). On the other hand, they also show remarkable structural, functional and lexical differences. This is what makes it difficult to assess the degree of genealogical and dialectological nearness or distance between them. Major structural differences pertain to, for instance,

- number of functional "slots" in the postradical suffix chain (including incorporated object pronouns: three in Lamang; six in Hdi),
- constraints on the combinability of extensions in the suffix chain (not treated in any detail in this paper),
- elaboration of a subgrammar of motion verbs which is almost non-existent in Hdi but highly developed in Lamang,
- sensitivity to inflectional aspect (IMPERFECTIVE vs. PERFECTIVE) of both derivational material (in both Lamang and Hdi) and motion verbs (Lamang only); this point was also not treated in any detail in the present paper.

Lamang and Hdi can be viewed and understood, at the same time, to be remote dialects within a dialect chain stretching along the border between Northern Nigeria and northern Cameroon, as well as very closely related sister languages within the Wandala-Lamang Group of Central Chadic (subbranch A). Depending on one's own view on the matter, linguistic analyses and descriptions will differ in terms of highlighting the similarities or the differences, no matter how structurally shallow they may turn out to be. In any case, looking at Lamang and Hdi on the basis of the available major sources, reveals rich insights into fairly recent processes of language diversification from a common stock including independently ongoing grammaticalizations.

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H. Ekkehard Wolff
University of Leipzig
email: wolff@uni-leipzig.de