

The Ghanaian linguistics nexus

Edited by

Christopher R. Green

Samson Lotven

Contemporary African Linguistics 8



Contemporary African Linguistics

Editors: Michael R. Marlo, Laura J. Downing, Kristina Riedel

In this series:

1. Payne, Doris L., Sara Pacchiarotti & Mokaya Bosire (eds.). Diversity in African languages: Selected papers from the 46th Annual Conference on African Linguistics.
2. Persohn, Bastian. The verb in Nyakyusa: A focus on tense, aspect and modality.
3. Kandybowicz, Jason, Travis Major & Harold Torrence (eds.). African linguistics on the prairie: Selected papers from the 45th Annual Conference on African Linguistics.
4. Clem, Emily, Peter Jenks & Hannah Sande (eds.). Theory and description in African Linguistics: Selected papers from the 47th Annual Conference on African Linguistics.
5. Lotven, Samson, Silvina Bongiovanni, Phillip Weirich, Robert Botne & Samuel Gyasi Obeng (eds.). African linguistics across the disciplines: Selected papers from the 48th Annual Conference on African Linguistics.
6. Sibanda, Galen, Deo Ngonyani, Jonathan Choti & Ann Biersteker (eds.). Descriptive and theoretical approaches to African linguistics: Selected papers from the 49th Annual Conference on African Linguistics.
7. Akinlabi, Akinbiyi, Lee Bickmore, Michael Cahill, Michael Diercks, Laura J. Downing, James Essegbey, Katie Franich, Laura McPherson & Sharon Rose (eds.). Celebrating 50 years of ACAL: Selected papers from the 50th Annual Conference on African Linguistics.
8. Green, Christopher R. & Samson Lotven (eds.). The Ghanaian linguistics nexus.

ISSN: 2511-7726

The Ghanaian linguistics nexus

Edited by

Christopher R. Green

Samson Lotven



Christopher R. Green & Samson Lotven (eds.). 2024. *The Ghanaian linguistics nexus* (Contemporary African Linguistics 8). Berlin: Language Science Press.

This title can be downloaded at:

<http://langsci-press.org/catalog/book/427>

© 2024, the authors

Published under the Creative Commons Attribution 4.0 Licence (CC BY 4.0):

<http://creativecommons.org/licenses/by/4.0/>

ISBN: 978-3-96110-469-7 (Digital)

978-3-98554-098-3 (Hardcover)

ISSN: 2511-7726

DOI: 10.5281/zenodo.10949012

Source code available from www.github.com/langsci/427

Errata: paperhive.org/documents/remote?type=langsci&id=427

Cover and concept of design: Ulrike Harbort

Proofreading: Sebastian Nordhoff

Fonts: Libertinus, Arimo, DejaVu Sans Mono

Typesetting software: Xe_{La}T_EX

Language Science Press

xHain

Grünberger Str. 16

10243 Berlin, Germany

<http://langsci-press.org>

Storage and cataloguing done by FU Berlin

Freie Universität



Berlin

For Sam – our teacher, mentor, and friend

Contents

	Acknowledgments	iii
	Preface	v
1	Introduction Christopher R. Green & Samson Lotven	1
2	From co-occurrence patterns to rhythmic alignment: Ongoing investigations of Twi consonants and vowels Kenneth de Jong	9
3	Glide-onset formation between vowels in Akan Seth Antwi Ofori	27
4	Morphology in Gengbe and Yoruba ideophones Samson Lotven & Matthew Ajibade	53
5	Ethnopragmatics of Akan plant metaphor Kofi Agyekum	77
6	The socio-pragmatics of routine expressions in Dompò Esther Desiadenyo Manu-Barfo	101
7	Argument linkage for Niger-Congo ‘give’ Ronald Schaefer & Francis Egbokhare	125
8	Intertextuality in discourse: Chief Obasanjo’s open letter to Dr. Jonathan Victor Temitope Alabi	167
9	Names as communicative acts: A study of Yoruba names Taiwo Ehineni	185

Contents

10 Linguistic “oddities” explained	
Paul Newman	201
11 Coerced weight and its consequences in Bondu So verbs	
Abbie Hantgan, Christopher R. Green & Leonardo Contreras Roa	213
12 Morphophonology of Dholuo noun pluralization	
Beatrice Ng’uono Okelo	243
13 Poised to pivot: Kenyan Maay’s restricted tone system	
Christopher R. Green & Katrina Smith	269
Index	288

Acknowledgments

The editors of this book are grateful to the Contemporary African Linguistics series editors – Michael Marlo and Laura Downing – for believing in this volume. We appreciate their encouragement and support and the very efficient editorial process that they facilitated.

A volume like this would not be possible without the careful and critical, but always constructive, input from reviewers. Each chapter in this volume was evaluated by at least two, and in some instances three, expert reviewers. Where appropriate, one of the reviews was conducted internally by another contributor to the volume, but in most instances, reviews were provided by external reviewers who were not otherwise involved in the project. We gratefully acknowledge the contributions of all reviewers: (external) Joe Amoako, Kelly Berkson, Lee Bickmore, Michael Cahill, Aline Cunia, Stuart Davis, Mark Dingemanse, Katherine Franich, Emily Hannink, Larry Hyman, Kyle Jerro, Eyo Mensah, Winfred Mkochi, David Odden, Martin Orwin, Augustina Owusu, Kwabena Sarfo-Kantankah, Yvonne Treis, H. Ekkehard Wolff, and Ben Yamsuan; (internal) Matthew Ajibade, Victor Alabi, Kofi Agyekum, Leonardo Contreras Roa, Kenneth de Jong, Abbie Hantgan, and Ron Schaefer.

Lastly, we gratefully acknowledge Aline Cunia, who set the references in Bib-Tex, and Gary Mullin II, who provided expert technical assistance in formatting figures and other graphics. We are also indebted to the editorial team at Language Science Press – Sebastian Nordhoff for his invaluable guidance during the proofreading stage and Felix Kopecky for technical help with matters related to formatting and indexing.

Preface

In addition to his many contributions to the field of African linguistics, among Samuel Gyasi Obeng's most treasured hobbies and past times is writing short stories and poetry. Indeed, an accomplished poet, Obeng has published three collections of his poems: *Yese Yese*, 'Rumor mongering' (1993, Bureau of Ghana Languages), *Voices from the graves: Words of wisdom and caution from the departed* (2008, Author House), and *A nation in crises* (2022, Page Publishing). We are grateful to Sam for kindly agreeing to provide a poem for this volume, and one that offers deep, personal insight into his upbringing, early education, and the love that he has for his language and for Ghanaian culture.

crg & sl

Sunset in the morning

Samuel Gyasi Obeng

It almost ended before it began
It should have ended at dawn on a night
 of the thirty-sixth moon after my birth
No one gave me a chance at survival
Not even the Salvation Army clergy,
 nor the Nzema woman who brought me back from Hades.
The clergy named me *Rejected-by-Death*
For Death did not like me and so refused to take me with him
My father, Gyasi, Brave Buffalo, named me *Ugly-and-Useless*
And via that name hid me from Death and the Ancestral Phantoms
Yes, the Death-Prevention name gave me the opportunity and power to live.
Death, however, did not spare my two younger sisters,
Ama Oyuo, *The-Black-Antelope*, and Ama Fanosaara, *Take-Her-As-She-Is*
For, the Squad-of-Killers sent by Death via the measles epidemic
 had no mercy on them.

Preface

I witnessed their small coffins being carried away to the cemetery
one after the other
That same day; that Tuesday in June, just before *Ohumuu*,
the Festival-of-Harvest.

One Monday in a September, a bearded man, Tikya Brako,
hailed me from his mother's arms.
I saw a tear in my Mom's eyes but somehow clung to the man,
Tikya Brako
Later in life, I understood the meaning
of the tear that was shed.
Having lost two of her children,
she did not want the third being hauled away.
Tikya Brako assured my mom with the words,
I'll bring him back at noon; he must begin school.
Tikya Brako carried me on his shoulder and bid my mom farewell.
As we left the house, the house's gate squeaked and closed after us,
As if to say, *Isn't he too young to begin Grade One?*
On arrival at the school, I did not see much of a school
Seven black slates, each with a chalk resting on it;
Scattered in the dust, yawning and staring at me.

This is the Salvation Army Primary School,
Tikya Brako whispered.
You and your friends are going to be the pioneers of the school
And your classroom is this huge and comfortable space
Under these two tall mango trees;
you'll get mangoes in the weeks to come.
The morning winds swung the mango trees' branches to and fro
And beckoned me to sit in the dust that danced with the winds.
Tikya Brako made six other trips
Each time carrying a poor little soul,
Yes; they were all 'infants.'
The oldest, Owusu, was six
And I, Kwadwo Nyankomago, *Second-After-Twins*, was four.

Five of boys and two girls, Boatemaa and Dokuaa, Constituted the Unit,
the first batch of pupils, of that new school.

The three other boys, Kwadwo Mòtó, Kwame Dukuro and Yaw Minta,
were somehow all emotionally and probably mentally challenged.
There were no special schools those days
for the mentally and emotionally challenged
And no other school would take them during those *Days and Years of Ignorance*
So the Salvation Army accepted them,
as it would of others in the years that followed.
Those days, the belief was that giving such children an education
was against the wishes of the gods
For they were believed to be agents of terror
and torture of the other children.
And even though they may have unleashed terror and torture
every now and then,
They made the classroom fun for one and all.

Our teacher, Tikya Brako, had a Seventh-Grade education
But he gave his all to the best of his ability
Often times making what will now constitute a professional malpractice
By composing songs that we sang in class
To ridicule one of the emotionally challenged classmates, Kwame Dukuro.
This song has stuck with me, that I still sing in tears and in shame
The words of the song in the indigenous language, Akan, were:
Mankɔ sukuua, anka meye aboa, keteke!
'Had it not been for school/education, I would have been an animal'
Kwame Dukuro anka meye aboa, keteke!
'Kwame Dukuro, I would have been an animal.'

Two years of Middle School at a Presbyterian Middle School
Seven years at a Presbyterian run Secondary School,
five in my village, Asuom,
Before been blown by the winds of education
To learn more about the white man's ways and thinking
in College and Graduate school.
Stubbornness or love for my culture caused me to study my own tongue
all those however many years
Subjected to ridicule by my classmates,
especially during Middle and Secondary school
And punished by the teachers if I spoke my own tongue at school.

Preface

I persisted in learning and speaking that on-campus tabooed tongue
Akan, into College
Where I ended up studying Linguistics
Which in my Ghanaian culture is often interpreted as,
A chief's spokesperson, *Okyeame*.
A proud, *Okyeame*; Spokesperson, Orator, Editor
and Educator of Chiefs, Kings and intellectual giants!

I was given no chance of survival
I was given a Death-Prevention name that made me live
In dust under two mango trees
I first breathed an education that was termed formal
Nurtured by a teacher who gave his all despite his many hiccups
Immersed in foreign religions and their denominations
Yet continued to love and learn my culture and native tongue
Shaped by the culture that gave birth to me
Yet respectful of all cultures that have nurtured my professional life
A professional life that has become a web of constellation
A professional life that has taken me away from my homeland
to a land called Home-of-the-Brave
Yes, it takes the brave bird to take a flight to the unknown!

I end my song, my poem and my story with proverbs, that have guided my personal and professional journeys:

Wohu anomaa korɔ a, ɛnto no tuo.
If you see a lone bird, do not shoot it.

Do not persecute the defenseless.

Ohohoɔ nte nea ne bɔtɔ tee.
A visitor does not hear what his luggage hears.

*Don't be naive about the good that people say in your presence;
their insults are said behind your back.*

Wohwε asubɔnten nkyenmkyen apɔɔbibire a, anka worennom nsuo da.
If you look at the spirogyra on a river's banks, you'll never drink from the river.

Be welcoming to one and all.

Sε obi hwε wo na wo se fifi a, hwε no bere a, ne se retutu.
If someone nurtures you when you're teething, you must look after her when she's losing her teeth.

Return a favor to those who helped you early in life.

Wote sε obi retu ne ba fo a, na wode bi ato wo kotodwe mu.
When you hear someone advising her child, keep some in your knees so that you walk everywhere with it.

Learn from those who know better than you.

Sε obi yε wo bɔne apem ne papa baako a, hwε papa korɔ no so na wo ne no nye adwuma.
If someone does a thousand wrongs against you and does one right, look at that one right and word with him.

Wrongs are easy to count but goodness is easily forgotten.

Mepe me sankuo de nti na sε merebɔ a, na makata m'ani and makyea m'ano no.
It is because I want my hand piano to sound good that is why I close my eyes and twist my lips while playing it.

Create the necessary conditions to ensure success of your endeavors.

Obi nsi ne ho hene, enti kae na ma w'ani nsɔ nea nipa aye ama wo.
No one crowns himself chief, so remember and appreciate what people do for you.

Be appreciative of the help you receive from others because you got to where you are now because of other's generosity and assistance.

Preface

*Se yaw ne abeɓreɓe ka w'ani ɔbra ahyeɓeɓe a, ema wo atimpirim,
denhyɛ, yiedie ne nkɔsɔɔ.*

A life characterized by sunset in the morning survives and endures.

Tough beginnings prepare one for ultimate success in life.

Chapter 1

Introduction

Christopher R. Green

Syracuse University

Samson Lotven

Indiana University

1 Introduction

The papers in this volume contribute to our understanding of linguistic phenomena that span disciplines from phonetics to phonology and morphology, and on to discourse analysis and pragmatics. They further provide theoretical, typological, and descriptive insights centered upon several African languages, but particularly those native to Ghana and surrounding countries. What ties these contributions together is that they are inspired by and make reference – whether explicitly or implicitly – to a sizable body of research produced by Ghanaian linguists, and especially by Dr. Samuel Gyasi Obeng, Distinguished Professor of Linguistics at Indiana University.

Obeng's contributions to linguistics are distinctly noteworthy and unique among African and Africanist linguists in their breadth and their extension beyond linguistics to other disciplines. Initially trained in descriptive fieldwork by the eminent Ghanaian linguist, Professor Florence Abena Dolphyne, Obeng later pursued training in phonetics at University of York in England and at the University of California – Los Angeles, before further expanding his research program to political discourse analysis, indirectness, and his theory of *Language & Liberty*. Other subjects upon which Obeng theorized and published include conversational prosody, onomasiology, and creole genesis, just to name a few. For each



of these topical areas, Obeng's point of departure has been his own diverse language experiences in Ghana, and particularly those involving his mother tongue Akan. His work inspired a generation of linguists whose research focus is either primarily or entirely centered upon African languages. Indeed, many of the young linguists he trained have established and grown linguistics departments and programs throughout West Africa.

One might ask how such a diverse research trajectory possibly came to be, but Obeng's upbringing as the son of a village chief in Asuom, Ghana, undoubtedly played a role. As intimated in the poem that he contributed to this volume (see preface), Obeng grew up in trying times and within a national education system that did nothing to celebrate Ghanaian languages and cultures. Despite facing ridicule and antipathy from his colleagues and elders, he held fast to his love for the diversity of Ghanaian languages, including Akan, and the intricacies of the practices surrounding its use in a variety of social and political contexts.

Indeed, having been raised with daily exposure to a litany of discursive political strategies for activities such as turn taking, apologizing, face saving, cross-examination (among a host of other interactional pragmatic phenomena), and above all "speaking the unspeakable", Obeng's first research interests centered on the area of conversational phonetics, or what have come to be called "voice-prints" in conversational interaction. His 1988 dissertation *Conversational strategies: Towards a phonological description of Projection in Akyem-Twi* analyzed the use of Firthian "prosodies" like silence, pitch, tempo, and length, among other phonetic correlates to negotiate their interactions.

This work carried forward and expanded upon an already strong tradition of descriptive and theoretical linguistics in Ghana built by the likes of Dolphyne, but also Africanists like Mary Esther Kropp Dakubu, an American linguist who spent her professional life in Ghana and working on Ghanaian languages. Alan Stewart Duthie, a Scottish linguist, similarly devoted himself to Ghana and the exploration of its languages. Other prominent Ghanaian linguists who have contributed to this tradition include Felix Ameka, Gilbert Ansre, Adams Bodomo, James Essegbey, Kwesi Yankah, George Akanlig-Pare, and Kofi Agyekum. A new generation of Ghanaian linguists, many of whom were trained by this cadre, includes many already well-known names – Clement Appah, Mercy Bobuafor, Seth Ofori, Nana Aba Appiah Amfo, Fusheini Hudu, Esther Manu-Barfo, Michael Obiri-Yeboah, Augustina Owusu, Eyo Mensah – and certainly others too numerous to list. We, of course, are very happy to have had several of these individuals contribute to this volume, whether as authors or reviewers.

This research tradition, having originated in Ghana, has since transcended national boundaries via these individuals' scholarship. Scholars like Ameka, Bo-

domo, and Obeng, in particular, not only have supervised many of those listed above, but have also had a lasting influence on colleagues at universities around the globe, and a body of students who have become Africanist linguists. Several of these individuals, trained by these eminent Ghanaian linguists, are contributors to this volume.

2 Structure of this volume

The remainder of this volume contains 12 chapters from 16 contributors all of whom have drawn inspiration – methodological, analytical, empirical, or otherwise – from the foundational work described above. The first six chapters specifically concern themselves with languages native to Ghana. The two chapters that follow reflect extensions of the discourse methodologies developed for Ghanaian languages, but in the context of Nigeria. The last four chapters celebrate the challenges and outcomes of linguistic fieldwork on African languages more broadly.

Reflecting on an ongoing research program developed over several decades, de Jong (Chapter 2) reveals the unique timing relationships between consonants and vowels in Akan. Motivated by the uncommonly large inventory of fricatives in the language, as well as the distribution of secondary labial and palatal features vis-à-vis flanking vowels, de Jong's analysis takes into account phonology, historical linguistics, and phonetics, presenting a path from observation to experimentation. Akan appears to have undergone two processes of incorporating vocalic features into the consonantal system, first losing some instances of /u/ in favor of secondary labial articulations, and then, more recently, losing some instances of /i/ in favor of secondary palatal articulations. Such diachronic changes are reflected in modern co-occurrence restrictions. This chapter also describes ongoing research involving the rhythmic alignment of these secondary articulations within the syllable.

Ofori (Chapter 3) untangles the complex phenomenon of glide-onset formation in Akan CV₁V₂ words. Prompted by noted shortcomings in the literature concerning the emergence of [j]- vs. [w]-onsets in the language, Ofori argues that two phonotactic constraints are the overarching drivers of glide choice. While seeking to avoid sequences of V_[+High]V_[-High] overall, often accomplished via loss of the first vowel, the language is also faced with the need to avoid losing this vowel's contrastive place features. It is shown that the choice of alternation, and indeed of glide-onset, depends not only on underlying characteristics of V₁, but also the [Labial] specification of a preceding consonant. In some instances, secondary influences emerge based on characteristics of V₂. Intriguing distinctions reveal themselves, such as the fact that high back vowels that differ only in

their [ATR] specification participate differently in the process. Ultimately, Ofori illustrates that the phenomenon of glide formation is far more intricate than the published literature thus far would lead one to believe.

Lotven & Ajibade (Chapter 4) probe the relationship between ideophones and morphology in two isolating West African languages: Gengbe, a Gbe language (Niger-Congo) spoken primarily in Togo, but also in Benin and Ghana; and Yoruba (Niger-Congo), spoken primarily in Nigeria, but also in Benin and Togo. This paper considers various word formation processes such as compounding, reduplication, and tonal morphology which play a part in the production of ideophones and prosaic words (non-ideophones) alike. In doing so, they offer evidence that research which sets aside ideophones in the course of linguistic work risks ignoring rich swaths of the lexicons of these and other West African Languages. Such comparison suggests that ideophones, with their extra-linguistic baggage and depictive-rather-than-descriptive function, behave very much like other occupants of the lexicon in their derivational morphology.

The next chapter explores the ways in which a society views its relationship with the natural world, as reflected in the metaphors its people sew into proverbs, poems, and every day conversation. Agyekum (Chapter 5) offers the reader a view of Akan society in this local-ecological and culturally-specific mirror by examining plant metaphors (plantosemy) in various domains of daily and ritualized experience. Such cultural concepts analogize parts of life and human activity to the life cycles and features of various Ghanaian plants. By laying bare the ideas that underlie these expressions, this research illuminates both the unique ecological interconnections of the Akan and the universality of the human-plant relationships on which these expressions are built. Such research is also of documentary value, since Agyekum notes that many of these metaphors are falling out of use among younger speakers increasingly familiar with metaphors involving non-native plants.

As part of a larger language documentation project on the moribund Ghanaian language Dampo, Manu-Barfo (Chapter 6) shines a light on the daily and ritualized interactions that oil the cogs of communication. The routine parts of human interaction are a network of unwritten rules governing communication. Their adherence or violation is glaringly obvious to those who grew up within the community of their practice. This chapter includes discussions of the different expectations that native Dampo speakers have for greetings that happen at different parts of the day, in different locations, and situations. It also covers expressions of gratitude, congratulations, and sympathy, as well as non-verbal aspects of greeting and greeting taboos. For a language at such an advanced state

of decline and attrition, such daily expressions play an outsized role in conversation, since they may even be known and used by community members not fluent in Dompò. And, as this language disappears, this chapter contributes to the preservation of its memory and the memories of its last three speakers, consulted for this project.

In their cross-linguistic survey of 31 Niger-Congo languages from 14 distinct groups, Schaefer & Egbohare (Chapter 7) cover three major languages of Ghana (Akan, Ga, and Ewe), as well as three additional “Togo Mountain Languages” (Logba, Tafi, and Avatime) that are spoken in the border regions across Togo and Ghana. The focus of this typological survey is ‘give’ predications, or constructions that encode changes of possession between a Theme argument and a Recipient argument. Revealed in this survey is that three constructions are attested among these groups and that they are distributed areally. Moreover, it is shown that two of the three linkage types that involve ‘give’ verbs “couple” such that they are found within the same languages. Elsewhere, in languages that do not encode change of possession with ‘give,’ only a single predication type, or linkage, is possible. A few atypical linkage types are also reported and their unusual characteristics discussed in light of the broader categories.

The next two chapters of the volume take us outside of Ghana itself, illustrating the inspiration that Ghanaian scholars like Obeng and Agyekum have had on the analysis of African political discourse elsewhere in West Africa, and here, specifically in the Nigerian political arena. Drawing upon discursive tools like indirectness, intertextuality, and (more broadly) interactional pragmatics, Alabi (Chapter 8) analyzes in detail aspects of an open letter written by one former president of Nigeria – Chief Olusegun Obasanjo – to then-president of Nigeria Dr. Goodluck Jonathan. Alabi illustrates a variety of powerful discursive mechanisms that Obasanjo employed to draw attention to shortcomings and apparent falsehoods that he attributed to Jonathan’s words and actions as he debated running for a second term as Nigeria’s president. Obasanjo is shown to have drawn upon his own publically-spoken words, as well as those of Jonathan, to support and provide legitimacy to his writing of the open letter. In doing so, he further invokes proverbs and Biblical verses to situate his aversion to Jonathan pursuing a second term in office. Alabi hypothesizes that this action by Obasanjo may have ultimately played a key role in Jonathan losing the election.

Working within the area of onomastics, Ehineni (Chapter 9) uses the social and behavioral context of Yoruba naming traditions to offer insights into the Yoruba culture and people. A Yoruba child may have five or six different names, proposed to the parents by various family members – the many names expressing diverse rhetorical and pragmatic goals. Yoruba names may indicate the place

someone was born, or events in the life of the family during the time of birth. They may offer information about how birth occurred, the birth order of children, or previously deceased siblings. Names also tell something of a family's lineage, beliefs, and professions. Ehineni illustrates that names in the Yoruba tradition are communicative acts to those with the context to understand their significance.

While best known for his work on political discourse analysis, always underlying Obeng's work has been a deep commitment to the description and documentation of African languages, particularly those that are threatened with endangerment. This tradition and this commitment, as introduced above, carries forward his own training, as he has instilled these values in dozens of students whom he has mentored, especially those in Ghana. In bringing this fieldwork tradition to the US, Obeng – alongside Africanist colleagues Paul Newman, Roxana Ma Newman, and Robert Botne – pressed and challenged their students to rethink how to do “fieldwork”, given ever-dwindling and increasingly competitive funding, sometimes dangerous or uncertain political conditions in many parts of the world, and also decreased time available to spend working *in situ*. In doing so, students' attention was brought to the value of working with diaspora communities and field methods courses to gain insight into lesser-known languages and thus to form and test hypotheses about them. The last four chapters of this volume celebrate the challenges of fieldwork on African languages.

Newman (Chapter 10) revisits apparent morphophonological “oddities” from three Chadic languages – Hausa, Kanakuru, and Tera – that have long been treated as exceptions among experts on these languages. He illustrates that with further insight into the historical context now known about these languages, behaviors and characteristics previously deemed divergent find a ready explanation. As Newman suggests, such apparent oddities should not be relegated to the descriptive and analytical sidelines for long, as they have the potential to shed important light on other aspects of the language that might have thus far escaped notice.

Hantgan, Green, & Contreras Roa (Chapter 11) reflect upon a connection to earlier research on complex Ghanaian vowel harmony systems which laud the benefits of focusing on a targeted array of related constructs – in essence, the Firthian-style analytical “piece” – as a means to unravel the intricacies of the language's vocalic system and how it functions more broadly. In this chapter, Hantgan et al. delve into the surprising behavior of Bondu So verbs – particularly a subset of inflectional forms of the Past and Chaining stems – for which stems with a [+ATR] vowel and that end in a sonorant preclude suffixation in some contexts. Their results, while preliminary, suggest that there are acoustic correlations between the presence of the [ATR] feature on these stem vowels and

increased length in stem-final sonorants. They argue that these results implicate the ability of [ATR] to license the projection of sonorant moras and thus illustrate a different type of “contextual weight” than has otherwise been reported in the literature.

Stepping away from West Africa, Okelo (Chapter 12) revisits the challenging morphophonological behavior of Dholuo pluralization. Despite being better described than many African languages, Okelo points out that a satisfying analysis of how Dholuo nouns form their plurals remains elusive, in part because proposed analyses typically only account for a subset of attested patterns. By dividing nouns into classes by pluralization strategy, Okelo separately tackles three types of suffixation, two types of suppletion, and also pluralization by morphological subtraction. Her proposed analysis of six interrelated alternations via *-e* expands upon accounts offered elsewhere in the literature that posit an abstract underlying form of this suffix that never surfaces but nonetheless would appear to have a clear and consistent influence on several outcomes. Ultimately, her analysis stipulates that metrification and phonotactics are key factors that, taken together, permit a unified account of observed outcomes.

In the final chapter of this volume, Green & Smith (Chapter 13) present data highlighting the tonal and morphological behavior of two Maay dialects – Kenyan Maay and Baydhabo (Baidoa) Maay – and, more specially, their nominal systems. Green & Smith argue that although both varieties exhibit restricted tone systems, what is known about these and related languages diachronically suggests that they have come to exhibit more stress-like properties over time, yet have done so in different ways. The authors posit that in approaching a “pivot” point between tonehood and stresshood, the varieties remain definitionally tonal by different parameters. This, it is shown, appears to correlate with their somewhat divergent historical responses to the loss of tone bearing units at the right edge of words. Another variety of Maay (Lower Jubba Maay) and Somali are presented for further comparison.

Chapter 2

From co-occurrence patterns to rhythmic alignment: Ongoing investigations of Twi consonants and vowels

Kenneth de Jong

Indiana University

This chapter describes the results of several phonological and phonetic research projects investigating the system of secondary articulations found in Twi, in particular the extensive combinations of secondary articulations found with different fricatives. These patterns give evidence of a historical source for the secondary articulations as lying in the interaction between vowel articulations superimposed on various obstruent articulations, and how these affect acoustic output patterns. The chapter goes on to describe ongoing research into the relative timing of consonant and vowel articulations in speakers of Twi, by means of rhythmic metronome repetition tasks.

1 Introduction

As a linguistics professor at the University College London and then at the School of Oriental and African Studies (SOAS) from the 1920's to the 1950's, J. R. Firth's take on phonological analysis was and remains somewhat unusual in the context of modern linguistics. The crux of Firth's approach to phonological systems, vis-à-vis the more common approaches found especially in the American academy, is an insistence that phonological systems are multisystemic, and on the phonological side, that one cannot assume that particular phono-segmental structures exist before one begins to work with a language. The approach asserts that once



Kenneth de Jong. 2024. From co-occurrence patterns to rhythmic alignment: Ongoing investigations of Twi consonants and vowels. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 9–26. Berlin: Language Science Press. DOI: [10.5281/zenodo.11091821](https://doi.org/10.5281/zenodo.11091821)

one begins looking at larger spans of time, one finds that language users express many different facets of meaning beyond just the lexical contrasts that comprise the morpho-syntactic structures linguists typically examine.

As noted above, the Firthian approach to phonological systems questions some of the basic assumptions of many traditional phonological models. The most obvious divergence from what we typically expect of such systems is a skepticism about the segment. In many ways, the Firthian approach prefigured the move toward multi-tiered representations which began to be popularized in Goldsmith (1976). While structuralist analyses of the Bloomfieldian tradition focused on isolating categories of contrasts from which languages build a lexicon, and tended to represent the signal as a sequence of such categories, these alternative representations opened up the possibility of segments arising from the bundling of various properties which may have different temporal spans. Such research has highlighted languages with harmonic systems, like Turkic and Uralic vowel harmony systems, and the Tupi nasal harmony systems found in South America, with the point being that one does not get segments for free as some necessary building block of language.

Perhaps the most read phonological work from the 1960s, and certainly the most read work on English phonology, *The sound pattern of English* (Chomsky & Halle 1968), was particularly notable for its persistent attempts to remove any reference to non-segmentally organized information from the lexicon. In this work, prosodic stress was argued to be predictable, and hence, unnecessary. Tone was only referenced in passing, and syllabic organization was also done away with. Ideas laid out in Davis (1988), however, document many reasons why we need to understand these prosodic phenomena, especially stress and syllabification, in order to make sense of phonological systems, including the English phonological system.

In this Firthian tradition, de Jong & Obeng (2000) illustrate via Twi, a variety of Akan, aspects of the language's segmental phonology that bear upon our understanding of the fundamental units of speech and the cross-linguistic relationship between segments and prosodic structure. The current paper revisits this work and expands upon its findings through novel research on the relative timing of consonant and vowel articulation as explored through rhythmic metronome repetition tasks.

1.1 Twi fricatives and affricates

Twi boasts 11 different fricative qualities in our first survey of the system: [f, s, ɕ, h, fʲ, sʲ, fʷ, sʷ, hʷ, sʷ, ɕʷ]. A brief summary of examples from the Asante variety is laid out in Table 1, cross-classifying the examples by primary articulation in

the rows, and secondary articulations shaping those primary articulations in the columns. These examples are from de Jong & Obeng (2000: 686–687).

Table 1: Examples of contrasting fricatives in Asante Twi

Plain	Palatalized	Labialized	Labio-palatalized
<i>fa</i> ‘to take’	<i>fʲa</i> ‘to embellish’	<i>fʷa</i> ‘to endorse’	–
<i>sa</i> ‘to dance’	<i>æʲsʲa</i> ‘tree sp.’	<i>sʷa</i> ‘to carry on one’s head’	<i>sʷa</i> ‘to carry one one’s head’
<i>ci</i> ‘to burn’	–	<i>cʷa</i> ‘scrotum’	<i>cʷa</i> ‘scrotum’
<i>ha</i> ‘here’	–	<i>hʷa</i> ‘whack!’	–

In analyzing the system further, there are complicating irregularities concerning the idea that the Twi sound system includes eleven different fricative segments, and these irregularities come in three categories.

First, many of these fricatives are associated with secondary articulations, as explicated in the layout of Table 1. While there are four basic articulations, one labial, two coronal, and one glottal (or possibly dorsal), the addition of palatalization, lip rounding, and even a combination of palatalization with lip rounding – labio-palatalization – are what expands the inventory of qualities from four to the impressive eleven.

Second, these secondary articulations are distributed in a way that is not independent of the primary articulation. Co-occurrence restrictions are fairly common in phonological systems, but the particular patterning in Twi is not typical. For more on the complexities of secondary articulations and their phonotactic basis, see Ofori’s chapter 2 in this volume. As Ofori discusses, there are some constraints in Akan on segmental combinations that one can broadly ascribe to OCP constraints (see Leben 1973, and an extensive thread of following research) which insist that two collocated items differ from one another. One example of this in Akan is the following: a palatalized articulation cannot combine with any dorsal articulation. However, most other constraints do not fit this pattern, for example those involving lip rounding. Typologically, the most typical restriction on rounding combining with consonantal articulation is a proscription of labialization from combining with labials. Thus, [fʷ] is typologically rare. However, it is perfectly fine in Twi systems. Similarly, labio-palatalization only occurs with primary coronal articulations [cʲ sʲ], those most similar to the palatal element in the secondary articulation. This labio-palatalization, however, is not just a secondary property of the palatal articulation on the alveolo-palatal fricatives, because it also appears with the alveolar sibilant.

Third, these fricative articulations also exhibit a complex pattern of co-occurrence with the following vowel; again, see an impressive array of examples speaking to this fact in Ofori's chapter in this volume. This pattern of co-occurrence suggests strongly that, at least historically, the large array of fricatives in Twi have arisen partly due to consonants interacting with the vowel system. That is, the current consonant system reflects patterns of organization at roughly the syllabic level, which is where consonants and following vowels are organized into a production complex. De Jong & Obeng's (2000) investigation into these irregularities in segmental make-up and contextual constraints led them back into the question of syllabic organization as a root cause for their occurrence. Specifically, the integrated system of consonants in Twi appears to be the outcome of contrasts in the vowel system migrating into the consonant system. In this process of migrating, the system takes on a very different shape, since the acoustic space in which obstruents are articulated is very different from the acoustic space that the vowel contrasts came from. I next turn to the evidence for this sort of migration.

1.2 Phonotactic restriction and evidence for vowel migration

Akan vowel systems are all quite similar, with each language typically exhibiting ten vowels, composed of a five-vowel system, each vowel having a [\pm ATR] pair. With respect to the consonant system, the ATR contrasts are essentially irrelevant, so the patterns can be more simply grasped by treating the vowel system as having five vowels. In this five-vowel system, the high and mid vowels pattern similarly, so there are three categories of vowels to be considered: front vowels ([i/i] & [e/ɛ]), back, rounded vowels ([u/ʊ] & [o/ɔ]), and low vowels ([a/ɑ]). The patterns of co-occurrence found with the fricatives also extend, with some minor variations, to the plosives in the language, so the effects described here affect the entire obstruent system.

Looking at obstruents occurring before front vowels, one notes a systematic gap, that posterior consonants do not appear before front vowels. Similarly, posterior consonants ([k g h]) exhibit only a two-way contrast in secondary articulations; they systematically exhibit minimal contrasts in rounding, but never contrasts in palatalization. This gap strongly suggests that any historical contrastive front vowel elements that appeared after the posterior consonants have been incorporated into the consonant system in the form of primary distinctions between alveolo-palatal consonants and velar/glottal consonants. Or, more directly:

[k] + [i/I] > [tɕ]
 [g] + [i/I] > [dʒ]
 [h] + [i/I] > [ç]

Obeng (p.c.) has recently mentioned that there are older speakers in his memory with productions reflecting the earlier form of the language before this posited change, so the time-depth of this process would be in the early 20th century. The resulting co-occurrence pattern is not completely consistent, as there are a small number of current forms such as [kita] ‘to hold,’ but by-and-large the velars and glottals do not appear before front vowels or with palatal secondary articulations.¹

This hypothetical historical pathway to the alveolo-palatal series, then, further suggests a historical source for the labio-palatalization articulations as coming from rounded dorsal consonants appearing before front vowels, or more directly:

[k^wa] + [i/I] > [tɕ^ʷ]
 [g^w] + [i/I] > [dʒ^ʷ]
 [h^w] + [i/I] > [ç^ʷ]

That is, the labio-palatal articulation is actually, at least historically, a combination of previous consonant rounding and palatal articulation from the following vowel, both becoming incorporated into a complex secondary articulation of the consonants.

This overall conjecture about the dorsal series and front vowels is further borne out by the complicated system appearing before low vowels. The low vowel context exhibits the greatest number of contrasting secondary articulations on the obstruent. For labial and alveolar consonants before [a/a], there is a systematic, three-way contrast in plain, labial, and palatal. Minimal pairs exhibiting these secondary articulation contrasts are readily available; with [b], [d], and [t], there’s a systematic four-way lexical contrast, as exemplified in (1) with [t].

- (1) a. *ta* ‘to plaster’
 b. *tⁱa* ‘to step on’
 c. *t^wa* ‘bottle’
 d. *t^ʷa* ‘to pay’

¹It is possible that these exceptions are the result of subsequent changes or borrowings, which obscure the overall pattern.

However, with posterior consonants, alveolo-palatal, and velar/glottal, there is largely only a two-way contrast. Alveolo-palatal consonants contrast plain vs. labio-palatal, while velars and glottals contrast plain with rounded, as in (2). Palatalization does not co-occur with posterior consonants before [a], as in (3).

- (2) a. dza ‘to leave behind’
 b. $dz^u a$ ‘to butcher’
 c. * $dz^i a$
 d. * $dz^w a$
- (3) a. ha ‘here’
 b. * $h^u a$
 c. * $h^i a$
 d. $h^w a$ ‘whack!’

Putting all these pieces together, it appears that the systematic, two-way rounding contrast in consonants before [a] can be split into a four-way contrast by incorporating an intervening [i] vowel: [ta] contrasting with ([t] + [i/ɪ] + [a] >) [tⁱa], and [t^wa] contrasting with ([t^w] + [i/ɪ] + [a] >) [t^ua]. Posterior consonants also contrast in rounding, alveolo-palatals contrasting plain with labio-palatals, and velars/glottals contrasting plain with rounded. However, since the palatal element of the front vowel has already been incorporated into the primary articulation system, it is not available anymore to divide the secondary articulation contrasts. So, [ta] ⇔ [tⁱa], and [t^wa] ⇔ [t^ua], but [ga] ⇔ [dza], and [g^wa] ⇔ [dz^ua].

The final piece to this story concerns the rounding contrast itself. This rounding systematically does not contrast before back vowels, except in the case of labio-palatal contrasts in the alveolo-palatal consonants in some varieties, such as Akwapem: [dzo] ‘to cool’ vs. [dz^uow] ‘to harvest palm nuts.’ A sense of linguistic neatness would suggest a similar source for the rounding secondary articulation and the palatal secondary articulation. If the palatalization arises as incorporation of a front vowel articulation into the consonant system, then perhaps consonant rounding could also be the result of the incorporation of a back vowel into the consonant system. The suggested historical patterns with example anterior and posterior obstruents, then, are summarized in Table 2.

To sum up, all this patterning might suggest that the whole secondary articulation system is actually better thought of as a vowel system with the peculiarity of being articulated in conjunction with the consonants. Or, to put it another way,

Table 2: Posited sources for contrasting fricatives in Asante Twi

Posited historic source	Current form
s + a	sa
h + a	ha
s + i + a	s ⁱ a
k + i + a	ɕa
t + u + a	s ^w a
k + u + a	h ^w a
t + u + i + a	s ^u a
k + u + i + a	ɕ ^u a

maybe the co-production pattern of vowels and consonants is systematically different from what one expects from other languages, and so, the main difference between Kwa languages like the Akan varieties and, for example, Indo-European languages, is a different kind of syllabic organization of the contrasting elements. Here, we call the organization syllabic, because it is the syllabic level that coordinates the production of consonant and vowel articulations.

1.3 Phonetic factors in syllabic organization in Twi

In this line of inquiry, a first question is why the non-low vowels might appear in such close temporal proximity with the onset consonants in the first place. What is it about these languages that has encouraged the development of what look like complex consonants out of consonant + vowel sequences?

A second, related question is whether these consonantal complexes are actually just consonants and vowels, and not complex consonants at all. That is, could the current production patterns actually better be thought of as an accidental acoustic byproduct of syllabic organization, without reference at all to the segmental structure of the consonant system? Leading in this direction is the presence of a lot of apparent variation in the production of secondary articulations. Rounding sometimes varies with labio-palatalization, as in [p^wie] ~ [p^uie] ‘to exit,’ and palatalization varies with an actual vowel, as in [sie] ~ [sⁱe] ‘to bury.’

This second line of questioning, however, does not seem entirely explanatory of the situation, since there are examples of lexical items which violate the co-occurrence patterns expected, if the whole secondary articulation pattern is just the systematic fall-out of a general syllabic organization creating the patterns.

Some forms lexically require the non-palatal rounding with the velars, in contrast to the palatal rounding. For example, [k^wa] ‘to paint with clay’ contrasts with [æk^uaŋ] ‘to cheat.’ Similarly, some forms require the palatal secondary articulation without the palatal primary articulation, and one finds forms such as [h^uaŋ] ‘to sponge off someone.’ If the different secondary articulations are just unspecified variants of following vowels produced by a general syllabic articulation frame, then we would not expect lexically specific items that require a particular primary or secondary articulation.

De Jong & Obeng (2000) indicated a large amount of temporal overlap in the production of vowels and consonants, suggesting something like a syllabic frame which might account for the patterning. Palatography of consonants with different following vowels in various languages generally indicates that a following vowel will shift consonant closures in the direction of the vowel articulation. However, the extent of this effect in individual speakers is notable and, thus, it was deemed worthy of further investigation.

To quantify the degree of this temporal overlap, this earlier study explored a statistical framework which attempted to determine how far from the edges of a consonant one might be able to detect the identity of a neighboring vowel in the acoustic patterns on the other side of the consonant. The corpus included consonants intervening between two vowels, and then formant measurements were taken from the center of both vowels, and on the preceding and trailing edges of the consonant. Directional asymmetries were quite obvious, with the effect of a following vowel showing up in the middle of the initial vowel in one of the speakers, and in the preceding edge of the consonant in both speakers. Effects of the initial vowel on the following vowel, however, were not detectable at all. All this work suggested strongly that the Twi speakers were timing vowel articulations such that they strongly overlapped with a previous consonant.

Further detailed analyses, however, showed that the phonetic behavior of the speakers was not well accounted for just by stating that vowel and consonant articulations overlap. The main difficulty documented in de Jong & Obeng (2000) is in the lingual articulation of the labio-palatal consonants. If labio-palatal consonants are actually just the result of simultaneous production of three different articulations (primary articulation, front vowel/palatal articulation, and rounding articulation), then one would expect the three articulations to behave the same as in other words which are missing one of the articulations. Thus, alveolo-palatal articulations should be the same with or without the secondary articulations added to them. However, this turns out not to be the case; static palatography of the labio-palatal consonants shows that the lingual obstruent closures are shifted in a posterior direction from their plain counterparts.

The effect, then, indicates that, even though the secondary articulations of consonants in Twi may have historically arisen from vowel contrasts, the vowel contrasts have not remained separate from the consonants they are articulated with. The fact that the point of articulation of the alveolo-palatals is shifted in a posterior direction when articulated with labio-palatalization strongly suggests that the secondary articulations and the primary articulations have been fused together.

It is also not inexplicable that the primary closure would be shifted specifically in a posterior direction. This posterior shifting and lip rounding couple together to help lower the frequency of the dominant formant imposed on the noise corresponding to the obstruent. Both lip protrusion and lingual backing have complementary effects on the length of an anterior resonator between the two constrictions; both make that tube longer, and hence the resonating noise in the tube takes on a lower frequency, and results in a prominent formant (corresponding to F3 in the vowel) in the frication noise. The analysis of the noise spectra of these consonants (reflecting observations about fricative contrasts recently reviewed in Shadle 2023) indicates the presence of just such a very low anterior-cavity formant frequency in these labio-palatalized alveolo-palatal fricatives and affricates.

The conclusion of this earlier phonetic work, then, is that, yes, the consonant system of Twi has been heavily augmented by incorporating former vowel articulations into the former consonant system. This process of migration of vowel contrasts into the consonant system appears to be at least partly driven by how these vowel articulations generate distinct noise categories in the consonant system, so the function of the vowel articulations does not work exactly like it did in the vowel system. The consonant system has a different acoustic dimensionality than does the vowel system, and so some of the complexity of the migration process is driven by this mapping from the old, “sending” vocalic system to the “receiving” consonant system. As suggested by one of the reviewers of this chapter, such migrations from vowel to consonant systems are not uncommon in linguistic systems. For example, Faytak (2022) has explored the diachronic context of “fricative vowels” including in Sūzhōu Chinese, as well as some Grassfields Bantu languages, where vowels display more consonant-like articulatory/acoustic targets. Similarly, Voorhoeve (1976) also briefly describes a situation in Medumba, another Grassfields Bantu language, in which vowels /o/, /u/ and /e/, /i/ (the latter having been classified as a “super-high vowel” in Bantu reconstructions) are perceptually quite similar except for the fricativizing effect of /u/ and /i/ on a preceding consonant. Recent work on Lutuv (Bonhert et al. 2022), a language of the Chin State in Myanmar, has found a vowel system including six high vowels,

with the high central rounded vowel [ʊ] being “fricativized.” What the observations from Twi bring to the fore is the question of how such consonant-like vowel articulations are acoustically related to other vowels and to the idea that vowels and consonants are separated contrastive systems.

The other outstanding puzzle that this earlier work on Twi points out is the overall question of why the temporal coordination of consonants and vowels in Twi is so different from previously heavily examined languages in the first place. Or, to state the question more generally, how do consonant and vowel articulations get coordinated in languages, and how do languages differ in managing such coordination?

1.4 Studying temporal coordination in Twi

Languages such as Twi re-open some very long-standing questions in speech production, concerning how it is that the detailed articulations of speech become coordinated with one another in highly skilled, fluent speech. This topic has been the center of many different threads of research, but the thread that forms the core of the rest of this chapter is that pursued by speech and linguistic researchers at Haskins laboratories, especially during the 1980s and 1990s.

In the late 1980s, several elements of a synthetic speech model came together in an effort to understand how speech unfolds in time. One particularly detailed element of this larger model was Task Dynamics (Salzman & Munhall 1989), which sought to elucidate how a linguistic representation of speech composed of contrasting gestures might be interpreted as action regimes associated with these different contrastive elements – action regimes that then become orchestrated together in larger speech units corresponding variously to segments, syllables, or sub-syllabic units such as onsets and codas, all as part of a single orchestration scheme. Task Dynamic mechanisms interpret this orchestration as a mapping onto control-regimes for actual anatomical articulators, which then play out as schematized movement patterns. These are then interpreted by an articulatory synthesizer into actual acoustic signals.

Particularly relevant to the current discussion, the prosodic organization of these various gestures was pursued in heavily cited papers by Browman & Goldstein (1986, 1990). Their approach, along with similar work by others (e.g., de Jong 2003) envisioned syllabic organization as consisting of specified timing relations between the gestures associated with consonants and those associated with vowels. Subsequent work by Goldstein (e.g., with particularly interesting cross-linguistic analyses in Goldstein et al. 2007) drew on earlier coordination

models by Tuller, Kelso, and colleagues (e.g., Tuller & Kelso 1991) to hypothesize that syllabic structures correspond to stable phasing relations between the consonant and vowel systems.

These models, based as they are in the motor control literature, indicate that there should be a stereotypical set of timing relations found in all human languages, as long as the individual segments are executed by gestures of similar type to the ones seen in commonly examined western languages. However, the work discussed here on Twi suggests the language exhibits a tendency towards a different timing relation between consonant articulation and high vowel articulation, one in which a following vowel is synchronized with the release of consonant, such that the peak articulation of the vowel occurs simultaneous to the consonant release. The patterns found here are strikingly different from what is found in similar research with paleography on French, where there is very little overall difference in coronal contact for consonants before front and back vowels (Dart 1991).

While there is much direct measurement of production patterns that this set of speculations would suggest, I would like to close this section proposing a somewhat different approach to analyzing timing relations motivated by these very interesting questions that Twi raises for speech science. This research thread concerns the field of rhythmic organization.

1.5 Segmental make-up and P-centers

Recent work has revived interest in an experimental paradigm which became popular in the 1970s, that of the P-center (Allen 1972, Morton et al. 1976, Rapp 1971). In this work, two different threads of research, one in speech perception and one in speech production, came together in observations by Morton et al. (1976). They were examining memory patterns in speech perception, and encountered the difficult problem of figuring out how people perceive speech to have a regular timing pattern. It turned out that it was quite difficult to identify anything in the acoustic signal that precisely corresponded to the perception of regular speech timing, since the balance of acoustic information about consonants and vowels contributed to the timing pattern. The general effect was that listeners, given the task of adjusting recordings of speech syllables to sound regular, would align the beginning of vowels to occur at regular intervals. Onset consonants, preceding the vowel, would tend to pull the alignment point to an earlier time. Different consonants also would affect alignment to different degrees.

This complex pattern matches up quite well with what researchers such as Rapp and Allen found with production tasks, such as having people produce

syllables in time with a metronome or having them tap a finger in time with speech. From this literature, the concept of “P-center” was formulated, as a way of avoiding deciding whether the center of the syllable is based on perception or production, since both tasks give evidence for the effect.

Recent work on the P-center has suggested that the location of the P-center is language specific, and sensitive to the syllabic inventory of the language. Specifically, Chow et al. (2015) examined production in time to a metronome by Cantonese speakers, finding that the speakers were timing the beginning of the consonant with the metronome beats, rather than the vowel. The authors speculated that this alternative alignment pattern is due to the relatively simple onset structure in Cantonese, wherein (in many analyses) there are no consonant clusters. More recent work with speakers of Mandarin (Lin & de Jong 2023), however, has found a pattern similar to that found in languages such as English, with general alignment of a point near the beginning of the vowel with the metronome beats.

Of particular interest to the current chapter are two points: First, that the P-center might be sensitive to the structure of the language of the speakers, rather than just to the auditory or production substance of the speech. Besides the unusual results of Chow et al. (2015), a similar sensitivity of the P-center alignment to linguistic structure, specifically morphological constituency, has been found in Medumba (Franich 2018). Second, that the crucial point of alignment resides in the nexus between the consonant onset and the vowel. These two points together raise the more specific question of what counts as a consonant, and what counts as a vowel, especially in a case such as Twi where there is evidence that vowels can, at least historically, migrate into the consonant position. Are these vowels which are heavily co-produced with the onset consonant, or are they actually part of the consonants themselves?

1.6 P-centers in Twi: A first look

To begin exploring rhythmic organization in Twi, I employed the protocol used in a previous study of Mandarin (Lin & de Jong 2023). The logic of this approach is that, if secondary articulations in Twi are actually vowels which are produced in time with preceding consonants, then we would expect syllables with secondary articulations, such as [tʰɑ] ‘to step on,’ to exhibit an earlier timing of the metronome with the respect to the initial consonant. The metronome would line up with the secondary articulation, rather than with the following vowel. This logic might not extend to labialization, however, as our reconstruction places rounding as possibly a part of the earlier consonantal system. So we might not

expect a difference in timing between syllables with labialization, such as [t^wɑ] ‘bottle,’ and ones without it, such as [tɑ] ‘to plaster.’

A preliminary look at the recordings for this project suggests a difference in syllable timing, however, not in the expected direction.² Figure 1 presents spectrograms of parts of three production trials, comparing [tɑ] (top), [t^ɪɑ] (middle), and [t^wɑ] (bottom). The general pattern one finds is that the metronome signal, which shows on the spectrogram as dark squares in the lower frequency ranges, appears near the beginning of the vocalic portion of each syllable production, with quite a bit of variation in the exact timing. Looking in more detail at the middle syllable in the images in Figure 1, the metronome pulse in the middle trial ([t^ɪɑ]) appears after the consonant release, while in the other trials ([tɑ] and [t^wɑ]), the metronome tends to overlay the release of the consonant. This is actually the reverse of what was expected, since the palatal articulation should reflect the onset of the vowel, while the labial articulation might be part of the consonant that would precede the metronome. However, there is also extensive variation in the productions. For example, the last syllable in the top trial has the consonant release happening well before the metronome, while the first syllable has the metronome centered on the release. So, the next step in this journey is to determine the distribution of the different types and to generalize the protocol for use with different speakers.

The variation noted above also led in another direction, that of querying the fact that this sort of repetitive production is strongly rhythmic in nature. Given what we know about rhythmic productions, based on a well-developed research program exemplified in works like Cummins & Port (1998), Cummins (2009), Tajima (1998), and Anderson (2018), we are amply aware of the existence of different modes of phasing in rhythmic production. Given a repetitive cycle, either explicit in a metronome, or just internally generated by a speaker (or musician), the speech content can entrain to different parts of the cycle in any harmonic relation. So, our preliminary discussions have led us into the question of whether the variation in P-center studies might be due to different harmonic entrainment.

Previous work on the perceptual side, using tasks where participants are to adjust recordings to make them sound regular have not found strong evidence for different rhythmic modes (Whalen et al. 1991). Some probing of the possibilities did produce various production modes, as illustrated in Figure 2.

The three types illustrated in Figure 2 seemed perfectly stable ways of repeating syllables to a metronome, as expected from previous work on the subject.

²These recordings were made with the help of my previous co-author and collaborator Samuel Obeng, whose voice is featured in them.

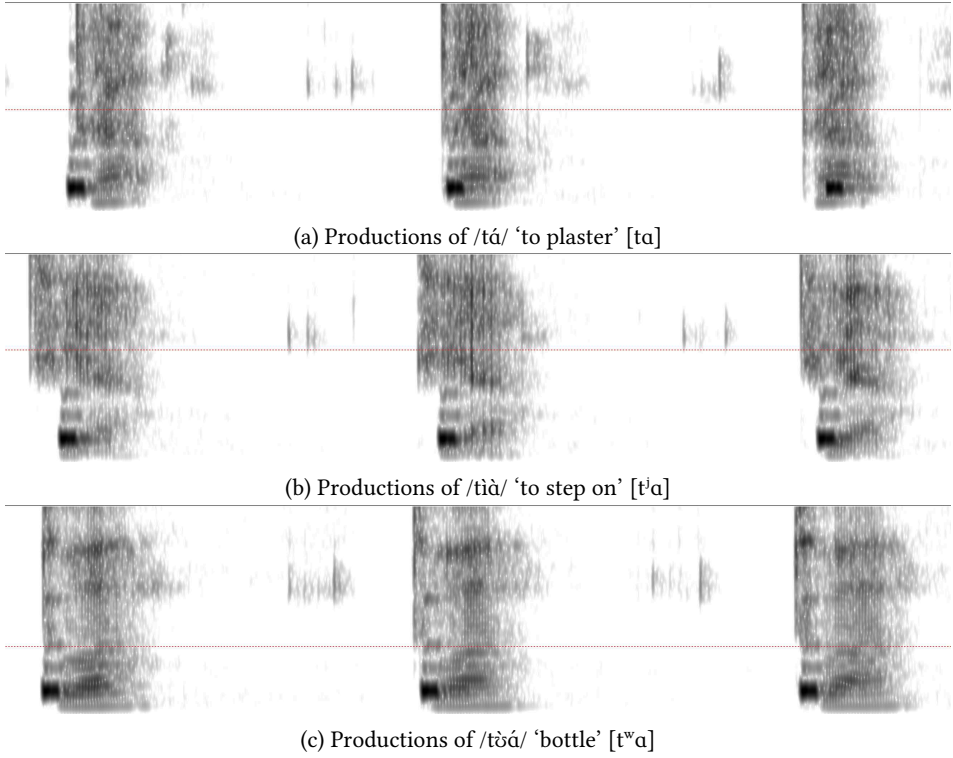
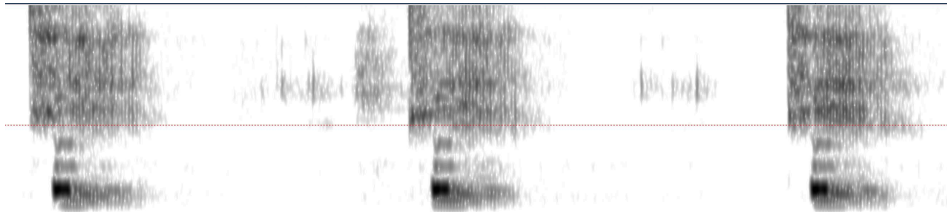


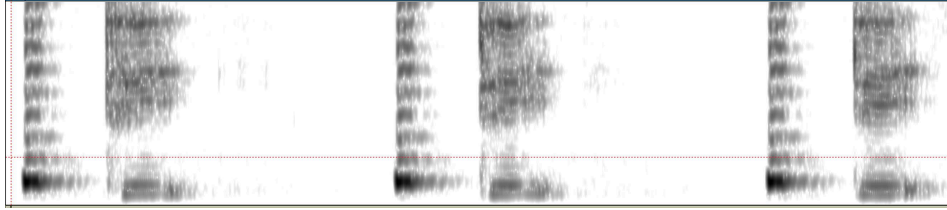
Figure 1: Three-syllable extracts from metronome speech trains. The metronome is visible as the square dark spot which appears overlaid near the beginning of each syllable.

The most obvious mode is the “on-beat” mode in the top panel, and this was clearly the mode that the productions in the P-center protocol generated. The other modes subdivided the metronome cycle, making harmonic repetitions at higher rates. So, for example, the bottom, “off-beat” mode has the metronome and the syllable alternating regularly so an event happens at twice the rate of the metronome cycle. The “pick-up” mode in the middle is a bit more complicated as the syllable timing suggests a sub-division of this double-time mode, yielding a repetition pattern at four times the metronome frequency. Here, there are two other events (at halfway and three-quarters of the way between metronome pulses) that need to be supplied by the speaker (or musician).

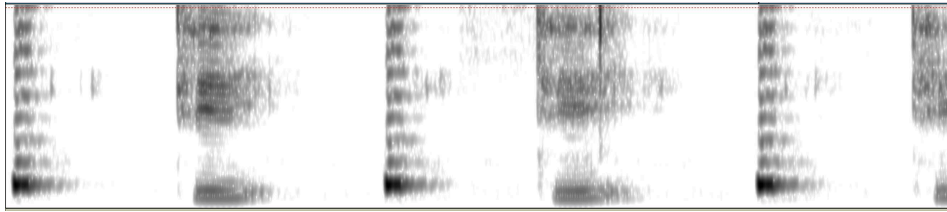
It is unclear at this juncture the extent to which speakers’ tendencies toward different modes may affect their patterning in P-center production experiments. It seems clear that the dominant alignment patterns with the metronome and syllabic beats being synchronized is the most obvious way of performing the



(a) Metronome embedded in the speech image, from the original task which created the productions in Figure 1



(b) “Pick-up” mode with the metronome beating before the onset of each syllable.



(c) “Off beat” mode with the metronome appearing half-way between each syllable onset.

Figure 2: Three-syllable extracts of three trials probing different rhythmic modes. The metronome appears as a dark square with harmonically related stripes above it. All syllables are productions of /ti/ ‘head’ [ti].

task, and that most speakers fall into it naturally. Also, the different modes are different enough that we should be able to distinguish them from the on-beat pattern. However, we have encountered speakers who, for some reason, avoid the on-beat pattern early in the trials, but then will gradually migrate into an on-beat pattern later on, and it is not clear whether certain types of syllables are more likely to cause this migration than others. This remains a topic for current investigation.

Of course, these observations are just preliminary, but they suggest the possible fruitfulness of extending this analysis to see how general these patterns are with other speakers of Twi, and other consonants. But a general conclusion to this work is clear: The Akan languages are a rich foundation for moving the discipline of linguistics forward, beyond the comfortable patterns found in more typically studied languages.

Acknowledgments

This research would not have been possible without the collaboration of Dr. Samuel Gyasi Obeng. Sam's impact on our understanding of linguistics and of African languages has taken on many different forms and has addressed many different aspects of language. My work in collaboration with him illustrates just one branch of his body of research that grew out of his doctoral work, which focused on understanding the signaling systems of different languages. This later led him to pay close attention to the prosodic aspects of language, particularly those which do not fit into a typical Latin alphabetic representation. It is in this endeavor that I have had the enormous privilege of collaborating with him. Additionally, I want to thank Yu-Jung Lin for her crafting of the metronome.

References

- Allen, George D. 1972. The location of rhythmic stress beats in English: An experimental study. *Language and Speech* 15. 72–100. DOI: 10.1177/002383097201500110.
- Anderson, Jonathan C. 2018. *The phonetics and phonology of speech rhythm in Akan*. Indiana University, Bloomington. (Doctoral dissertation).
- Bonhert, Amanda, Kelly Berkson & Sui-Hnem Par. 2022. Vowel sounds in Hnar-ing Lutuv. *Indiana University Working Papers in South Asian Languages and Cultures* 3. DOI: 10.14434/iwpsalc2022.v3i1.35447.
- Browman, Catherine P. & Louis Goldstein. 1986. Towards an articulatory phonology. *Phonology* 3. 219–252. DOI: 10.1017/S0952675700000658.
- Browman, Catherine P. & Louis Goldstein. 1990. Gestural specification using dynamically-defined articulatory structures. *Journal of Phonetics* 18. 299–320. DOI: 10.1016/S0095447019303766.
- Chomsky, Noam & Morris Halle. 1968. *The sound pattern of English*. Cambridge, MA: MIT Press.
- Chow, Ivan, Michel Belyk, Vance Tran & Steven Brown. 2015. Syllable synchronization and the P-center in Cantonese. *Journal of Phonetics* 49. 55–66. DOI: 10.1016/j.wocn.2014.10.006.
- Cummins, Fred. 2009. Rhythm as entrainment: The case of synchronous speech. *Journal of Phonetics* 37. 16–28. DOI: 10.1016/j.wocn.2008.08.003.
- Cummins, Fred & Robert Port. 1998. Rhythmic constraints on stress timing in English. *Journal of Phonetics* 26. 145–171. DOI: 10.1006/jpho.1998.0070.
- Dart, Sarah N. 1991. Articulatory and acoustic properties of apical and laminal articulations. *UCLA Working Papers in Phonetics* 79.

- Davis, Stuart. 1988. *Topics in syllable geometry*. New York: Garland Press.
- de Jong, Kenneth. 2003. Temporal constraints and characterizing syllable structuring. *Papers in Laboratory Phonology* 6. 253–268. DOI: 10.1017/CBO9780511486425.015.
- de Jong, Kenneth & Samuel G. Obeng. 2000. Labio-palatalization in Twi: Prosodic, contrastive, and quantal effects in linguistic micro-evolution. *Language* 76. 682–703. DOI: 10.2307/417139.
- Faytak, Matthew. 2022. Place uniformity and drift in the Suzhounese fricative and apical vowels. *Linguistics Vanguard* 8. 569–581. DOI: 10.1515/lingvan-2021-0071.
- Franich, Kathryn. 2018. Tonal and morphophonological effects on the location of perceptual centers (P-centers): Evidence from a Bantu language. *Journal of Phonetics* 67. 21–33. DOI: 10.1016/j.wocn.2017.11.001.
- Goldsmith, John. 1976. *Autosegmental phonology*. MIT. (Doctoral dissertation).
- Goldstein, Louis, Ioana Chitoran & Elisabeth Selkirk. 2007. Syllable structure as coupled oscillator modes: Evidence from Georgian and Tashlhiyt Berber. In Jürgen Trouvain & William Barry (eds.), *Proceedings of the XVI International Congress of Phonetic Sciences*, 241–244. Saarbrücken, Germany: Universität des Saarlandes.
- Leben, William. 1973. *Suprasegmental phonology*. MIT. (Doctoral dissertation).
- Lin, Yu-jung & Kenneth de Jong. 2023. The perceptual center in Mandarin Chinese syllables. *Journal of Phonetics* 99. 101–245. DOI: 10.1016/j.wocn.2023.101245.
- Morton, John, Steve Marcus & Clive Frankish. 1976. Perceptual centers (P-centers). *Psychological Review* 1. 405. DOI: 10.1037/0033-295X.83.5.405.
- Rapp, K. 1971. A study of syllable-timing. *University of Stockholm, Speech Transmission Laboratory - Quarterly Progress and Status Report* 12. 14–19.
- Salzman, Elliot L. & Kevin G. Munhall. 1989. A dynamical approach to gestural patterning in speech production. *Ecological Psychology* 1. 333–382. DOI: 10.1207/s15326969eco0104_2.
- Shadle, Christine. 2023. Alternatives to moments for characterizing fricatives: Reconsidering Forrest et al. *Journal of the Acoustical Society of America* 153. 1412–1426. DOI: 10.1121/10.0017231.
- Taijma, Keiichi. 1998. *Phonetics and phonology of speech rhythm: A cross-linguistic exploration in rhythmic speech production*. Indiana University. (Doctoral dissertation).
- Tuller, Betty & J. A. Scott Kelso. 1991. The production and perception of syllable structure. *Journal of Speech and Hearing Research* 34. 501–508. DOI: 10.1044/jshr.3403.501.

- Voorhoeve, Jan. 1976. *Contes bamileke*. Tervuren: Musée Royal de l'Afrique Centrale.
- Whalen, D. H., Andre M. Cooper & Carol A. Fowler. 1991. P-center judgments are generally insensitive to the instructions given. *Haskins Laboratories Status Report on Speech Research* 108. 141–146. DOI: 10.1159/000261843.

Chapter 3

Glide-onset formation between vowels in Akan

Seth Antwi Ofori

University of Ghana, Legon

This paper examines complex alternations involved in glide-onset formation between vowels in Akan. A glide-onset formed between vowels is realized as either [w] or [j], largely aligning with the place specification of an abutting vowel. I propose that two inviolable phonotactic constraints underlie the [w] and [j] glide-onset formation process – $*V_{1[+High]}V_{2[-High]}$ and $*C^wV_{[Labial]}$ – which are sometimes in conflict with one another. To avoid such impermissible structures, glide-onsets are formed that ultimately preserve V_1 's contrastive features. It will be shown that, surprisingly, /u/ and /ʊ/ as V_1 s behave differently in glide-onset formation.

1 Introduction

In Akan, a Niger-Congo language of the New Kwa sub-branch, forms in which one might expect a $V_{[+High]}V_{[-High]}$ sequence are instead produced with a glide-onset inserted between the vowels. I will henceforth call the process *glide-onset formation*. Data for the current study were gathered through direct data elicitation from 30 native speakers of the language, alongside my intuition as a native speaker of Akan. Written sources such as de Jong & Obeng (2000), Dolphyne (1988), and Ofori (2006, 2008, 2013, 2018, 2019) were also useful in determining the underlying representations of the data that were collected. The following is a brief introduction of the problem.

Dolphyne (1988: 8–14) lists and describes the vowel sequences in Figure 1 as permissible in Akan. Here, and in tables elsewhere throughout this chapter, grey cells show impermissible forms. The sequences under consideration here are bolded (and later presented in Table 10).



Seth Antwi Ofori. 2024. Glide-onset formation between vowels in Akan. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 27–52. Berlin: Language Science Press. DOI: 10.5281/zenodo.11091823

			V ₂ +High				V ₂ –High				
			–Round		+Round		–Low			+Low	
			i	ɪ	u	ʊ	e	ɛ	o	ɔ	
V ₁ +High	–Round	i	ii	ɪɪ			ie	ie	io	io	ia
		ɪ		ɪɪ				ie			ia
	+Round	u	ui		uu		ue		uo		ua
		ʊ		ʊɪ		ʊʊ		ʊe		ʊɔ	ʊa
V ₁ –High	–Low	e	ei				ee				
		ɛ		ɛɪ				ɛɛ			
		o	oi						oo		
		ɔ		ɔɪ						ɔɔ	
	+Low	a		aɪ							aa

Figure 1: Vowel sequences in Akan (Dolphyne 1988: 8–14)

Given the possible sequences in Figure 1, the generalizations in (1) can be stated, based on Dolphyne (1988).

- (1) a. [αF][αF]: identical vowel sequences are allowed
- b. [+High][–High]: high followed by non-high is allowed
- c. [–High][+High]: non-high followed by high is allowed
- d. [+High][+High]: two high vowels (round followed by non-round) are allowed

It is not explicitly stated in Dolphyne’s book at what level of representation these vowel sequences are acceptable, and whether the vowel sequences in (1b), in particular, are the same at both the underlying and surface levels of representation in Akan. The current study seeks to bring determinacy to this matter by providing the relevant phonetic evidence that these vowel sequences are only present underlyingly. On the surface, however, there are markedness and sonority-based syllable sequencing constraints coupled with the need to preserve segmental/feature contrasts that militate against a surface V₁[+High]V₂[–High] sequence. As such, a glide-onset must be formed between the involved vowels to satisfy all these conditions. Therefore, the claim in this paper is that, on the surface, there is glide-onset formation between an underlying V₁[+High]V₂[–High] sequence. One goal of this paper is to establish the rules leading up to glide-onset formation which achieve phonotactic well-formedness while also preserving underlyingly contrastive distinctions. The interactions that result in glide-onset formation, have implications for markedness theory, perspectives on the sonority

scale, and for syllable theory, including for the Syllable Contact Law (Murray & Vennemann 1983).

For expository purposes, Tables 1 through 5 illustrate instances of glide-onset formation in Akan that will be further explored below. Here and elsewhere, underlying (phonological) forms are given between slashed brackets, and surface (phonetic forms) are not bracketed.

As seen in Table 1, glide-onset formation is realized as [j] when the V_1 is an underlyingly high coronal vowel. It can also be realized as [w], when V_1 is an underlyingly high labial (i.e., round) vowel, as in Tables 2 and 3.

Table 1: [j] glide-onset formation
when $V_{1[+High]}$ is /i/ or /ɪ/

a. /ɛ́fíé/	ɛ́fjé	‘house’
b. /àbìèsá/	àbìjèsá	‘three’
c. /ɛ́fíé/	ɛ́fjé	‘vomit’
d. /bíó/	bìjó	‘again, further- more’
e. /àpíá/	àpíjá	‘itchy powdered substance’

Table 2: [w] glide-onset formation
when $V_{1[+High]}$ is /ɔ/

a. /ɛ́bósó/	ɛ́bówó	‘stone’
b. /ètósó/	ètówó	‘butt’
c. /èkósó/	èkówó	‘buffalo’
d. /kòá/	kòwá	‘bend over’
e. /bòá/	bòwá	‘help’
f. /tòá/	tòwá	‘enjoin’

Table 3: [w] glide-onset formation
when $V_{1[+High]}$ is /u/

a. /bùá/	bùwá	‘answer’
b. /pùé/	pùwé	‘go out’
c. /èbúó/	èbúwó	‘coop’

Table 4: [j] glide-onset formation in Akuapem
when $V_{1[+High]}$ is /ɔ/

a. /bùá/	bùwá	‘answer’
b. /pùé/	pùwé	‘go out’
c. /èbúó/	èbúwó	‘coop’

As will become clear, typical outcomes of glide insertion like those just shown are not realized in all instances. For example, forms in Table 4, which are found only in the Akuapem dialect, involve additional rules of delabialization and labio-palatalization that affect an underlying /ɔ/, yielding unique surface forms.

In addition, there is variation in forms with underlying V_1 /u/. While a [w] is often found after a labial consonant, as in Table 3, other forms with [j] are also attested in Table 5a–b in this context; these further entail vowel delabialization to [i]. After a non-labial consonant, there are alternative forms with delabialization to [ɪ], with subsequent labio-palatalization (Table 5c–h).

Table 5: Alternative glide insertion for V_1 /u/

a.	/bùá/	bìjá	‘answer’
b.	/pùé/	pìjé	‘go out’
c.	/tùá/	t ^u íjá	‘settle debt’
d.	/ètúó/	èt ^u íjó	‘gun’
e.	/kúá/	k ^u íjá	‘farming’
f.	/èkúó/	èk ^u íjó	‘group/association’
g.	/dùé/	d ^u íjé	‘bid apologies’
h.	/àdùòwòtɛ ^u í/	àdɛpìjòwòtɛpí	‘eighty’

The remainder of this paper is organized as follows. §2 defines the relevant phonological background for the analysis introduced above. §3 presents and analyzes the data within rule-based phonology. §4 connects findings in §3 with principles of markedness, sonority and syllable theories, and research on Akan phonology.

2 Phonological background

Table 6 shows features that I assume to be associated with the nine vowel phonemes in Akan. Redundant features appear in parentheses.¹ Certain feature definitions are particularly important for this paper. Notably, I extend place features to vowels. Doing so follows Hume (1992) and provides a unified and more meaningful account of vowel-consonant and consonant-vowel feature interactions in this study. Note that one could alternatively analyze $[\pm\text{Labial}]$ vowels $[\pm\text{Round}]$, but given their interaction with Labial consonants, the former is analytically preferable. A binary \pm distinction for $[\text{Labial}]$ place for consonants is necessary, as consonant-based phonological processes actively reference these values independently. The same is not the case for vowels, and therefore $[\text{Labial}]$ is treated privatively for vowels. Since there is no evidence to suggest its binarity, the $[\text{Coronal}]$ feature is also treated privatively. Privative features, when present, are marked with “✓” in Table 6. In general, I assume featural binarity unless there is reason to posit otherwise.

The feature classes defined in Table 7 provide a reference to be used throughout this paper, with V_1 and V_2 indicated for convenience. Phonotactic constraints refer to these classes, and they aid in defining the context and processes that underlie alternations.

¹There is an additional low vowel represented as $[\text{æ}]$, which is underlyingly $/\text{a}/$ but appears allophonically in $[\text{+ATR}]$ contexts.

Table 6: The Akan vowel feature matrix

	i	ɪ	e	ɛ	a	u	ʊ	o	ɔ
±High	+	+	–	(–)	+	+	–	–	–
±Low	(–)	(–)	–	–	+	(–)	(–)	–	–
±ATR	+	–	+	–	–	+	–	+	–
Labial						✓	✓	✓	✓
Coronal	✓	✓	✓	✓					

Table 7: Vowel feature classes

	V ₁		V ₂
i ɪ u ʊ	[+High]	e ɛ a o ɔ	[–High]
u ʊ	[+High, Labial]	o ɔ	[–High, Labial]
i ɪ	[+High, Coronal]	e ɛ	[–High, Coronal]
i u	[+High, +ATR]	a	[+Low]
ɪ ʊ	[+High, –ATR]		

In Akan, there is a constraint forbidding unadvanced [–ATR] and advanced [+ATR] vowels from co-occurring either within words (roots, stems, and compound words) or between words in a phrase. This phonotactic state of affairs is typically resolved by favoring [+ATR] over [–ATR] such that an unadvanced vowel becomes advanced. The process is called “[+ATR] harmony”, and is caused by the [+ATR] *harmony rule* (Dolphyne 1988), in recognition of the direction of sound change. Generally speaking, [–ATR] vowels, /ɪ, ʊ, ɛ, ɔ, a/, in a given domain, are pronounced [i, u, e, o, æ], respectively, without a meaning change. For example, there is regressive [+ATR] harmony in which the future marker /bɛ-/ is pronounced [be-] before a [+ATR] vowel (e.g., /bɛ-di/ → [bedi] ‘will eat’).

Progressive [+ATR] harmony also occurs in Akan, but strictly between two vowels without an intervening consonant, the second of which is [–Low]. For example, /ɔ-di-ɪ-ɛ/ (3SG-eat-PST-EMP) is realized [odiiɛ] ‘s/he ate it’. Here, [+ATR] harmony spreads from /i/, the root vowel, to /ɪ/, the past/perfect marker, but does not spread to /ɛ/, the emphatic marker. Such outcomes are relevant to the current paper in that [j] glide-onset formation precedes and blocks the spread of [+ATR] to /ɛ/.²

²The [+ATR] harmony process will only be discussed in this paper where its application interacts with processes that contribute to glide-onset formation as described above. The interested reader could consult Dolphyne (1988: 14–18) for when and how the [+ATR] harmony rule applies in Akan.

Table 8 is based on Dolphyne (1988: 29, 48) and provides readers with information concerning the consonantal phonemes of Akan. The phonetic realization(s) of each phoneme appear(s) in square brackets, where relevant.

Table 8: Akan consonant system (Dolphyne 1988: 29, 48)

	Labial	Coronal	Dorsal	Glottal
Plosive				
Voiceless	p	t [t, ts]	k [k, kw, tɕ, tɕʷ]	
Voiced	b	d [d, r, l, dz]	g [g, tw, dz, dzʷ]	
			Prepalatal	Velar
Fricative	f	s	ç çʷ	h
Nasal	m	n	ɲ ɲʷ	ŋ ŋʷ
Lateral		l		
Trill		r		
Glide			j	w [w, ʋ]

In this paper, I am concerned with only a subset of these consonants. In several instances, the phonemes /t, d, s, k, g/ behave differently from /p, b, f, m, w/ in that they undergo labialization triggered by $V_{1[+High/Labial]}$. An opposing delabialization process also applies in the language, which derives the coronal vowels [i, ɪ] from the labial vowels /u, ʊ/, respectively. I view the latter as a repair that is necessary to ensure that a $C^wV_{[Labial]}$ sequence does not occur on the surface.

Depending on the quality of the following vowel, a $C_{[-Labial]}$ may be labialized (i.e., $[C^w]$), or ultimately labio-palatalized ($[C^ɥ]$). In both instances, the trigger is $V_{[Labial]}$, though this vowel ultimately loses its labiality by rule to become coronal. The processes taken together displace the vowel's labiality onto the consonant while subsequently satisfying an Obligatory Contour Principle (OCP, Leben 1973) constraint on adjacent segments specified for $[Labial]$. Vowel delabialization yields an environment which, in turn, sets the stage for labio-palatalization, with the former, in essence, feeding the latter.

Independent evidence for these outcomes is seen in that /u/ is optionally delabialized when preceded by an inherently labial consonant (e.g., /bùá/ → [bùwá] ~ [bìjá] 'to answer'). As seen in this example, such inputs have two non-contrastive output forms: i) V_1 [u] with a [w] glide-onset, and ii) V_1 [i] with a [j] glide-onset. Employing the feature $[Labial]$ for vowels and consonants allows one to capture both the aforementioned phenomena as instances of $[Labial][Labial]$ dissimilation whereby the second instance of the feature is removed. As discussion of

these outcomes continues, the feature classes in Table 9 will prove important in capturing the outcomes witnessed in Akan. The focus here is on consonants, but some vowels are included to illustrate the classes within which consonants and vowels pattern in the language's phonological processes.

Table 9: Feature classes

[+Labial]	Consonants: p, b, f, m, w	Labial
[+Labial]	Labialized consonants: C ^w	Labialized
[+Labial]	Labio-palatalized consonants: C ^ɥ	Labio-palatalized
[-Labial]	Consonants: t, d, s, j, k, g	Non-labial
[Coronal]	Consonants: t, d, s, j	Coronal
[Dorsal]	Consonants: k, g	Dorsal
[Labial]	Vowels: u, ʊ, o, ɔ	Labial

With reference to the feature classes in Table 9, the glide-onset [w] patterns with [+Labial] consonants and labial vowels, while the [j] glide-onset patterns with [-Labial] consonants and vowels. In addition, the [j] glide-onset patterns with [Coronal] consonants. Where there is the need to discuss /k, g/ separately, [Dorsal] is used.

It is clear that the vowels [i, ɪ] are coronal given their role in [j] glide-onset formation. Also, /e, ɛ/ are coronal, which is supported by the fact that even when they are in V₂ position, they dictate [j] glide-formation when V₁ is /ʊ/, and also when [w] glide-onset formation would be phonotactically and/or semantically costly. It is typically, but not always, in the absence or inability of [j] glide-onset formation to apply that a [w] glide-onset is formed. As will be shown, context is everything.

With the relevant features and feature classes defined, we can now turn to more details of the Akan data. To aid in doing so, Table 10 presents a subset of the vowel sequences that were given in Figure 1 in order to focus strictly on those relevant to the current study. These sequences can be described as V₁[+High]V₂[-High].

Important to this paper is that a glide is formed between these vowel sequences and comes to serve as an onset to V₂[-High]: coronal vowels introduce a [j] glide-onset, and labial vowels introduce a [w] glide-onset. The morphological structure of a word plays no role in glide-onset formation or in processes associated with it. As a requirement, a glide-onset must agree with an adjacent surface vowel for place, either [Coronal] or [Labial], with a preference for the former over the latter. This preference is partly based on contrast preservation, but perhaps also

Table 10: Vowel sequences under consideration

		V ₂ -High					
		-Low					
		-Round	+Round		+Low		
		e	ε	o	ɔ	a	
V ₁ +High	-Round	i	ie	iε	io	iɔ	ia
		ɪ		ɪε			ɪa
	+Round	u	ue		uo		ua
		ʊ		ʊε		ʊɔ	ʊa

in markedness. [j] is coronal, whereas [w] is labial, with the former being less sonorous, and perhaps a better syllable onset in the language. But, although this is the preferred outcome, others are observed that are predicated on several interrelated featural and phonotactic factors. The description and analysis in §3 aims to establish how context affects a given rule’s application, and how rule interactions derive output forms.

3 A rule-based analysis of glide-onset formation

This section analyzes data on glide-onset formation in Akan drawing upon concepts and principles of rule-based phonology. Data are sub-divided into two broad categories, namely [j] glide-onset formation (§3.1) and [w] glide-onset formation (§3.2). Rules and their relevant refinements are fully expressed in §3.3.

As elsewhere in this chapter, input forms are given in slashed brackets. The second column of each table shows the output for a given input. As will be shown, for some inputs, onset formation is more complex than simple glide insertion. There are indeed instances in which the onset formation trigger (a V₁[+High]) is altered by rule before a glide-onset is formed. There are also situations in which a preferred alternation is not phonotactically and/or semantically feasible, leading to another outcome instigated by a non-high, coronal V₂.

3.1 Domains of [j] glide-onset formation

This section focuses on instances when onset-formation is realized as [j] between a V₁[+High]V₂[–High] vowel sequence. The goal here is to establish requirements

for the formation of the [j] glide-onset and to formulate linear rules to formalize the outcomes.

As shown in Tables 11 and 12, Akan avoids a $V_{1[+High]}V_{2[-High]}$ vowel sequence by introducing [j], the coronal glide.

Table 11: Input /ɛ/ and /ia/ sequences

a.	/ɛfié/	ɛfijé	‘vomit’
b.	/tié/	tijé	‘discipline’
c.	/àpíá/	àpíjá	‘itchy powdered substance’
d.	/tíá/	tíjá	‘shout at’

Table 12: Input /ie/, /io/, and /ia/ sequences

a.	/ɛfié/	ɛfijé	‘house’
b.	/tié/	tijé	‘listen’
c.	/bié/	bijé	‘open’
d.	/pié/	pijé	‘go out’
e.	/bíó/	bíjó	‘again, furthermore’
f.	/àbìèsá/	àbìjèsá	‘three’
g.	/àníèdí/	àníjèdí	‘persistence’
h.	/píá/	píjá	‘push’
i.	/àfíá/	àfíjá	‘Friday female name’

Prosodically, the augmented [j] comes to form an onset for the syllable containing $V_{2[-High]}$. A common characteristic of the vowel sequences in these tables is that V_1 is both [+High] and [Coronal] – the only notable featural difference between the vowels in V_1 is their [ATR] status, which is [–ATR] in Table 11, but [+ATR] in Table 12. The V_2 s, which are all [–High], can be of either [ATR] value.

Though I have not listed them in the table, the forms in Table 12, /bié/ ‘to open’ and /pié/ ‘to go out’, are sometimes realized as the variants [bùwé] ‘to open’ and [pùwé] ‘to go out’, respectively, with a [w] glide onset, with no change in meaning. While each retains its V_2 , it is the V_1 s that witness variation. This variation, in turn, underlies their difference in glide-onset formation: a labial $V_{1[+High]}$ will select [w], whereas a coronal $V_{1[+High]}$ will select [j]. The latter outcome is relevant in Tables 11 and 12, given that the glide that is inserted and the $V_{1[+High]}$ that precedes it are both coronal.

It is unclear at this point how best to treat this variation. One plausible explanation is that these items have a $V_{1[+High]}$ that is underspecified for place. Coronicity might be assigned by default, resulting in the [j] glide-onset, while the [w] glide-onset is derived via V_1 labialization from the preceding consonant. This is a matter to be explored in future research given that their counterparts in Table 12 with $V_1 /i/$ are always realized with a [j] glide-onset. From the data, it is clear that $V_{2[-High]}$ plays no role in this matter. Rule (2) captures [j]-onset formation in these forms.

(2) j glide-onset formation:

$$\emptyset \rightarrow [j] / V_{1[+High, Coronal]} \text{ — } V_{2[-High]}$$

It was mentioned that the presence of a labial V_1 often yields a [w] glide-onset to prevent a $V_{1[+High]}V_{2[-High]}$ sequence, but this is not what obtains in Tables 13 through 16. Although $V_{1[+High]}$ is underlyingly labial (either /u/ or /ʊ/), it loses its labiality to a preceding non-labial consonant, becoming coronal and triggering a [j] glide-onset. /ʊ/ only appears as $V_{1[+High]}$ in Table 16 and is always followed by /ɛ/. /u/ is the $V_{1[+High]}$ for the input forms in Tables 13 through 15, with a non-high V_2 .

Table 13: Input /ue/ sequences with non-Labial C

a.	/tùé/	t ^u íjé	‘pierce’
b.	/dùé/	d ^u íjé	‘sorry’

Table 14: Input /uo/ sequences with non-Labial C

a.	/ètúó/	èt ^u íjó	‘gun’
b.	/ènsúó/	èns ^u íjó	‘water’
c.	/èkúó/	èk ^u íjó	‘group’
d.	/àdùòwòtɛɛí/	æd ^u íjòwòtɛɛí	‘80’

Table 15: Input /ua/ sequences with non-Labial C

a.	/tùá/	t ^u íjá	‘settle debt’
b.	/dùá/	d ^u íjá	‘plant’
c.	/sùá/	s ^u íjá	‘imitate’
d.	/kùá/	k ^u íjá	‘farming’

Table 16: Input /ʊɛ/ sequences with non-Labial C

a.	/tʊ́é/	t ^u íjé	‘remove from fire’
b.	/sʊ́é/	s ^u íjé	‘offload’

The following are shared characteristics of forms in Tables 13 through 16, aside from their shared $V_{1[+High, Labial]}V_{2[-High]}$ vowel sequences: i) the consonant after which the glide-onset is added is underlyingly non-labial, ii) the underlying

consonants become labio-palatalized, iii) the underlying $V_{1[+High, Labial]}$ becomes coronal, and iv) onset-formation yields [j], triggered by a derived coronal V_1 . Given the place alternation of labial V_1 s to coronal, and the context in which Rule (2) applies, the rule responsible for the labial-to-coronal alternation must apply before the glide formation rule. I call this the V_1 delabialization rule.

There are other instances in which the consonant preceding V₁[+High] becomes labio-palatalized, and this can only apply after V₁ delabialization. In Akan, a labial vowel can only labialize, but not labio-palatalize a consonant. For example, the stems *àkó* ‘has gone’ and *àbá* ‘has come’ merge to derive the expression: *àkwáábá* [àk^wáábá] ‘welcome’. Here, /ɔ/ would labialize /k/ to derive the intermediate output [àk^wɔaba]. To avoid the *k^wɔ sequence, /ɔ/ is deleted, and the low vowel that follows it lengthens to compensate for this deletion to ultimately yield [àk^wáábá]. The [w] that is superimposed on /k/ in [àk^wáábá] does not become labio-palatalized because the succeeding vowel is not (or does not become) a high coronal. In Akan, it is only a labial glide that can become labio-palatalized before a coronal vowel. The word /wɪ/ ‘to chew’ is pronounced [ɥɪ] – that is, /w/ (labio)palatalizes to [ɥ] before the coronal vowel /ɪ/.

From the examples above, it can be argued that there are three rules that apply consecutively (in a feeding relation) to render labio-palatalized a non-labial consonant preceding $V_{1[+Hi]}$. The three rules are (i) consonant labialization, (ii) V_1 delabialization, and (iii) labio-palatalization. According to the consonant labialization rule, a non-labial consonant followed by the vowel-sequence, $V_{1[+Hi, Lab]} V_{2[-Hi]}$ becomes labialized (i.e., C^w).

For the current study, one must formulate two separate consonant labialization rules, one for when /u/ is V_1 , with V_2 specified broadly as $V_{2[-Hi]}$ (see 3a), and a second consonant labialization rule for when V_1 is /ʊ/, with a V_2 that is strictly /ε/ as in (see 3b). This is necessary because forms with /ʊ/ as V_1 , as in Table 16, opt out of [j] glide-onset formation when V_2 is /a/ or /ɔ/. Forms with V_1 /u/ do not.

A consonant labialization rule focusing strictly on the /vɛ/ vowel sequence (Rule 3b) ensures that output forms with /va/ and /vɔ/ sequences are not wrongly predicted to have a [j] glide-onset. That is, Rule (3a) has diverse V₂s and, therefore, is more productive than Rule (3b) whose application is restricted to when the sequence following the underlyingly non-labial consonant is /vɛ/.

- (3) a. Consonant labialization:

$$C_{[-\text{Labial}]} \rightarrow C_{[-\text{Labial}]^w / __ V_1[+\text{High}, \text{Labial}, +\text{ATR}] V_2[-\text{High}]}$$

- b. Consonant labialization:

$$C_{[-\text{Labial}]} \rightarrow C_{[-\text{Labial}]}^w / \text{---} V_{1[+\text{High}, \text{Labial}, +\text{ATR}]} V_{2[-\text{High}, \text{Coronal}]}$$

- c. V_1 delabialization (avoidance of $C^wV_{[Labial]}$):
 $V_{[Labial]} \rightarrow V_{[Coronal]} / C_{[-Labial]}^w _$
- d. Labio-palatalization:
 $C^w \rightarrow C^q / C _ V_1[Coronal]$
- e. j glide-onset formation:
 $\emptyset \rightarrow [j] / V_1[+High, Coronal] _ V_2[-High]$

The two rules of consonant labialization, in effect, derive an impermissible consonant-vowel sequence, $C^wV_{[+High, Labial]}$. This, in turn, motivates the application of the V_1 delabialization (Rule 3c) to derive the intermediate output, $C^wV_{[+High, Coronal]}$. This sequence then motivates labio-palatalization of the labialized consonant (Rule 3d) and $[j]$ glide-onset formation (Rule 3e). The labio-palatalization and $[j]$ glide-onset rules must apply after the V_1 delabialization rule; labio-palatalization and the $[j]$ onset-formation rules need not be ordered crucially.

In Table 16, it was shown that a non-labial consonant preceding $/\upsilon/$ is realized with labialization as a secondary articulation: $C_{[-Labial]} \rightarrow C_{[-Labial]}^w$. In these instances, V_1 $/\upsilon/$ delabializes to $[i]$, and consequently, a $[j]$ glide is formed to avoid the $[+High][-High]$ vowel-sequence, in that order.

A different procedure occurs in words like those in Table 17, however. Consonant labialization and V_1 delabialization do not apply to yield $[j]$ onset-formation, and yet a $[j]$ -onset is formed nonetheless. The consonants preceding $/\upsilon/$ in Table 17 are underlyingly labial, which is the only way that these forms differ from those in Table 16.

Table 17: Input $/\upsilon\epsilon/$ sequences with a preceding labial consonant

a.	$/b\upsilon\acute{\epsilon}/$	$b\upsilon\acute{j}\acute{\epsilon}$	‘be crunchy’
b.	$/f\upsilon\acute{\epsilon}/$	$f\upsilon\acute{j}\acute{\epsilon}$	‘be ill’

Comparing Tables 16 and 17, one can see that consonant labialization, with its associated V_1 delabialization, does not apply when the consonant preceding $/\upsilon/$ is underlyingly labial. It is expected, in the absence of consonant labialization and resultant V_1 delabialization, that $[w]$ will be formed (i.e., to derive: $*[b\upsilon w\acute{\epsilon}]$ and $*[f\upsilon w\acute{\epsilon}]$) given that V_1 remains $/\upsilon/$ and labial, yet this does not happen. Rather, the V_2 $/\epsilon/$ dictates onset formation. Hence, these output forms emerge with the $[j]$ onset. Note that $*[w\epsilon]$ is not a permissible phonetic sequence/syllable in Akan, and any attempt to avoid this structure by extending labiality further to $/\epsilon/$ would

therefore yield attested Akan words: [bɔwɔ] ‘stone’ and [fɔɔ] ‘buffalo’. To avoid such an outcome, a [j]-onset, triggered by /ε/, is the preferred option. Rule (4) shows insertion of [j] after C_[+Labial]V_[Labial] and before V₂ /ε/.

- (4) $V_2/\epsilon/$, [j] onset-glide formation:
 $\emptyset \rightarrow [j] / C_{[+Labial]}V_1[+High, Labial, -ATR] \text{ — } V_2[-High, Coronal]$

The data in Table 17 suggest that consonant labialization with V₁ delabialization fails to apply when the consonant preceding /ʋ/ is underlyingly labial. It will also be shown in Tables 22 and 27 that onset-formation between a /ʋa/ sequence, irrespective of the place of articulation of the preceding consonant, is typically [w]. The output forms in Table 18, observed in the Akuapem dialect of Akan, might seem to contradict these two positions. However, this is not entirely true, as these forms are simply variants of those seen elsewhere, which are observed for all dialects of Akan. In other words, the underlyingly /ʋa/ word-forms in Akuapem optionally involve consonant labialization, which triggers the processes that derive the forms in Table 18.

Table 18: Input /ʋa/ sequences in Akuapem Twi

a.	/bòá/	b ^u íjá	‘help’
b.	/fòá/	f ^u íjá	‘agree with’
c.	/tòá/	t ^u íjá	‘enjoin’
d.	/sòá/	s ^u íjá	‘carry over head’
e.	/kòá/	k ^u íjá	‘bend over’

Given these facts, I propose the optional consonant-labialization rule in (5), which applies only in the Akuapem dialect of Akan.

- (5) Consonant labialization (in Akuapem):

$$C \rightarrow [C^w] / \text{--- } V_1[+High, Labial, -ATR] V_2[+Low]$$

With this optional consonant labialization rule now added, the V_1 delabialization rule proposed above in (3c) must be refined to accommodate the instances of V_1 delabialization seen in Table 18. The only way to do this is to remove the feature $[-\text{Labial}]$, as in the amended Rule (6), so that the V_1 delabialization rule applies regardless of whether a labialized consonant is underlyingly labial or non-labial.

- (6) V_[Labial] → V_[Coronal] / C^w __

I have illustrated thus far that there are three contexts triggering [j] onset formation: i) a $V_{1[+High]}$ that is underlyingly coronal (Tables 11 and 12), ii) a derived coronal vowel from an underlyingly high labial vowel (Tables 13 through 16), and iii) a coronal $V_{2[-High]}$ preceded by $C_{[+Labial]}V_{[+High, Labial, -ATR]}$ (Table 17). Thus, a derived coronal-trigger of the [j]-onset emerges after consonant labialization and V_1 delabialization.

In addition, I have proposed three consonant labialization rules. In two of them, the consonant preceding a labial V_1 is underlyingly non-labial. The third is an optional consonant labialization rule found only in Akuapem that affects any consonant before a $V_1/\text{ʊ}/V_2/\text{a}/$ sequence. To these, one can also add a V_1 delabialization rule which targets either /u/ or /ʊ/ when preceded by a labialized consonant.

The rule relationships identified here are of the feeding type, which holds among consonant labialization, V_1 delabialization, and [j] onset-formation and labio-palatalization, in that order. The V_1 delabialization rule applies to avoid a [Labialized][Labial] (consonant-vowel) sequence, and the [j]-onset is formed to prevent a [+High][-High] vowel-sequence.

The vowel /u/ triggers consonant labialization and also undergoes V_1 delabialization to condition the [j] glide-onset more than /ʊ/. Cross-dialectally, V_1 delabialization involving /ʊ/ applies when the surrounding sounds (both consonants and vowels) are underlyingly coronal.

3.2 Domains of [w] glide-onset formation

This subsection discusses input vowel sequences that result in [w] glide-onset formation. The first portion focuses on data in Tables 19 through 23 which involve vowel sequences preceded by a labial consonant. In most instances, the expected [w] glide-onset emerges. However, Table 24 is given for comparison as it contains data discussed earlier where the language distinctly but unexpectedly opts out of [w] onset-formation.

Data from Tables 19 through 22, and also Table 23 below, exhibit the following shared properties: i) $V_{1[+High]}$ is underlyingly high and labial, ii) the consonant preceding V_1 is labial, and iii) V_2 is [-High]. Rule (7) accounts for [w] glide-onset formation in these instances and is not restricted to V_1 being only /ʊ/ or /u/.

- (7) w glide-onset formation:
 $\emptyset \rightarrow [w] / C_{[+Labial]}V_{1[+High, Labial]} __ V_{2[-High]}$

This rule applies broadly, when C is underlyingly labial, V_1 is high and labial, and V_2 is [-High]. Exceptions to it contain inputs with $V_2/\text{ɛ}/$ (as in Table 24)

3 Glide-onset formation between vowels in Akan

Table 19: Input /uo/ sequences

a.	/èbúó/	èbúwó	‘coop’
b.	/àfúó/	àfúwó	‘farm’

Table 20: Input /ɔɔ/ sequences

a.	/èbɔ́ɔ́/	èbɔ̀wɔ́	‘stone’
b.	/èfɔ́ɔ́/	èfɔ̀wɔ́	‘buffalo’

Table 21: Input /ua/ sequences

a.	/bùá/	bùwá	‘answer’
b.	/fúá/	fúwá	‘single’

Table 22: Input /ɔa/ sequences

a.	/bɔ́á/	bɔ̀wá	‘help’
b.	/fɔ́á/	fɔ̀wá	‘agree with’

Table 23: Input /ue/ sequences

a.	/pùé/	pùwé	‘go out’
b.	/bùé/	bùwé	‘open’

Table 24: Input /ɔɛ/ sequences

a.	/bɔ́é/	bɔ̀jé	‘be crunchy’
b.	/fɔ́é/	fɔ̀jé	‘be ill’

which seem immune to it. To account for such outcomes, Rule (4), proposed above, must be ordered before Rule (7). In these instances involving /ɛ/, the grammar prioritizes [j] onset-formation rule over [w] onset-formation. The derivations in Table 25 illustrates this outcome.

Table 25: Effect of V_2 /ɛ/

	/bɔ́é/	/bùé/
Rule 4	bɔ̀jé	–
Rule 7	–	bùwé
	[bɔ̀jé]	[bùwé]
	‘be crunchy’	‘open’

In Table 25, the /ɛ/-specific [j]-onset rule bleeds the [w]-onset rule, yielding /bɔ́é/ → [bɔ̀jé]. Reversing the rules would derive unattested *[bɔ̀wé]. The [j]-onset rule does not apply to /bùé/ whose V_2 is [+ATR], resulting instead in [bùwé].

The last of the [w]-onset cases to be analyzed involve the forms in Tables 26 and 27. The vowel sequences are underlyingly /ʊɔ/ and /ʊa/, just like those in Tables 21 and 22, but they differ in that they are preceded by non-labial consonants.

Table 26: Input /ʊɔ/ sequences

a.	/ètɔ́/	ètòwɔ́	‘butt’
b.	/èkɔ́/	èkòwɔ́	‘buffalo’

Table 27: Input /ʊa/ sequences

a.	/tòá/	tòwá	‘enjoin’
b.	/sòá/	sòwá	‘carry over head’
c.	/kòá/	kòwá	‘bend over’

Rule (8) captures [w] onset-formation as it applies to forms in Tables 26 and 27.

- (8) w glide-onset formation for $C_{[-\text{Labial}]}V_1/\text{ʊ}/$:
 $\emptyset \rightarrow [w] / C_{[-\text{Labial}]}V_1[+\text{High}, \text{Labial}, -\text{ATR}] \text{ — } V_2[-\text{High}]$

We can see that this rule is restricted to applying to $V_1 / \text{ʊ}/$ because vowel-sequences /uo/ and /ua/, when preceded by non-labial consonants, submit instead to the [j]-onset rule. The outcomes in Table 28 illustrate key differences that extend from these differing vocalic environments, which are captured by rule ordering.

Table 28: Effect of $V_1 / \text{ʊ}/$ vs. /u/ and C labiality

	/(\epsilon)tɔ́/	/tòá/	/bòá/	/bòé/	/bùá/	/bùé/
Rule 4	–	–	–	bòjé	–	–
Rule 7	–	–	bòwá	–	bùwá	bùwé
Rule 8	tòwɔ́	tòwá	–	–	–	–
	[tòwɔ́] ‘butt’	[tòwá] ‘join’	[bòwá] ‘help’	[bòjé] ‘be crunchy’	[bùwá] ‘help’	[bùwé] ‘open’

3.3 Rules and their refinements

Table 29 presents, in no particular order, a summary of the rules proposed thus far to be responsible for [j] and [w] onset-formation between high and non-high vowel-sequences in Akan; any ordering relationships that hold between rules are discussed below. In the interest of space, feature names are abbreviated. Taken together, these repair strategies in Akan prevent $*V_{1[+High]}V_{2[-High]}$ vowel sequences and $*[Labialized][Labial]$ consonant-vowel sequences in CVV words. For ease of reference, rules are numbered here according where they were first discussed earlier in this chapter. Rules contributing to [j] onset-formation are Rules (2) and (4), and those responsible for [w] onset-formation are Rules (7) and (8). Thus, there are two rules directly responsible for forming each onset; one occurs in a very specific vocalic environment, and one that applies more broadly.

Table 29: Rule summary

Rule	Name	Context
4	V_2 / ϵ /-conditioned [j]-onset	$\emptyset \rightarrow [j] / C_{[+Lab]} V_{1[+Hi, Lab, -ATR]} \text{ — } V_{2[-Hi, Cor]}$
2	$V_{1[+Hi, Cor]}$ [j]-onset	$\emptyset \rightarrow [j] / V_{1[+Hi, Cor]} \text{ — } V_{2[-Hi]}$
8	[w]-onset, non-Labial C, $V_1/\upsilon/$	$\emptyset \rightarrow [w] / C_{[-Lab]} V_{1[+Hi, Lab, -ATR]} \text{ — } V_{2[-Hi]}$
7	[w]-onset, Labial C	$\emptyset \rightarrow [w] / C_{[+Lab]} V_{1[+Hi, Lab]} \text{ — } V_{2[-Hi]}$
3a	Consonant labialization 1	$C_{[-Lab]} \rightarrow C_{[-Lab]}^w / \text{ — } V_{1[+Hi, Lab, +ATR]} V_{2[-Hi]}$
3b	Consonant labialization 2	$C_{[-Lab]} \rightarrow C_{[-Lab]}^w / \text{ — } V_{1[+Hi, Lab, -ATR]} V_{2[-Hi, Cor]}$
5	C-Labialization (Akuapem), / υa /	$C \rightarrow [C^w] / \text{ — } V_{1[+Hi, Lab, -ATR]} V_{2[+Low]}$
6	V_1 delabialization	$V_{[Lab]} \rightarrow [Cor] / C^w \text{ — }$
3d	Labio-palatalization	$C^w \rightarrow C^q / \text{ — } V_{1[+Hi, Cor]}$

In the remainder of this section, I illustrate various interactions that arise between rules in Table 29. It has been shown thus far that rule ordering is critical in a number of instances. For example it was shown in Table 25 that Rule (4) must crucially precede Rule (7). I also discussed that Rule (5), which applies only in the Akuapem dialect, sets the stage for V_1 delabialization via Rule (6), and thereafter [j] glide-onset formation (Rule 2) and labio-palatalization (Rule 3d).

In Rule (4), [j] onset-formation is conditioned by a non-high coronal V_2 when the preceding CV sequence is $/C_{[+Labial]}\upsilon/$. Given what occurs elsewhere in Akan, other potential outcomes could have been: i) for $V_1/\upsilon/$ to delabialize to [ɪ] and then for [ɪ] to have conditioned the [j]-onset (i.e., $b\acute{o}\acute{e} \rightarrow b\acute{i}j\acute{e}$ ‘vomit’), or ii) for $V_1/\upsilon/$ to have conditioned a [w]-onset, which would thereafter trigger an alternation of / ϵ / to [ɔ] as in: $b\acute{o}\acute{e} \rightarrow b\acute{o}\acute{w}\acute{e} \rightarrow b\acute{o}\acute{w}\acute{o}$). Both outcomes would have been

semantically costly, however. That is, [j] onset-formation conditioned by $V_2 / \varepsilon /$ blocks a $V_1[\text{Labial}]$ delabialization rule and also a [w] onset-formation rule, which I have demonstrated above disrupts the semantic identity of $C_{[+\text{Labial}]} / \text{tò} \acute{\text{e}} /$ inputs. As such, $/ \text{v} \text{v} /$ as V_1 must retain its labiality and must not be allowed to trigger the [w] glide-onset.

The [j] glide-formation rule (Rule 2) applies in contexts where such semantic issues are not relevant. That is, the rule applies when $V_1[+\text{High}, \text{Labial}]$ delabialization (via Rule 6) has applied to $V_1 / \text{v} \text{v} /$ or $/ \text{u} /$, changing them to a coronal, [ɹ] or [i], respectively, or when V_1 is inherently coronal. Note that the consonant labialization rules in (3a) and (3b) create the context required for the application of Rule (6); these labialization rules apply when the initial consonant of the word is $[-\text{Labial}]$.

A third consonant labialization rule (Rule 5) applies only in the Akuapem dialect and affects both labial and non-labial consonants before the vowel sequence $/ \text{v} \text{a} /$. This rule is just like the labialization rules (3a) and (3b) in that it feeds $V_1[+\text{High}, +\text{Labial}]$ delabialization. It can therefore be said that $C_{[-\text{Labial}]}$ labialization, via whichever of the three labialization rules applies in a given environment, is a process that feeds $V_1[\text{Labial}]$ delabialization which, in turn, feeds [j] glide-onset formation triggered by $V_1[+\text{High}, \text{Coronal}]$.

In sum, consonant labialization applies to preserve V_1 labiality, V_1 delabialization prevents an impermissible $C^w V_1[\text{Labial}]$ sequence, and [j] glide-onset formation prevents $*V_1[+\text{High}] V_2[-\text{High}]$ sequence. As shown, the vowel $/ \text{u} /$ is more susceptible to these processes than $/ \text{v} \text{v} /$.

Concerning the two [w] onset-formation rules, Rules (7) and (8), a [w] glide-onset is formed when $V_1[+\text{High}]$ is underlyingly labial and remains so on the surface. Rule (8) is restricted to applying when $V_{[+\text{High}]}$ is $/ \text{v} \text{v} /$ and the consonant preceding it is non-labial. In Rule (3b), the environment conditioning consonant labialization is similar to that of [w] glide-onset formation. For both, the initial consonant is non-labial, and V_1 is $/ \text{v} \text{v} /$. The only difference between them is the content of V_2 which is broadly $[-\text{High}]$ in Rule (7), while narrowly $[-\text{High}, -\text{Coronal}]$ in Rule (3b). As such, the narrower rule must precede the broader rule, as shown in Table 30, so that $/ \text{tò} \acute{\text{e}} /$ ‘to remove from fire’ can be spared of [w] glide-onset formation. Even reversing the order of the two rules in Table 30 would yield an unattested form for $/ \text{tò} \acute{\text{e}} / \rightarrow *[\text{tò} \acute{\text{w}} \acute{\text{e}}]$, illustrating that other factors must be at play.

Table 31 shows the attested outcome $[\text{t}^{\text{h}} \text{ij} \acute{\text{e}}]$ is created owing to the downstream effects of V_1 delabialization, consonant labio-palatalization, and [j] glide-onset formation, which must consecutively apply and act upon the output of Rule (3b).

3 Glide-onset formation between vowels in Akan

Table 30: Consonant labialization precedes [w] glide-onset

	/tòé/	/(\̩)tów/	/tòá/
Rule 3b	t ^w òé	–	–
Rule 8	–	(\̩)tów	tòwá
	*[t ^w òé]	[(\̩)tów]	[tòwá]
	‘remove from fire’	‘butt’	‘enjoin’

The input forms /(\̩)tów/ ‘butt’ and /tòá/ ‘to enjoin’ are not subject to V₁ delabialization, consonant labio-palatalization, and [j] glide-onset formation, as they have not undergone consonant labialization, on which these rules depend.

Table 31: Feeding effects

	/tòé/	/(\̩)tów/	/tòá/
Rule 3b	t ^w òé	–	–
Rule 8	–	(\̩)tów	tòwá
Rule 6	t ^w íé	–	–
Rule 3d	t ^u íé	–	–
Rule 2	t ^u íjé	–	–
	*[t ^u íjé]	[(\̩)tów]	[tòwá]
	‘remove from fire’	‘butt’	‘enjoin’

The broader [w] glide-onset rule, Rule (7), applies in instances where V₁[+High] and the consonant preceding it are [+Labial]. Notably, V₂ must be a non-high vowel. The context of the narrower [j] onset formation rule triggered by V₂ /ε/, Rule (4), is similar, illustrating that the latter must be ordered before the former in order for it to have any visible effect. This ordering, yielding [bòjé] ‘to be crunchy’ from input /bòé/ illustrates the necessity of this ordering in Table 32. Other inputs whose V₂ differs are not affected by the more stringent rule.

What I hope is clear is that V₁ is the primary conditioner of glide-onset formation. V₂ has a limited, but nonetheless significant, role to play. Concerning the two high labial V₁s, /ɔ/ generally conditions [w] glide-onset formation. It only conditions consonant labialization (with accompanying V₁ delabialization, consonant labio-palatalization, and [j] glide-onset formation rules) when the preceding consonant is non-labial and the succeeding vowel is /ε/. There are cases

Table 32: Ordering [j] glide-onset before [w] glide-onset

	/bòé/	/(è)bóó/	/bùá/	/bùé/	/(è)búó/	/bùá/
Rule 4	bòjé	–	–	–	–	–
Rule 7	–	(è)bòwó	bòwá	bùwé	(è)búwó	bùwá
	[bòjé]	[(è)bòwó]	[bòwá]	[bùwé]	[(è)búwó]	[bùwá]
	‘be crunchy’	‘stone’	‘help’	‘open’	‘coop’	‘answer’

where /ε/ is the V₂ (i.e., in C_{+Labial}/ʊε/ words), and therefore V₂ steps in to trigger a [j] glide-onset when V₁ cannot act in either of the ways described above (i.e., when neither consonant labialization nor the [w] glide-onset formation rule could apply). V₁ /u/ generally conditions consonant labialization, followed by V₁ delabialization, consonant labio-palatalization, and [j] glide-onset formation. It only conditions [w] glide-onset formation when the preceding consonant is labial.

In Akuapem, consonant labialization and its accompanying rules, on the one hand, and the rule of [w] glide-onset formation, on the other, apply independently (irrespective on the place of articulation of the initial consonant) to derive variant output realizations in /Còá/ input cases. That is, these forms undergo either [j] glide-onset formation with the initial consonant becoming labio-palatalized, or [w] glide-onset formation with the initial consonant being intact.³

4 Conclusion

In this section, I situate the findings presented above within phonological theory to shed more light on the motivations for the observed vowel and consonant behaviors as well as the prosodic aspects of the glide-onset formations under consideration in this paper.

The following is a brief overview of some essential principles of markedness theory and sonority theory to which the findings relate. The theory of markedness (de Lacy 2002, 2006, Lombardi 2002) posits that “not all elements in a phonological system are of equal status” (Rice 2007). The unmarked/marked distinction between any two segments often dictates which phonological processes they can

³The approach taken here has been rule-based. In non-linear phonological terms, consonant labialization and both [j] and [w] glide-onset formation, could be conceived of and represented by place feature spreading – not a complete spreading of a vowel as one reviewer suggested – either regressively or progressively.

be subject to. The tendency is to preserve marked units over unmarked ones in situations where one of them must be deleted in a given phonological domain. In terms of height (from marked to unmarked) the following relationships can be proposed for Akan vowels: [-High] >> [+High] and [+Low] >> [-Low]. Taken together, high vowels are the least marked, and so forth, as vowel height moves to mid and low: *a* >> *ɔ*, *ɔ*, *ɛ*, *e* >> *ʊ*, *u*, *i*, *ɪ*. For consonant place, coronal is unmarked.

As noted by Zec (2007: 178–179), “[s]onority ... steers the crucial aspects of syllable internal segment sequencing” [and that] “[t]he second mode of constraining sonority is syntagmatic in nature.” Argued to underlie intra- and inter-syllabic organization of segments, the sonority scale/hierarchy has been represented as follows (from the most to least sonorous): V (low >> mid >> high) > L (rhotics >> laterals) > N (nasals) > O (voiced fricatives >> voiced stops >> voiceless fricatives >> voiceless stops) (Zec 2007: 178). As reiterated by Zec, “[b]y taking into account the ordering [as given above], the arrangement of segments within the syllable follows a clear pattern: the most sonorous segment occupies the nucleus, while the less sonorous ones occur towards the margins. [Syntagmatically], [c]onstraints on sonority distance have the task to optimize the sonority slope between margins and peaks, both within and across syllables”. I would argue that Syllable Contact Law (SCL, Murray & Vennemann 1983), focusing on vowel sequences between syllables, motivates onset formation in Akan.

Prosodically, what begins as a /CV.V/ syllable sequence (with the second onsetless syllable being marked) undergoes glide-onset formation to become [CV.CV]. The outcome is two unmarked CV syllables. What is fascinating is how the language employs an unmarked prosodic strategy to obviate the phonotactically ill-formed *[+High][-High] vowel sequence. In achieving this objective, templates have to be modified (e.g., a C has to be inserted on the CV-tier) to allow for the onset and glide formations (i.e., the prosodic and segmental/featural remedies, respectively) which apply concurrently to right this phonotactic blunder. To meet this objective, there is alignment (i.e., association), re-alignment (i.e., re-association), and de-association of units of the different levels of input representation, which could easily be illustrated in a non-linear representational model.

This re-organization of features and prosodic units is required to prevent a marked [+High][-High] phonotactic sequence, in a context where the feature [+High] (i.e., the unmarked value) is lexically significant and must be preserved. The unmarked status of [+High] is established based on how sounds with this feature respond when adjacent to those with the feature [-High]. The word, *paɪ* ‘split’, when reduplicated to *paɪpaɪ*, is pronounced [paapaɪ]. That is, /ɪ/ (being unmarked in Akan) is lost in pronunciation, and /a/ (being marked in Akan) is doubled to compensate for the loss.

Also contributing to the observed outcomes is that, historically, the sounds [tɕ, dz, ɥ, ɕ] are said to have been originally /k, g, w, h/, respectively, word-initially before $V_1[+High, Coronal, +ATR]V_2[-High]$. The V_1 /i/ was deleted alongside the coronalization of the two plosives /k, g/ to [tɕ, dz], respectively. Thus, what was once a disyllabic root became monosyllabic. Interestingly, the [+ATR] feature of the deleted /i/ still triggers regressive [+ATR] harmony in the language. The so-called historical reduction was made possible by the fact that the high vowel was not contrastive in said domain. Words in the language that are argued to have been subjected to the two processes are: *agya* [ædʒa] ‘father’, *gya* [dʒa] ‘leave’, and *egya* [edʒa] ‘fire’, as well as, *twa* [tɕɥa], ‘to cut’, and *dwa* [dʒɥa] ‘to peel off’. De Jong & Obeng (2000) (also, see de Jong 2024 [this volume]) use the term *palatalization* to refer to the above historical process in Akan.

Via this process, an unmarked [+High] vowel was deleted, and a marked [−High] vowel preserved, illustrating another instance of faithfulness to the marked, masking of the unmarked, submergence of the unmarked (de Lacy 2002, 2006, Rice 1999, 2002). The impermissible [+High][−High] vowel sequence cannot be prevented by deleting the unmarked high vowel in the data under consideration in the current paper. This is because the unmarked high vowel is lexically significant – i.e., its deletion would create another attested word. The formation of a glide-onset, therefore, precludes the unmarked [+High] vowel from deletion.

Based on the current study, I would argue that glide-onset formation is a strategy for preservation of the unmarked. The unmarked high vowel is under threat of deletion by a succeeding non-high vowel. The argument in this paper is that principles of sonority underlie the determination of what is marked and unmarked in Akan grammar and that the two factors combined are significant in the construction of syllable-sequences in Akan grammar. Glide-onset formation applies to prevent an unmarked/less-sonorous vowel from the encroachment of, and subsequent deletion by, a marked/more-sonorous vowel in sequence. With $V_1[+High]$ being less sonorous than V_2 , the [j] or [w] glide is inserted to create a syllable onset for the second vowel.

My analytical position is that sonority is not only significant in the organization of segments within syllables (Bybee 1976, Clements 1990, Jespersen 1904, Selkirk 1984, Steriade 1982, Vennemann 1972, Zec 1988), and in constraining syllable contact sequences via the Syllable Contact Law (Murray & Vennemann 1983), but it is also equally relevant in the sequencing of vowels at the syllable-boundary in open syllable languages like Akan. Thus, it would appear that Syllable Contact Law motivates glide-onset formation. Glide-onset formation is necessitated by the fact that V_1 , which ends the first syllable, is less sonorous than a following V_2 . The argument, therefore, is that glide formation applies to ensure that the left edge of the second syllable is lower in sonority than the right edge of

the first syllable. Glides are well-suited for this because they are lower on the sonority scale than the high vowels which end the first syllable, but it should also be noted that liquids, nasals, obstruents are also lower on the sonority scale than high vowels, and, on that basis, one might consider them equally plausible candidates for the V_2 onset slot. So, this leads to a question of why glides are preferred over non-glides preceding V_2 .

The answer would appear to rest in the fact that glide-onset formation must be pursued in ways that preserve meaning, and the grammar meets this objective by employing more predictable, meaning-preserving processes, which the [w] and [j] glide-onset formation can achieve. That is, the transition from a less sonorous vocalic unit to the more sonorous vocalic unit of abutting syllables must be avoided, and is so achieved through glide-onset formation conditioned by an abutting vowel in the sequence in this preference order: [i, ɪ] >> [ɛ, e] >> [u, ʊ]. The conditioning vowel must be preserved, to the extent possible, to maintain the root's lexical identity.

This (re)syllabification effort is significant for achieving both phonotactic and functional/semantic well-formedness. In the end, contrastive units/features are preserved, and conditions regulating the sequencing of phonological (segmental and featural) units (which are markedness- and sonority-based) under the umbrella term, phonotactics, are observed.

That $V_{2[-\text{High}]}$ is more sonorous than $V_{1[+\text{High}]}$, and the outcomes surrounding them as presented here, is conceived as a fortitioning strategy aimed at preserving an unmarked but contrastive feature. This occurs predictably in all instances. It is guaranteed by the extension a vowel's place feature – either [Coronal] or [Labial] – to the newly created onset slot. We see the tendency of /u/ (but not /ʊ/) to lose its labiality, and, therefore, for the [j] glide-onset to be generated often for forms with underlying /u/. This trend can be viewed as principled if one bears in mind that /u/ is higher than /ʊ/, and therefore less marked based on the reasoning above. The vowel trapezium in Dolphyne (1988: 7) supports these findings. Indeed, what the current study has done is to have offered the relevant empirical phonological support for Dolphyne's Akan vowel chart.

Lastly, on the semantic/functional side of the argument, glide-onset formation applies when the repair of phonotactically impermissible vowel sequences via loss of one of the two segments would be functionally/semantically costly. Therefore, glide-onset formation comes across as the more convenient, alternative repair strategy that significantly preserves essential elements of the two vowels without the output resulting in any meaning difference. Thus, Akan's grammar appears to restrict the application of phonological to specific units and domains, and demands that certain rules be ordered, so preserve both meaning and phonotactic well-formedness.

Abbreviations

ATR	Advanced Tongue Root	Lab	Labial
C	Consonant	Lo	Low
Cor	Coronal	PST	Past
Dor	Dorsal	Rd	Round
EMP	Emphatic	SG	Singular
Hi	High	V	Vowel

Acknowledgements

When I was growing up in Ghana in the 80s, there was a program on national radio called “The Everyday English” on which Dr. Samuel Gyasi Obeng was the radio teacher. We were always glued to our radios each morning to learn from him about the intricacies of the English language and how to use it. We so admired him, and little did some of us know that we would someday meet him and that we would become colleagues in Linguistics. Prof. Obeng is a great teacher and colossus in matters of general and African linguistics, and it is befitting that his contributions to our field be recognized. May God continue to bless this fine scholar and gentleman with good health and in all his endeavors.

I am also very thankful to the editorial team and the two anonymous reviewers for their comments and suggestions on the drafts that have finally developed into the current paper. Chris and Samson, I really appreciate your attention to detail and clarity, your patience and hard work in putting this volume together.

References

- Bybee, Joan. 1976. *An introduction to Natural Generative Phonology*. New York: Academic Press.
- Clements, G. Nick. 1990. The role of the sonority cycle in core syllabification. In John Kingston & Mary E. Beckman (eds.), *Papers in Laboratory Phonology I: Between the grammar and physics of speech*, 283–333. Cambridge, UK: Cambridge University Press. DOI: 10.1017/CBO9780511627736.017.
- de Jong, Kenneth. 2024. From co-occurrence patterns to rhythmic alignment: Ongoing investigations of Twi consonants and vowels. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 9–26. Berlin: Language Science Press. DOI: 10.5281/zenodo.11091821.

- de Jong, Kenneth & Samuel G. Obeng. 2000. Labio-palatalization in Twi: Prosodic, contrastive, and quantal effects in linguistic micro-evolution. *Language* 76. 682–703. DOI: 10.2307/417139.
- de Lacy, Paul. 2002. *The formal expression of markedness*. University of Massachusetts Amherst. (Doctoral dissertation).
- de Lacy, Paul. 2006. *Markedness: Reduction and preservation in phonology*. Cambridge, UK: Cambridge University Press.
- Dolphyne, Florence. 1988. *The Akan (Twi-Fante) language: Its sound systems and tonal structure*. Accra: Ghana Universities Press.
- Hume, Elizabeth. 1992. *Front vowels, coronal consonants and their interaction in non-linear phonology*. Cornell University. (Doctoral dissertation).
- Jespersen, Otto. 1904. *Lehrbuch der Phonetik*. Leipzig: B. G. Teubner.
- Leben, William. 1973. *Suprasegmental phonology*. MIT. (Doctoral dissertation).
- Lombardi, Linda. 2002. Coronal epenthesis and markedness. *Phonology* 19. 219–251. DOI: 10.1017/S0952675702004323.
- Murray, Robert & Theo Vennemann. 1983. Sound change and syllable structure in Germanic phonology. *Language* 59. 514–528. DOI: 10.2307/413901.
- Ofori, Seth Antwi. 2006. Recent and remote past marking in Akan: A multi-tiered analysis. In Samuel Obeng & Cecilia Obeng (eds.), *From linguistics to cultural anthropology: Aspects of language, culture and family issues in Ghana (West Africa)*, 514–528. Munich: Lincom Europa.
- Ofori, Seth Antwi. 2008. Numeral compounding in Akan (Twi): A multi-tiered account. *Journal of West African Languages* 35. 79–99.
- Ofori, Seth Antwi. 2013. A prosodic analysis of monosyllabic and disyllabic verb reduplication in Akan (Twi). *Journal of African Languages and Linguistics* 34. 75–109.
- Ofori, Seth Antwi. 2018. Vowel doubling before the verbal unit -ye [je] in Asante Twi. *Ghana Journal of Linguistics* 7. 71–101. DOI: 10.4314/gjl.v7i2.4.
- Ofori, Seth Antwi. 2019. Rules and rule relations in Akan day names. *Journal of West African Languages* 46. 47–73.
- Rice, Keren. 1999. Featural markedness in phonology: Variation. *Glott International* 4(7). 3–6.
- Rice, Keren. 2002. Featural markedness in phonology: Variation. In Lisa Cheng & Rent Sybesma (eds.), *The second Glott International state-of-the-article book* (Studies in Generative Grammar 61), 389–429. Berlin: Mouton de Gruyter. DOI: 10.1515/9783110890952.389.
- Rice, Keren. 2007. Markedness in phonology. In Paul de Lacy (ed.), *The Cambridge handbook of phonology*, 79–97. Cambridge, MA: Cambridge University Press.

- Selkirk, Elizabeth. 1984. On the major class features and syllable theory. In Mark Aronoff & Richard T. Oerhle (eds.), *Language sound structure: Studies in phonology presented to Morris Halle by his teacher and students*, 107–136. Cambridge, MA: MIT Press.
- Steriade, Donca. 1982. *Greek prosodies and the nature of syllabification*. MIT. (Doctoral dissertation).
- Vennemann, Theo. 1972. On the theory of syllabic phonology. *Linguistische Berichte* 18. 1–18.
- Zec, Draga. 1988. *Sonority constraints on prosodic structure*. Stanford University. (Doctoral dissertation).
- Zec, Draga. 2007. The syllable. In Paul de Lacy (ed.), *The Cambridge handbook of phonology*, 161–194. Cambridge, MA: Cambridge University Press.

Chapter 4

Morphology in Gengbe and Yoruba ideophones

Samson Lotven

Indiana University

Matthew Ajibade

Indiana University

Ideophones depict events and states, filling the cracks between linguistic iconicity and arbitrariness. More than extemporaneous sound effects, ideophones are words, stored in the mental lexicons of speakers, and as such, despite their often exceptional properties, ideophones behave very much like other words, especially in their derivational morphology – word formation that happens in the lexicon. To highlight the similarities in morphological phenomena between ideophones and other words in the lexicon, we consider compounding, reduplication, and tone in the derivational morphology of Gengbe and Yoruba. In these and other West African languages, often used as examples of isolating languages, we take this opportunity to highlight morphological processes where we find them, revealing complexity in the word formation patterns of ideophones and in the morphology of isolating languages.

1 Introduction

Like the category of *isolating languages*, defined by a dearth of inflectional morphology, the category of *ideophones* is also said to “display little morphology”, (Childs 1994: 185), or even “exceptional morphology”, the example given by Klammer (2001: 167) being reduplication. Yet, there is more to morphology than inflection, and reduplication is not so exceptional, especially in West African languages. In responding to similar assertions, such as Johnson (1976) and Kunene



(1965), Ameka (2001: 26) notes that it is not useful to highlight that ideophones do not display the morphology of inflected words in languages where there is little inflection: “I suspect that many of the features that have been noted for ideophones co-vary in similar ways with the typological properties of the languages in which they occur”.

As researchers increasingly consider ideophones within their linguistic descriptions and analyses, academic focus has broadened to include how ideophones fit into grammar and more broadly into linguistic typology (Newman 2001, Voeltz & Kilian-Hatz 2001). In pursuing this concern, we present examples of word formation patterns found in two isolating West African languages, Gengbe and Yoruba. Our goal is to highlight similarities between the derivational morphology of prosaic words (non-ideophones) and that of ideophones, with particular focus given to compounding, reduplication, and tonal morphology. In doing so, we examine different types of non-arbitrariness in Gengbe and Yoruba derivational morphology, including qualitative iconicity (depiction based on the sounds of a word), quantitative iconicity (depiction based on the shape of a word), and systematicity (regularity within the language system), distinctions discussed in Carling & Johansson (2015) and Dingemanse et al. (2015).

After this brief introduction, Section 2 introduces these two languages, their morphology, and the sources for data presented in this paper. Section 3 offers examples of word formation in ideophones, discussing different types of non-arbitrariness and working from word formation that is not clearly morphological towards examples of patterns more similar to prosaic word morphology. Section 4 concludes the paper by considering similarities between the morphological processes discussed and the importance of including ideophones in morphological description and analysis.

2 Language backgrounds and data

2.1 Gengbe

Gengbe [iso 639-3: gej], alongside other Gbe languages (Niger-Congo, Kwa), is spoken in Togo, Benin, and Ghana by multilingual populations. As with other Gbe languages, such as Ewe, the basic word order in a Gengbe sentence is Subject-Verb-Object, but syntactic movement such as topicalization and focusing, as well as morphological processes like nominal and adjectival reduplication, can generate a surface Subject-Object-Verb order. Similar to Ewe, the Gengbe syllable may be Vowel or Syllabic Nasal only (V or N), Consonant-Vowel (CV), Consonant-Liquid-Vowel (CLV), or Consonant-Glide-Vowel (CGV). All syllables either have

(H)igh tone, realized as H or Rising pitch, or are toneless, realized with (M)id or (L)ow pitch (Bole-Richard 1983). Additional analysis of the phonetics and phonology of this variety of Gengbe can be found in Lotven & Obeng (2018) and Lotven (2020), as can the conventions of the practical orthography used here.

2.2 Gengbe ideophones

It has been long noted that Gbe languages are rich with ideophones, and some of the earliest linguistic research on ideophones is from Schlegel (1857), who devoted a chapter to the subject in his grammar of the Gbe language Ewe, a research program continued by Westermann (1905, 1907). Ameka (2001), describes ideophones in Ewe as belonging to no one grammatical word class, and rather that they can be found in syntactic positions typically occupied by nouns, verbs, adjectives, adverbs, intensifiers, and interjections. Gengbe is similar to Ewe in this respect (as is Yoruba).

[illegible]

2.3 Gengbe morphology

Essegbey (2006: 1) calls Ewe “an isolating language with agglutinating features”. Gbe languages generally display little inflectional morphology, and, with the exception of case-marked pronouns, they lack verbal and nominal inflection (Aboh 2004: 32–33). This description is apt for Gengbe as well, with Gengbe derivational morphology making use of compounding, reduplication (full and partial), and tone, as exemplified below.

Compounding is commonplace in Gengbe, for example in the word meaning ‘pen’ *è-sì-nú-ŋlǎ-tí* (NML-water-thing-write-stick), and nouns typically have

a lexically-determined nominal prefix *è-* or *à-* (glossed NML), which is deleted during compounding. Abaglo & Archangeli (1989) and Beavon-Hamm (2020) analyze these prefixes in Gen and other Gbe languages, where they are obligatory for monosyllabic nouns, as working to satisfy a disyllabic minimal word condition, but free to drop when the word is sufficiently long. For this reason, in nouns, the presence of only one nominal prefix is diagnostic of a compound. However, verb-object sequences, as will be seen in example (1), may also involve deletion of the nominal prefix after a predicate, and further, ideophones do not appear with nominal prefixes. So, in this domain of word formation at least, the dividing line between phrase- and word-level phonology is blurry.

In the nominal domain, compounding in the language is trending towards affixation, as noted by Essegbey (2006) for Gbe more broadly. Some common morphemes have undergone grammaticalization, taking on more functional and conventionalized usages. For example, the word (*è*)*tɔ* ‘father, parent, owner’ may be used as an agentive following nouns like ‘head’ in ‘leader’ *è-tà-tɔ* (NML-head-father) and ‘oil’ in ‘oil seller’ *à-mɪ-tɔ* (NML-oil-father), and as a nominalizer following adjectives and verbs, as in ‘redness’ *d͡ʒẽ-tɔ* (red-father) and ‘smartness’ *nũ-ɲá-tɔ* (thing-know-father).

Reduplication is productively used in Gengbe for two patterns illustrated in Table 1. The stem in isolation is given in the first column. Full reduplication used to indicate pluractional and emphatic/intensive forms is given in the second column, and partial reduplication used to derive nouns and adjectives from verbs is given in the third column. For monosyllabic predicates, the nominal/adjectival pattern only fully reduplicates Consonant-(Glide)-Vowel syllables, as in (1a–c). Consonant-Liquid-Vowel syllables do not copy the liquid in the reduplicant, as in (1d–e). Note that this is different from Ewe, which simplifies both CLV and CGV syllables to CV reduplicants (Stemberger & Lewis 1986). Examples (1e–f) show how the nominal/adjectival pattern avoids reduplicants of the form CLV, but can reduplicate multi-syllabic (CVCV) forms. This distinction can help us to separate serial verb or verb-particle constructions, like *d͡ʒrà d͡ʒó* (repair do), from derivational morphology, as in *má-sà* (NEG-sell) ‘unsold’.¹

These two patterns are distinct. First, while the nominal/adjectival pattern involves one base and one prefixed reduplicant, the pluractional/emphatic pattern can be reduplicated indefinitely and creatively. Next, the tone pattern for

¹In addition to these phonological features, the nominal/adjectival forms involve word order differences. While the reduplicated forms in the former pattern do not have an effect on word order, those in the latter pattern do. For nominal and adjectival forms, the head is pre-posed. The order of Verb and Object in a Gengbe verb phrase is usually V-O, yet in such a noun phrase it is O-V, as in ‘gift, giving’ *è-nũ-ná-ná* (NML-thing-give-REDUP), wherein the reduplicated form can be interpreted as an adjective ‘a given thing = gift’ or as a noun ‘the giving of a thing = giving.’

Table 1: Reduplication in Gengbe

	Isolation	Pluractional/Emphatic	Nominal/Adjectival
a.	<i>βù</i> 'open'	<i>βù βù</i> 'many people open,' 'many things opened'	<i>βù-βù</i> or <i>βù-βù</i> 'opening, opened'
b.	<i>vǔ</i> 'be scared'	<i>vǔ vǔ</i> 'very scared'	<i>vǔ-vǔ</i> 'scared, fear'
c.	<i>bjǒ</i> 'ask'	<i>bjǒ bjǒ</i> 'repeatedly ask'	<i>bjǒ-bjǒ</i> 'asking, asked'
d.	<i>gblě</i> 'spoil'	<i>gblě gblě</i> 'completely spoiled'	<i>gblě-gblě</i> 'spoilage, spoiled'
e.	<i>d̥zrà d̥ó</i> 'repair'	<i>d̥zrà d̥ó d̥zrà d̥ó</i> 'repeatedly repair'	<i>d̥zà-d̥zrà d̥ó</i> 'repairing, repaired'
f.	<i>mǎ-sà</i> 'not sell'	-	<i>mǎ-sà-mǎ-sà</i> or <i>mǎ-sà-mǎ-sǎ</i> 'unsold'

High tone stems in the nominal/adjectival is Rising-High, the result of a regular phonological rule – a prohibition on a sequence of Rises that is active within words – while the pluractional/emphatic pattern shows a series of Rises, as in (1b–d) (Lotven & Berkson 2019). These observations evince different structures: the pluractional/emphatic pattern is syntactic reduplication, or iteration of the same syntactic constituent, while the nominal/adjectival pattern is morphological, with the reduplicant integrated into the same prosodic word as the stem.

There are some other reduplicative patterns in the language, for example, a productive pattern with *sía* 'all', as in 'everything' *è-nú-sía-nú* (NML-thing-all-thing), with deletion of NML marking and compensatory lengthening of the preceding /a/, preserving the High-Low tone pattern (*è-nú-sía-è-nú* → *è-nú-síâ-nú*). These and other reduplicative patterns are described for Ewe in Ameka (1999). Far from exceptional, reduplication offers some of the most productive morphological patterns in Gengbe, with unique morpho-phonological processes that shine a light on the structure of the language.

Tone matters to Gengbe morphology as well, for example, in distinguishing the 1st person plural *mí* from the 2nd person plural *mǐ*, the 3rd person singular subject *é*, from the object *è*, and 'I will' from 'I should' in (1).² Tone is also part of the nominal/adjectival reduplicative template discussed above.

²The 3sg clitic assimilates in height, nasality, and ATR to the previous vowel but retains Low tone, for example in *kè-è* 'spread-3sg,' *tú-ì* 'close-3sg,' and *sé-è* 'bear-3sg (fruit)'

- (1) *mǎ́/mǎ́ qù nú*
 I.will/I.should eat thing
 ‘I will/should eat.’

In addition, there is an alternative reduplicative template for Low tone Gengbe verbs wherein the second syllable has Rising tone, as in *kù.kù* or *kù.kǔ* ‘uprooting/uprooted,’ as is also shown in Table (1a). This pattern is similar to reduplicative templates in Ewe, where a suffixed High tone lengthens syllables with High tone and derives Rising tone from Low tone syllables (Ameka 2012).

Although Gengbe has few instances of inflectional morphology, its derivational morphology makes use of compounding, reduplication, and tone. Similar phenomena are found in Yoruba.

2.4 Yoruba

Yoruba [iso 639-3: *yor*] is a Benue-Congo language spoken in Southwestern Nigeria, Benin, and Togo. Similar to Gengbe, Yoruba has been described as having a rich inventory of ideophones, even in early works such as Awoyale (1978, 1981, 1989) and Rowlands (1970), but also Akanbi (2014). Yoruba data for this paper are from these sources as well as from the second author, a native speaker of Yoruba; we direct the reader to these sources for further research on Yoruba ideophones, as well as for lists of examples. We use the Yoruba orthography for the examples in this paper. Yoruba has 7 oral vowels [i e ε a ɔ o u] and 5 nasal vowels [ĩ ẽ ã õ ũ], with [ã] and [õ] being allophones of the same phoneme. The mid vowels /ε/ and /ɔ/ are represented orthographically as ⟨e⟩ and ⟨o⟩, respectively, while nasality is represented with ⟨n⟩ after the vowel, such that /ĩ/ is represented orthographically as ⟨in⟩. Yoruba has 3 tones: High, Mid, and Low. High tone is conventionally marked with an acute accent (x́), Low tone with a grave accent (x̀), and Mid tone is unmarked.

2.5 Yoruba morphology

Similar to Gengbe, typological work has categorized Yoruba as an isolating language due to its limited inflectional morphology, and Yoruba morphology is characterized by compounding, affixation, and reduplication (Adewole 1995, Pulleyblank & Akinlabi 1988, Schleicher 1987). Tonal morphology, or word formation that uses tone as part or all of its exponence, is commonplace in Yoruba. In addition to playing a role in the reduplicative templates to be discussed in this chapter, tone can mark features in the pronominal clitic system (Akinlabi & Liberman

2001). For example, the 2nd person singular subject pronoun *o* is distinct from the 3rd person *ó*, and the 3rd person plural subject pronoun *wón* is distinct from the pronoun *won*.

Yoruba commonly derives words through compounding. Compounding can result in the formation of complex verbs through Verb+Verb or Verb+Noun constructions (Schleicher & Schleicher 1990, Seidl 2000) or in the creation of complex nouns through Noun+Noun constructions (Adewole 1995; Eleshin 2021). As a result of a vowel hiatus constraint in the language, compounding can create an environment for vowel assimilation across morpheme boundaries (Adewole 1995) or vowel elision, especially in compound verbs (Schleicher & Schleicher 1990, Seidl 2000). Compound verbs are created through Verb+Noun constructions, as in *wíjọ* ‘complain’, derived from *wí* ‘speak’ + *ẹjọ* ‘case’, or *wolé* ‘inspect a house’, derived from *wo* ‘look’ and *ilé* ‘house’, both with elision of the noun’s initial vowels, *e-* or *i-*, respectively. Compound noun examples (Noun+Noun constructions) include the following words starting with the noun *owo* ‘money’: (1) *owoorí* ‘tax’, with *orí* ‘head’, (2), *owooşù* ‘salary’, with *oşù* ‘month’, and (3) *owoolé* (*owo*+*ilé*) ‘rent’, with *ilé* ‘house’. For the second members of these compounds, there is an assimilation of the initial vowel to the preceding vowel quality. In addition to orthographic conventions for compounds and phrases in Yoruba, compounds can often be identified phonologically by their hiatus resolution strategies, and semantically by their strict collocations with often conventionalized meanings.

As an example of affixation, deverbal noun constructions typically take nominalizing prefixes, as in *a-kòwé* (AG-write) ‘secretary’ and *ì-kòwé* (INS-write) ‘pen.’ With the base verb *kòwé* found in both examples, the former employs the agentive prefix *a-* while the latter has the instrumental prefix *ì-*. Some prefixes have more than one functional usage, as with *ì-*, which is an instrument for performing an action in the example above, but which can indicate the act of performing the action in other contexts (Adewole 1995, Awobuluyi 2008, Bamgbose 1990).

Reduplication functions productively in several Yoruba word formation processes (Ehineni 2017, Pulleyblank 2009), as illustrated in Table 2. Notably, prosaic words may fully reduplicate for intensity, as in the adverbs in (2a–b), or to form agentive (nominal) constructions from verbs, as in (2c–d). Partial reduplication occurs in examples (2e–f), as these deverbal nouns reduplicate only the first consonant of the word, followed invariably by the vowel /i/ with High tone. In examples (2g–h), the morpheme *kí* ‘any’ intervenes between the stem and reduplicant (with assimilation and elision), similar to the *síá* ‘all’ construction in Gengbe, discussed in Section 2.3.

The ‘any’ structure in (2g–h) can also extend to some ideophones such as *tímùtímù-kí-tímùtímù* ‘any mattress’, where ‘mattress’ is the already redupli-

Table 2: Yoruba Reduplication

	Stem	Gloss	Reduplicated form	Gloss
a.	<i>tayò</i>	‘joyfully’	<i>tayòtayò</i>	‘very joyfully’
b.	<i>díẹ</i>	‘little’	<i>díẹdíẹ</i>	‘very little’
c.	<i>peja</i>	‘kill fish’	<i>pejapeja</i>	‘fisherman’
d.	<i>paná</i>	‘quench fire’	<i>panápaná</i>	‘fireman’
e.	<i>jẹ</i>	‘eat’	<i>jíjẹ</i>	‘eating’
f.	<i>gbàdúra</i>	‘pray’	<i>gbígbàdúra</i>	‘praying’
g.	<i>omọ</i>	‘child’	<i>omọkọmọ</i>	‘any child’
h.	<i>ilé</i>	‘house’	<i>ilékilé</i>	‘any house’

cated ideophone *tímùtímù*. Awoyale (1981) notes that this type of reduplication and infixation is permitted only for ideophones which are already functioning as nouns in Yoruba.

Though lacking inflectional morphology, Gengbe and Yoruba are rich with derivational morphology, making use of compounding, affixation, reduplication, and tone. The following section explores similar processes used in forming ideophones in these two languages.

3 Derivational morphology in Gengbe and Yoruba ideophones

3.1 Qualitative iconicity and related word forms

Like prosaic words, some pairs or sets of ideophones have related forms and meanings, often differing minimally in their depictions (Diffloth 1972).³ These iconic relationships between the sounds of a word and its meaning are referred to by Carling & Johansson (2015) as qualitative iconicity. Such associations may be language specific, such as phonoaesthemes – combinations of sounds with similar meaning (Firth 1930) – or they may be universal, such as the frequency code, which relates smallness with high pitch and high vowels cross-linguistically (Ohala 1984, 1994).

³While prosaic words are largely used to *describe*, representing events and states with arbitrary symbols, ideophones *depict*, offering vivid, gradient, and specific representations of events and states to be interpreted. Further discussion is found in Dingemanse (2015), especially as it relates to ideophones.

Paradigmatic differences in consonants, vowels, and tone all play a part in influencing the depiction offered by an ideophone. In Yoruba, for example, *gbim* and *kim* both describe degrees of heart palpitation, with the former associated with a heavier heartbeat than the latter. In Gengbe, *páji* and *táji* evoke the sound of a slap, where the former slap struck the front of the recipient's face, and the latter struck the person's cheek. Likewise, a punch to the stomach or cheek *gbùm* differs from a punch to the ribs *gùm*, which differs from a punch to the face *gim* – which High tone renders ineffectual as an attack (*gím*). Tone alone may make the difference between depictions. For example, in Yoruba, *táló* describes the sound a tiny object makes when it drops into a river, while Rising tone in *tàlǒ* indicates that the object created a ripple. Similarly reliant on tone for interpretation, *káló* evokes the sound or motion of food being quickly swallowed, and *kàlò* is associated with the metaphorical swallowing of money, such as a gambler or wasteful person may do.

If we define morphological patterns as regular differences in word form associated with regular differences in word meaning, these types of alternations do not clearly meet the mark. For such morphological analysis, one might split onsets or tones from rhymes and assign them meanings. Yet, each of these units does not clearly relate to an individual piece of the meaning, and such sound-meaning correspondences are not usually systematic enough to be considered morphology, rather than, say, sound symbolism (Hinton et al. 1994). In other words, the above examples appear more like observations of individual relationships between word forms, rather than productive or predictable patterns of form-meaning correspondence, which can be seen elsewhere in the morphology of ideophones. However, it is worth noting that minor changes in meaning associated with minor changes in word form are also typical in, for example, the pronoun systems of Gengbe and Yoruba, where tone also plays idiosyncratic roles; and all morphology varies in productivity.

3.2 Quantitative iconicity and event semantics

The event or state that an ideophone depicts may be tied to its syllable and/or word structure. These types of syntagmatic alternations and shape-based depictions fall into the category that Carling & Johansson (2015) call quantitative iconicity, and while such processes are available to other word categories, ideophones are often this type of creative-yet-conventionalized expression. For example, in Gengbe, the continuous blowing of wind is lengthened iconically *βù::*, but when wind hits the resistance of trees, and there is a repetitive rather than

continuous quality to its sound/motion, a coronal stop is added to form two syllables, and reduplication is employed *βùdùβùdù*. Lengthening and reduplication are used in both Gengbe and Yoruba to similar effect, yet Gengbe ideophone reduplication is likely syntactic, while later in Section 3.4, we present some examples of morphological reduplication in Yoruba.

In Gengbe, when a person walks in water, sliding forward without raising their feet, a single syllable is reduplicated *vlàvlà*, but when that person moves their legs through deeper water, this exertion is depicted with a lengthening of the reduplicated rhyme from one to two syllables through glide insertion *vlàjàvlàjà*. When the person picks their feet out of the water, and there is a distinct raising and lowering of the leg through the surface of the water, the action is depicted with syllables containing onset stops and a Low-High-Low-High tone pattern, *dàbúdàbú* – similarly, elephants in mud walk *ǎzàgùǎzàgù*. Lengthening through glide insertion seems to be associated with slow or protracted movement, such as in the motion of a clumsy person walking leisurely *βlàjàβlàjà*.

Reduplication and lengthening are productively used in the intensification of Yoruba ideophones as well. For example, the act of staring at something is intensified through lengthening *sì::*, as is the depiction of a finished item *po::*, or a single punctual event, such as the sound that comes from hitting two things together *gbà::*. Awoyale (1978) notes that Yoruba ideophones can be reduplicated for recurrent actions, such as *gbì* (a single heavy tread of one's boots) and *gbìgbì(gbì...)* (numerous heavy treads of one's boots). Some ideophones, such as *gbà::* (two things hitting against each other), can be lengthened for intensity *gbà::* or reduplicated indefinitely *gbà::gbà::(gbà::)* to convey the number of occurrences, in this case strikes.

Some relationships between word formation and event semantics walk us more clearly into the domain of regular, predictable morphology, for example, in the choice of reduplication or lengthening for intensification in Gengbe. To compare this with other morphological processes of the language, we first consider how a predicate's lexical aspect influences the aspectual morphology it takes. Bare Gengbe predicates describing events have a default past-time interpretation, while bare predicates describing states have a default present-time interpretation. Gbe languages often use reduplication in forming progressive constructions, varying also along the divide between events and states. Essegbey (1999), writing on Ewe, claims that true stative verbs are identified as those that resist reduplication for progressive aspect. A similar correspondence between lexical aspect and reduplication can be found in Gengbe progressive constructions as well.

For ideophones, the choice of lengthening or reduplication also reveals information about the lexical aspect of the depicted event or state. The productive link between these processes can be illustrated with a stem and its possible modifications, shedding a light on regular morphological patterns among ideophones. For example, in Gengbe, a single step by a big man *kìm* can be reduplicated (indefinitely) to indicate the many steps involved in walking, *kìmkìm(kìm)*, while the duration of an object sitting still is intensified through lengthening *kpó::*. Likewise, slow or quiet actions are emphasized or exaggerated through lengthening *blèù::*, and intense darkness lengthens *jìbò::*.

The link between repetition of punctual events and reduplication, as well as between lengthening and slow motions or states, is illustrated with the Gengbe ideophone *kédé*. A single quiet or gentle motion is lengthened, *kédé::*, a hunter stalking prey carefully is lengthened and repeated, *kédé:: kédé::*, and quick movements that are not so quiet skip the lengthening and surface with reduplication only, *kédékédé*. Not all reduplicated ideophones have a clear stem form from which they are derived, as some expressions are obligatorily reduplicated, however, Ameka (2001) has noted that the general link between event repetition and reduplication in Ewe ideophones holds in these forms as well.

These examples show that depictive lengthening and reduplication may be linked to lexically stored and aspectually bound differences in ideophones, similar to the influence of lexical aspect on verbal morphology. Some of these transformations are less productive, such as glide insertion, while others are more productive, such as full reduplication and lengthening for intensification. Reduplication, in some functions, is linked to punctual event repetition, and it is worth noting that this iteration is similar to compounding if we consider that each reduplicant depicts a different event, for example, a punch in a boxing match or a step through mud, repeated. In Gengbe, such full reduplication is likely syntactic iteration rather than morphological concatenation, as these processes can be applied creatively and indefinitely (unlike the one base + one reduplicant patterns given in Table 1) and fail to exhibit word-level phonological rules such as a prohibition on a series of Rising tones. The following section considers more clearly compositional ideophone compounds.

3.3 Compounding and complex events

Some events are composed of more than one part, so the iconic depiction of events leads to some ideophones that are decomposable. In Gengbe, the ideophone *βù::g̀bim* can be split in two, where the first syllable indicates the motion of a large object falling, and the second denotes the sound of it hitting the ground.

Similarly, in Yoruba, *gbù:gbà:* describes a car that loses control and hits something, where *gbù:* depicts the wobbling movement of the car, and *gbà:* denotes both the action and sound of the collision.

Compounding in ideophones can depict different participant involvement as well. In Gengbe, the motion of a slim person taking a step/walking is *srá/srásrá*, while the motion of a large person taking a step/walking is *gbì/gbìgbì*. When these individuals are stomping through mud side-by-side, their steps are intermingled *gbìsrágbìsrá*. These are examples of collocations – words that often occur together – but they are not clearly morphologically bound into a prosodic word. We offer no evidence of clearly-absent word-level phonology which would suggest a morphological analysis, so these examples may, like ideophone reduplication in the language, be better described as phrases rather than words.

Yoruba offers some conventionalized examples of compounding in ideophones. For example, *gbèdèmúkẹ* depicts a festive mood with maximal enjoyment and entertainment, where *gbèdẹ* depicts a simple/easy situation or event, and *múkẹ* depicts a relaxing mood or situation. As another example, with some metaphorical extension, we can understand *gbangbakedere* to depict a secret that was exposed, composed of *gbangba*, which depicts openness (especially a part of a building), and *kedere*, which depicts ‘clearly.’

As with simplex ideophones, these complex ideophones function like words rather than phrases, and unlike phrases, they can occupy the positions of various categories, as illustrated by (2) below. *Gbèdèmúkẹ* acts as noun in (2a) (only nouns can occupy this position in Yoruba, Bamgbose 1990), an adverb in (2b), and an adjective in (2c) with a difference in tone that does not affect interpretation. *Gbangbakedere* acts as noun in (2d) but as an adverb in (2e).

- (2) a. *Gbèdèmúkẹ* ni *gbogbo* wa wà.
 IDEO COMP all 1PL be
 ‘We are all in a festive/relaxing mood.’
- b. Ó rọ *gbèdèmúkẹ*.
 3SG simple IDEO
 ‘It is simple in a fun way.’
- c. È kú *gbèdèmúkẹ* òpín òsẹ̀.
 2PL greet IDEO end week
 ‘Have a happy fun weekend!’
- d. *Gbangbakedere* ni l-ójú Olódùmarè.
 IDEO COMP before-eyes God
 ‘It is wide-open before God.’

e. Ó ti hàn gbangbakedere.

3SG PFV expose IDEO

‘It has been exposed openly/It is no longer a secret.’

These examples, taken in conjunction with those of prosaic compounds in Section 2 show how compounding applies across the lexicons of these two languages. We now turn to patterns of reduplication that reveal further complexities, as well as more clearly morphological phenomena: templatic and tonal morphology in ideophones.

3.4 Reduplication and templatic morphology

Reduplication is commonplace in Gengbe and Yoruba and is used, among other functions, to form nouns and adjectives from Gengbe verbs and to mark emphatic and agentive forms in Yoruba. In this subsection, we highlight regular, productive patterns in Yoruba ideophone reduplication, contrasting the full reduplication found in pluractional formation with a tonal template that marks counter-expectation and overwrites lexical tone. Such templates are non-arbitrary, but not necessarily iconic, in that they are predictable and regular patterns within the language system, though the nature of their tone and shape does not necessarily depict events and states. Dingemanse et al. (2015) refer to this type of non-arbitrariness as “systematicity”.

Commonly marked with reduplication across the world’s languages, pluractionality refers to the expression of multiplicity, usually of occurrence or participant (Newman 1980, 2012). In Table 2 above, full reduplication of Yoruba adverbs was shown to indicate intensity, and full reduplication of verbs was shown to indicate agentivity. As shown in Table 3 below, full reduplication of Yoruba ideophones indicates pluractionality. While these forms may be used to depict many flat, huge, fat, small, or bulging things, pluractional meaning is context-dependent. For example, (3a) could be used to depict multiple flat objects, or multiple people making something flat, like a team of workers flattening a section of road.

The pattern in Table 3 contrasts with the counter-expectation template illustrated in Table 4, which replaces the tone pattern of the stem. This overwrite of the underlying tone pattern happens regardless of the stem tone or number of syllables, and the resulting pattern is that of all Low tone on the first copy of the stem and all Mid tone on the second. In (4a–c), Low tone stems with two, three, and four syllables, surface with this Low-Mid pattern, as do Mid and High tone stems in (4d–e). Neither stem copy always surfaces faithfully, so it is not possible

Table 3: Pluractionality in Yoruba

	Stem	Pluractional form	Gloss
a.	<i>pẹlẹbẹ</i>	<i>pẹlẹbẹpẹlẹbẹ</i>	‘flat’
b.	<i>kòbìtì</i>	<i>kòbìtìkòbìtì</i>	‘huge’
c.	<i>bẹrẹkẹtẹ</i>	<i>bẹrẹkẹtẹbẹrẹkẹtẹ</i>	‘fat’
d.	<i>ríndín</i>	<i>ríndínríndín</i>	‘small’
e.	<i>rògòdò</i>	<i>rògòdòrògòdò</i>	‘bulging’

to determine which is the base and which is the reduplicant for this construction. While the stems in (4a) and (4e) are tonal minimal pairs, their reduplicated forms are identical, and ambiguity is avoided through predicate choice in two collocations – *dùn* ‘sweet’ usually precedes the former, and *rí* ‘appear’ usually precedes the latter. This prosodic template is reminiscent of the nominalizing reduplication pattern in (2e–f) where vowel quality is overwritten, surfacing consistently as /i/ for the reduplicant.

Table 4: Counter-expectation in Yoruba

	Stem	Gloss	Reduplicated Form	Gloss
a.	<i>ríndín</i>	‘sweet’	<i>ríndínríndín</i>	‘unusually sweet’
b.	<i>kòbìtì</i>	‘huge’	<i>kòbìtìkòbìtì</i>	‘unusually huge’
c.	<i>bẹrẹkẹtẹ</i>	‘fat’	<i>bẹrẹkẹtẹbẹrẹkẹtẹ</i>	‘unusually fat’
d.	<i>pẹlẹbẹ</i>	‘flat’	<i>pẹlẹbẹpẹlẹbẹ</i>	‘unusually flat’
e.	<i>ríndín</i>	‘small’	<i>ríndínríndín</i>	‘unusually small’

To draw a comparison with the ‘any’ reduplication in (2g–h), it is worth also mentioning another reduplicative template that applies to limited derived ideophones in Yoruba. Some ideophones, such as *kẹ̀n̄bẹ̀* ‘loose/spacious’, have a CVNVCV shape with all Low tones, a pattern that may involve reduplication, as in *gbò̀n̄gbò̀* ‘deeply rooted’. These ideophone examples are not readily decomposable into constituent morphemes, but others are derived from monosyllabic, prosaic predicates, such as *gà̀n̄gà̀* ‘conspicuously tall’, which is derived from the prosaic verb *ga* ‘tall’, and *làn̄làn̄* ‘conspicuously heavy and big’, derived from *ńlàn̄* ‘big’. These examples show two different paths to mimicking the CVNVCV shape of ideophones. For *ga/gà̀n̄gà̀*, an *-n-* is inserted between the base and reduplicant,

while in *nlá/lànlà*, the initial *n*- is deleted, while the medial *n*- remains. In addition to conforming to this CVNVCV template through insertion or deletion, both examples show that the underlying tones of the base, here Mid or High respectively, are overwritten by Low tone across the entire word. Such reduplication offers an example of systematicity, as a template that even prosaic words can conform to, through different means, to make their form non-arbitrarily linked to meaning, in this case *conspicuousness*. Further evidence of morphology in reduplication is seen in other West African languages like Siwu and Emai, which Dingemanse (2015) uses to argue that reduplication bridges description and depiction.

This snapshot of word formation processes, from the more iconic and idiosyncratic to the more systematic and productive, offers a look at the parallels between word formation in ideophones compared to the rest of the lexicon. These parallels include the use of compounding, affixation, reduplication, and tone in deriving meaning, and although some processes appear more syntactic, others suggest morphological processes active in the ideophones of Gengbe and Yoruba.

4 Conclusion

Since ideophones, like other words, inhabit the lexicon, derivational morphology – word formation that occurs there – is a natural point of comparison. Stepping past spontaneous and performative vocal gestures, we examined the fuzzy line between depictive word formation strategies and the conventionalized forms that offer us evidence for derivational morphology. In doing so, we considered various word-formation strategies, including those linked to qualitative and quantitative iconicity, as well as to systematicity, and those making use of compounding, reduplication, and tone.

Qualitative iconicity, or connections between the sounds of a word and its meaning, are commonplace and conventionalized, yet when regularity is discovered, patterns are often treated within the domain of sound symbolism, rather than morphology. In this discussion, a parallel was made between form-meaning (in this case, tone-meaning) correspondences that alter the details of events and states depicted by ideophones and those that mark the interpretation of person and number in the pronoun systems of Gengbe and Yoruba.

Quantitative iconicity, or connections between word shape and meaning, was also discussed, where regular links can be found between a morphophonological process and the event or state depicted. Lengthening is associated with slow movements and states in Gengbe, while reduplication is associated with repetition and pluractionality, as it is in Ewe, Yoruba, and many other languages. Much

like individual predicates, which are compatible with different morphological structures based on their lexical aspect, the word formation processes available to ideophones (lengthening and reduplication) are also dependent on lexically-defined aspectual differences between them, offering another point of similarity between ideophones and other lexical items.

Compounding – combining words to derive complex concepts – is also used in Gengbe and Yoruba ideophones. Compounds range from those that depict complex events, to those which are less clearly compositional, some involving metaphorical extension. Such compounding is available across the lexicon, to ideophones and prosaic words alike.

Reduplication – copying all or part of a morpheme – is particularly widespread in Gengbe and Yoruba, and is employed by derivational processes across the lexicon. We offered examples of full and partial reduplication, some with infixation and some conforming to particular tonal or prosodic templates, to highlight the complexities found in the morphology of ideophones and prosaic words alike in West African languages. We discussed systematicity, or non-arbitrariness, linked to regularity within the language system itself, and offered examples in Yoruba of an ideophone template that can even accept some prosaic words as stems. A possible continuation of this research could examine whether ideophones favor templatic and replacive strategies, those forcing stems to conform to a specified form. In future research, formalisms used to analyze reduplication and non-concatenative word formation, such as Construction Morphology (Booij 2010, Goldberg 2006) and Optimality Theory (McCarthy & Prince 1995, Prince & Smolensky 1993), are available for more pointed comparison between the patterns found in ideophones and those found elsewhere.

In focusing on these two isolating languages, we look to treat word formation in the lexicon as inclusive of ideophones. Previous research has been hampered by such omissions – consider the following quote, “Although it is conceivable that ideophonic expressions, particularly those employed to describe physical objects (e.g., *roboto* ‘round’) are an important source of adjectives in the language, ideophones are not considered in this study” (Madugu 1976: 86). Asides like these bring truth to the assertion by Dingemanse (2018) that the inclusion or exclusion of ideophones in analysis reshapes typology. Typology relies on more than just a list of which phenomena appear in which languages; it thrives on an understanding of how those phenomena work within as well as across languages.

Emphasis on the extralinguistic tendencies of ideophones sets them apart from the “regular” grammar of languages and may relegate them to exceptions or footnotes. Yet, language is naturally both arbitrary and non-arbitrary, and our linguistic analyses should be built to accommodate the whole lexicon, not just

the places we can most readily build rules around. It is in this leaky corner of the grammar where ideophones thrive, and where they have much to give to the study of language.

Abbreviations

1, 2, 3	1st, 2nd, 3rd person	NML	nominalizing prefix
AG	agentive	PFV	perfective
COMP	complementizer	PL	plural
IDEO	ideophone	SG	singular
INS	instrumental	REDUP	reduplicant
NEG	negative		

Acknowledgments

This research would not be possible without Dr. Samuel Gyasi Obeng, our mentor and friend, who deserves credit both for his guidance and for his work on the list of Gengbe ideophones in the Appendix. We also thank Gabriel Mawusi for the Gengbe ideophone data in this chapter, who offered his intuitions and voice to the project. In revising this chapter, we owe a debt of gratitude to the excellent and detailed feedback from Christopher R. Green, Mark Dingemanse, and an anonymous reviewer.

Appendix: Gengbe ideophones

<i>bàdàbàdà</i>	(phen) speaking bitterly
<i>bê</i>	(phon) goat bleat
<i>cųĩm</i>	(phen) bird/plane rising; car speeding by; fast moving object
<i>cųĩmcųĩm</i>	(phen) object repeatedly moving fast or rising
<i>dàbúdàbú</i>	(phon) person walking in water and raising feet out of water
<i>ḍ̣àgùḍ̣àgù</i>	(phon) heavy person or elephant walking through mud
<i>ḍ̣ẹ̣́ḍ̣ẹ̣́</i>	(phon) people chattering loudly with tense or negative feeling
<i>ḍ̣ì</i>	(phen) light person taking a step
<i>ḍ̣ìḍ̣ì</i>	(phon) light person walking
<i>ḍ̣ṛ̣à::</i>	(phen/phon) large animal dashing away
<i>ḍ̣ṛ̣à?</i>	(phen/phon) lion lunging
<i>gḅ̣àí:</i>	(phon) large bell

<i>gbà̀m</i>	(phon) crash (lengthen [m] for a bigger crash)
<i>gbì</i>	(phon/phen) heavy person stepping in sand/mud/tall grass
<i>gbì</i>	(phon) large thing hitting the ground
<i>gbìgbì</i>	(phon/phen) heavy person walking in sand/mud/tall grass
<i>gbim</i>	(phon) heavy thing hitting the ground
<i>gbìsrágbìsrá</i>	(phen/phon) a heavy and a light person walking together in sand/mud/tall grass
<i>gbógbó</i>	(phon) people chattering loudly with chaotic but positive feeling
<i>gbùm</i>	(phon) loud gunshot (lengthen [m] for echo)
<i>gbùm</i>	(phon) punch to the stomach or cheek
<i>gidìgidì</i>	(phen) squirming
<i>gím</i>	(phon) ineffective punch
<i>gim</i>	(phon) punch to the face
<i>gimgim</i>	(phen) heavy person walking quickly
<i>glàḍzàglàḍzà</i>	(phen/phon) car on rough road; horse gallop; clumsy person running
<i>glàmàglàmà</i>	(phen/phon) person or object swaying side to side
<i>glòḍzò</i>	(phen/phon) big truck stopping
<i>glòḍzòglòḍzò</i>	(phen/phon) drunk person walking; car on a rough road; truck passing
<i>gràgrà</i>	(phen/phon) large animal running
<i>grèù grèù</i>	(phon) person crunching something with teeth
<i>gùdùgùdù</i>	(phon) fast running water; boiling water; big river running
<i>gùm</i>	(phon) punch to the ribs
<i>jò::</i>	(phen) snake moving; water flowing
<i>kàtà</i>	(phon) raindrop
<i>kàtàkàtà</i>	(phon) rainfall, especially on a roof
<i>kédê::</i>	(phen) quiet/gentle action; setting something down; opening a door
<i>kédê::kédê::</i>	(phen) hunter or predator stalking prey
<i>kédékédé</i>	(phen/phon) moving quickly and not quietly
<i>kim</i>	(phen) heavy person taking a step
<i>kimkim</i>	(phen) heavy person walking quickly; mid size person walking forcefully
<i>k̀pò</i>	(phen) chopping meat
<i>k̀pó::</i>	(phen) object sitting still
<i>k̀pó::k̀pó::</i>	(phen) sneaking quietly so as not to sleeping people

4 Morphology in Gengbe and Yoruba ideophones

<i>krikri</i>	(phen/phon) light animal (e.g. mouse) moving in the forest
<i>míàò</i>	(phon) cat cry
<i>mû</i>	(phon) cow moo
<i>nâ::nâ::</i>	(phen) sick/tired/injured person or animal walking also <i>blèù::, blèùblèù</i>
<i>ńáńúńáńú</i>	(phen) person chewing
<i>pájì</i>	(phon) slap to the front of the face
<i>pê</i>	(phon) small gunshot with echo
<i>pépé</i>	(phon) small gunshot
<i>pé</i>	(phon) small thing falling or hitting the ground
<i>pípí</i>	(phon) car horn
<i>pô</i>	(phon) slap on the bottom with cupped hand
<i>φím</i>	(phen) light person taking a step
<i>φímφím</i>	(phen) light person walking quickly
<i>srá</i>	(phen) light person stepping in sand/mud/tall grass
<i>srásrá</i>	(phen/phon) light person walking in sand/mud/tall grass
<i>sss</i>	(phon) snake moving through grass
<i>juríjurí</i>	(phon) people speaking a language that is not understood
<i>tâ</i>	(phon) slap on the bottom with open hand
<i>tájì</i>	(phon) slap to the cheek
<i>tété</i>	(phon) popping sound like a fire crackling or oil in a pan
<i>îfákútîfákú</i>	(phen/phon) person/cow/goat chewing
<i>îfâtîfâ</i>	(phen/phon) cutting through grass/woods; chopping meat
<i>îfêîfê</i>	(phon) leaves rustling
<i>îfî::</i>	(phon) frying sound
<i>îfrâtîfrâ</i>	(phen/phon) cutting quickly/intensely through grass/woods
<i>vlàjàvlàjà</i>	(phon) walking in tall grass; moving legs through water
<i>vlàvlà</i>	(phen) person walking in water and not raising feet
<i>wô</i>	(phon) dog bark
<i>zrìm</i>	(phon) cutting
<i>βì::</i>	(phen) person/thing falling
<i>βí::βí::</i>	(phen) light person walking slowly
<i>βlàjàβlàjà</i>	(phen/phon) clumsy person walking leisurely
<i>βlìβlì</i>	(phen/phon) people/animals/cars moving in a group
<i>βù::</i>	(phen/phon) wind blowing, big fire burning
<i>βùdùβùdù</i>	(phen/phon) wind meeting resistance (e.g. trees)
<i>βuù gbìm</i>	(phen/phon) large thing falling over (e.g. elephant, car, building)

References

- Abaglo, Poovi & Diana Archangeli. 1989. Language-particular underspecification: Gengbe /e/ and Yoruba /i/. *Linguistic Inquiry* 20. 457–480.
- Aboh, Enoch Oladé. 2004. *The morphosyntax of complement-head sequences: Clause structure and word order patterns in Kwa*. Oxford: Oxford University Press.
- Adewole, Stephen Monday. 1995. *Yoruba word formation processes*. UCLA. (Doctoral dissertation).
- Akanbi, Timothy Adeyemi. 2014. Grammatical implication of tone on Yorùbá idio-
phone[sic]. *International Journal of Current Research* 6. 7692–7697.
- Akinlabi, Akinbiyi & Mark Liberman. 2001. The tonal phonology of Yoruba clitics.
In Birgit Gerlach & Janet Grijzenhout (eds.), *Clitics in phonology, morphology
and syntax*, 31–62. Amsterdam: John Benjamins.
- Ameka, Felix K. 1999. The typology and semantics of complex nominal duplication in Ewe. *Anthropological Linguistics* 41. 75–106.
- Ameka, Felix K. 2001. Ideophones and the nature of the adjective word class in Ewe. In F. K. Erhard Voeltz & Christa Kilian-Hatz (eds.), *Ideophones*, 25–48. Amsterdam: John Benjamins.
- Ameka, Felix K. 2012. *Ewe: Its grammatical constructions and illocutionary devices*. Munich: Lincom Europa.
- Awobuluyi, Oladele. 2008. *Èkó ịṣẹ̀dà-òrò Yorùbá*. Ibadan: Kingdon Arts Publishing.
- Awoyale, Yiwola. 1978. On the deep structure of ideophones. *Research Papers in Linguistic Science* 1. 5–40.
- Awoyale, Yiwola. 1981. Nominal compound formation in Yorùbá. *Journal of African Languages* 19. 15–34.
- Awoyale, Yiwola. 1989. Reduplication and the status of ideophones in Yoruba. *Journal of West African Languages* 16. 15–34.
- Bamgbose, Ayo. 1990. *Fonoloji ati girama Yoruba*. Ibadan: University Press PLC.
- Beavon-Hamm, Virginia. 2020. Prefix or prosody: The initial vowel on nouns in Gbe (Kwa). In Jenneke van der Wal, Heleen Smits, Sara Petrollino, Victoria Nyst & Maarten Kosmann (eds.), *Essays on African languages and linguistics in honour of Maarten Mous*, 509–540. Leiden: African Studies Center.
- Bole-Richard, Remy. 1983. *Système phonologique et grammatical d'un parler ewe: Le Gen-Mina du sud Togo et du sud Bénin*. Paris: L'Harmattan.
- Booij, Geert. 2010. Construction morphology. *Language and Linguistics Compass* 4. 543–555.

- Carling, Gerd & Niklas E. Johansson. 2015. Motivated language change: Processes involved in the growth and conventionalization of onomatopoeia and sound symbolism. *Acta Linguistica Hafniensia* 46. 199–217.
- Childs, Tucker George. 1994. African ideophones. In Leanne Hinton, Johanna Nichols & John J. Ohala (eds.), *Sound symbolism*, 178–204. Cambridge, UK: Cambridge University Press.
- Diffloth, Gerard. 1972. Notes on expressive meaning. *Chicago Linguistic Society* 8. 440–447.
- Dingemanse, Mark. 2015. Ideophones and reduplication: Depiction, description, and the interpretation of repeated talk in discourse. *Studies in Language* 39. 946–970.
- Dingemanse, Mark. 2018. Redrawing the margins of language: Lessons from research on ideophones. *Glossa* 3. 1–30. DOI: 10.5334/gjgl.444.
- Dingemanse, Mark, Damián E. Blasi, Gary Lupyan, Morten H. Christiansen & Padraic Monaghan. 2015. Arbitrariness, iconicity, and systematicity in language. *Trends in Cognitive Sciences* 19. 603–615. DOI: 10.1016/j.tics.2015.07.013.
- Ehineni, Taiwo. 2017. Prosodic reduplication in Yoruba. *Journal of Universal Language* 18. 39–59.
- Eleshin, Bisoye. 2021. Typology of headedness in Yorùbá nominal derivations. 22. 91–125. DOI: 10.22425/jul.2021.22.1.91.
- Essegbey, James. 1999. *Inherent complement verbs revisited: Towards an understanding of complement structure in Ewe*. Leiden University. (Doctoral dissertation).
- Essegbey, James. 2006. Ewe. In Keith Brown (ed.), *Encyclopedia of language & linguistics*, 2nd edn., 369–370. Elsevier.
- Firth, John Rupert. 1930. *Speech*. London: Ernest Benn Ltd.
- Goldberg, Adele. 2006. *Constructions at work: The nature of generalization in language*. Oxford: Oxford University Press.
- Hinton, Leanne, Johanna Nichols & John J. Ohala. 1994. Introduction: Sound-symbolic processes. In Leanne Hinton, Johanna Nichols & John J. Ohala (eds.), *Sound symbolism*, 1–12. Cambridge, UK: Cambridge University Press.
- Johnson, Marion M. 1976. Towards a definition of the ideophone in Bantu. *OSU Working Papers in Linguistics* 21. 240–253.
- Klamer, Marian A. F. 2001. Expressives and iconicity in the lexicon. In F. K. Erhard Voeltz & Christa Kilian-Hatz (eds.), *Ideophones*, 165–181. Amsterdam: John Benjamins.
- Kunene, Daniel P. 1965. The ideophone in Southern Sotho. *Journal of African Languages* 4. 19–39.

- Lotven, Samson. 2020. Sound system sketch of a Gengbe speaker from Batonou. *IULC Working Papers* 20. 1–27.
- Lotven, Samson & Kelly Berkson. 2019. The phonetics and phonology of depressor consonants in Gengbe. In Emily Clem, Peter Jenks & Hannah Sande (eds.), *Theory and description in African linguistics: Selected papers from the 47th Annual Conference on African Linguistics* (Contemporary African Linguistics 4), 249–268. Berlin: Language Science Press. DOI: 10.5281/zenodo.3367145.
- Lotven, Samson & Samuel G. Obeng. 2018. Nasality and the Gengbe syllable. In Samuel G. Obeng & Christopher R. Green (eds.), *African linguistics in the 21st century: Essays in honor of Paul Newman*, 33–46. Köln: Rüdiger Köppe.
- Madugu, Isaac S. George. 1976. Yoruba adjectives have merged with verbs: Or are they just emerging? *Journal of West African Languages* 11. 85–102.
- Martin, Samuel. 1975. *A reference grammar of Japanese*. New Haven, CT: Yale University Press.
- McCarthy, John J. & Alan Prince. 1995. Faithfulness and reduplicative identity. In Jill Beckman, Suzanne Urbanczyk & Laura Walsh Dickey (eds.), *Papers in Optimality Theory* (University of Massachusetts Occasional Papers in Linguistics 18), 249–384. Amherst, MA: GLSA.
- Newman, Paul. 1980. *The classification of Chadic within Afroasiatic*. Leiden: Universitaire Pers Leiden.
- Newman, Paul. 2001. Are ideophones really as weird and extra-systematic as linguists make them out to be? In F. K. Erhard Voeltz & Christa Kilian-Hatz (eds.), *Ideophones*, 251–258. Amsterdam: John Benjamins.
- Newman, Paul. 2012. Pluractional verbs: An overview. In Patricia Cabredo Hofherr & Brenda Laca (eds.), *Verbal plurality and distributivity*, 185–210. Berlin: De Gruyter.
- Ohala, John J. 1984. An ethological perspective on common cross-language utilization of f0 of voice. *Phonetica* 41. 1–16.
- Ohala, John J. 1994. The frequency code underlies the sound symbolic use of voice pitch. In Leanne Hinton, Johanna Nichols & John J. Ohala (eds.), *Sound symbolism*, 325–347. Cambridge, UK: Cambridge University Press.
- Prince, Alan & Paul Smolensky. 1993. *Optimality theory: Constraint interaction in Generative Grammar*. Rutgers University Center for Cognitive Science Technical Report 2.
- Pulleyblank, Douglas. 2009. Patterns of reduplication in Yoruba. In Kristen Hanson & Sharon Inkelas (eds.), *The nature of the word: Essays in honor of Paul Kiparsky*, 311–357. Cambridge, MA: MIT Press.
- Pulleyblank, Douglas & Akinbiyi Akinlabi. 1988. Phrasal morphology in Yoruba. *Lingua* 74. 141–166.

- Rowlands, E. C. 1970. Ideophones in Yorùbá. In Guy Atkins (ed.), *African language studies XI*, 289–297. London: School of Oriental & African Studies.
- Schlegel, Joh. Bernhard. 1857. *Schlüssel der Ewesprache, dargeboten in den Gram-matischen Grundzügen des Anlodialekts*. Bremen: W. Valett & Co.
- Schleicher, Antonia Yétúndé. 1987. Lexical and phrasal phonology of Yoruba nouns. *Kansas Working Papers in Linguistics* 12. 43–66.
- Schleicher, Charles P. & Antonia Yétúndé Schleicher. 1990. Complex verbs in Yoruba. In Frances Ingemann (ed.), *Papers of the Mid-America Linguistics Conference*, 339–354. Lawrence, KS: KU Linguistics Department.
- Seidl, Amanda. 2000. Yoruba vowel elision in compounding. *University of Penn-sylvania Working Papers in Linguistics* 6. 279–297.
- Stemberger, Joseph Paul & Marshall Lewis. 1986. Reduplication in Ewe: Morpho-logical accommodation to phonological errors. *Phonology Yearbook* 3. 151–160.
- Voeltz, F. K. Erhard & Christa Kilian-Hatz. 2001. Introduction. In F. K. Erhard Voeltz & Christa Kilian-Hatz (eds.), *Ideophones*, 1–8. Amsterdam: John Ben-jamins.
- Westermann, Dierdrich. 1905. *Wörterbuch der Ewe-Sprache*. Berlin: D. Reimer.
- Westermann, Dierdrich. 1907. *Grammatik der Ewe-Sprache*. Berlin: D. Reimer.

Chapter 5

Ethnopragmatics of Akan plant metaphor

Kofi Agyekum

University of Ghana, Legon

The paper examines the ethnopragmatics of plant metaphor (plantosemy) in Akan. It hinges on *cultural linguistics* and its sub-branches *cultural metaphor* and *world-view metaphor* as established by Sharifian (2015, 2017), and Lakoff & Johnson's (1980) *conceptual metaphor*. The paper postulates that Akans use their familiarity with plant behavior, structure, and functions to represent human behavior in plant metaphors. The areas to be covered are proverbs, panegyric and elegiac poetry, and *adinkra* symbols and fabrics. Other areas include plant metaphors related to youth, marriage, family, and death. The paper subjects the data to semantic, pragmatic, and stylistic analysis by looking at metaphor, simile, personification, and other literary devices. This paper argues that the Akan people use flora metaphors to depict their indigenous knowledge, philosophy, worldview, and environmental knowledge about plants. The study is qualitative and employs library and internet research, as well as interviews with four renowned Akan scholars. The paper argues that even though plant metaphor is universal, the attributes of specific plants are language- and culture-specific based on the natural ecology of the place, and the ways in which people interact with their environment. This paper expands new interdisciplinary research in the Akan language and culture in the areas of cultural linguistics, cognitive linguistics, ethnography of communication, anthropology, and oral literature.

1 Introduction

Metaphors are one of the most researched literary devices, and this is so because our human life is full of metaphors, and we use metaphors daily to indicate our



Kofi Agyekum. 2024. Ethnopragmatics of Akan plant metaphor. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 77–100. Berlin: Language Science Press. DOI: [10.5281/zenodo.11091827](https://doi.org/10.5281/zenodo.11091827)

relationship with nature, the environment, our body, emotions, society, culture, religion, etc. Lakoff & Turner (1989: 55) stated that a “metaphor is *conventionalized* to the extent that it is automatic, effortless, and generally established as a mode of thought among members of a linguistic community.”

In the last two decades, there has been research on Akan cognitive semantics, with emphasis on metaphor, culminating in many publications, including Agyekum (2006, 2015a,b, 2016, 2018, 2020), Ansah (2014), Dzokoto (2010), Dzokoto & Okazaki (2006), and Gyekye (1997). None of these papers, all of which have focused on metaphor in Akan, has turned attention to plant metaphor (plantosemy), hence the need to work on it. Ghanaian folk song composers and high-life artistes have composed many songs that employ plant metaphors. The current paper covers plant metaphors in proverbs, praise poetry (panegyrics), drum language, and *adinkra* (fabric symbols). This is a companion piece to Agyekum (2023) on Akan animal metaphor, and many of the findings presented in that paper are also embodied in the current paper on plant metaphor.

The structure of the paper is as follows: Section 2 deals with the Akan language and people, as well as the present study’s methodology and a literature review. Section 3 concerns the theoretical frameworks employed here: cultural linguistics and conceptual metaphor. Section 4 discusses the nature of plant metaphor. Section 5 deals with thematic areas of Akan plant metaphors and their analysis, covering plant metaphor pertaining to youth and new marriage, death and dirges, and family, as well as plant metaphor in poetry, panegyric poetry, and proverbs. Section 5 also covers use of copular verbs and simile as markers of plant metaphors, and plant metaphors in some Akan *adinkra* textiles. Section 6 is the conclusion.

2 Background

2.1 The Akan language and people

The word “Akan” refers to the people as well as their language. Akans are considered from both an ethnographic and linguistic perspective. The ethnographic Akans encompass the linguistic Akans plus the Achantas, Aowin, Nzema, and Sewi, who do not speak Akan as a first language, but rather as a second language, and who share cultural similarities with the Akan (Obeng 1987). The linguistic Akan speak Akan as their native language and are the largest ethnic group in Ghana. In the 2010 national population census, 47.5% of the Ghanaian population was linguistic Akan and about 44% of the rest of the country’s population

speak Akan non-natively (see Agyekum 2020). The linguistic Akans occupy the greater part of southern Ghana.

Akan is spoken as a native language in nine out of the sixteen regions in Ghana, namely Ahafo, Ashanti, Bono, Bono East, Central, Eastern, Oti, Western, and Western North. The Akan-speaking communities in the Oti Region are sandwiched by the Ewe and Gur language communities. Akan has 13 dialects: Agona, Akyem, Akuapem, Akwamu, Asante, Assin, Bono, Buem, Denkyira, Fante, Kwawu, Twifo, and Wassaw. There are some Bono speakers in Côte d'Ivoire. Akan is used in the first 3 years of primary education as the medium of instruction, after which it is studied as an academic subject up to the University level (Agyekum 2020: 2). The dialect names, such as Bono and Asante, refer first to the people, then to the dialects and the regions they occupy in Ghana.

2.2 Methodology and literature review

The methodology for this paper is qualitative and involves secondary data from library and internet sources, as well as interviews. This research paper involved various works on cultural linguistics, cognitive semantics, and metaphors. These include metaphors for the expression of anger, patience, distress, well-being, and face concepts (see Agyekum 2006, 2015a,b, 2016, 2018, 2020). Other scholars who have worked on areas of Akan metaphor include Ansah (2014), Dzokoto (2010), Dzokoto & Okazaki (2006), and Gyekye (1997). Ansah (2014) discussed the metaphoric and metonymic conceptualizations of fear among the Akans.

Apart from these academic works, the following works were very useful to this study: Nketia's (1978) *Amoma* and Nketia's (1974) *Ayan*. Christaller's (1933) and Appiah et al.'s (2000) Akan dictionaries were also consulted, which provided English equivalents of some archaic terms. I also benefited from Irvine's (1930) book *Plants of the Gold Coast* and Abbiw's (1990) book *Useful plants of Ghana*. Four renowned Akan scholars, namely Agya Koo Nimo, Mr. Bosie Amponsah, Nana Ampadu I, and Mr. Banning Peprah were interviewed for this project.

Mr. Banning Peprah, an MPhil holder in the Akan language, was interviewed in May 2021. Mr. Bosie Amponsah, a seasoned broadcaster in Akan, was interviewed for four hours in August 2020. I spent four hours with the late Nana Ampadu I, who was well versed in Akan language and culture in October 2020. He was a renowned and talented Akan highlife musician who relied greatly on Akan folktales, especially those on animal and plant metaphors. The last expert, interviewed in July 2021, was Mr. Daniel Amponsah, popularly known as Agya Koo Nimo in the Akan folk music circles. Agya Koo is a folklorist who has composed many songs since the 1960's. He is a well-known expert in Akan language

and culture. Some of his folk songs are in the form of folktales imbued with animal and plant metaphors. We spent about four hours looking at the structure and functions of some Akan plants including those used in his compositions.

The interviewees were given a list of familiar plants, and we spent on average four hours finding out the positive and negative characteristics they know about these plants. I further interviewed them on the plant metaphors in proverbs, panegyrics, elegiac poems, adinkra symbols, and plant metaphors about youth, family, marriage, and those used in our daily conversations. All of them were very knowledgeable in the Akan language and culture. I found out from them more about the characters and functions of plants.

In the case of the panegyrics, I consulted some praise singers at the Otumfoo, the Asante King's palace in Kumasi Manhyia, who explained some of the plant metaphors in the panegyrics and drum language to me. I also relied heavily on J. H. Nketia's books *Amoma* (1978) and *Ayan* (1974), *Funeral Dirges* (1955), where I obtained some other panegyrics and drum text language on plant metaphor. The four experts finally cross-checked the authenticity of the attributes of the Akan plants gathered from the secondary data and gave their feedback. Apart from the four renowned Akan scholars, I also interviewed five male and five female Akan Oral literature graduate students. I also employed my own introspection as a native Akan speaker to analyze the expressions.

This methodology also tested any evidence of the current use of plant metaphors. It came out that, since metaphors are a part of life, these plant metaphors are in current use in ordinary conversations, proverbs, folk songs, and in institutionalized genres like panegyrics, drum language, and folksongs, which Akan people are very proud of. Incidentally, the youth consulted for this project were rather familiar with plant metaphors that relate to love because the highlife artistes of the current generation use plant metaphors to talk about love in their songs.

3 Theoretical framework: Cultural Linguistics

The theoretical framework for the paper is *Cultural Linguistics*, including its sub-branches *Conceptual Metaphor* and *Cultural Metaphor*.

3.1 Cultural Linguistics

Sharifian (2015: 473) states that "Cultural Linguistics is a multidisciplinary area of research that explores the relationship between language, culture, and conceptualization." It is founded on the principles of cognitive linguistics, hence its

application to the discussion of Akan plant metaphor. Sharifian (2015: 476) further postulates that Cultural Linguistics has drawn on several other disciplines to yield a framework that may be best described as *Cultural Cognition and Language* because it affords an integrated understanding of the notions of “cognition” and “culture”, as they relate to language (see also Sharifian 2011). To Sharifian, one important function of cultural cognition is that it embraces the cultural knowledge that emerges from the interactions between members of a cultural group across time and space. The use of flora metaphor among the Akan of Ghana would be based on the participants, the setting, the goals, and the subject matter, as well as compliance to the Akan cultural norms. In effect, it touches on Hymes’ (1972) acronym SPEAKING.¹ Our discussion of semiotics, proverbs, panegyrics, and elegiac poetry will attest to this connection.

Sharifian (2015: 477) further considers the analytical tools that are used in the workings of Cultural Linguistics and postulates the super-ordinate term *cultural conceptualizations*. Under this, he identified “cultural schema”, “cultural category” (including “cultural prototype”), and “cultural metaphor”. The current paper will focus on the “cultural metaphor”. It is the cultural metaphor that relates very well to “conceptual metaphor” postulated by Lakoff and Johnson, and both will help to discuss and explain Akan plant metaphor.²

In the conceptualization of Akan plant metaphor, we will see that some metaphors have been fossilized based on the strong interrelationships between the Akan as an agrarian society and the plants in traditional periods when they were living in the rural areas and farming was the major occupation. With urbanization and the distancing of many local plants from human beings, the current dispensation may see the plant metaphors as abstract. Sharifian (2015: 482) discussed fossilized conceptualizations as follows:

Some cases of conceptual metaphors are simply “fossilized” conceptualizations that represented active insight at some stage in the history of the cultural cognition of a group. Such metaphors do not imply current speakers of the language have any conscious awareness of the cultural roots of the expressions, or are engaged in any conceptual mapping when they use them. In such cases, the conceptual metaphors may serve rather as cultural

¹SPEAKING: S (scene and setting), P (participants), E (ends), A (act sequence), K (key), I (instrumentalities), N (norms of interaction), G (genre)

²Sharifian (2015: 482) refers to Cultural Linguistics such that it is interested in exploring conceptual metaphors that are culturally constructed as cultural metaphors (see also Sharifian 2011).

schemas which [guide] thinking about and helps with understanding certain domains of experience. In some other cases, the expressions that are associated with such cultural conceptualizations may be considered simply as figures of speech.

Sharifian (2015: 482) summarizes cultural linguistics as follows:

Cultural Linguistics explores human languages and language varieties to examine features that draw on cultural conceptualizations such as cultural schemas, cultural categories, and cultural conceptual metaphors, from the perspective of the theoretical framework of cultural cognition.

Sharifian (2017: 2) echoes the tenets of cultural linguistics: “Cultural linguistics engages with features of human languages that encode or instantiate culturally constructed conceptualizations encompassing the whole range of human experience.” We will see how this works in the data on Akan proverbs, panegyrics, and poetry.

3.2 Conceptual metaphor (CM)

Agyekum (2020) uses conceptual metaphor to discuss Akan emotions of distress, stress, sorrow, and depression. We are adopting the same conceptual metaphor theory that will usher us into the discussion of plant metaphor. *Conceptual Metaphor Theory* was proposed by Lakoff & Johnson (1980: 177) who describe it as follows:

Many aspects of our experience cannot be clearly delineated in terms of the naturally emergent dimensions of our experience. This is typically the case for human emotions, abstract concepts, mental activity...Though most of these can be experienced directly; none of them can be fully comprehended on their own terms. Instead, we must understand them in terms of other entities and experiences, typically other kinds of entities and experiences.

In conceptual metaphor, concepts expressed in metaphors, idioms, and proverbs correspond to cultural traits, sociocultural interactions, natural experiences, and basic domains of human life, including bodily perception and movement, basic objects, and the environment (see Lakoff & Johnson 1980). Semino (2008: 5) posits that “conceptual metaphors are defined as systematic sets of correspondence, or ‘mappings,’ across conceptual domains, whereby a ‘target’ domain is partly structured in terms of a different ‘source’ domain” (see also Kövecses 2002). Using this framework, in this paper, we map source domains, plants, to our target, human behavior.

4 What is plant metaphor?

Plants are sometimes used to conceptualize abstract phenomena (Kövecses 2002). Most plant metaphors have strong positive evaluations. Kövecses (2002: 8–9) finds that plants are one of the most common source domains for metaphorical mapping of organizations and therefore suggests the conceptual metaphor SOCIAL ORGANIZATIONS ARE PLANTS. The mapping expressions manifested in plant metaphors are as follows: (a) the whole plant, (b) branches, (c) growing, (d) pruning, (e) roots, (f) blossoms/flowers, and (g) fruit. Kövecses (2002: 8–9) employs knowledge of plants as a schema for organization. These conceptual mappings are transparent because the plants and animals referenced are those we find in our environments, especially in rural areas.

The grounding of our metaphors is based on our basic experiences in life, and one of the most fundamental human experiences is agriculture (see Ungerer & Schmid 2009: 126). It is natural for human beings to find similarities between plants and themselves.³ Plants provide humans with basic needs: shelter, food, medicine, clothing; and, the products of plants are used in most industries. The agricultural revolution opened the gate for the industrial revolution, and most industries globally rely on agricultural raw materials.

Esenova (2007) notes that some plants, especially roses, bear sharp and woody thorns. The metaphor of thorns normally has strong negative connotations since we experience the sharp physical pain of a thorn prick. This metaphorical conceptualization stems from a more general metaphor EMOTIONAL PAIN IS PHYSICAL PAIN. We thus speak metaphorically of emotional pain in terms of physical pain caused by thorns with a negative connotation. In Akan, the plant *nsansono* ‘nettle’ is considered negative because it has some bristles that touch a person’s skin and bring irritation that causes people to scratch themselves. We have the Akan expression, *abusua nsansono*, ‘a nettle family’ to indicate some family conflicts.

Charteris-Black (2004) postulates that negative emotions are not evoked in all plant metaphors, as some plant metaphors are normally associated with strong positive evaluations. In Akan, we have both positive and negative notions depending on the type of plant that we are dealing with and the context of usage. In the view of the Akan, a stronger and bigger tree connotes a stronger relationship, reliability, and dependability. For example, the Akan say *X anya duapa de*

³Grzaśko (2017: 39) states categorically that plantosemy may be defined as employing various plant-terms to denote human qualities. Plantosemy is thus a form of metaphoric semantic change (Gathigia & Maitaria 2019: 80). Grzaśko (2017: 112) postulates that within the plantosemic developmental path, we are dealing with a mapping between the conceptual categories PLANT and HUMAN BEING, reflected in the pattern PLANT → HUMAN BEING.

ne nnwan amantam mu ‘X has got a dependable tree to tie his sheep to.’ If a sheep is tied to a dependable tree, it cannot free itself and go astray or walk wayward. Gathigia & Maitaria (2019: 83) states that a strong plant may be compared to a relationship that has a strong bond. The ephemerality of human beings is compared to flowers; they blossom fast and nice but wither later.

The following section focuses on certain areas where plant metaphors are manifested among the Akan of Ghana. These areas include youth, marriage, death, family, elegiac and panegyric poetry, proverbs, and *adinkra* symbols.

5 Thematic areas of Akan plant metaphor and their analysis

The Akan word *ababunu* refers to the youth, and the metaphor is UNRIPENED FRUIT IS YOUTH. The unripened fruit (youth) has conceptually not arrived at its maturity state for harvesting. It has not served its purpose of being mature to serve mankind so that it can be harvested as food. It is bitter and of less importance. The youthful era is not the stage to marry or to give birth. The Akan therefore advise their youth to take their time and mature fully and thus get ripened. The youth are warned that if they rush in life, they will die prematurely, and this is conceptualized as *wɔbɛbu abugyen*. The verb *bu* means ‘to break’; *gyen* is an ideophone that connotes the sound of something breaking instantly and unexpectedly. This is compared to a fruit or plant that has been broken due to wind or a heavy storm. We can thus recognize the Akan conceptual metaphor MATURITY IS A RIPENED FRUIT. This is similar to the Polish conceptual metaphor RIPENING IS DEVELOPING (see Filipczuk-Rosińska 2016: 18). The distinction between a blossoming plant and a withering or dead plant in the work of Filipczuk-Rosińska (2016) is also found among the Akan in the following adage in (1) where the ‘fresh tree’ is the youth, and the ‘wooden tree’ refers to the aged adults.

- (1) *Dua-mono bu na dua-wuie nso bu.*
‘The fresh tree breaks and the wooden tree also breaks.’

The death of the two contrastive trees fosters the conceptual metaphor that HUMAN BEINGS ARE PLANTS, so death can befall on any of them.

The term *ahoɔfedua* literally means a ‘beautiful tree’ that blossoms so nicely. This is metaphorically used to describe a beautiful lady in the metaphor BEAUTIFUL TREE IS PRETTY LADY. This is, however, not surprising because the human physical structure is metaphorically compared to a tree in the term *onipadua*,

made up of *onipa* ‘person’ and *dua* ‘tree’. The Akan, like the Polish and the English, share the same conceptual metaphor A HUMAN BEING IS A PLANT (see also Romans 11: 17–24 where Paul compares religious communities to trees and branches).

Among the Akan, a fresh marriage is compared to a cocoa farm that has started bearing fruit, as in adage (2).

- (2) Awarefoforɔ te sɛ kookoo nsiwa.

‘A new marriage is like a new cocoa farm that has started bearing fruit.’

Like the cocoa farm, an Akan couple knows that care must be taken to let it maintain its fruitful standing. Again, they must be aware the tree will grow old and deteriorate and eventually die. Conceptually, most marriages travel through this cycle. It implies that a new marriage is full of joy that cannot persist forever (see Agyekum 2012). Here, the conceptual metaphor A HUMAN BEING IS A PLANT is manifested.

5.1 The Akan plant metaphor about death and in dirges

The Akan use plant metaphor in describing death and in their reflections about death. The extension of the metaphor is seen in their elegiac poetry when women sing dirges. The Akan adage states this view in (3).

- (3) Nnipa te sɛ nhwiren, enkyɛ na atwam, enkyɛ na ate ato.

‘Human beings are like flowers, soon they wither and soon they fall.’

In discussing the metaphor of love as a plant among the Gĩkũyũ (also called Kikuyu or Agĩkũyũ) of Kenya, Gathigia & Maitaria (2019: 83) state that, “just like a flower opens up and then withers after some time, the same case may happen to love. This implies that love can blossom and wither or die with time”. Basson (2006: 577) expatiates that:

through the plant metaphor people can be viewed as plants with respect to the life cycle – more precisely, they are viewed as that part of the plant that burgeons and then withers or declines, such as leaves, flowers, and fruits, though sometimes the whole plant is viewed as burgeoning and then declining as with grass or wheat.

Basson (2006: 581) concludes his paper on *People are Plants* by noting that Biblical Hebrew authors relied on their deep and abundant knowledge of plant

metaphors to describe the relationship between Yahweh and his people, the Israelites. Psalm (1:3) in the Bible reads “They are like trees planted by streams of water, which yield their fruit in its season, and their leaves do not wither. In all that they do, they prosper.”

Let us now touch upon plant metaphors that relate to death. On the death of a chief, the Akan use the plant metaphor in (4).

- (4) Odupɔn bi atutu.

‘A mighty tree is uprooted.’

The conceptual metaphor is A KING IS A MIGHTY TREE. The impact of the uprooting of a mighty tree is that (a) it comes with a big sound *pum*, (b) it creates a vacuum in the forest because it occupied a big area, and one can see the void, and (c) finding an instant and suitable replacement becomes difficult because it will take a longer period for some younger trees to grow to that stage. All these interpretations imply that the death of a king means a big loss to the society. There is a popular Akan maxim about death that is captured by the plant metaphor in (5).

- (5) X nkɔforo dua a, waforo kakapempem.

‘To climb a tree, X has climbed the Kakapenpen tree.’⁴

The *kakapenpen* tree is not strong, and when people climb it, it will easily break and they will fall. If you need to climb a tree to protect yourself from wild animals chasing you, it would be prudent to climb a strong tree for safety. While the others who took refuge on top of strong trees are safe and alive, the one who climbed the *kakapenpen* has been overcome by death. The conceptual metaphor with the climbing of such a tree is DEATH IS CLIMBING A KAKAPENPEN TREE.

In describing the death of a dignitary and a responsible member of the family, the deceased is captured in Nketia (1955: 35) as follows in (6).

- (6) Woyɛ dua tan a w’abaaso. Woaso wosowo; mmɔfra ba w’ase a, wɔanya bi adi.

‘You are a mighty tree with big branches laden with fruits; when children come to you, they find something to eat.’

The conceptual metaphor in this piece is A BENEVOLENT PERSON IS A MIGHTY TREE. The many branches of a mighty tree represent to many people who are

⁴The *kakapenpen* (*rauolfia vomitoria*) tree is very short and has many soft branches.

affiliated with this kind individual that the fruits are the gains the individuals get, and that any time people approach him/her they get something needed for their life.

In the dirge in (7), the deceased woman (mother) is compared to an okra pod that can contain many seeds and yet maintains its size.

(7) *Eno nkrumakɛsɛ a ne yam abaduasa na ɔmmaa.*

‘Mother, the okra, full of seeds but does not shrink.’

The dependable woman is so responsible and resilient that she can care for all her children and even more. Such a description gives a vivid picture of the loss that children have encountered with the demise of their mother. The conceptual metaphor is A RELIABLE MOTHER IS AN OKRA POD.

5.2 Plant metaphor in the Akan family

The Akan word for family is *abusua*. There are certain plant metaphors that describe the Akan family system by looking at the structure of the tree, its roots, stem, branches, and leaves. They further consider how the individual trees combine to form the forest, and how as a collective entity, each forest is also an individual.

Kövecses (2002: 98) formulated a conceptual metaphorical schema on plants: COMPLEX ABSTRACT SYSTEMS ARE PLANTS. This is evident in fields like kinship with its “family trees”, “branches of families”, and so on. Similar metaphorical schemas are important in many cultures across the world. For instance, in the Austronesian world, the growth and propagation of social groups is systematically likened to the structure of plants. Based on these, Schecter (2015: 218) posits that “Plant metaphors are deeply embedded in ways of thinking about such issues as social organization in recent Western cultures.” We can see a reflection of Kövecses (2002) schema in the area of the family with its complexities among the Akan of Ghana.

Some derived plant metaphorical expressions within this realm in Akan include, *abusuaban*, made up of *abusua* ‘family’ and *ban* ‘branch’. This term is used for each of the eight matrilineal clans: Aduana, Agona, Asakyiri Asenneɛ, Asona, Bretuo, Ekoɔna, and Oyokoɔ. Each of these families is considered the family stem – roots and branches are the individual families scattered all over the Akan geopolitical areas and the thirteen Akan dialects in the different regions of Ghana.

There is another term, *dua no ara mu* (lit.) ‘the tree itself’. This refers to the core and inner circle members of the family, especially, *abusua panin* ‘the family

head'. From the standpoint that the Akan *abusua* is a complex, collective entity, there are proverbs based on plant metaphors to indicate the unity in diversity, as in (8).

- (8) Abusua hwedee gu nkuruwa.

'The family elephant grasses are put into groups.'

The conceptual metaphor in (8) A BIG FAMILY IS AN ELEPHANT GRASS. According to Nketia (1955: 20), The lineage, like grass, grows in little tufts that combine to form the group. An additional plant metaphor that relates to the family is in (9).

- (9) Abusua te se kwaee, wogyina akyire a, ebo mu koro. Wopini ho a, na wohunu se dua koro biara wone siberɛ.

'The matriclan is a like a forest, if you are standing afar, it forms a canopy and a single unit, but if you draw closer, you will see that each tree has its position.' (see Appiah et al. 2000: Proverb 1259)

The conceptual metaphor in (9) is A FAMILY IS A FOREST. It implies that since the Akan nuclear family is complex and large, made up of hundreds of people, an outsider may think that there is a strong unity without conflicts, discrimination, and strategies of inclusion and exclusion. When it comes to funerals and inheritance, the sibling relationship precedes cousins and strangers who might have adopted the family. They concretize this division or grouping with the adage in (10).

- (10) Deɛ ɔwoo mmaa mmienɛ na ɔde abusuapae baee.

'She who gave birth to two daughters is the one who split the family.' (i.e., splitting of the family is done by giving two daughters)

In the matrilineal system, people still get closer to their siblings than to their cousins, even though the term *nua* is used for both. The offspring of two daughters would be cousins rather than siblings thereby splitting the family.

There are certain proverbs that portray that, despite the individualism and set groups in the family, the family is considered a unified and fortified group. This is indicated in (11).

- (11) Abusua dua wontwa.

'The family tree is not cut.'

The family is considered as strong and dependable as a mighty tree, a unit that should be protected. The implication is that one cannot disparage his/her origin. No matter how bad and mischievous your family is, it will forever remain your family.

(12) Wotɔ abusua nsansono mu a, woyɛ biribiara a ɛnye yie.

‘If you fall into an *itching plant* family, nothing goes well with you.’

In (12), the family is conceptualized as a farm that is full of itching plants that make you scratch yourself anytime the thistles touch your body. It depicts that when you find yourself in such a family, there are always standing blocks and impediments that will not allow you to move and concentrate on fruitful ventures. Your available precious time is spent on scratching your body, and that will thwart your efforts of moving forward into action on the farm.

In the family lineage, the Akan talk about *X ase firi Y* ‘X’s root comes from place Y’. The stem is the personality, and the root is where the person migrated from. In the family, the Akan also have *X kɔ X nkyiri*, ‘X has gone back to X’s roots’. Another plant metaphor that relates to family is *X ase atrɛ* ‘X’s root has spread’ or *X ase atim* ‘X’s root has been well grounded’. To say *X ase atrɛ* implies that the women in the family have given birth to more children, and the family has become large. It further implies that the family becomes more established in terms of numbers and especially in riches.

There are cases where because of an accident, “generational curse”, or lack of childbirth in a family, there are concerns about a decrease in numbers. This can happen in the Akan matrilineal family system where only the offspring of the women are part of the maternal family. The Akan use the expression *abusua no ase ahye* ‘the root of the family is withered (i.e., burnt)’. This is a painful situation where the growth of the family is thwarted, and there is no replacement for the current family members. In all these examples, the conceptual metaphor is A LINEAGE IS A ROOT, and it implies A FAMILY IS A PLANT.

5.3 Plant metaphor in panegyric poetry

Akan plant metaphors feature prominently in their various poetic genres like panegyric poetry, elegiac poetry, libation, drum language, and all forms of folk songs. In this paper, however, we only concentrate on panegyric poetry and refer to the others only in passing. Akan plant metaphor in oral literature is typically found in poetry more than in prose or drama.

Panegyric is a rich Akan oral literature genre employed as praise poetry for chiefs and important dignitaries of the society. As an agrarian society, some of

the lines have plant metaphors that recount the achievements, feats, problems, hardships, and maltreatment that the past kings have gone through. In this section, I draw extracts from Nketia's (1978) book entitled *Amoma* on Akan panegyrics.

Table 1: Poem 28 (Nketia 1978)

Ono no!	Alas he is here!
Obredwane ee!	Dried palm fronds!
Obredwane ee!	Dried palm fronds!
Osɛɛ Tutu yɛpɛm-yɛya wo	Osɛɛ Tutu they are pulling and insulting you
Osɛɛ Tutu yɛpɛm-yɛya wo	Osɛɛ Tutu they are pulling and insulting
Yɛaya wo aya wo	They have insulted you
Yɛaya wo a, wonko	When you are insulted, you do not move
Wadi asempa na yeatwiri wo	You have done well but you are insulted
Osɛɛ Tutu, woato nkyene akyɛ.	You have bought salt as a gift
Nanso yɛde mako ada wo ase	But you have been thanked with pepper
Apampammire a ɔsi abura	The <i>apampammire</i> plant that covers wells

In the panegyric Poem 28, the ungratefulness of the citizen is measured by the way they have treated the king Osei Tutu, who is now compared with a wooden palm frond. When it was green and blossoming, the people used it for many things, including sweeping and basketry. Now that it is dried, they are pulling it from the palm tree, not recognizing the pain it goes through. Even though it is painful, the target is not perturbed, and it is not moving an inch. The conceptual metaphor is A BENEVOLENT LEADER IS DRIED PALM FROND. The ungratefulness of the citizens is portrayed by thanking the one who bought them salt (lit. sweetness) with pepper, which is hot. If you cannot reciprocate with his benevolence, do not pay him bitterly. The poem ends by comparing the king with the *apampammire* creeping plant that can cover the well and therefore trap the people. The metaphor is A HIDDEN DANGER IS APAMPAMMIRE PLANT; in other words, his subjects would realize the negative effect of ungratefulness only once they are trapped by it.

Poem 35 utilizes the plant metaphor of the oak tree in the conceptual metaphor A FAMOUS PERSON IS AN OAK TREE. Apart from its hugeness in terms of its trunk, the Akan oak tree in the tropical forest has many branches and uncountable small leaves. If issues and conversations about the king are comparable to all the leaves on three mighty oak trees, then the person is very famous. The poet highlights the areas of the king's popularity in terms of wars, bravery, industriousness, and dexterity, and finally his personal interest in wars, joining the army on the battlefield.

Table 2: Poem 35 (Nketia 1978)

Ono no!	Alas, here he is!
Ɔsee Tutu wo ho asem merete merete	Ɔsee Tutu, I constantly hear about you
Wo ho asem te se	Issues about you are like
Onyinatan mmiensa so ahahan awisi	The leaves of three mighty oak trees
Wo ho asem merete merete.	I constantly hear about you
Owuo na esi aso	It is death that can make one dumb
Mete a, mete no ko so	I hear it about battles
Mete no mmarima so	I hear it from your manly prowess
Mete no akatakyie so	I hear it from a warrior's perspective
Ɔkyere fa-nim-ako a wannane ko	The victor who did not leave the war
Anto mpanin ne mmɔfra so,	As a burden to elders and the youth
Okontonkurowi a ɔda amansan kɔn mu,	The moon that encircles round our necks
Na amansan nkɔmmɔ a yɛdie ne ɔsei Tutu!	All the conversations are on Osei Tutu

Table 3: Poem 48 and Poem 71 (Nketia 1978: 19, 27–28)

Ono no!	Alas, here he is!
Ankaadudwane a	The lime full of thorns
Mmɔfra kɔ aseɛ a yetu nnɛɛ	That children tread cautiously under it
Na ɔsei Tutu da aseɛ rebu mfumpaa no oo!	And Osei Tutu is wrestling under it
Nana na wayɛ ne ho dufokyee	Nana who is like a wooden log
Senkosenko a ɔsen akwantemfi,	That hangs in the middle of the road
Yewura n'ase a, abɔ yen;	When we bend under it, it hits us
Amfo a yekwati a, yeayera,	A big trap when ignored, we are lost
Yehuri tra a, yeasi amena mu,	When we jump over it, we land in a hole
Yetena so a, yen to afo,	When we sit on it our buttocks are wet
Yepagya yen ani a, adeɛ atɔ so,	If we lift our eyes, something falls on it
Yede akuma si mu a, wagye amene!	When we put an axe in it, it swallows it

Poems 35 and 48 start by comparing the bravery, resilience, and endurance of the chief with his agility and wrestling skills under a lime tree with many thorns, especially when it has been pruned. Children and people who go under it walk carefully and slowly so that they do not get hurt. Ironically, it is such a place where the wonderful king can roll on the ground and not be afraid of the thorns. The conceptual metaphor is BRAVERY AND RESILIENCE IS ROLLING ON THORNS.

In the second part of the poem, the king is compared to a rotten log hanging in the middle of a path that has all the abilities to overcome people who use that path. No matter who and what you are, and what your strategies are, you will be conquered. The conceptual metaphor is INVINCIBILITY IS A ROTTEN LOG. One may assume that it would be easier to deal with a rotten log than a fresh log, but rather the reverse is the case. It implies that when it comes to the Akan chiefs, nothing should be taken for granted, especially regarding their age and environment.

5.4 Flora metaphor in some Akan proverbs

Proverbs are terse sayings that embody general truths or principles, as well as ways of life. These general truths are based on the people's past experiences, mindset, philosophy, perception, ideology, socio-cultural concepts, environment, and worldview (see Agyekum 2012: 11). Momoh (2000: 362) looked at African proverbs from a philosophical point of view and avers that:

For anything to be known it has to be put into proverbs and for anything to be deknown it has to be removed from proverbs. Proverbs represent the last authority on the communal or public aspect of a people's beliefs or philosophy on any concept or issue. In short and in summary, for the traditional African, to be is to be in proverbs and not to be is not to be in proverbs.

Oral literature scholars like Agyekum (2005), Finnegan (2012), Okpewho (1992), and Yankah (1989) have extensively researched proverbs. Agyekum (2005: 9) states that "proverbs are interpretations of traditional wisdom based on the experiences and socio-cultural life of our elders". In Akan indigenous communication, the use of proverbs is the acknowledged mark of one's communicative competence. Speakers' ability to use appropriate proverbs in appropriate socio-cultural contexts depicts how competent and well versed they are in the language (see Agyekum 2012, Finnegan 2012, Yankah 1989). In the Akan agrarian community, indigenous knowledge on plant metaphor is found in proverbs such as (13) and (14).

- (13) Dua korɔ gye mframa a ɛbu.

‘If one tree is used as a storm brake, it will fall.’

- (14) Nnua nyinaa woso a, ɛbeka abɛ.

‘If all trees get uprooted, what would be left behind is the palm tree.’

In examples (13) and (14), trees represent human beings in society. In (13), the tree represents a single person in a family who shoulders all the responsibilities – the load is too much that he/she is overburdened. The other side of the proverb is where, in an organization, the director or chief executive wants to do everything and does not delegate. The conceptual metaphor of a single tree implies that the organization will collapse. In (14), there is the metaphor of resilience in a group or an organization, such that when all other employees, organizations, or family members fall out, the resilient and committed person will remain. AN INDEFATIGABLE AND NEVER DYING PERSON IS A PALM TREE. The metaphor of the palm tree also features prominently in Akan *adinkra* symbols.

Examples (15–18) offer flora proverbs based on the issues of dependency, benevolence, and ungratefulness.

- (15) Borɔferɛ a ɛyɛ dɛ na nsee kɔ so ayie.

‘It is the sweet pawpaw that the *nsee* birds flock on.’ (benevolence)

- (16) Akɔnkɔdɛɛ so a, na ɛnsee kɔ so adidie, ɛso po pɛ na woagyae.

‘When the *akɔnkɔdɛɛ* tree bears fruits, the *nsee* birds flock to eat them, but when they are all finished, they stop.’ (ungratefulness)

- (17) Ankaaadudwane, m’ayɛyie ne mmaa.

‘I am the lime; my reward (thanks) is the beating by sticks.’
(ungratefulness)

- (18) ɛnam dua so na homa hunu soro.

‘It is through the tree that the rope (vine) gets to see the top.’
(dependency)

In examples (15) and (16), plant metaphors represent people who are interested in booty, who are greedy and always move to places where they can only get juicy things and run away in times of hardship and scarcity. In (15), the pawpaw tree refers to wealthy people who have many friends; the conceptual metaphor is A BENEVOLENT PERSON IS A SWEET PAWPAW TREE. Similarly, in (16), the *akɔnkɔdɛɛ* tree that bears some pink and red fruits represents the wealthy and benevolent people in the Akan society who are always flocked by family and

non-family members. However, when they lose their wealth all the people despise them. Example (17) comments on the use of lime in much Akan traditional herbal medicine; because of the thorny nature of the lime tree, people do not climb it but rather use sticks to pluck the fruits. The Akan people use the vocative to say that the lime is complaining that its gratitude from all its services to the Akan is how people beat it with sticks. The conceptual metaphor is Akan UN-GRATEFULNESS IS BEATING WITH STICKS. In (18), the real picture of how creeping plants and rope get to the treetop is captured; it is through the trees that the rope gets to the top, and therefore ropes should appreciate the services of the trees. All four plant metaphors in (15–18) talk about real experiences in life and involve services, dependency, benevolence, greed, ungratefulness, and disappointment among people in the society. These foreground the conceptual metaphor HUMAN BEINGS ARE PLANTS.

In addition, the two plant metaphors below represent human beings in society who create problems for themselves.

- (19) Akwantimfi sahomā me na mepɛ m'adonko na yɛreto me.
'The swinging rope in the middle of the path, I have created the situation for people to swing me here and there.'
- (20) Kɔntoa na pɛ na homa sa ne kɔn.
'It is the long gourd that gives the chance for a rope to be tied around its neck.'

In example (19), it is the swinging rope in the middle of the path that has created problems for itself; others in the forest are relaxing and are out of trouble. In (20), there are many varieties of gourd, with some being very round, and the one in question has a long neck where a rope is easily tied as a handle. According to the proverb, the gourd has created a problem for itself by having a long neck. In society, there are problems that a lot of people encounter that are self-afflicted. These proverbs advise braggarts, husbands and wives, politicians, and heads of institutions who elevate themselves beyond their means, and therefore suffer because of their own behavior. In these two proverbs, plant metaphors are sourced from the swinging rope and the long-necked gourd, which represent self-affliction.

5.5 Use of the copula verb *yɛ* and the simile, *te sɛ* in plant metaphor

There are certain plant metaphors in Akan that employ metaphor and simile to indicate that the characteristic of the plant is transferred absolutely to the human being, or that some features of the plant are like the behaviors of human beings.

- (21) X aye te se apakyie, gye se yebo ha bo ha.
 'X is like a gourd, unless you hit the sides before it opens.'
- (22) Maye aworomo, abusua aworo me ama.
 'I am the *aworomo* leaves; people have neglected me.'
- (23) Maye Kagya, yeakae me agya.
 'I am *kagya* (*Grifonnia simplicifolia*), I have been left uncounted.'

In all the above plant metaphoric proverbs, there is the use of simile and metaphor where human beings are represented by plants. In (21), the insubordinate person is compared to the *apakyie*, the small round gourd that can only be opened by hitting its sides. In (22), a despised person in the family is represented by the *aworomo* plant, whose name rhymes with the verb *woro*, 'to reject or abandon'. In (23), the neglected person is metaphorically represented by the *kagya* plant whose name also rhymes with the phrase *yeakae me agya* 'they have counted and left me behind'. It is important to note that examples (22–23) also involve play on words (i.e., *woro* and *gya*). All these plant metaphors represent selective justice and exclusion in groups and societies.

Let us now look at two plant metaphors: (24) portrays the popularity of an individual, and (25) represents childbirth and the safeguarding of children.

- (24) Prekese gyaanaadu a ofiti kurotia a, na ne ho agye afieafie mu.
 'Prekese gyaanaadu (tetrapleurate traptera) who appears at the outskirts of the town and its fragrance is felt in all houses.'
- (25) Maye nkrumakese, mabo me mma agu me yam.
 'I am a dried okra pod; I have conserved my children in my stomach.'

In (24), the *prekese* is a spice that is so fragrant that even from afar one is aware of its scent. The plant metaphor is POPULARITY IS PREKESE. In the case of (25), the dried pod with many seeds represents multiple births, while keeping seeds in the pod represents their security. The conceptual metaphor is TIGHT SECURITY IS KEEPING IN A DRIED POD.

5.6 Plant metaphor in some Akan semiotics: *adinkra* textiles

Agyekum (2006: 125–126) worked on the semiotics of *adinkra* textiles, as well as some on plant metaphor. These include the *aya* plant and *bese saka*, a bunch of kola nuts. The *aya*, 'fern' is a small plant (more of a weed) that normally grows under cocoa farms. Even though it is soft, it can withstand any weather, including the dry season. When most plants are withered, it is still green. The Akan

have closely examined the *aya*, 'fern' plant and used it as one of their *adinkra* symbols. The *aya* plant is noted for its invincibility and continuous existence, steadfastness, and resilience. It shoots up again and again after many attempts to destroy it; when you weed it, it sprouts up after a few days. According to the Akan, it symbolizes stamina, fortitude, staying in power, defiance, and the ability to endure in the face of problems and animosities. The symbol advises people who face problems and challenges to consider the situation of the fern (see Agyekum 2006: 125). The University of Ghana's crest has three *aya* ferns on it. This symbolizes the strong determination the university has in pursuing its academic mission without being discouraged by the problems and challenges of the time (see Opoku 1997: 120).

Another *adinkra* symbol that is part of Akan plant metaphor is *bese saka* 'bunch of cola nuts.' It symbolizes affluence, power, abundance, togetherness, and unity. The bunch refers to unity because separate pods, each with a few seeds, have been brought together. Here, one can mention the philosophy of unity in diversity. The cola nut is also a stimulant and a gift item used by most Islamic and ethnic groups of northern Ghana; the cola is a cash crop. The conceptual metaphors of these two plants are FERN IS INVINCIBILITY AND RESILIENCE and UNITY IN DIVERSITY IS A BUNCH OF COLA NUTS. We can see in these two metaphors that there is a triadic relation, with a semantic extension from plants to *adinkra* symbols, and further into the abstract concepts of human relations.

6 Conclusion

We have seen how metaphors are indispensable aspects of our life. We concentrated on conceptual metaphor where plants from the physical world are used as the source domains to derive targeted entities in human life. There is metaphorical mapping of one entity to another. Metaphors are culturally based on the people's environment and their epistemology, indigenous knowledge, and worldview. In this paper, we looked at how the agrarian nature of the Akan culture and society influences the mapping of features of Akan plants onto human behavior in the conceptual world. Plant metaphors reference the entire plant either from its roots, stem, branches, seed, or leaves, or from a combination of some of these; this is prominently manifested in the Akan extended family system.

This paper employed Lakoff and Johnson's conceptual metaphor theory and Sharifian's cultural linguistics with its sub-discipline worldview metaphor to discuss Akan plant metaphor. The scope of the paper covered Akan plant metaphor in proverbs, poetry, panegyrics, family, youth, marriage, death, and *adinkra* symbols.

Over the years, most of these rich plant metaphors have become so fossilized that many people, especially the youth, use them without knowing that they are metaphorical. The dynamism of Akan culture, coupled with urbanization and westernization, have made it impossible for the current generation to fully appreciate these plant metaphors. This limitation has emerged from the fact that their knowledge of the agricultural sector is normally tied to the food crops they find in their homes and in the market. They have faint ideas about the names of trees and plants and may be ignorant that some of the metaphorical expressions they hear and use are derived from plants. The youth are now often only conversant in plant metaphors that are derived from English flowers.

This paper is a contribution to cognitive studies in Akan, and it also opens the gates for further studies and research in the areas of cognitive studies, involving embodiment and emotions, language and the mind, body part expressions, and animal metaphors, among others. It is hoped that scholars of other Ghanaian languages will extend their research into these areas, since metaphors are a part of our lives. All these efforts are aimed at the documentation and development of Akan and other Ghanaian languages.

Acknowledgements

My major acknowledgements go to my resource persons, especially Agya Koo Nimo, Mr. Bosie Amponsah, Nana Ampadu I, and Mr. Banning Peprah, who were interviewed for this project. They devoted much time and commitment to the study.

References

- Abbiw, Daniel. 1990. *Useful plants of Ghana*. London: Intermediate Technology Publications.
- Agyekum, Kofi. 2005. An Akan oral artist: The use of proverbs in the lyrics of Kwabena Konadu. *Research Review, Institute of African Studies Legon* 27. 1–24.
- Agyekum, Kofi. 2006. From linguistics to cultural anthropology: Aspects of language, culture and family issues in Ghana (West Africa). In Samuel G. Obeng & Cecilia Obeng (eds.), *LINCOM Studies in African Linguistics*, 121–133. Munich: LINCOM EUROPA.
- Agyekum, Kofi. 2012. Akan proverbs and aphorisms about marriage. *Research Review* 27. 1–24.

- Agyekum, Kofi. 2015a. Metaphors and metonyms of patience in Akan. *International Journal of Language and Communication (RASK)* 43. 35–65.
- Agyekum, Kofi. 2015b. Metaphors of anger in Akan. *International Journal of Language and Culture* 2. 87–107. DOI: 10.1075/ijolc.2.1.04agy.
- Agyekum, Kofi. 2016. Metaphors and metonyms of *nsa* ‘the hand’ in Akan. *Pragmatics and Cognition* 23. 300–323. DOI: 10.1075/pc.23.2.06ayg.
- Agyekum, Kofi. 2018. *Akan body part expressions: A cognitive semantics and pragmatic approach*. Accra: Adwinsa.
- Agyekum, Kofi. 2020. Akan cultural concepts and expressions for “stress,” “distress,” “sorrow,” and “depression”. *Nordic Journal of African Studies* 29. 1–21. DOI: 10.53228/njas.v29i3.546.
- Agyekum, Kofi. 2023. Sociocultural aspects of animal metaphor in Akan. *Journal of West African Languages* 50. 104–120.
- Ansah, Gladys Nyarko. 2014. Culture in embodied cognition: Metaphorical and metonymic conceptualizations of fear in Akan and English. *Metaphor and Symbol* 29. 44–58. DOI: 10.1080/10926488.2014.859483.
- Appiah, Peggy, Kwame Anthony Appiah & Ivor Agyeman-Duah. 2000. *Bu me be: Akan proverbs*. Accra: Centre for Intellectual Renewal.
- Basson, Alec. 2006. ‘People are plants’- A conceptual metaphor in the Hebrew Bible. *Old Testament Essays* 19. 573–583.
- Charteris-Black, Jonathan. 2004. *Corpus approaches to critical metaphor analysis*. London: Palgrave Macmillan.
- Chrastaller, Johann Gottlieb. 1933. *Dictionary of the Asante and Fante language called Twi*. Basel: Basel Evangelical Missionary Society.
- Dzokoto, Vivian Afi. 2010. Different ways of feeling: Emotion and the somatic awareness in Ghanaians and Euro-Americans. *Journal of Social, Evolutionary, and Cultural Psychology* 4. 68–78. DOI: 10.1037/h0099299.
- Dzokoto, Vivian Afi & Sumie Okazaki. 2006. Happiness in the eye and heart: Somatic referencing in West African emotion lexica. *Journal of Black Psychology* 33. 117–140. DOI: doi.org/10.1177/0095798406286799.
- Esenova, Orazgozel. 2007. Plant metaphors for the expression of emotions in the English language. *Beyond Philology*. 7–21.
- Filipczuk-Rosińska, Sylwia. 2016. The comparison of a A HUMAN BEING IS A PLANT metaphor between the English and Polish language. *World Journal of Social Science* 3. 15–21. DOI: 10.5430/wjss.v3n1p15.
- Finnegan, Ruth. 2012. *Oral literature in Africa*. 2nd edn. Cambridge, UK: Open Book Publishers. DOI: 10.2307/2798194.

- Gathigia, Moses Gatambuki & Joseph Nyehita Maitaria. 2019. Metaphoric conceptualisation of LOVE IS A PLANT in Gikūyū: A cognitive-semantics perspective. *Bulletin of advanced English studies* 2. 79–89. DOI: 10.31559/baes2019.2.2.4.
- Grzaśko, Agnieszka. 2017. On zoosemy, foodsemy, and plantosemy: A cognitive approach to selected terms of endearment. *Studia Anglica Resoviensia* 14. 29–43. DOI: 10.5584/S2017143.
- Gyekye, Kwame. 1997. *Tradition and modernity: Philosophical reflections on the African experience*. New York: Oxford University Press.
- Hymes, Dell. 1972. The ethnography of speaking. In Joshua Aaron Fishman (ed.), *Readings in the sociology of language*, 99–138. The Hague, Paris: Mouton & Co.
- Irvine, Frederick R. 1930. *Plants of the Gold Coast*. London: Oxford University Press.
- Kövecses, Zoltán. 2002. *Metaphor: A practical introduction*. London: Oxford University Press.
- Lakoff, George & Mark Johnson. 1980. *Metaphors we live by*. Chicago: University of Chicago Press.
- Lakoff, George & Mark Turner. 1989. *More than a cool reason: A field guide to poetic metaphor*. Chicago: University of Chicago Press.
- Momoh, Campbell Shittu. 2000. *The substance of African philosophy*. 2nd edn. Auchi, Nigeria: African Philosophy Projects Publication.
- Nketia, Joseph Hanson Kwabena. 1955. *Funeral dirges of the Akan people*. Achimota, Ghana: James Townsend Ltd.
- Nketia, Joseph Hanson Kwabena. 1974. *Ayan*. Accra: Ghana Publishing Corporation.
- Nketia, Joseph Hanson Kwabena. 1978. *Amoma*. Accra: Ghana Publishing Corporation.
- Obeng, Samuel G. 1987. *Conversational strategies: Towards a phonological description of projection in Akyem-Twi*. University of York. (Doctoral dissertation).
- Okpewho, Isidore. 1992. *African oral literature: Backgrounds, character, and community*. Bloomington, IN: Indiana University Press.
- Opoku, Kofi Asare. 1997. *Hearing and keeping: Akan proverbs*. Accra: Asempa Publishers.
- Schecter, Sandra. 2015. Language, culture, and identity. In Farzad Sharifian (ed.), *Routledge handbook of language and culture*, 196–224. London: Routledge. DOI: 10.4324/9781315793993-14.
- Semino, Elena. 2008. *Metaphor in discourse*. Cambridge, UK: Cambridge University Press.
- Sharifian, Farzad. 2011. *Cultural conceptualisations and language: Theoretical framework and applications*. Amsterdam: John Benjamins.

- Sharifian, Farzad. 2015. Cultural linguistics. In Farzad Sharifian (ed.), *The Routledge handbook of language and culture*, 473–492. London: Routledge. DOI: 10.17951/et.2016.28.31.
- Sharifian, Farzad. 2017. *Cultural conceptualisations and language*. Amsterdam: John Benjamins.
- Ungerer, Fredrich & Hans-Jörg Schmid. 2009. *An introduction to cognitive linguistics*. 2nd edn. New York: Longmans.
- Yankah, Kwesi. 1989. Proverbs: The aesthetics of traditional communication. *Research in African Literature* 20. 325–346.

Chapter 6

The socio-pragmatics of routine expressions in Dompō

Esther Desiadenyo Manu-Barfo

University of Ghana, Legon

La Trobe University, Melbourne, Australia

The basic communicative mechanisms used by members of a speech community provide insights into their culture. Greetings, expressions of gratitude, congratulations, sympathies, and farewells all form part of the formulaic and socially specific expressions that people understand and respond to accordingly in a community. This paper describes routine expressions in Dompō, a moribund language spoken in the North-Western corner of the Bono Region of Ghana. In 2018, four of the six remaining speakers of Dompō provided data for this project as part of a larger description of the language. Presently, there are three remaining speakers of the language. Some non-linguistic cues, as well as circumstances that condition these expressions and the underlying meanings they convey are discussed. The paper establishes that routine expressions form an integral part of the existence of the Dompō people, having social and cultural norms attached to them. With so few native speakers left, this paper provides a snapshot of some of the most common and accessible conversations available at such a late stage of language shift and attrition.

1 Introduction

The communities we come from and live in propel us to conform to their conventional norms and customs. These invisible guidelines are part of the community and have been part of them for a long time, having been passed down from one generation to the next. Some of these norms may require that members of a society undergo orientation and initiation to better understand them, and this social



Esther Desiadenyo Manu-Barfo. 2024. The socio-pragmatics of routine expressions in Dompō. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 101–124. Berlin: Language Science Press. DOI: 10.5281/zenodo.11091829

competency enables people to be fully considered bona fide community members. For instance, in some communities across Africa, to be ushered into adulthood, it is required of both males and females to undergo certain rites. In some ethnic groups in Eastern and Southern Africa, males must undergo a circumcision rite to usher them into manhood (Barker & Ricardo 2005, Siweya et al. 2018), and females in some African societies, as well as some North American Indian cultures, may go through certain rites to be ushered into womanhood (Crentsil 2015, Gyan 2017, Johnson 2018, Markstrom 2008). Such rituals are often performed by females at their menarche (i.e., the first occurrence of menstruation). In general, the groups of people who will be undergoing such rites have been conscientized about them and have even been groomed to undergo them. The aforementioned initiation rites for both genders largely involve other members of the community who either actively participate in the enactment process or serve as observers. On the other hand, there are other rites that do not involve rigorous initiations.

These are considered practices and social customs that are taught to children from a young age by their immediate families. They include routine expressions such as greetings, expressions of gratitude, congratulations, sympathies, and farewells. They are classified as routine expressions because they form part of one's daily interactions with other people. They are a necessary component of locutionary exchanges with members of our society and are "crucial for the establishment and maintenance of interpersonal relationships" (Wójtowicz 2021: 171). While different speech communities may employ varied verbal and non-verbal cues to accompany these expressions, it should be noted that many linguistic communities also share several similarities when it comes to the norms regulating the expression of daily ritual exchanges. For instance, in many African cultures where greetings may be accompanied by a handshake, it is considered anathema to use the left hand in doing so. In fact, it is a taboo in most African cultures to use the left hand to make gestures such as pointing, to interact with people, to give and receive items, and to eat and drink (Alhassan 2018, Ameka & Breedveld 2004, Kita & Essegbey 2001, Wójtowicz 2021). This is because the left hand is deemed dirty or filthy, since it is used to perform ablutions (Ameka & Breedveld 2004: 170).

In this paper, I elaborate on the routine expressions of greetings, congratulations, gratitude, sympathy, and farewells in the critically endangered language Dompó. I discuss their usefulness in serving as a testament to the cordial relationships that exist among members of the Dompó community. Their absence is generally an indication of a strain in relationship. I further instantiate the various forms that these routine expressions take and additionally draw on the different

aspects of similarities and variations that characterize them in some African languages. Most routine expressions are accompanied by non-verbal cues. I further explore these as well and the social dynamics that exist between interlocutors. Finally, I argue that with the tremendous decline in the active usage of Domp among the very few remaining native speakers, various aspects of routine expressions form part of the everyday repertoire of some of the non-fluent natives. For the handful of natives who remember some vocabulary and a few sentences in Domp, many of these are from routine expressions. It is particularly important to document routine expressions in a moribund language such as Domp precisely because they make up an important and substantial proportion of the communication that occurs between fluent speakers, as well as between fluent and non-fluent speakers.

Data on Domp greetings and routine expressions presented below were collected in Dompofie and form part of a larger corpus of data drawn upon for the write-up of the only descriptive grammar of the language (Manu-Barfo 2020). Our native speakers provided data on the greeting systems in the language through elicitation procedures and staged communicative events in 2018. I also observed how greetings were done among the speakers and asked follow-up questions to gain more insight. The sessions were audio and video recorded, and later analysed, glossed, and translated into English.

2 About the moribund Domp language

Endangered languages are once-active languages with communities of native speakers who took pride in the knowledge of their language, culture, and heritage. The dynamics of our societies, coupled with some natural and unnatural causes force languages to compete against each other (Sallabank 2012: 56). Languages that are winning the race are those deemed to have more economic, political, and cultural value. Their speakers are in the majority, and their languages have more of an appeal to attract speakers of minority languages. These and many associated factors are leading to the loss of an estimated half of the world's approximately 6,000–7,000 languages by the next century (Grenoble & Whaley 2006: 1).

One such language on the brink of extinction is Domp, which has three remaining speakers at the time of writing. Domp is spoken in a small village called Dompofie which means 'home of the Domp people'. Dompofie is in the North-Western part of the Bono Region of Ghana. The language was thought to be extinct until the first linguistic work on it was conducted in 1999 by Blench

(2007). In his work, he recorded about 60–70 speakers who had some command of the language and about 10 people who could remember some obscure words. Over the years, the number of speakers has dwindled tremendously, largely due to death and emigration from Dompofie (Manu-Barfo 2020).

In 2016, when work on the descriptive grammar of the language began, there were six remaining speakers. Three speakers have passed on, bringing the current number of remaining speakers to three. Dompō is believed by some to be a language isolate (Blench 2007, Dimmendaal 2011) based on three claims made by Blench (2007), the last of which advances the position that Dompō may be a language of unknown origin, relexified from Gonja and other languages. The two others stipulate that Dompō is related to Gonja based on the various lexical forms they share, and lastly, that Dompō is a dialect of Gonja that has been heavily influenced by other languages. More intensive research on Dompō has, however, concluded that Dompō should rather be classified as part of the North Guang language group based on some phonological, lexical, and social evidence (Manu-Barfo 2019, 2020). This conclusion aligns with the classifications of Dompō made by Güldemann (2018), Painter (1967), and Simons & Fennig (2022). The native Dompō speakers and their language have been submerged by the dominant Nafaanra language and its speakers. The Dompōs claim they are the autochthonous settlers of the lands (Goody 1964, Stahl 1991). The Nafaanras, however, dispute this claim by also asserting that when they first arrived in the area, they found no other group settled there (Owusuh 1976). The speakers of Nafaanra are believed to have migrated from Kakala, near Bontuku in the eastern part of Ivory Coast (Ameyaw 1965). The speakers settled in the villages around Dompofie and subsequently in Dompofie. Nafaanra is a Gur language and belongs to the Senufo language family in Ivory Coast and Mali (Jordan 1980, Simons & Fennig 2022). Nafaanra itself has gained so much prominence over the Dompō language that it is the language used across all spheres in Dompofie. It has become the first language of the progeny of the native Dompō speakers. Dompō is currently only used on very rare occasions such as during their annual festival when homage is paid to the ancestors in the language, during funerals, marriage, and puberty ceremonies, when some songs are sung in the language and when rituals are held to appease the gods.

According to some Dompō speakers who were witnesses to the causes of the decline in the use of the language over the years, the shift in use of Dompō to Nafaanra can be attributed to several fundamental causes. The chief of Dompofie explains that there was a period in the history of the Dompō people where there were very strict law makers who insisted that the Dompō natives should marry among themselves to keep their language active, so as to transmit it to the

next generation. However, when those law makers passed on, the Domp

os began marrying individuals from other tribes, particularly the Nafaanras. A woman who experienced the effect of this shared that both her parents were Domp

os, but her father also married a Nafaanra woman who came to reside in the same household with them. It happened that whenever her parents were speaking Domp

o, or her mother and other Domp

o speakers were conversing, the Nafaanra woman would accuse them of gossiping about her. Over time, the frequency with which Domp

o was used reduced, leading to a breakdown in the transmission of the language in the household. The Nafaanra language was, however, gaining more ground, in turn, because its speakers were increasing in number in the Domp

o community. Another opinion was given by three siblings who all confirmed that when they were young, their parents deliberately did not actively transmit Domp

o to them because their parents didn't want them to understand their conversations. In a similar manner, other children who could speak Domp

o were discouraged from interacting and teaching Domp

o to their Nafaanra peers. The oldest remaining speaker of Domp

o attributes the decline of the language to the fact that teens were not respectful of the elderly and were not willing to help them out on the farms. He noted that one easy way the language could be transmitted to the younger generation was if they walked to the farms with the elderly Domp

o speakers and if they worked on the farms with them. He pointed out that that was how he taught the youngest speaker of the language (who is now deceased). Other Domp

o speakers and non-Domp

o-speaking community members also shared that they witnessed the Domp

o language used as a secret language to gossip about those who could not speak it.

3 Greetings in the African milieu and in the Domp community

Greetings form part of those essential daily exchanges that characterize our existence as humans. Egblewogbe (1990: 14) suggests that "greetings are regarded as a means of establishing social contact and acknowledging the social presence of others". Both Egblewogbe (1990) and Foley (1997) establish that greetings are used to acknowledge the social presence of someone, to maintain the bond between interlocutors; and greetings encircle fundamental aspects of culture. Members of a society are mandated to initiate greeting exchanges and receive responses during an encounter.

Greetings in most African contexts are influenced by social factors such as age, gender, religion, occupation, and social status (Egblewogbe 1990: 14, Nwoye 1993:

37). Each society may have different approaches to how greetings are conducted by indicating who should be greeted, the person to initiate the greeting, and what verbal and non-verbal acts should go with the greetings. In most communities, the person who encounters another person or a group of people first initiates the greeting, irrespective of the former's age. Generally, in the social order, the onus falls on the youngest of the group in the hierarchy to initiate a greeting, with some appropriate interval of questioning to follow. In the Dompò community as well, young people are required to greet the elderly first and to wait for the older interlocutor to make enquiries about the health of the younger interlocutor. In contrast, young people in Persian and Hausa societies can ask about the welfare of the older interlocutor and that of their family after initiating a greeting (Chamo 2015: 263, Moradi 2017: 300). Whereas the onus lies on women in the Yoruba and Kisukuma family hierarchy to greet a man first (Akindele 1990: 2, Batibo 2009: 93), in the Dompò community, such an onus does not exist. Rather, age takes precedence over gender in a greeting exchange. Observe below the various greeting exchanges used during the different periods of the day in Dompò. Note also that the initiators are either the younger person in the greeting exchange or the person who first sees the other as they approach.

3.1 Morning greetings

Klà is the Dompò word for *greet* or *greetings*. It is also used as a morning greeting. It is further used in two ways in the language. In its first form, it occurs after the kinship name or the title of the person who is being greeted as is depicted in (1). As seen here, a kinship title, such as 'mother' or 'father', is added to greetings in Dompò; it does not matter if the person one is greeting is the biological mother or father. The exchange in (2) is between the author and the oldest male speaker of the language. It took place one morning when I was doing my fieldwork in Dompò.¹

- (1) Ntrô, klà.
father greet
'Greetings, father.'

In its other form, *klà* serves as a logical object that can be given to someone, as depicted in (2).

¹I lived with the Dompò speakers in Dompòfè for about 10 months during my fieldwork. Greetings were one of the first linguistic exchanges I learnt from the speakers. It provided the grounds for the speakers to always want to engage further because they saw the enthusiasm with which I learnt different aspects of their culture.

- (2) a. Ntrô, é há wó klá.
father 1SG give 2SG greet
'Father, I greet you.' (lit. father, I give you greetings) *Speaker A*
- b. Klà mí bí. ó kàà fóófó à?
greet 1SG child 2SG wake well Q
'Greetings my child (response). Did you wake up well?' *Speaker B*
- c. ěě, é kàà fóófó.
INTJ 1SG wake well
'Yes, I woke up well.' *Speaker A*
- d. Á há Bwàrèngò lèé.
1PL give God thank
'We thank God (for life).' *Speaker B*

As can be inferred from the dialogue above, morning greetings in Dompò express appreciation for the lives of both interlocutors and give thanks to God for the blessing of another day. Greetings are moreover viewed as something that can be given to the subject, perhaps as sustenance, and are expressed as something to be eaten or treasured. When one greets another in the morning, the words serve to nourish the body of the person being greeted. It is a blessing to be alive and to have someone to interact with. This buttresses the important nature of greetings in Dompò and alludes to the fact that humans need these physical interactions to feel loved and appreciated.

3.2 Afternoon greetings

Afternoon greetings in Dompò serve to further recognize the presence of the interactants. They might have been away during the morning, and so seeing each other gives them the opportunity to touch base and to further talk about what might have ensued during the period before meeting once again. Below is a brief exchange between two friends who met on the road while going to conduct their individual business.²

- (3) a. Ámá, ápáá.
Ama afternoon
'Good afternoon, Ama.' *Speaker A*
- b. Pàà, mí nákpáá.
afternoon 1SG friend
'Good afternoon, my friend.' *Speaker B*

²Ama is the name for a female born on Saturday in the Akan culture of Ghana.

c. Lànò lîrè à?

house exit Q

‘(Is everything ok) at the house you come from?’

Speaker B

d. òó.

INTJ

‘Yes.’

Speaker A

In this exchange, speaker B’s question about the home of speaker A is deeper than its literal meaning. Speaker B wants to find out if everyone and everything in the home of speaker A is okay. If something eventful had happened in the home of speaker A, she would have prolonged the interaction by detailing it out to speaker B. In this case, it can be assumed that there was no such thing and so the interaction was cut short and both interlocutors went their way.

3.3 Evening greetings

Evening greetings in Dompò give interlocutors the opportunity to unwind and discuss the activities of the day, which mostly would be what happened on their respective farms. Observe the exchange below between the older male Dompò speaker, who is speaker B and the younger, who is speaker A.³

(4) a. Ntrô, áséé.

father evening

‘Good evening, father.’

Speaker A

b. Sèè, trò.

evening father

‘Good evening, father.’

Speaker B

c. Bí léé ndòò ró.

2PL welcome farm in

‘Welcome from work.’

Speaker B

d. Lèè, ntrô.

thank, father

‘Thank you, father.’

Speaker A

e. Ntí sòmì wá dù?

how work DEF plant

‘How did the work go?’

Speaker B

³Note that ‘father’ has the forms *trò* and *ntrô*, used interchangeably.

- f. Á tí mú.
1PL be.able 3SG

‘We managed it (e.g., the scheduled weeding/planting).’ *Speaker A*

The kinship title *trò/ntôr* ‘father’ in (4) is used to refer to an older male – the respondent, though older than the initiator, refers to the latter using the same title. This shows mutual respect between the interactants. B’s utterance, *bí léé ndòò ró* is meant to welcome A and his family from the farm. In Dompôfè, women and children often accompany their husbands and fathers to the farm. Thus, B is further thanking God for bringing the family from the farm to their home. B then goes ahead to ask about what ensued on the farm, and A responds that all the work they had planned to do that day was accomplished. The conversation could go on about what ensued in speaker B’s day as well. Other topics may come up for discussion and depending on the time they have to spare, the conversation could go on for hours.

3.4 Night farewells

Night farewells take place between interlocutors who are taking leave of each other to go to their respective homes. They bid good night by praying for God’s protection throughout the night and by expressing hope that He ushers them into a new day. The following exchange is between the author, who is speaker A, and the oldest Dompô speaker, who is speaker B.

- (5) a. Mín yá dèhè.
1SG.FUT go sleep
‘I am going to sleep.’ *Speaker A*
- b. Bwàrè yí nò ó dèhè lèlè.
God let CONJ 2SG sleep well
‘May God let you sleep well.’ *Speaker B*
- c. Né kádé ñkè, ànín sré.
COND dawn tomorrow 1PL.FUT meet
‘When day breaks, we will meet.’ *Speaker B*
- d. Yòò, Bwàrèn bú àni.
okay God cover 1PL
‘Okay, God cover us.’ *Speaker A*
- e. Bwàrèn há àní kè.
God give 1PL tomorrow
‘God give us tomorrow.’ *Speaker B*

Though the oldest Dompò speaker is a traditionalist and believes in a lesser god, on all occasions when we had to bid good night, he referred to the supreme God.

Additionally, greetings are not only used to perform the role of phatic communion, but some are also used to convey information (Duranti 1997: 64, Malinowski 1972: 151, Nwoye 1993: 37). The communal nature of the remaining Dompò society makes greetings not only a phatic gesture but one that elicits further personal details about the interlocutors. The information greetings relay usually transcends the interactants merely recognizing each other, transitioning to exchanges about their personal lives (Coupland et al. 1992). Greetings between interlocutors in Dompò can be of any length, depending on the relationship between them. If the interlocutors are not very well acquainted, the exchange can be brief. This is, however, very rare because of the close-knit nature of the small community. Most of the exchanges go beyond the normal greetings and responses, and largely border on the well-being of the interlocutors and their respective families. For the women, it may go into a discussion of the welfare of some of their children who might be living outside Dompò and even to some petty gossip about what is happening in the lives of some members of the community. The length of greetings in Dompò may also be dependent on when last the interlocutors interacted. If it has been a while, then there will be a cause to catch up on all the eventful things that have happened in their individual lives. Observe the greeting exchange in (6) between two women, the enquiries they make about each other and their respective families, as well as the formulaic responses that follow.

- (6) a. Mí nákpáá, é há wó klá.
1SG friend 1SG give 2SG greet
'My friend, I greet you.' *Speaker A*
- b. Klà, mí nákpáá.
greet 1SG friend
'Greetings, my friend.' *Speaker B*
- c. Ó kàà fóófó à?
2SG wake well Q
'Did you wake up well?' *Speaker B*
- d. èé, é kàà fóófó.
Yes 1SG wake well
'Yes, I woke up well.' *Speaker A*

- e. Ó klú nè mbìà áná bí kàà fóófó à?
 2SG husband CONJ PL-child QUANT 3PL wake well Q
 ‘Did your husband and children wake up well?’ *Speaker A*
- f. èé, bí kàà fóófó.
 Yes 3PL wake well
 ‘Yes, they woke up well.’ *Speaker B*
- g. Bà-shià wò ó lándò bí kàà fóófó à?
 PL-person be.at 2SG house 3PL wake well Q
 ‘Did the people in your house wake up well?’ *Speaker B*
- h. èé, bì wùrò. Bí kàà fóófó.
 Yes 3PL be.in 3PL wake well *Speaker A*
 ‘Yes, they are in (the house). They woke up well.’
- i. Á há Bwàrèngò lèé.
 1PL give God thank
 ‘We thank God (for life).’ *Speaker B*

Furthermore, greetings are a component of the politeness strategies that are taught to members of a community from a young age with the aim of training them to become respectful and responsible members. Greetings are thus embedded in the concept of politeness (Brown & Levinson 1987, Obeng 1996, 1999). Greetings indicate that the initiator is well grounded in the cultural ethics of the society he/she belongs to. Knowledge of good procedures of greetings classifies one as having good manners, politeness, and respect towards others. Ignorance of customs shows that a person is uncouth, uncaring, and lacks education (Wójtowicz 2021: 174).

Another aspect of politeness that greetings relate to is the concept of ‘face’ (Goffman 1967). Brown & Levinson (1987: 311) assert that face is “the public self-image that every member wants to claim for himself”. This includes the desire of the interactants to be approved of or appreciated. Thus, in a greeting exchange, the interlocutors appeal to each other’s positive face by recognizing their presence. Any contrary act will lead to the loss of one’s positive face, and to embarrassment.

Spolsky (1998: 20) describes greetings as the “basic oil of social relations”. In the Dompō community, a person who passes by others without greeting is considered uncultured and disrespectful. If he/she is young, an older person may point out the anomaly and correct the former there and then. On the other hand, if the person who does not greet is a person whose social status renders them

beyond reproach, the one who is not greeted may harbor the malice of not being greeted, and may talk to others about the slight. A person who does not respond to greetings in the Dompō community is considered proud and hostile towards the one who greeted. Similarly, (Moradi 2017: 301) records that in Persian society, people who fail to respond to greetings are not only considered worse than impolite, but arrogant and hostile. In most African communities, one's ability to greet properly indicates respect and concern for the well being of others (Schleicher 1997: 335). She indicates that in the Yoruba community, greetings can be exchanged several times in a day among members. The frequency of interaction is a visible manifestation of the love and concern people have and feel for one another. In the Ewe society of Ghana, a premium is placed on greetings because they establish mutual interest, respect, and goodwill (Dzameshie 2002: 384). In the Limba community of Sierra Leone, greetings are performed as a formal act to show commitment and to acknowledge others (Finnegan 1969: 544). Thus, when two people who were initially on good terms are spotted not exchanging greetings, it automatically signals that the relationship between them has gone sour.

In a social setting, greetings are language events that comprise participators, time and place, message, situation, and function (Egblewogbe 1990: 14). Akindele (1990: 1) posits that greeting is "informed by the rules of conduct and is an inevitable part of everyday conversation". He further observes that greetings are an essential part of social intercourse and serve as a foundation for establishing social connections. Greetings are used as a conversational opener or closer, and their introduction maintains the fluidity of the interaction. Their format is embedded with turn-taking that signifies commonality, mutual respect, and reciprocity among interlocutors (Agyekum 2008, Duranti 1997). In the Dompō community, greetings are expected at all times and in all social situations that involve the meeting of two or more people. Greetings are required from one who enters a house, meets others on the road, in the market, at the farm, and during occasions such as festivals, marriage, and funeral ceremonies. The illustrations below in Dompō depict several of the various social situations and occasions when greetings are exchanged.

3.5 Greetings when entering someone's home

In the Dompō community, a person is mandated to call the attention of others in the house they are visiting from a short distance away, preferably at the door, before entering – if there is a response to do so. The conventional attention seeking marker, *àgòò* is used to fulfill this request. The response to this greeting is *àmèè*, which is given by someone in the house and indicates permission to enter

the house. This bipartite greeting and response is a borrowing into Dompò. It is used in most of the languages spoken in the Southern part of Ghana. It is used for the same purpose in Ga (Berry & Kotei 1969), Ewe (Ameka 2009), and Akan (Ofori 2011). Alternatively, in Dompò, the greeting exchange in (7) can also take place when one is entering another's house.

- (7) a. É bá.
1SG come
'I come (I am here).' *Speaker A*
- b. Ó mné?
2SG who
'Who is it?' *Speaker B*
- c. Mì Kòfì nà
1SG Kòfì FOC
'It is me, Kofi.' *Speaker A*

In this exchange, Speaker B was likely expecting some visitors and asked to verify their identities.

3.6 Greetings when welcoming people into homes

Visiting people is part of our social function as human beings. In the Dompò community, members create opportunities to visit one another. The rate of the visits increases depending on the occasion, such as marriage, naming ceremonies, or funerals in the homes of members. When a visitor is ushered into someone's home, the host offers their guest a seat. An offering of water then follows. Especially for people who have travelled a distance to pay a visit, they are given some time to rest before other exchanges take place. The host then goes on to ask about the purpose of the visit, and further exchanges ensue about the well-being of their individual families and interesting things that might be happening in the guest's village. This is demonstrated in the exchange below.

- (8) a. Lèèlè.
welcome
'Welcome.' *Host*
- b. Lèè trò/níí.
thank father/mother
'Thank you, father/mother.' *Guest*

- c. Lànò máníé?⁴

house matter

‘How are issues at home?’

Host

- d. ó Káwí máníé?

2SG village.name matter

‘How are issues in your village?’

Guest

3.7 Greeting people working on a farm

Farming is a major part of the livelihood of the Dompò people. The farms of the inhabitants are located several kilometers from the Dompò settlement. They thus trek or cycle these long distances to their farms in the early morning and return late in the afternoon. It is considered good neighborliness to acknowledge and encourage others who are working on the farm. The following conversational exchange in (9) may ensue in such situations.

- (9) a. É há bán klá.

1SG give 2PL greet

‘I give you greetings.’

Speaker A

- b. Klà trò/níí.

greet father/mother

‘Greetings, father/mother.’

Speaker B

- c. Bí bó kó.

2PL do INDEF

‘You have done some work.’

Speaker A

- d. Ó lèé ná.

2SG thank FOC

‘Thank you.’

Speaker B

These types of greetings are usually brief and might not extend to incorporate other topics because the interlocutors are likely on their way to a farm or some other place.

3.8 Greeting people when they are eating

When someone receives a visitor just when they are about to eat, the guest greets the host first and follows this with a funny remark about being strategic, and

⁴*Máníé* is a borrowing from the Akan word *àmànié* which has the same meaning.

lucky enough to come at the right time when there is food. The host thus performs the cultural norm routine of inviting the guest to join him or her in eating. If the guest wants to eat, they may join the host in eating. The guest cannot blatantly say no to the request. The polite way of declining the offer is to urge the host to continue eating, or by stating that one's hands have joined in the eating – a metaphorical way of saying that the guest's hands are helping the host finish the food. In the event that the host has little food available, or is almost done eating, they may still invite the guest to join in the eating. Often, the guest responds by urging the host to finish up, with the excuse of having already eaten. Observe the exchange below.⁴

- (10) a. Ó wúrá hálé.
2SG enter hand
'Your hand has entered food.' *Guest*
- b. Bà nà á wúrá hálé.
come CONJ 1PL enter hand
'Come let us eat.' *Host*
- c. Mí hálé wò mù rò.
1SG hand be.at 3SG in
'My hands are in it.' *Guest*
- d. É jí drà.
1SG eat already
'I have already eaten.' *Guest*

There are other expressions among the Dompòs that indicate that members of the community are connected in their interpersonal relationships. These expressions are discussed in Section 3.9.

3.9 Other routine expressions in Dompò

3.9.1 Exchanges during the expression of gratitude

The Dompòs believe that showing gratitude for things they receive from someone leaves more room for other good things to happen for both parties. They sing praises upon the giver and pray for God's blessings upon their life, so more of such gifts will come from the person in the future. The morning after a gift is

⁴I thank a reviewer for pointing out that 'enter hand' is an idiom for 'eat'. There is no mention of the word for 'food' *jí sò* in the Dompò sentence, probably because 'enter hand' may also have the same connotation in the language.

received, it is the culture of the Dompos to visit the home of the giver to offer their gratitude for what was given to them. After greetings have been exchanged, the interaction in (11) may take place, where (11a–d) are possible statements made by the recipient, depending on the circumstance.⁵

- (11) a. Gbàrèngò chá wò. Kó ó léé nè ò nyá.
 God help 2SG INDEF 2SG want CONJ 2SG get
 ‘May God help you. Whatever you want may you get it.’ *Recipient*
- b. Bwàrèn há ó ñkpà kán kisi ó ló.
 God give 2SG life SC hate 2SG ill
 ‘God give you life and hate your illness.’
- c. Bwàrèn yílí ó kàmnè nò ó má ló.
 God stand 2SG back CONJ 2SG NEG ill
 ‘God stand behind you so that you don’t get ill.’
- d. Chòsò ndré kó ó bó kán hà mí wá ó bó kó.
 pass yesterday INDEF 2SG do SC give 2SG DEF 2SG do INDEF
 ‘Thank you for what you did for me yesterday. You did something for me.’
- e. Àmín. Ó má há mí lèé, hà Gbàrèngò lèé.
 Amen 2SG NEG give 1SG thank give God thank
 ‘Amen. Don’t give me thanks, give thanks to God.’ *Giver*

3.9.2 Exchanges during the expression of congratulations

When good fortune falls upon any member of the Dompò community, the person is celebrated. Such happenings include childbirth, marriage, and the passing of a major exam. Individual successes are celebrated because it is believed each member of the community helped one way or the other to help attain them. For instance, when a woman is pregnant, others help take care of her by giving her food items, fetching water for her, and offering advice on how to carry herself during the pregnancy period. Women who are about to get married are also presumed to have been groomed to be suitable women for marriage by the community. Some exchanges that might take place include the exchanges in (12) and (13). The first is between a visitor and a host congratulating the former after the birth of a child. The second is a congratulatory message to someone who has achieved success in an exam.

⁵The word for God has the variant forms *Bwàrè*, *Bwàrèn*, *Bùàrèngò*, and *Gbwàrèngò*. These are used interchangeably in speech.

- (12) a. Bí lé nfòó nà.
2PL come far FOC
'You have come far.' Visitor
- b. Bwàrèn yí nè bì chìná kán kùrè mbì lélé kán há ání.
God let CONJ 2SG live sc bear PL.child good sc give 2PL
'God let you live to bear good children for us.'
- c. Bwàrèn yí nè bán kánú bó kòólè.
God let CONJ 2PL mouth make one
'God let you be united as one.'
- d. Àmín. Ó lèé nà.
Amen 2SG thank FOC
'Amen. Thank you.' Host
- (13) a. Ó bó kó.
2SG do INDEF
'You have done well.' Visitor
- b. Ó yà kěé kán yò ó nyíró.
2SG go write sc go 2SG face
'You have gone forward (by passing your exams).'
- c. Gbàrèngò yí nè ò yó ó nyíró ló.
God let CONJ 2SG go 2SG face like.that
'May God let you move forward like that.'
- d. Àmín.
Amen
'Amen.' Host

3.9.3 Exchanges during the expression of sympathy

When misfortunes such as accidents or death occur in any household in the Dompò community, other members rally their support behind the affected family. They pay visits to show solidarity with them and to offer words of comfort and encouragement. In the exchange in (14), the host responds that they (the bereaved family) have heard and received all the words of comfort from the visitors and thank them for it. They also acknowledge that these words are the only ones that can sustain them during their difficult period.

- (14) a. Bwàlè.
sorry
'Sorry.' *Visitor*
- b. Bí yíé mú kán há Gbàrèngò.
2PL leave 3SG SC give God
'Leave it (the situation) to God.'
- c. Á nú. Bí lèé nà.
1PL hear 3PL thank FOC
'We have heard. We thank you.' *Host*

3.9.4 Exchanges during the expression of farewell

There are certain exchanges that might ensue when a guest is taking leave of the host. In a similar light, when a person is travelling out of the community, there are some farewell messages that might be said, which largely border on God's protection for the person travelling. Such an exchange is found in (15).

- (15) a. Yò-m bà.
go-SC come
'Go and come back.' *Host*
- b. Gbàrèngò há wó kló lèlè.
God give 2SG car good
'May God give you a good car to travel in.'
- c. Gbàrèngò yí nó ò yá lùá nó jòò.
God let CONJ 2SG go arrive there smooth
'May God let you arrive (at your destination) smoothly.'
- d. Àmín.
Amen
'Amen.' *Guest*

4 Greeting taboos in Dompò

Just as greetings are expected in all social encounters, there are a few situations in which their usage is prohibited in Dompò culture, as is the case for many cultures in West Africa. In the Dompò community, when a person is on the way to use the toilet, they neither greet nor respond to greetings from anyone. The person can, however, respond to greetings after using the toilet. In Dompofie, there are

separate pit latrines built by the community for both men and women, which are located at some distance from the settlement. A few other households may also come together to build one behind a home. Thus, one way of knowing when a person is going to use the toilet is by the direction they are going. One who meets another going in the direction of the toilet and not holding any farming tools passes by without greeting. The rationale behind this greeting prohibition is that the person going to the toilet is unclean and can only be interacted with when they have rid themselves of the filth they were carrying (Agyekum 2008, Dzameshie 2002, Eglewogbe 1990).

In the Domp community, the majority of bath houses are built outside homes and in such a way that the head of the person bathing may be visible to passersby. People are thus tempted to greet when they encounter someone taking their bath. It is, however, a taboo for a man who is not married to greet a bathing woman and further engage in conversation with her. The same applies if the one bathing is a man and the potential greeter is a woman. Otherwise, community members may assume that they are having an affair. It is, however, acceptable for there to be such an encounter and a conversational exchange between same sex people.

Lastly, in the Domp community, the elders are neither greeted nor respond to any greetings when they are on their way to perform rituals to appease the gods.

The elders of the Domp community have stated that these cultural norms and values regarding the performance and non-performance of greetings are not being adhered to by the younger generation. Some Domp attribute this attrition to the advent and influence of modernity, which has made their society more liberal and prone to outside negative influence.

5 Non-verbal aspects of Domp greetings

In speech societies, the modes of carrying out greetings may be verbal, non-verbal, or both. Cross-linguistically, these verbal acts are often complemented by non-verbal gestures such as shaking one's hand, waving one's hand, nodding one's head, bending one's knee, and/or making certain facial expressions (Agyekum 2008, Dzameshie 2002, Eglewogbe 1990, Nwoye 1993). These non-verbal gestures, which may have some slight variations across cultures of the world, are heavily intertwined across the African continent. The onus lies on every member of the community to properly train younger members in their use. In the Domp community, and similar to what happens in the Ewe community, a young girl or woman bends one or both knees in deference when greeting an

older man/woman (Egblewogbe 1990, Manu-Barfo 2020). This non-verbal gesture is comparable to the Hausa child who squats when greeting the parents, the Igbo child who bows down, and the Yoruba boy who prostrates while the girl kneels when greeting their parents or elders (Schleicher 1997).

Furthermore, a young man in the Dompoto community is mandated to remove his hat and/or spectacles when greeting an elderly person. In the past, anyone who came around to interact with the elders in the community had to take off their shoes before offering any form of greetings. This is also the norm among the Baatonu tribe of Northern Benin, where subjects remove their shoes upon entering the chief's palace; there, men further prostrate, and women get down on their knees with their arms on the ground (Schottman 1995). If a person is far off and is not visible enough to exchange verbal greetings, one can simply raise the right hand and wave at the person to acknowledge their presence. A smile, indicating the pleasure of seeing the person also accompanies the hand wave.

Finally, depending on when last two people saw each other, they are likely to exchange hugs alongside greetings in the Dompoto community. Hugs show the warmth and love that they feel towards each other, and confirm how well their bodies have been since their last encounter.

6 Summary and conclusion

The prevalence of greetings in the Dompoto community can be attributed to the fact that it is close-knit and increasingly small unit, with its few members sharing strong relationships and common interests. Greetings transcend the role of phatic communion, establishing and maintaining strong ties between community members. Greetings thus serve to empower members to carry out their social mandate of being each other's keeper by checking up on and being concerned about the welfare of others. The lack of a greeting exchange between two interlocutors automatically implies a sour relationship. This act deviates from the oneness the community portrays, and, as such, the people involved may be urged to settle their differences to enable peace and love to prevail in the community.

In the Dompoto community, just as has been recorded in other African cultures, age supersedes gender when it comes to the initiation of greetings. Thus, a younger person always initiates a greeting exchange first. Greetings are conducted at different times and under different conditions. This reflects the fact that languages may have different ways of expressing events. However, the underlying situations that condition these greetings are the same in most African countries. For instance, all languages have greetings that pertain to different times of the day and ones used at different occasions.

Inasmuch as greetings are a requirement in most social situations, there are a few occasions where they are not needed. In the Domp culture, one going to the toilet is not to be greeted. A person taking his/her bath who is of the opposite sex should not be greeted, and elders going to perform rituals are also not to be greeted. Greetings in the Domp culture are buttressed by non-verbal gestures. Young children and women are expected to bend their knees while greeting older people. Young men are also supposed to remove their caps and spectacles while greeting in the Domp community.

Greetings have been explored in many languages across the world. By this paper, I have added to the discussion on the topic by providing data from an underdescribed and moribund language. Similarities and differences with other languages in these greeting exchanges have also been noted and described. In documenting a language with so few remaining speakers, routine expressions such as these show warmth and solidarity, offering a peek into the customs of a once-larger speaker community.

Abbreviations

1	first person	INTJ	interjection
2	second person	NEG	negative
3	third person	PART	particle
COND	conditional	PL	plural
CONJ	conjunction	Q	question marker
DET	determiner	QUANT	quantifier
FOC	focus	SC	serial connector
FUT	future	SG	singular
INDEF	indefinite		

Acknowledgements

I would like to appreciate the efforts of every member of the Domp community in making the documentation of their language possible. Special thanks go to my main consultants, Mr. Kosi Mila, Madam Abena Kuma, and Nana Shiembor Agba II (Mr. Emmanuel Dwirah). I offer this and other works on Domp to the memory of two of my main consultants, Mr. Daniel Kofi Nakpa and Madam Afia Nimena, and Madam Mariama Sima (who couldn't partake in the project, but is a speaker of Domp). We lost them in 2021 and 2022, respectively. I am also indebted to La Trobe University for funding my research and to my thesis supervisors, Prof. Stephen Morey, Dr. Lauren Gawne, and Prof. David Bradley.

References

- Agyekum, Kofi. 2008. The pragmatics of Akan greetings. *Discourse Studies* 10. 493–516. DOI: 10.1177/1461445608091884.
- Akindele, Dele Femi. 1990. A sociolinguistic analysis of Yoruba greetings. *African Languages and Cultures* 3. 1–14.
- Alhassan, Ayanniyi Bako. 2018. Left-handedness and stigmatization in Africa: Implications for parents and teachers. *Global Journal of Archaeology & Anthropology* 7. 63–67. DOI: 10.19080/GJAA.2018.07.555713.
- Ameka, Felix K. 2009. *Access to rituals in West African communities: An ethno-pragmatic perspective*. New York: Routledge.
- Ameka, Felix K. & Anneke Breedveld. 2004. Areal cultural scripts for social interaction in West African communities. *Intercultural Pragmatics* 1. 167–187. DOI: 10.1515/iprg.2004.1.2.167.
- Ameyaw, Kwabena. 1965. Tradition of Banda. *Traditions from Brong-Ahafo* 1. 1–15.
- Barker, Gary & Christine Ricardo. 2005. *Young men and the construction of masculinity in Sub-Saharan Africa: Implications for HIV/AIDS, conflict, and violence*. Social Development Papers: Conflict Prevention and Reconstruction, The World Bank.
- Batibo, Herman M. 2009. The inter-cultural dimension in the use of languages of wider communication by minority language speakers. *Journal of Multicultural Discourses* 4. 89–102. DOI: 10.1080/17447140802691716.
- Berry, Jack & Amon N. Kotei. 1969. *An introduction course in Ga*. Institute of International Studies, Evanston, IL: Northwestern University.
- Blench, Roger. 2007. *The Dompō language of central Ghana and its affinities*. unpublished ms, Cambridge University.
- Brown, Penelope & Stephen C. Levinson. 1987. *Politeness: Some universals in language use*. Cambridge, UK: Cambridge University Press.
- Chamo, Isa Y. 2015. Pragmatic differences in greetings: A comparative study of Hausa and English. *Bayero Journal of Linguistics* 1. 258–274.
- Coupland, Justine, Nicholas Coupland & Jeffrey Robinson. 1992. How are you? Negotiating phatic communion. *Language in Society* 21. 207–230.
- Crentsil, Perpetual. 2015. A disappearing puberty rite of the Akan of Ghana. *Current Politics of Economics of Africa* 8. 231–257.
- Dimmendaal, Gerrit J. 2011. *Historical linguistics and comparative study of African languages*. Amsterdam: John Benjamins.
- Duranti, Alessandro. 1997. *Linguistic anthropology*. Cambridge, UK: Cambridge University Press.

- Dzameshie, Alex K. 2002. The forms, functions and social value of greetings among the Ewes. In Felix K. Ameka & Emmanuel K. Osam (eds.), *New directions in Ghanaian linguistics*, 381–408. Accra: Black Mask.
- Egblewogbe, E. Y. 1990. Social and psychological aspects of greeting among the Ewes of West Africa. *Research Review NS* 6. 8–18.
- Finnegan, Ruth. 1969. How to do things with words: Performative utterances among the Limba of Sierra Leone. *Man* 4. 537–552.
- Foley, William A. 1997. *Anthropological linguistics: An introduction*. Malden, MA: Blackwell.
- Goffman, Erving. 1967. *Interaction ritual: Essays on face to face behavior*. Chicago: Aldine.
- Goody, Jack. 1964. The Mande and the Akan hinterland. In Jan Vansina, Raymond Mauny & Louis-Vincent Thomas (eds.), *The historian in tropical Africa*, 193–218. London: Oxford University Press.
- Grenoble, Lenore & Lindsay Whaley. 2006. *An introduction to language revitalization*. Cambridge, UK: Cambridge University Press.
- Güldemann, Tom. 2018. Historical linguistics and genealogical language classification in Africa. In Tom Güldemann (ed.), *The languages and linguistics of Africa*, 58–444. Berlin: De Gruyter Mouton. DOI: 10.1515/9783110421668-002.
- Gyan, Sylvia E. 2017. Exploring the causes of change in adolescent girl's sexual behaviour in Begoro, Ghana. *African Journal of Reproductive Health* 21. 55–63. DOI: 10.29063/ajrh2017/v21i2.7.
- Johnson, Jessica. 2018. Female initiation and aspiration in matrilineal Malawi. *Journal of the Royal Anthropological Institute* 24. 1–18. DOI: 10.1111/1467-9655.12917.
- Jordan, Dean. 1980. *Collected field reports on the phonology of Nafaara*. Legon, Ghana: Institute of African Studies, University of Ghana.
- Kita, Sotaro & James Essegbey. 2001. Pointing left in Ghana: How a taboo on the use of the left hand influences gestural practices. *Gesture* 1. 73–95. DOI: 10.1075/gest.1.1.06kit.
- Malinowski, Bronislaw. 1972. Phatic communion. In John Laver & Sandy Hutcheson (eds.), *Communication in face to face interaction*, 146–152. Harmondsworth, UK: Penguin.
- Manu-Barfo, Esther. 2019. On the status of Dompò, a critically endangered language in Ghana. *Anthropological Linguistics* 61. 94–102.
- Manu-Barfo, Esther. 2020. *A descriptive grammar of the Dòmò language of Ghana*. La Trobe University, Australia. (Doctoral dissertation).
- Markstrom, Carol A. 2008. *Empowerment of North American Indian girls: Ritual expressions at puberty*. Lincoln, NE: University of Nebraska Press.

- Moradi, Roozbeh. 2017. Sociolinguistic aspects of the speech act of greeting in Persian and English. *Bulletin de la société royale des sciences de Liège* 86. 294–303.
- Nwoye, Onuigbo G. 1993. An ethnographic analysis of Igbo greetings. *African Languages and Cultures* 6. 37–48.
- Obeng, Samuel G. 1996. The proverb as a mitigating and politeness strategy in Akan discourse. *Anthropological Linguistics* 38. 521–549.
- Obeng, Samuel G. 1999. Apologies in Akan discourse. *Journal of Pragmatics* 31. 709–734. DOI: 10.1016/S0378-2166(98)00089-7.
- Ofori, Seth Antwi. 2011. Capturing students' target language exposure collaboratively, on video: The Akan (Twi) example. *Journal of the National Council of Less Commonly Taught Languages* 10. 111–140. DOI: 10.1515/jall-2013-0003.
- Owusuh, E. S. K. 1976. Traditions of Banda. In *Oral traditions of Sampa, Hani, Debibi, Namasa, Banda, Broahane and Mengye (Menji)–Brong Ahafo*, 99–127. Legon, Ghana: Institute of African Studies, University of Ghana.
- Painter, Colin. 1967. The distribution of Guang in Ghana and a statistical pre-testing on twenty-five idiolects. *Journal of West African Languages* 4. 25–78.
- Sallabank, Julia. 2012. Language endangerment: Problems and solutions. *E-Sharp, Special issue: Communicating change: Representing self and community in a technological world*. 50–87.
- Schleicher, Antonia Yétundé. 1997. Using greetings to teach cultural understanding. *The Modern Language Journal* 81. 334–343.
- Schottman, Wendy. 1995. The daily ritual of greeting among the Baatombu of Benin. *Anthropological Linguistics* 37. 487–523.
- Simons, Gary. F. & Charles D. Fennig. 2022. *Ethnologue: Languages of the world*. 21st edn. Dallas, TX: SIL International.
- Siweya, Tryphosa, Tholene Sodi & Mbuyiselo Douglas. 2018. The notion of manhood embedment in the practice of traditional male circumcision in Ngrove Village, Limpopo, South Africa. *American Journal of Men's Health* 12. 1567–1574.
- Spolsky, Bernard. 1998. *Sociolinguistics*. Oxford: Oxford University Press.
- Stahl, Ann B. 1991. Ethnic style and ethnic boundaries: A diachronic case study from west-central Ghana. *Ethnohistory* 38. 250–275.
- Wójtowicz, Beata. 2021. Cultural norms of greeting in the African context. *Roczniki Humanistyczne* 69. 171–187.

Chapter 7

Argument linkage for Niger-Congo 'give'

Ronald Schaefer

Southern Illinois University Edwardsville

Francis Egbokhare

University of Ibadan

Relative to the Niger-Congo languages of West Africa, we survey 'give' predication, i.e., those involving physical change of possession of a theme object to a recipient. Linkage of theme (T) and recipient (R) arguments to a predication is of three predication types: ditransitive verb, verb-verb, and verb-oblique. Across West Africa, linkage types couple. They reflect two areal zones: the Bandama-Tano-Volta watershed and the Niger River delta. Both show ditransitive linkage ($V_1 NP_R NP_T$) and verb-verb linkage ($V_2 NP_T V_1 NP_R$). Outside these zones, single linkage types predominate, including verb-oblique ($V_2 NP_T OBL NP_R$). Where available, we assess correlations between predication form (linear order of arguments, linkage type) and predication function (possession change vs. transfer without possession change). In ditransitive only languages, adjacency of R to 'give' tends to convey possession change, while transfer emerges with T adjacency. For languages that couple ditransitive and verb-verb, verb-verb conveys transfer while ditransitive expresses possession change.

1 Introduction

Recent studies of argument structure have investigated 'give' verbs from typological and crosslinguistic perspectives (Bouveret 2021, Malchukov et al. 2011, Newman 1996, 1998). An explicitly areal dimension to 'give' studies was added



by Comrie's (2012) assessment of 'give' constructions across Europe and North-Central Asia.

For this paper, we undertake an areal survey of 'give' among 14 Niger-Congo language groups. Relevant constructions, which may consist of one- or two-element predications, convey physical transfer in which an agent causes a theme to become possessed by an animate recipient. In other words, someone transfers something to someone else, and thereby loses possession of it.

Relative to West Africa, we assembled a convenience sample of 'give' constructions from the Niger-Congo language groups in Table 1. Countries in which the surveyed languages from these groups are spoken are provided for reference.

Table 1: Language groups in this survey and countries where they are spoken

Language group	Countries
Atlantic	Senegal
Delta Cross	Nigeria
Dogon	Burkina Faso, Mali
Edoid	Nigeria
Gur	Burkina Faso, Ghana
Igboid	Nigeria
Ijoid	Nigeria
Jukunoid	Nigeria
Kru	Ivory Coast
Kwa	Benin, Ghana, Ivory Coast, Togo
Mande	Burkina Faso, Gambia, Guinea, Guinea-Bissau, Mali, Senegal
Nupoid	Nigeria
Senufo	Mali
Yoruboid	Nigeria

Our survey encompasses languages from near the headwaters of the Niger River in the Guinea Highlands to the tributaries of Nigeria's Niger Delta around Port Harcourt. Across these languages, we scrutinize the linkage relation of theme and recipient arguments to their predication.

2 Ditransitivity and its nature

Regarding ditransitive predications and their cross-linguistic realization, Whaley (1997: 148) has footnoted, “It is an intriguing fact that the verb form meaning ‘give’ is commonly employed in serial constructions to mark benefactive”. A similar statement could be advanced about the marking of ‘give’ recipient. Indeed, Heine & Kuteva (2002: 149–154) and Kuteva et al. (2019) find that in many genetically unrelated languages the marker for a benefactive or recipient argument has grammaticalized from a verb meaning ‘give’.

In these general statements, there are two dimensions that should not be lost. What Whaley alludes to and Heine and Kuteva recognize are two dimensions of grammatical analysis that apply to ‘give’ verbs and their framing of theme and recipient. One concerns a contrast in the linear ordering of theme and recipient arguments, as illustrated in (1) with R signaling recipient and T theme.

- (1) a. $NP_R NP_T$
b. $NP_T NP_R$

A second dimension has to do with how these arguments relate to their predication. In West Africa, three patterns are pertinent. In one, a ‘give’ verb, as a ditransitive predicate, links to two arguments: recipient and theme. In a second pattern, a ‘give’ verb links to only a single argument. Another distinct verb, ‘take’ for example, links to the remaining argument. In a third pattern, a non-‘give’ verb links to one argument, while the second argument is linked to a non-verbal oblique marker, such as an adposition.

Undergirding these predication types is the potentially variable nature of theme and recipient linkage. There are three linkage types. Ditransitive linkage relies on a single verb. Verb-verb linkage associates each argument to a distinct element of a predication, both of which are verbs. And verb-oblique linkage fixes each argument to a distinct predicate element, one of which is a verb and the other is a non-verb, grammatical form. In our survey, one or more of these linkage types, shown in (2), identifies argument-predicate relations for ‘give’ events. In each, V_1 represents a ‘give’ verb, and V_2 is a verb with a meaning distinct from ‘give’ (either ‘take’ or some other transitive verb). OBL is a non-verbal grammatical form.

- (2) a. $V_1 NP_R NP_T$
b. $V_2 NP_T V_1 NP_R$
c. $V_2 NP_T OBL NP_R$

3 Language samples and analysis

Comparative analyses of ‘give’ events coding recipient and theme arguments among West Africa’s Niger-Congo languages are limited at best (Ameka 2013). Due to the very preliminary nature of this investigation and our modest sample of languages, we do not claim our sample to be more than it is. We do, however, assume that the data from each language is representative of its group and is suggestive of essential linkage types for ‘give’ events in West Africa. We hold to this assumption even though coverage provided ‘give’ clauses in the grammatical literature we consulted is uneven. Across statements, constraints affecting ‘give’ clauses are inconsistently discussed. Nonetheless, we highlight these constraints whenever they occur in order to provide a flavor of the range of issues that interlace with our principal concern: argument linkage relations and their familial and areal distribution. With this as background, we turn to ‘give’ clauses among the fourteen language groups in our sample.

3.1 Kwa

The Kwa languages we assess exist along a coastal axis from Baule in the west to Tafi and Fongbe in the east. They are spoken in a block of nation states that include Ivory Coast, Ghana, Togo, and the Republic of Benin. Relative to ‘give’ and its theme and recipient arguments, all exhibit ditransitive linkage and verb-verb linkage. None show verb-oblique linkage. A more general discussion of serial verb types in Kwa is found in Shluinsky (2017).

Baule, spoken in southeastern Ivory Coast, evinces the verb *man* ‘give’ (Creissels & Kouadio 2010). Although additional comments by Creissels and Kouadio suggest that *man* may be limited to gift giving and similar rituals, thus restricting theme argument character, we leave for another time the distinction between ‘give something for someone to possess’ and ‘present/offer a gift to someone’. Across West African languages, information bearing on this distinction is simply not available. Baule *man* occurs as a simple predicate and as the second element of a complex predicate. As a simple ditransitive, *man* takes a recipient argument and a theme argument (3a). Argument order is restricted to NP_R NP_T. In addition, *man* occurs in a verb-verb predicate, which similarly restricts argument order. Within a single clause, *man* and its recipient argument follow the verb *fa* ‘take’ with a theme argument (3b). These examples strongly suggest that Baule exhibits the ditransitive pattern V₁ NP_R NP_T and the verb-verb pattern V₂ NP_T V₁ NP_R.¹

¹Here and elsewhere, morphological glosses and tone marking are provided as in the cited

(3) Baule (adapted from Creissels & Kouadio 2010: 11)

- a. Kuàkú mǎn-nìn mín sǐkǎá.
Kouakou give-PFV 1SG money
‘Kouakou gave me money.’
- b. Kuàkú fà-li sǐkǎá mǎn-nìn mín.
Kouakou take-PFV money give-PFV 1SG
‘Kouakou gave me money.’

We note here a point regarding argument occurrence which is also applicable to other languages in our sample. Baule *man* can maintain its ditransitive character when followed by a single noun phrase that expresses a theme argument. Its recipient argument can be understood from context. The positioning of only a recipient after *man* is not open to such contextualization; recipient-only structures with verb *man* are ungrammatical (4b).

(4) Baule (adapted from Creissels & Kouadio 2010: 18)

- a. Kuàkú mǎn-nìn sǐkǎá.
Kouakou give-PFV money
‘Kouakou gave money (to someone).’
- b. * Kuàkú mǎn-nìn kǒfí.
Kouakou give-PFV kofi
‘Kouakou gave Kofi (something).’ [intended]

Akan, spoken over much of southern Ghana, has two verbs, *ma* and *kye* with English ‘give’ as translation (Osam 2004: 23). Of these, *kye* is associated with ritual activity (Reginald Duah, personal communication). *Ma* occurs as a simple predicate and as one element of a complex predicate. As a ditransitive predicate, *ma* precedes arguments for recipient and theme (5a). Argument order is restricted to NP_R NP_T. In a verb-verb predication, *ma* follows verb *de* ‘take’. *De* takes a theme argument and *ma*, a recipient (5b); argument order is restricted. Based on *ma* behavior, Akan exhibits the linkage types ditransitive V₁ NP_R NP_T and verb-verb V₂ NP_T V₁ NP_R.

source. High tone is marked with an acute diacritic, Mid tone with a macron, and Low tone with a grave diacritic, as is conventional. We have taken the liberty to indicate downstep with a superscript [!]. In some traditions, it is conventional to indicate *open* or *lax* vowels with an underline, but we have chosen to convert these to the appropriate IPA vowel symbol. The reader is encouraged to consult the source for more detail.

(5) Akan (Reginald Duah, personal communication)

- a. Kofi ma-a maame no oguan.
Kofi give-COMP woman the sheep
'Kofi gave the woman a sheep / a sheep to the woman.'
- b. Kofi de oguan no ma-a maame no.
Kofi take sheep the give-COMP woman the
'Kofi gave the sheep to the woman / the woman the sheep.'

The verb *kye* in Akan exhibits linkage types similar to *ma*. As a ditransitive predicate, *kye* takes recipient and theme in that order (6a). *Kye* also shows a verb-verb predication with the verb *de* 'take' (6b). *Kye* and its recipient argument follow *de* and its theme argument. Distinct orders for theme and recipient characterize *kye* linkage types: ditransitive $V_1 \text{ NP}_R \text{ NP}_T$ and verb-verb $V_2 \text{ NP}_T V_1 \text{ NP}_R$.

(6) Akan (Osam 2004: 23)

- a. Abena kye-e abofra no sika.
Abena give-COMP child the money
'Abena gave the child money / gave money to the child.'
- b. Abena de sika no kye-e abofra no.
Abena take money the give-COMP child the
'Abena gave the child the money / the money to the child.'
- c. * Abena kye-e abofra no sika no.
Abena give-COMP child the money the
'Abena gave the child the money / the money to the child.'
[intended]

Various constraints affect the realization of *ma* and *kye* arguments, as is the case for some other languages in our sample. Nevertheless, none of these constraints undermine our basic contention that Akan 'give' verbs manifest ditransitive and verb-verb linkage. Among constraints on ditransitive linkage is a definiteness prohibition on the second argument, the theme. It rejects both the definite article *no* (7a) and third person definite pronoun *no* (7b). No similar prohibition exists for verb-verb linkage.

(7) Akan (Reginald Duah, personal communication)

- a. * Kofi ma-a maame no oguan no.
Kofi give-COMP woman the sheep the
'Kofi gave the woman the sheep / the sheep to the woman.'
[intended]

- b. * Kofi ma-a maame no.
 Kofi give-COMP woman it
 ‘Kofi gave it to the woman / the woman it.’ [intended]

Another Kwa language of southern Ghana is Ga. Its ‘give’ equivalent is the verb *han* (Kropp Dakubu 2003, 2004, 2009). *Han* occurs as a simple ditransitive predicate and as one element of a complex predicate. Ditransitive *han* appears with recipient and theme arguments (8a). Argument order is limited to NP_R NP_T, and similar to Akan, ditransitive *han* prohibits theme definiteness (8b). In a verb-verb predication, *han* and its recipient argument follow the verb *ke* ‘move’ and its theme argument (8c). No alternative order for predication arguments is acceptable. Linkage patterns for Ga are ditransitive V₁ NP_R NP_T and verb-verb V₂ NP_T V₁ NP_R.

- (8) Ga (Kropp Dakubu 2004: 116-117)
- a. Oto hán è-bí 'e tsòbí.
 Oto give 3s-child DEF doll
 ‘Oto gave his child a doll.’
- b. * Oto hán è-bí 'e tsòbí !e.
 Oto give 3s-child DEF doll DEF
 ‘Oto gave his child the doll.’ [intended]
- c. Oto ke tsobí !e han è-bi !e.
 Oto move doll DEF give 3s-child DEF
 ‘Oto gave the doll to his child / gave his child the doll.’

A Kwa language in our sample spoken in southeastern Ghana and southwestern Togo is Ewe. It employs the ‘give’ verb *na* (Dzameshie 2004), apparently associated with ritual giving. As a predicate, *na* appears in ditransitive and verb-verb linkages. Ewe *na*, as a ditransitive predicate, permits a recipient and a theme argument, although not necessarily in that order. Either NP_R NP_T or NP_T NP_R argument order is grammatically sanctioned (9a–b). In addition, Ewe *na* occurs in a verb-verb predication, where the verb *tso* ‘take’ and its theme argument precede *na* and its recipient argument (9c). Ewe exhibits verb-verb V₂ NP_T V₁ NP_R, where argument order is restricted and ditransitive V₁ NP_R NP_T or V₁ NP_T NP_R, where argument order is unrestricted.

- (9) Ewe (Essegbey 1999: 143, 145, 156)
- a. Kofi ná ga amí.
 Kofi give money Ami
 ‘Kofi gave money to Ami.’

- b. Kofi ná amí ga.
Kofi give Ami money
'Kofi gave Ami money.'
- c. Kofi tsó ga lá ná nyónuví ádé.
Kofi take money DEF give girl SPECI
'Kofi gave the money to a certain girl.'

The distinct orders of recipient and theme under ditransitive linkage in Ewe are not semantically equivalent, as shown by an appended clause explicitly rejecting possession, (10a–b), from Essegbey (1999). Positioning the recipient adjacent to the verb conveys a change of possession, i.e., the recipient accepts the transferred object and takes possession of it. An appended clause rejecting possession renders the multi-clause structure only marginally acceptable (10a). On the other hand, a non-adjacent recipient, i.e., positioned after the theme, articulates transfer without change of possession. The non-adjacent argument can both be recipient and yet not take possession of the transferred entity. An appended clause rejecting possession of theme is thus acceptable (10b).

(10) Ewe (Essegbey 1999: 164)

- a. ? Kofi ná amí ga gaké mé-xɔ-e o.
Kofi give Ami money but NEG-receive-3SG NEG
'Kofi gave Ami money but she did not take it.' [marginal]
- b. Kofi ná ga amí gaké mé-xɔ-e o.
Kofi give money Ami but NEG-receive-3SG NEG
'Kofi gave money to Ami but she did not take it.'

Another Kwa language in our sample is Fongbe. It is spoken in southern parts of Togo and the Republic of Benin. Fongbe exhibits the 'give' verb *na* (Lefebvre & Brousseau 2002). As with Ewe, the behavior of this verb allows one to tease apart simple transfer from possession or ownership change.

Fongbe *na* occurs as a ditransitive predicate and as an element in a verb-verb predicate. As a ditransitive predicate, *na* permits recipient followed by theme as well as theme followed by recipient. Either NP_R NP_T or NP_T NP_R argument order is grammatically sanctioned (11a–b). In addition, Fongbe *na* occurs in a predication with verb-verb linkage. *Na* and its recipient argument follow the verb *tso* 'take' and its theme (11c).

(11) Fongbe (Lefebvre & Brousseau 2002: 447-448)

- a. Kòkú ná àsíbá àsón.
Koku give Asiba crab
‘Koku gave Asiba crab.’
- b. Kòkú ná àsón àsíbá.
Koku give crab Asiba
‘Koku gave Asiba crab.’
- c. Kòkú tsó àsón ó ná àsíbá.
Koku take crab the give Asiba
‘Koku gave the crab to Asiba.’

In Fongbe, ditransitive predications with *na* and one or another of its verb argument orders correlate with distinct semantic interpretations, too. These denote transfer of object as opposed to possession change of object (Lefebvre & Brousseau 2002). Ditransitive linkage manifests equivalent grammatical standing relative to an inference of inchoative possession change. Both (12a) and (13a) allow, respectively, (12b) and (13b), statements of inference holding that the recipient has come into “possession” of the theme.

(12) Fongbe (Lefebvre & Brousseau 2002: 447)

- a. Kòkú ná àsíbá àsón.
Koku give Asiba crab
‘Koku gave Asiba crab.’
- b. Àsón húzú / nyí àsíbá tòn.
crab become / be Asiba GEN
‘The crab has become / is Asiba’s.’

(13) Fongbe (Lefebvre & Brousseau 2002: 447)

- a. Kòkú ná àsón àsíbá.
Koku give crab Asiba
‘Koku gave Asiba crab.’
- b. Àsón húzú / nyí àsíbá tòn.
crab become / be Asiba GEN
‘The crab has become / is Asiba’s.’

However, when one adjoins a ditransitive or a verb-verb linkage structure to a grammatically appended ‘but’ clause, that negates possession change; grammaticality is not symmetrical. Ditransitive linkage, regardless of argument order, is unacceptable with an explicit rejection of possession change in a ‘but’ clause where the theme is possessum and recipient is possessor (14a–b). On the other hand, a verb-verb linkage joined to the same explicit rejection of possession change clause is grammatical. Verb-verb linkage therefore appears compatible with transfer of theme but not possession change of theme.

(14) Fongbe (Lefebvre & Brousseau 2002: 473)

- a. * Kòkú ná àsíbá àsón vó àsón nyí àsíbá tòn àá.
Koku give Asiba crab but crab be Asiba GEN NEG
‘Koku gave Asiba crab, but the crab is not hers.’ [intended]
- b. * Kòkú ná àsón àsíbá vó àsón nyí àsíbá tòn àá.
Koku give crab Asiba but crab be Asiba GEN NEG
‘Koku gave Asiba crab, but the crab is not hers.’ [intended]
- c. Kòkú tsó àsón ó ná Àsíbá vó àsón ó nyí àsíbá tòn àá.
Koku take crab the give Asiba but crab the be Asiba GEN NEG
‘Koku gave the crab to Asiba, but the crab is not Asiba’s.’

A final group of Kwa languages in our sample is spoken in the mountainous terrain of southeastern Ghana and southwestern Togo. The “Togo Mountain Languages” in our sample include Logba, Tafi, and Avatime. Their ‘give’ verbs exhibit behavior consistent with other Kwa languages, although these languages uniformly restrict argument order in ditransitive predications.

In Avatime, the verb *ki* ‘give’ participates in two predication types (Defina 2016). In ditransitive linkage, *ki* takes recipient and theme arguments whose order is restricted to NP_R NP_T (15a). In a complex predicate, *ki* and its recipient argument follow *ko* ‘take’ and its theme argument. The argument order is NP_T NP_R (15b–c). For Avatime, ‘give’ linkage patterns restrict argument order asymmetrically. For ditransitive it is V₁ NP_R NP_T, and for verb-verb it is V₂ NP_T V₁ NP_R.

(15) Avatime (Defina 2016: 42–42, 57)

- a. A-ki=yɛ lɪ-ba=lɛ.
C₁S.PFV-give=C₁S.OBJ C₃S-hoe=DEF
‘He gave him the hoe.’
- b. A-kò lɪ-ba=lɛ kí=yɛ.
C₁S.PFV-take C₃S-hoe=DEF give=C₁S.OBJ
‘He gave him the hoe.’

- c. A-kò kò-sà=a kí ó-dzε=ε.
 C₁S.PFV-take C₅S-cloth=DEF give C₁S-woman=DEF
 ‘He gave the cloth to the woman.’

Other Togo Mountain Languages such as Logba (Dorvlo 2008) and Tafi (Bouafor 2013) exhibit similar predications. In Logba, the verb *ta* ‘give’ occurs as a ditransitive predicate and as one element of a verb-verb predicate. As a ditransitive, *ta* takes a recipient argument and a theme argument (16a), in that order. *ta* also follows the verb *mi* ‘take’ in another predication type: *Ta* and its recipient argument follow *mi* and its theme argument (16b). Linkage types in Logba are ditransitive V₁ NP_R NP_T and verb-verb V₂ NP_T V₁ NP_R. Both predications restrict argument order, although the results are dissimilar.

(16) Logba (Dorvlo 2008: 137, personal communication)

- a. Howusu ó-tá Asafo e-feshi.
 Howusu SM.SG-give Asafo CM-sheep
 ‘Howusu gave Asafo sheep.’
 b. Howusu o-mi e-feshi=e ta Asafo.
 Howusu SM.SG-take CM-sheep=DEF give Asafo
 ‘Howusu gave the sheep to Asafo.’

A composite set of predication patterns evident in each Kwa language of our sample is shown in Table 2. Two linkage types stand out. Uniformly, a V₁ ‘give’ verb exhibits ditransitive linkage V₁ NP_R NP_T and verb-verb linkage V₂ NP_T V₁ NP_R. Argument order across these patterns is not similar. Verb-verb is restricted to NP_T NP_R order for all sample languages, whereas ditransitive is restricted for some languages but not for others. Ewe and Fongbe, in particular, allow ditransitive linkage where argument order appears syntactically unrestricted, i.e., both NP_R NP_T and NP_T NP_R occur. The remaining languages, Akan, Baule, and Ga, as well as Logbo, Tafi, and Avatime rely on ditransitive NP_R NP_T, where argument order is restricted.

3.2 Gur

Two languages in our sample belong to the Gur group: Dagaare and Kasem are spoken in Northern Ghana and southern Burkina Faso. As with Kwa, each Gur language articulates two predication patterns that link recipient and theme arguments.

Table 2: Linkage types for ‘give’ in Kwa

	V ₁ NP _R NP _T	V ₁ NP _T NP _R	V ₂ NP _T V ₁ NP _R
Baule	+	–	+
Akan	+	–	+
Ga	+	–	+
Ewe	+	+	+
Fongbe	+	+	+
Logba	+	–	+
Tafi	+	–	+
Avatime	+	–	+

Dagaare exhibits the ‘give’ verb *ko*. It occurs as a simple predicate and as one element of a complex verb-verb predicate. As a ditransitive predicate, *ko* takes a recipient and a theme argument (17a), only in that order. In a non-ditransitive predication, *ko* takes a recipient argument and follows the verb *de* ‘take’ and its theme argument (17b). Verb-verb argument order is exclusively NP_T NP_R. Dagaare linkage patterns are ditransitive V₁ NP_R NP_T and verb-verb V₂ NP_T V₁ NP_R. According to data available in Bodomo (1997), each linkage type restricts argument order differently.

(17) Dagaare (Bodomo 1997: 105)

- a. O ko la dere a gane.
he give.PERF FACT Dere DEF book
‘He gave Dere the book.’
- b. O de la a gane ko dere.
he take.PERF FACT DEF book give Dere
‘He gave Dere the book.’

Kasem, another Gur language, displays similar linkage and argument order patterns in ditransitive and verb-verb predications. It provides a ‘give’ verb *pV*, variously realized as *pe* or *pa* depending on tense/aspect selection (Hewer 1983, Nabaarese 2013, personal communication). *pV* occurs as a simple ditransitive predicate taking arguments for recipient and theme (18a) in the order NP_R NP_T. *pV* also appears in a complex predicate with the verb *kwe* ‘take’ and its theme argument. *pV* and its recipient argument follow *kwe* and its theme argument

(18b–c). Like Dagaare, Kasem manifests the linkage types ditransitive V_1 NP_R NP_T and verb-verb V_2 NP_T V_1 NP_R, each relying on a distinct argument order.

(18) Kasem (Nabaarese, personal communication)

- a. Kofi pɛ ama pɛɛne.
Kofi COMP.give.to Ama pen
‘Kofi gave Ama a pen.’
- b. Kofi kwè amo pɛɛne ɔ pa ama.
Kofi COMP.take my pen 3SG give.to Ama
‘Kofi gave my pen to Ama.’
- c. Kofi wora ɔ kwe-a amo pɛɛne ɔ pa-e ama.
Kofi CONT 3SG take-CONT my pen 3SG give.to-CONT Ama
‘Kofi is giving Ama my pen.’

We note in (18b–c) that Kasem, unlike Dagaare, requires explicit subject indexing across its verb-verb predicate. Third person singular *ɔ* agrees in number and person with the subject phrase *Kofi*, preceding *kwe*. A final example illustrates that indexing in Kasem is not a function of tense/aspect conditions, as one might conjecture. (18c), which displays continuous (CONT) aspect and a third person subject, requires indexing on the second verb. Subject indexing is required on all instances of verb-verb linkage (18b–c) in Kasem, regardless of tense-aspect. No indexing appears in ditransitive V_1 NP_R NP_T (18a).

Table 3 summarizes linkage types applicable to ‘give’ predications in Dagaare and Kasem. Differentially restricting argument order across predications, each Gur language manifests ditransitive V_1 NP_R NP_T as well as verb-verb V_2 NP_T V_1 NP_R.

Table 3: Linkage types for ‘give’ in Gur

	V_1 NP _R NP _T	V_1 NP _T NP _R	V_2 NP _T V_1 NP _R
Dagaare	+	–	+
Kasem	+	–	+

3.3 Atlantic and Kru

In our survey, there are languages from both the Atlantic and Kru groups. Jóola Banjal and Diola-Fogny from Atlantic are spoken in Senegal. Vata, an Eastern Kru

dialect, also identified as Dida, is spoken in southwestern Ivory Coast, west of the Bandama River. Regardless of group, each language exhibits a single linkage type for recipient and theme.

Jóola Banjal has the ‘give’ verb *sen* (Bassène 2007). It occurs only in a ditransitive predication. *Sen* takes recipient and theme arguments in a flexible linear order. Jóola Banjal ditransitive linkage is either $V_1 NP_T NP_R$ (19a) or $V_1 NP_R NP_T$ (19b). A similar constraint operated in the Kwa languages Ewe and Fongbe. Jóola Banjal, however, displays neither verb-verb linkage nor verb-oblique linkage.

(19) Jóola Banjal (adapted from Bassène 2007: 130)

- a. Ø-aare axu na-sen-e fu-mangu a-nynyil axu.
CL1-woman CL1.DEM S3S-give-TAM CL7-mango CL1-child CL1.DEM4
‘The woman gave a mango to the child.’
- b. Ø-aare axu na-sen-e a-nynyil axu fu-mangu.
CL1-woman CL1.DEM S3S-give-TAM CL1-child CL1.DEM4 CL7-mango
‘The woman gave the child a mango.’

Diola-Fogny exhibits the ‘give’ verb *sen* (Sapir 1965). It occurs in a ditransitive predication that shows recipient and theme arguments. The verb *sen* grammatically sanctions only the argument order $NP_R NP_T$ (20a–b), with no mention made of the order $NP_T NP_R$. Ditransitive linkage for Diola-Fogny is limited to $V_1 NP_R NP_T$. It fails to display verb-verb or verb-oblique linkage.

(20) Diola-Fogny (Sapir 1965: 30)

- a. Ni-sen-ɔ ebe.
I-give-him cow
‘I gave a cow to him.’
- b. Na-sen-ɔm-ɔ.
he-give-me-him
‘He gave him to me.’

Vata, a Kru language, employs the ‘give’ verb *nyɛ* (Koopman 1984). Its positioning relative to theme and recipient arguments is a function of the presence of a segmental auxiliary. When a future marker like *ka* occurs in auxiliary position, *nyɛ* follows its arguments (21a–b). Basic constituents of the clause are ordered SOV. In perfective and imperfective aspect, where no segmental auxiliary occurs, *nyɛ* precedes theme and recipient arguments (21c). Constituent word order is then SVO.

(21) Vata (adapted from Koopman 1984: 29, 157)

- a. N ká yɔ-ɔ saká nyɛ.
 I FUT.A child rice give
 ‘I will give rice to the child.’
- b. N ká saká yɔ-ɔ nyɛ.
 I FUT.A rice child give
 ‘I will give rice to the child.’
- c. À nyɛ à nɔ dâlà.
 we give our mother money
 ‘We gave money to our mother.’

The verb *nyɛ* orders recipient and theme arguments differently depending on the basic order of its clause. When a segmental auxiliary is present, argument order can be either NP_R NP_T or NP_T NP_R (21a–b). A similar versatility of argument order operated in Atlantic Jóola Banjal and in Kwa. When no overt auxiliary occurs in Vata, argument order appears limited to NP_R NP_T (21c). Regardless of auxiliary occurrence, Vata manifests ditransitive linkage, which is either V₁ NP_R NP_T under SVO or the contrasting NP_R NP_T V₁ or NP_T NP_R V₁ under SOV. Vata fails to display the linkage types verb-verb or verb-oblique.

An inventory of linkage types for ‘give’ predications in Atlantic and Kru is presented in Table 4. The only linkage type sanctioned is ditransitive. For Diola-Fogny, ditransitive V₁ NP_R NP_T is restricted to order NP_R NP_T, as is Vata under perfective or imperfective aspect. Jóola Banjal and Vata are not similarly constrained under non-perfective/imperfective aspects. Their ditransitive linkage permits either argument order NP_R NP_T or NP_T NP_R.

Table 4: Linkage types for ‘give’ in Atlantic and Kru

	V ₁ NP _R NP _T	V ₁ NP _T NP _R
Jóola Banjal	+	+
Diola-Fogny	+	–
Vata	+	+

3.4 Dogon

The Dogon languages are spoken primarily in Mali, although some communities may also exist in Burkina Faso. As with Mande and Ijoid, the status of Dogon as part of Niger-Congo is controversial since it lacks typical Niger-Congo features such as SVO word order, noun class affixes, and verb suffixes of derivation such as causative (see Williamson & Blench 2000). For basic sentences, Dogon languages exhibit SOV constituent order.

Our assessment of Dogon is based on the grammars of Heath (2016, 2017a,b,c). In the expression of ‘give’ events, Dogon languages exhibit linkage patterns that are exclusively ditransitive. Argument order in this single linkage type can vary for some languages between NP_T NP_R and NP_R NP_T. Bunoge shows both NP_T NP_R and NP_R NP_T in (22) from Heath (2017a). Dogul Dom manifests NP_R NP_T in (23) from Heath (2016), while both Najamba (24) and Yorno So (25) from Heath (2017c) display only order NP_T NP_R.

(22) Bunoge (Heath 2017a: 215, 324)

- a. Bármà à-ηgù ì tábè.
 pot 3PL=ACC 1SGSBJ give.PFV
 ‘I gave him/her a pot.’
- b. ʔÁ:mádù ηgù tóndí-gè ì tábè.
 Amadou ACC money 1SGSBJ give.PFV
 ‘I gave the money to Amadou.’

(23) Dogul Dom (Heath 2016: 186)

- Ó=ỳ bú:dù òdè-η.
 2SG=ACC money give.PFV-1SGSBJ
 ‘I gave the money to you.’

(24) Najamba (Heath 2017c: 245)

- Ìḡgwě: mí yè mó á:màdù gí òdè`rín.
 dog 1SGPOSS PSM.ANSG DEF.ANSG Amadu ACC give.PFV-1SGSBJ
 ‘I gave Amadou my dog.’

(25) Yorno So (Heath 2017c: 360)

- Sũm léy sáy mí-ỳ òb-ù-Ø.
 hundred two only 1SG-ACC give-PFV-3SGSBJ
 ‘He only gave me two hundred riyals.’

None of the available Dogon grammars concentrated on word order for ‘give’ events. Nonetheless, linear order of arguments in one language was flexible. As we found earlier, a similar flexibility of argument order in ditransitives appeared in Ewe, Fongbe, Jóola Banjal, and Vata. It remains to be determined whether all Dogon languages exhibit flexibility for the order of theme and recipient arguments and whether this correlates with any specific meaning change. This issue aside, no Dogon language displayed linkage type verb-verb or verb-oblique, as Table 5 indicates.

Table 5: Linkage types for ‘give’ in Dogon

	V ₁ NP _R NP _T	V ₁ NP _T NP _R
Bunoge	+	+
Dogul Dom	+	?
Najamba	+	?
Yorno So	+	?

3.5 Mande and Senufo

The Mande and Senufo languages occupy western sectors of West Africa. Mande languages in our sample are Mandinka and Bambara. Mande is spoken in the countries of Guinea, Guinea-Bissau, Senegal, and The Gambia. Bambara, on the other hand, is spoken in Mali, Senegal, and Burkina Faso. Senufo in our sample is represented by Supyire; it is spoken in southeastern Mali. All Mande and Senufo languages in our sample order basic sentence constituents as SOV. They also manifest a uniform linkage for recipient and theme.

From the Mande group, Mandinka and Bambara articulate ‘give’ predications with a verb-oblique linkage. Argument order is NP_R NP_T or NP_T NP_R, although never with a predication defined by a single verb.

Mandinka exhibits the verbs *dii* and *so*, which are translated as ‘give’ (Creissels 2015). Each occurs with an adposition in a complex predicate where argument order for theme and recipient can contrast. Consistent with SOV word order, *dii* takes a preceding theme argument. It is followed by a phrase in which the postposition *la* is preceded by a recipient argument (26a). Verb *dii* manifests the verb-oblique linkage NP_T V₁ NP_R OBL, where arguments are ordered as NP_T NP_R. In contrast, Mandinka *so* ‘give’ takes a preceding recipient as one argument of its verb-oblique linkage; the theme argument follows the verb and is marked by the postposition *la* (26b).

(26) Mandinka (Creissels 2015: 225)

- a. Kew-ó ye kó-d-ôo díi mus-óo la.
 man-DEF CMP.POS.TR money-DEF give woman-DEF OBL
 ‘The man gave money to the woman.’
- b. Kew-ó ye mus-ôo só kó-d-óo la.
 man-DEF CMP.POS.TR woman-DEF give money-DEF OBL
 ‘The man gave money to the woman.’

Overall, Mandinka manifests only verb-oblique linkage. Its two ‘give’ verbs sanction argument orders that contrast: NP_T NP_R for *dii* and NP_R NP_T for *so*. Oblique is realized by postposition *la* in either instance. Depending on verb selection, linkage for Mandinka is NP_T V₁ NP_R OBL or NP_R V₁ NP_T OBL.

Bambara exhibits two ‘give’ verbs as well, *di* and *ɓɓn* (Creissels 2007). Both verbs are limited to verb-oblique linkage with theme and recipient arguments, although argument order is determined by the verb.

The verb *di* exhibits verb-oblique linkage; *di* takes a preceding theme argument. Associated with *di* is the postposition *ma* and its preceding recipient. The verb *ɓɓn* also manifests verb-oblique linkage. In contrast to *di*, *ɓɓn* takes a recipient as its preceding argument. These elements are followed by the postposition *ma* and its preceding theme argument. Regardless of the ‘give’ verb employed, Bambara manifests only verb-oblique linkage. However, argument order in this linkage type is conditioned by verb selection. When *di* occurs (27a), verb-oblique linkage is realized as NP_T V₁ NP_R OBL and its ordering of arguments. When *ɓɓn* appears (27b), verb-oblique linkage has the form NP_R V₁ NP_T OBL, with argument order NP_R NP_T.

(27) Bambara (Creissels 2007: 8-9)

- a. Mùso yé dúmuni dí n mà.
 woman.DEF PF.POS food.DEF give 1S POSTP
 ‘The woman gave the food to me.’
- b. Mùso yé n sɓn dúmuni ná.
 woman.DEF PF.POS 1S give food.DEF POSTP
 ‘The woman gave me the food.’

Supyire, a Senufo language, also exhibits SOV word order for basic constituents, and it reveals only one ‘give’ verb (Carlson 1994). The verb *kan* and distinct postpositions occur in verb-oblique linkage predications. Although Supyire articulates the verb-oblique type of linkage, like the Mande languages, argument

order contrasts are determined by distinct postpositions. In one predication, *kan* precedes postposition *a*, and *kan* takes a theme argument, whereas the postposition *a* accepts a recipient (28a). In a second predication, *kan* precedes postposition *na*, and *kan* takes a recipient, while postposition *na* accepts a theme (28b). Accordingly, Supyire permits only one linkage type: verb-oblique. Nonetheless, argument order within this linkage type contrasts as NP_R NP_T or NP_T NP_R. Argument order is determined by selection of postposition. Verb-oblique linkage is NP_T V₁ NP_R OBL for *kan a* but NP_R V₁ NP_T OBL for *kan na*.

(28) Supyire (Carlson 1994: 270, 400)

- a. *Kà nògò-lyèngí sì ngkùù kan u à.*
 and man-old.DEF NARR chicken give him to
 ‘Then my father gave a chicken to him.’
- b. *Mii a u kan biki na.*
 I PERF him give pen at
 ‘I have given him a pen.’

A view of Mande and Senufo linkage types is shown in Table 6. As we have seen, languages in these two groups employ only one linkage type for ‘give’: verb-oblique. Argument order in this linkage type varies according to the selection of either main verb or postposition. In Mande, distinct argument orders within verb-oblique linkage correlate with contrasting ‘give’ verbs. In Senufo, distinct argument orders within verb-oblique linkage correlate with contrasting postpositions. In Bambara, distinct argument orders within verb-oblique correlate with contrasting patterns of selection for both verb and postposition.

Table 6: Linkage types for ‘give’ in Mande and Senufo

	NP _T V ₁ NP _R OBL	NP _R V ₁ NP _T OBL
Mandinka	+ dii...la	+ so...la
Bambara	+ di...ma	+ sɔn...na
Supyire	+ kan...a	+ kan...na

3.6 Delta Cross and Ijoid

Additional languages in our sample come from the Delta Cross group of East Benue Congo and non-Benue Congo Ijoid. All are spoken in eastern Nigeria's Niger Delta. Even though order of basic constituents varies across these groups, two linkage types are evident for 'give' predications and their expression of recipient and theme arguments.

Delta Cross languages in our sample include Obolo and Kana. Obolo has the 'give' verb *nyi* (Aaron 1999, Faraclas 1984). It manifests ditransitive linkage and verb-verb linkage, both of which restrict argument order. As a ditransitive predicate, *nyi* takes two arguments, a recipient followed by a theme (29a). Argument order is restricted to NP_R NP_T. In a verb-verb predicate, *nyi* combines with verb *sa* 'take'. *Nyi* takes a recipient argument and *sa*, a theme (29b). Within this last predication type, argument order is restricted to NP_T NP_R. Overall, Obolo shows linkage types where argument order is differently restricted: ditransitive V₁ NP_R NP_T compared to verb-verb V₂ NP_T V₁ NP_R.

(29) Obolo (Aaron 1999: 53, 83)

- a. Kpèé-yáká í-nyí ómó mkpó géègè.
CPL-NEG.INC NSP-give 3SG thing any
'They didn't give him anything anymore.'
- b. mèi-ní-gwó èsé í-sà í-nyí gwújà yà.
that.NSP-INC-scoop crayfish NSP-take NSP-give child CPL-NEG.INC
'that she scooped some crayfish and gave it to the boy.'
- c. í-'nèè-nií-sà àchá yà í-nyí.
3SG-REDUP-INC-take hoe DDEMSG NSP-give
'then he gave the hoe (to the people).'

The Delta Cross language Kana manifests ditransitive linkage and verb-verb linkage as well. In each linkage type, argument order is constrained, although order in ditransitive predications is atypical. Kana has a 'give' verb *ne* (Ikoro 1996). *Ne* occurs as a ditransitive predicate taking a theme and a recipient (30a). Argument order is limited to NP_T NP_R, which is relatively unusual for ditransitive linkage in our survey. In a predication with verb-verb linkage, *ne* follows the verb *su* 'take'. *Ne* takes a recipient argument and *su*, a theme (30b). Argument order in this verb-verb predication is again restricted to NP_T NP_R. Like Obolo, Kana manifests the linkage types ditransitive V₁ NP_T NP_R as well as verb-verb V₂ NP_T V₁ NP_R. Both linkage types in Kana restrict arguments to the same linear order.

(30) Kana (Ikoro 1996: 254)

- a. Bàrìlè é-nɛ péé yɔ.
Barile DF-give goat oraclist
‘Barile will present an oraclist a goat / a goat to an oraclist.’
- b. Bàrìlè é-sú péé nɛ yɔ.
Barile DF-take goat give oraclist
‘Barile will give / present a goat to an oraclist.’

The final language group of the Niger Delta in our sample is Ijoid. As with Dogon, Mande, and Senufo, word order of basic clause constituents in Ijoid is SOV. Our sample includes data from the Kolokuma dialect of Ijò (Williamson 1965). Ijò exhibits ditransitive and verb-verb linkage types. Like most other languages in the Niger Delta area, it does not show verb-oblique linkage.

Ijò has the ‘give’ verb *piri*. It occurs in a ditransitive predicate where a theme argument precedes a recipient argument (31a). Argument order for this predication, NP_T NP_R, is the mirror image of SVO languages of a similar linkage type in our sample. In Ijò, no other argument order is sanctioned. In a verb-verb linkage, *piri* appears with transitive verb *aki* ‘take’. *Piri* and its preceding recipient follow *aki* and its preceding theme (31b). Verb-verb linkage in Ijò limits argument order to NP_T NP_R. As with other languages from the Niger Delta, Ijò restricts theme and recipient to a single order regardless of linkage as ditransitive NP_T NP_R V₁ or verb-verb NP_T V₂ NP_R V₁.

(31) Ijò (Williamson 1965: 54)

- a. Erí opúru-mɔ-nì tɔboú pìrì-mì.
he crayfish-PL-LK boy give-SPA
‘He gave the boy the crayfish.’
- b. Erí opúru-mɔ àkí tɔboú pìrì-mì.
he crayfish-PL take boy give-SPA
‘He gave the crayfish to the boy.’

A summary of ‘give’ predications in the Delta Cross and Ijoid groups is presented in Table 7. Two linkage types are evident: ditransitive and verb-verb. In the easternmost part of the Niger Delta, Delta Cross languages exhibit ditransitive linkage where argument order varies: V₁ NP_R NP_T for Obolo but V₁ NP_T NP_R for Kana. Verb-verb linkage among these languages is confined to V₂ NP_T V₁ NP_R. Ijò, spoken across the Niger Delta but notably in its westernmost regions, manifests the same linkage types but with argument order in the ditransitive being the mirror image of Delta Cross Obolo. Ijò shows NP_T NP_R V₁ for ditransitive

linkage and NP_T V₂ NP_R V₁ for verb-verb linkage. As a point of comparison with respect to linkage types, Delta Cross and Ijoid strongly resemble Kwa and Gur. All exhibit linkage patterns that are ditransitive and verb-verb.

Table 7: Linkage types for ‘give’ in Delta Cross and Ijoid

	V ₁ NP _R NP _T	V ₁ NP _T NP _R	V ₂ NP _T V ₁ NP _R	NP _T NP _R V ₁
Obolo	+		+	
Kana		+	+	
			NP _T V ₂ NP _R V ₁	
Ijò			+	+

3.7 Benue Congo

The remaining languages in our sample belong to the Benue Congo group, as spoken in Nigeria. They include Yukuben from Jukunoid, Ebira from Nupoid, Igbo from Igbooid, Yoruba from Yoruboid, and several from Edoid. Among these languages, there are three linkage types: ditransitive, verb-verb and verb-oblique.

Jukunoid languages are spoken east of the Niger-Benue River confluence and northeast of Igbooid toward the Cameroon highlands. In our sample, Yukuben represents Jukunoid. It displays ditransitive linkage. It does so with the verb *nda* ‘give’ (Anyanwu 2013). As a ditransitive predicate, *nda* takes a recipient argument followed by a theme argument (32). Such predications restrict argument order since they allow only NP_R NP_T. Jukunoid thus exhibits ditransitive linkage V₁ NP_R NP_T. It does not manifest verb-verb or verb-oblique linkage.

(32) Yukuben (Anyanwu 2013: 204, 270)

- a. Nda íi-dúng e-mi.
give CL-child CL-breast
‘Give the child a breast.’
- b. È-yí nda mú bà-tr nyí?
PREF-who give 2SG CL-cloth DET
‘Who gave you that garment?’

The Nupoid language Ebira is spoken in the Nigerian middle belt immediately west and south of the Niger-Benue River confluence. It is located some distance from Jukunoid, but directly east of Yoruba and north of Edoid. Ebira exhibits

predications whose linkage types are ditransitive and verb-verb, as was the case for Kwa and Gur, as well as for Delta Cross and Ijoid. Ebira has the ‘give’ verb *yí* (Adivé 1984). As a ditransitive predicate, *yí* takes a recipient argument followed by a theme argument (33a). In a verb-verb predication, *yí* follows the verb *si* ‘take’. *Yí* and its recipient follow *si* and its theme argument (33b). Both predication types limit argument order: ditransitive is NP_R NP_T, and verb-verb is NP_T NP_R. As for linkage type, Ebira shows ditransitive V₁ NP_R NP_T and verb-verb V₂ NP_T V₁ NP_R. Ebira does not exhibit verb-oblique linkage.

(33) Ebira (Adivé 1984: 132)

- a. Ìzé ô yí ozí ísá.
Ize she give child food
‘Ize gave the child food / fed the child.’
- b. Ìzé ô sí ísá yí ozí.
Ize she take food give child
‘Ize gave the child food.’

Turning to Igbo, Igbo is spoken over a large area east of the Niger River and in parts of the Niger Delta. It features predications that are a ditransitive or verb-verb, just as found in Ebira, Delta Cross, and Ijoid. Igbo has the ‘give’ verb *nye* (Uwalaka 1988). As a ditransitive predicate, *nye* takes an immediately following recipient argument, in turn followed by a theme argument (34a). The argument order is NP_R NP_T. *Nye* also participates in verb-verb linkage with the verb *wee* ‘take’. The verb *nye* and its recipient argument follow *wee* and its theme argument (34b). The linear order of arguments is NP_T NP_R. Although argument order varies according to linkage type, Igbo displays both ditransitive V₁ NP_R NP_T and verb-verb V₂ NP_T V₁ NP_R. There is no evidence that Igbo shows verb-oblique linkage. As with most other language descriptions in our sample, no mention is made of a potential functional difference between grammatically sanctioned linkage types.

(34) Igbo (Uwalaka 1988: 122, personal communication)

- a. Àdha nyè-rè ucè ego.
Adha give-PAST Uce money
‘Adha gave Uce money.’
- b. Àdha wèe-re ego nye ucè.
Adha take-PAST money give Uce
‘Adha gave money to Uce.’

In contrast to Igbo, Yoruba is spoken in southwestern Nigeria, including the border region with the Republic of Benin. Different from other Benue-Congo languages, Yoruba uses ‘give’ expressions with predications that are either verb-oblique or verb-verb. Its ‘give’ verb is *fun* (Atoyebi et al. 2010, Lord 1993). In a verb-oblique predication, *fun* appears with the adposition *ni*. The verb *fun* and its recipient argument precede the oblique marker *ni* and its theme argument (35a). In a verb-verb predication, *fun* follows the verb *mu* ‘take.’ *Fun* takes a recipient argument, while *mu* takes a theme argument (35b). Linear order in both linkage types is constrained. Verb-oblique employs order NP_R NP_T, while verb-verb utilizes NP_T NP_R. Setting order restrictions aside, Yoruba manifests verb-oblique linkage V₁ NP_R OBL NP_T and verb-verb linkage V₂ NP_T V₁ NP_R. Yoruba does not show ditransitive linkage.

(35) Yoruba (Atoyebi et al. 2010: 2, 148)

- a. Bólá fún adé ní iwé.
Bola give Ade SECA book
‘Bola gave Ade a book.’
- b. Bólá mú iwé fún adé.
Bola take book give Ade
‘Bola gave a book to Ade.’

Our sample includes four Edoid languages, viz. Bini, Esan, Degema, and Emai (Elugbe 1989). Most are spoken west of the Niger River, east of the Yoruba, south of the Ebira, and west of the Igbo. Among Edoid languages, verb-oblique predications dominate. However, Degema, spoken on an island in the Niger Delta, exhibits both verb-oblique and ditransitive linkage.

We start with Emai and its ‘give’ expression, drawing upon our own previous research. Emai shows only verb-oblique predications. It exhibits a ritual event verb *kuee* with the two senses ‘give a present, provide a welcome gift or offering to someone’, as well as ‘betroth to someone, become engaged for marriage’. With either sense, *kuee* occurs in a verb-oblique predication with the applicative adposition *li/ni* (*ni* is reserved for clause final position when the applicative complement appears in focus or question word position, or when its complement is a pronoun). The verb *kuee* consistently takes a theme argument that is followed by *li/ni* and its recipient argument (36a–b).

(36) Emai (Schaefer & Egbokhare 2007: 241)

- a. Òjè kúéé òkpàn lí í'ré.
Oje:PRX PST:present:PFV gourd APP visitors
‘Oje has presented a gourd to his visitors.’

- b. Yàn kúéé ólì òkpòsò lí òhí.
 3PL:PRX PST:present:PFV the woman APP Ohí.
 ‘They have betrothed the woman to Ohí.’

For other less ritualized events, Emai has no single ‘give’ verb (Schaefer & Egbokhare 2007, 2010, 2017). Instead, it deploys a variety of transitive verbs of handling that convey object manipulation such as *zè* ‘scoop’ (37a), *roo* ‘pick out’ (37b), *vo* ‘fetch’ (37c), and *nwu* ‘carry’ (37d). Each occurs with the applicative adposition *li/ni* in verb-oblique predication V NP_T OBL NP_R, where argument order is confined to NP_T NP_R. This was also the case for argument order with *kuee*.

(37) Emai (Schaefer & Egbokhare 2007: 518-525)

- a. Ólì òkpòsò zé émàè lí ólì ònwìmè.
 the woman:PRX PST:scoop:PFV food APP the farmer
 ‘The woman has given food to the farmer.’
- b. Ólì òkpòsò róó ólì ùhàì lí ólì ònwìmè.
 the woman:PRX PST:pick:PFV the arrow APP the farmer
 ‘The man has given the arrow to the farmer.’
- c. Ólì ómòhè vó órán lí ólì ókpósódìòn.
 the man:PRX PST:fetch:PFV wood APP the old.woman
 ‘The man has given wood to the old woman.’
- d. Ólì òkpòsò nwú émà lí ólì ònwìmè.
 the woman:PRX PST:carry:PFV yam APP the farmer
 ‘The woman has given yam to the farmer.’

It is important to note that Emai handling verbs, when not in a predication with *li/ni*, do not denote ‘give’. As the sole predicate, these verbs convey various manners for handling entities, such as scooping, picking out, fetching, or carrying, as in (38).

(38) Emai (Schaefer & Egbokhare 2007: 518-525)

- a. Ólì òkpòsò zé émàè.
 the woman:PRX PST:scoop:PFV food
 ‘The woman has scooped food.’
- b. Ólì òkpòsò róó ùhàì.
 The woman:PRX PST:pick:PFV arrow
 ‘The man has picked out an arrow.’

- c. Ólí ómòhè vó órán.
the man:PRX PST:fetch:PRV wood
'The man has fetched wood.'
- d. Ólì òkpòsò nwú émà.
the woman:PRX PST:carry:PFV yam
'The woman has carried yam.'

It is equally important to point out that the oblique marker *li/ni* has no counterpart appearing as a synchronic verb. There are no transitive or ditransitive predications shaped by *li/ni* as the sole verb, especially one that might mean 'give' or something similar; see attempted forms in (39).

- (39) Emai (Schaefer & Egbokhare 2007: 518-525)
- a. * Ólì òkpòsò lí émàè.
the woman:PRX PST:give:PFV food
'The woman has given food.' [intended]
- b. * Ólì òkpòsò lí ójé émàè.
the woman:PRX PST:give:PFV Oje food
'The woman has given Oje food.' [intended]

Emai exhibits only the verb-oblique linkage V_1 NP_T OBL NP_R. As already shown, this linkage type restricts argument order to NP_T NP_R. Emai manifests neither ditransitive nor verb-verb linkage.

The most populous of the Edoid languages, spoken south of Emai but north of the western-most area of the greater Niger Delta region, is Bini. It is limited to verb-oblique predications for 'give'. Bini predicates in this domain consist of a verb of handling and an oblique marker (Agheyisi 1990). For instance, verb *rhie* 'pick out' and its argument precede the adposition *ne*. *Rhie* accepts a theme argument; *ne* follows with a recipient argument (40a). Argument order in Bini predications of this sort is limited to NP_T NP_R. Overall, Bini displays verb-oblique linkage V_1 NP_T OBL NP_R. Linkage possibilities for 'give' are further restricted, since there is neither ditransitive linkage (40b) nor verb-verb linkage. Virtually identical statements can be made about Esan, an Edoid neighbor to the north of Bini and east of Emai (Ejele 1986).

- (40) Bini (Agheyisi 1990: 92)
- a. Òzó rhìè ùkpòn mwén nè òsè órè.
Ozo pick.out cloth my to friend his
'Ozo gave my cloth to his friend.'

- b. * Òzó rhíè àsè órè ùkpòn mwén.
 Ozo give friend his cloth my
 ‘Ozo gave his friend my cloth.’ [intended]

An Edoid language whose speakers occupy parts of a Niger Delta island is Degema (Kari 2004). It shows verb-oblique linkage and ditransitive linkage; it also restricts argument order in both linkage types. Degema articulates ‘give’ with the verb *kiye* as a ditransitive predicate taking a recipient and theme argument. The linear order of arguments is restricted to NP_R NP_T. Another argument order in Degema appears with a verb-oblique predication, which consists of the ‘give’ verb *kiye* and the adposition *mu*. *Kiye* takes a theme argument and *mu* a recipient. Predications of this sort restrict argument order to NP_T NP_R. Compared to other Edoid languages, Degema shows not only the verb-oblique linkage V₁ NP_T OBL NP_R but also the ditransitive linkage V₁ NP_R NP_T. It fails to show verb-verb linkage.

(41) Degema (Kari 2004: 194)

- a. Ohoso ɔ=kíyé=n ómó yɔ́ ósama.
 Ohoso 3SGSCL=give=FE child DEF shirt
 ‘Ohoso gave the boy a shirt.’
- b. Ohoso ɔ=kíyé=n ɔsama mó ómó yɔ́.
 Ohoso 3SGSCL=give=FE shirt to child DEF
 ‘Ohoso gave a shirt to the boy.’

Predication types evident in our Benue Congo sample appear in Table 8. All three linkage types are evident; this is the only West African region we have surveyed where this is the case. Ditransitive linkage V₁ NP_R NP_T is found in Yukuben, Ebira, Igbo, and Degema. Verb-verb linkage is evident in Ebira, Igbo, and Yoruba. Verb-oblique linkage occurs in Yoruba, as well as Bini, Esan, Emai, and Degema. In addition, argument order within each linkage type is restricted: NP_R NP_T for ditransitive, NP_T NP_R for verb-verb, and NP_T NP_R for verb-oblique. There is also the uniquely ordered NP_R NP_T for verb-oblique in Yoruba. Overall, Benue Congo exhibits the linkage types ditransitive V₁ NP_R NP_T, verb-verb V₂ NP_T V₁ NP_R and verb-oblique, either V₂ NP_T OBL NP_R or V₂ NP_R OBL NP_T.

4 Discussion

Our survey of argument linkage for ‘give’ predications has netted three primary findings. Firstly, linkage types are not evenly distributed across the language

Table 8: Linkage types for ‘give’ in Benue Congo

	V ₁ NP _R NP _T	V ₂ NP _T V ₁ NP _R	V ₁ NP _R OBL NP _T	V ₂ NP _T OBL NP _R
Yukuben	+	–	–	–
Igbo	+	+	–	–
Ebira	+	+	–	–
Yoruba	–	+	+	–
Emai	–	–	–	+
Bini	–	–	–	+
Esan	–	–	–	+
Degema	+	–	–	+

groups of Niger-Congo. Secondly, some linkage types appear across physically adjacent language groups and so reflect potential areal zones of convergence. Linkage coupling or its absence, in fact, allows one to identify two primary areal zones in West Africa. Thirdly, the frequency with which a recipient argument abuts a ‘give’ verb reflects an adjacency condition that, while relatively uniform in distribution across language groups, is attenuated for ditransitive linkage in one areal subzone.

In what follows, we first note the frequency of the three linkage types relative to language groups and their members. For each type, we identify geographically defined areas within West Africa where a linkage type is or is not employed. Using a straightforward frequency count, it is ditransitive linkage that is most extensively distributed in our sample of language groups. Less widely distributed are predications that consist of two elements. Multi-element linkage patterns are also not evenly distributed across language groups. Verb-verb linkage is nearly twice as frequent as verb-oblique linkage.

4.1 Linkage type distribution

Occurrence of the three linkage types by language group is summarized in Table 9. Ditransitive linkage occurs in 11 of 14 groups, although not exclusively so for many of them. Ditransitive linkage is evident across the central West African states of Burkina Faso, Ivory Coast, Ghana, Mali, Togo, and the Republic of Benin. It is also found on either side of this block. Toward the west, ditransitive linkage occurs in Senegal and western Ivory Coast. Toward the east, it appears in eastern Nigeria, including the Niger River delta, and near the Niger-Benue confluence.

Ditransitive linkage was not found among any of the Mande and Senufo groups of Mali, north of the central block, or in Guinea-Bissau and Gambia, west of the central block. It was also lacking in southwestern Nigeria, where neither Yoruba nor any upland Edoid language exhibited ditransitive linkage.

Table 9: Linkage types aligned according to language group

	V ₁	V ₂ -V ₁	V ₂ -OBL
Kwa (8)	BA, AK, GA, EW FB, LO, TA, AV	BA, AK, GA, EW FB, LO, TA, AV	
Gur (2)	DA, KA	DA, KA	
Atlantic (2)	JB, DF		
Dogon (4)	BN, DD, NJ, YS		
Kru (1)	VA		
Mande (2)			MA, BB
Senufo (1)			SU
Jukunoid (1)	YU		
Ijoid (1)	IJ	IJ	
Delta Cross (2)	OB, KA	OB, KA	
Igboid (1)	IG	IG	
Nupoid (1)	EB	EB	
Yoruboid (1)		YR	YR
Edoid (4)	DE		EM, BI, ES, DE
# of groups	11	7	4

Verb-verb linkage is found in 7 of 14 groups, three fewer than ditransitive linkage. Verb-verb dominates in the central block of nations including eastern Ivory Coast, Ghana, Togo, Burkina Faso, and the Republic of Benin. It fails to occur to the west and northwest of this block. To its east, verb-verb linkage appears not only in the Niger Delta but in southwestern Nigeria with Yoruba. Verb-verb linkage, however, is not found among the Edoid languages of southwestern Nigeria nor the Jukunoid languages spoken in the Nigerian middle belt as it nears the Cameroonian highlands.

The last of the linkage types, verb-oblique, is found in only 4 of 14 groups. These are Mande and Senufo, north and west of the central block, as well as Yoruba and Edoid of southwestern Nigeria, directly east of the central block.

4.2 Linkage type combinations

Our next point of analysis concerns linkage combinations within and across language groups. Table 10 provides an overall impression of language groups and their members that couple linkage types or that maintain a single linkage type. There are three patterns where linkage types couple: ditransitive plus verb-verb (D-VV); verb-verb plus verb-oblique (VV-VOBL); and ditransitive plus verb-oblique (D-VOBL). By far the most widely distributed of these linkage couples is D-VV, i.e., ditransitive with verb-verb.

Table 10: Linkage coupling according to language group

	$V_1 + V_2$ - V_1	V_2 $V_1 + V_2$ -OBL	$V_1 + V_2$ -OBL
Kwa	BA, KA, GA, EN FG, LO, TA, AV		
Gur	DA, KA		
Atlantic			
Dogon			
Kru			
Mande			
Senufo			
Jukunoid			
Ijoid	IJ		
Delta Cross	OB, KA		
Igboid	IG		
Nupoid	EB		
Yoruboid		YR	
Edoid			DE
# of groups	6	1	1

D-VV coupling occurs in the greatest number of language groups. It is found in 6 of the 14. It is, again, the central block of nation states that constitute one area where D-VV is exclusively found. The Kwa and Gur language groups, encompassing the Bandama-Tano-Volta (BTV) watershed define this area. Another area rich in D-VV coupling is the Niger Delta, encompassing Delta Cross and Ijoid languages as well as Igboid. Outside the Niger Delta, it is only Nupoid in our survey that shows D-VV coupling; it is spoken near the Niger-Benue River confluence.

VV-VOBL coupling occurs in only one language group. Yoruba is the single language in our sample that combines verb-verb and verb-oblique linkage predications. D-VOBL coupling is also very limited in our sample. It appears in only one language group, viz. Edoid, and only in one of its four languages: Degema. As mentioned earlier, Degema is spoken on an island in the Niger Delta, an area where language groups tend to exhibit at least ditransitive linkage. There are 7 groups that fail to exhibit linkage coupling altogether or do so extremely sparingly, as shown in Table 11.

Table 11: Language group members failing to couple linkage types

	V ₁	V ₂ V ₁	V ₁ OBL
Kwa			
Gur			
Atlantic	JB, DF		
Dogon	BN, DD, NJ, YS		
Kru	VA		
Mande			MA, BB
Senufo			SU
Jukunoid	YU		
Ijoid			
Delta Cross			
Igboid			
Nupoid			
Yoruboid			
Edoid			EM, BI, ES
# of groups	4	0	3

Non-coupling groups include Atlantic, Dogon, Kru, Mande, Senufo, Jukunoid, and most of Edoid except Degema of the Niger Delta. None of these non-coupling language groups appears within the BTV watershed. Atlantic is far to the west in Senegal, and Kru is found in western Ivory Coast. Dogon is spoken to the north and immediate west of the BTV area in Mali and possibly Burkino Faso. Mande also occurs to the north and immediately west of the BTV area in Mali but also in Guinea-Bissau. Nearly all of Edoid is spoken west of the Niger River in southwestern Nigeria. Jukunoid appears in the Nigerian middle belt near the Cameroonian highlands.

Overall, we find that the propensity for D-VV coupling is extremely strong in our sample. This propensity, however, does not correlate with a contiguous land mass. Rather, there appear to be two major areas of D-VV coupling in West Africa. One is the BTV watershed that includes southeastern Ivory Coast, Ghana, Togo, Burkina Faso, and the Republic of Benin, where Kwa and Gur languages are spoken. The other is the Niger Delta, where Ijoid, Delta Cross, and Igbo languages converge.

Between these two major zones of D-VV coupling is western Nigeria, homeland of the Yoruba. It is perhaps not surprising that, in this location, Yoruba coupling would be unique in our sample. Yoruba VV-VOBL coupling employs one multi-element linkage type found to its east and one to its west. To its immediate west is the verb-verb linkage of Kwa and Gur. To its immediate east is the verb-oblique linkage of upland Edoid. Yoruba VV-VOBL combines these.

Two more convergence zones can be gleaned from Table 11, although not from linkage coupling. Instead, these two areas show verb-oblique linkage, exclusively so or nearly so. One of these areal zones is immediately north and west of the BTV watershed. This is where the Mande and Senufo languages are spoken. A second area where verb-oblique dominates is immediately west of the Niger River where one finds the bulk of Edoid and Yoruba. Interestingly, the languages in these two areas, although similar with respect to linkage types, are dissimilar with respect to the order of basic constituents within a clause. Mande and Senufo are SOV, while Edoid and Yoruba are SVO. What we should make of this is not yet clear, but it seems relevant to the overall distribution of areal linguistic patterns in West Africa.

Finally, we note that verb-verb is the only linkage type that is not exclusive to a single language group in our sample. It consistently couples with another linkage type, primarily ditransitive but also verb-oblique. Verb-verb appears to be a linkage type whose dependency requires further attention, especially when dependency is not a characteristic of ditransitive or verb-oblique linkage.

To start, we suggest that this dependency may be related to a sometimes-noted function for verb-verb linkage in our survey. Although inconsistently identified, the meaning relationship between the distinct forms D and VV appears to correlate, at least in some languages, with distinct functions. That is, VV expresses object transfer, while D signals object transfer with possession change. Both linkage types have in common a V_1 verb 'give'. Such a relationship is not unlike predication pairs in Edoid where there also exists a verb that is common to predications that are functionally distinct with respect to a feature of tertiary aspect (Desclés & Guentchéva 2012).² For example, common to Emai predications (42a)

²Tertiary aspect is a term used to identify aspectual values beyond viewpoint aspect and Aktionsart.

and (42b) is the verb *khuae* ‘raise.’ Predication (42a) means that the direct object of *khuae* simply changes its position in a vertical manner. The extent of positional change is not coded linguistically. In contrast, predication (42b), where *khuae* is preceded by its erstwhile direct object and by verb *nwu* ‘carry/take’, signals that position change has occurred and that it has achieved its maximum extent, e.g., ‘up to arm’s length’. No further positional change is possible.

(42) Emai (Schaefer & Egbokhare 2017: 732)

- a. Òjè khúáé ọ̀lì ùkòdò.
 Oje:PRX PST:raise:PFV the pot
 ‘Oje has raised the pot.’
- b. Òjè nwú ọ̀lì ùkòdò khúáé.
 Oje:PRX PST:carry:PFV the pot raise
 ‘Oje has raised the pot up to arm’s length.’

By analogy, it may be that in our survey of West Africa that D and VV relate via a feature in which D denotes maximal transfer, i.e., possession/ownership change, while VV expresses simple transfer that is non-maximal. It seems possible that the various languages in this survey showing both D and VV predications exploit a feature of tertiary aspect that allows one to profile possession or transfer. More detailed studies within Niger-Congo will be required to determine whether this might be the case.

4.3 Adjacency of linkage elements

Our final point of analysis concerns a possible adjacency relationship between NP_R (recipient, R in Table 12) and one or another predication element, V₁, V₂, or OBL. There are five adjacency possibilities in our sample where either a verb or an oblique marker can stand adjacent to a recipient argument. The five are V₁ NP_R for ditransitive linkage, V₁ NP_R or V₂ NP_R for verb-verb linkage, and OBL NP_R or V₁ NP_R for verb-oblique linkage. In Table 12, each is presented to allow for mirror image occurrence of recipient across SVO and SOV languages. We consider recipient rather than theme since animate entities have been central to the comparison of three argument predications (Gruber 1992) and their typology (Kittilä 2006, Margetts & Austin 2007).

A review of Table 12 reveals that not all adjacency conditions are realized in our sample. Of course, not all languages in our sample exploit each of the linkage types verb-oblique, verb-verb, and ditransitive. Nonetheless, within each linkage type, one can assess cross-linguistic tendencies for recipient placement.

Under ditransitive linkage, V_1 NP_R / NP_R V_1 adjacency is found in 11 of 14 language groups. It occurs in the two major areal zones we have previously identified within West Africa: the BTV watershed and the Niger Delta. In fact, all of eastern Nigeria including the Niger-Benue confluence zone and the middle belt extending from there to the Cameroonian highlands shows V_1 NP_R / NP_R V_1 adjacency.

There are two areas where ditransitive V_1 NP_R adjacency does not appear. One is the area between the BTV Watershed and eastern Nigeria demarcated by the river Niger. Essentially this is western Nigeria; it includes Yoruba and the greater part of Edoid. The second area is north and immediately west of the central block; it includes Guinea-Bissau, The Gambia, Mali, and their Mande and Senufo languages.

Each of these areas where ditransitive is not exploited has its own adjacency conditions. In the area north and immediately west of the BTV Watershed, the Mande and Senufo languages show alternating adjacency conditions for recipient. They exhibit verb-oblique NP_R V_1 adjacency or verb-oblique NP_R OBL adjacency. In western Nigeria there are three adjacency conditions for recipient. Yoruba relies on verb-verb V_1 NP_R adjacency and verb-oblique V_1 NP_R. Edoid, in contrast, exploits only verb-oblique OBL NP_R adjacency.

Highlighting these two areas draws attention to adjacency conditions that are infrequent in Table 12. The verb-oblique V_1 NP_R adjacency is limited to Yoruba. It represents the only group in our sample of 14 that employs this adjacency condition in addition to verb-verb V_1 NP_R adjacency. The other less frequent condition is OBL NP_R and its mirror image NP_R OBL; they occur, respectively, among the Edoid of western Nigeria and the Mande and Senufo groups north and west of the BTV Watershed.

Interestingly, the only possible adjacency condition that failed to occur in our sample was verb-verb V_2 NP_R. Recipient is never adjacent to V_2 position in a verb-verb linkage. It will be important to determine whether this is true of all languages in West Africa. Whatever the case, verb-verb V_2 NP_R absence will require future attention.

5 Conclusion

We have surveyed 'give' predications that express possession change among 14 West African language groups. We sought to identify linkage types for theme and recipient arguments. Two primary areal zones emerged where linkage types couple for adjacent groups. One is the BTV watershed; the other is the Niger Delta. In these two areas, linkage types for 'give' couple.

Table 12: Adjacency of ‘give’ and recipient (R) in each linkage type according to group, regardless of basic constituent order

	DITR	V-V ₁	V ₂ -V ₁	V-OBL	V ₁ -OBL
	V ₁ R	V ₁ R	V ₂ R	OBL R	V ₁ R
	R V ₁ SOV	R V ₁ SOV	R V ₂ SOV	R OBL _{SOV}	R V ₁ SOV
Kwa	BA, AK, GA, EW	BA, AK, GA, EW			
	FG, LO, TA, AV	FG, LO, TA, AV			
Gur	DA, KA	DA, KA			
Atlantic	JB, DF	JB, DF			
Dogon _{SOV}	BN, DD, NJ, YS				
Kru _{SOV} /SOV	VA				
Mande _{SOV}					
Senufo _{SOV}				MA, BB	MA, BB
Jukunoid	YU			SU	SU
Ijoid _{SOV}	IJ	IJ			
Delta Cross	OB, KA	OB, KA			
Igboid	IG	IG			
Nupoid	EB	EB			
Yoruboid		YR			YR
Edoid	DE			EM, BL, ES, DE	
# of groups	11	8	0	3	3

The strength of these two zones is suggested by two atypical linkage patterns in our sample. In the BTV watershed, ditransitive and verb-verb linkage are typical. In the area immediately east of the BTV, Yoruba shows verb-verb linkage. It is the only language in our sample that exhibits the coupling of verb-verb linkage and verb-oblique linkage. Recall that verb-oblique characterizes Edoid even further to the east than Yoruba. The other atypical linkage is shown by Degema, an Edoid language spoken on an island in the Niger Delta. In the Delta zone, ditransitive linkage and verb-verb linkage are typical. Degema exhibits ditransitive linkage. It also couples ditransitive with verb-oblique linkage, which characterizes the remainder of Edoid. No other language in our sample exhibits a coupling of linkage types ditransitive and verb-oblique.

As a final analytic point, an areal subzone evident in our survey is defined not by a linkage type but by an adjacency condition defined by verb and recipient. Relative to ditransitive linkage, Kwa and Gur languages most often restricted argument order to recipient first and theme second. However, two Kwa languages, Ewe and Fongbe, exhibited flexible theme recipient order. They permitted both $NP_R NP_T$ and $NP_T NP_R$ order. What we do not know is if the semantic condition governing possession/non-possession change in Ewe and Fongbe also applies to other languages in Kwa and perhaps Gur.

Although ditransitive ‘give’ and its linkage patterns were central to our analysis, we hesitate to suggest that other trivalent verbs in each of our language groups would exhibit similar behavior. In part, we say this because some languages in our sample, Emai for instance, which manifested verb-oblique linkage exclusively, have trivalent verbs in domains of information transfer, contact, and possession exchange, among others. These domains require cross-linguistic attention (Gruber 1992) if we are to understand ditransitivity in West Africa and its possible role in Niger-Congo and areal studies. We should not assume that ‘give’ is a reliable guide to broad patterning of trivalent predicates. Its atypical syntactic nature as a trivalent verb has been previously noted (Borg & Comrie 1984, Kittilä 2006). It may be, however, that it is precisely this atypical syntactic and semantic nature that allows ‘give’ equivalents to exhibit variable linkage types.

Clearly, there are additional issues, particularly regarding the grammatical realization of theme and recipient, that need to be scrutinized before we can begin to fully account for areal patterns affecting ‘give’ verbs in West Africa. Perhaps most importantly, the restricted language sample serving the present analysis should be augmented to include other languages in West Africa. Meanwhile though, we can broaden our investigation within existing language groups in order to determine the extent of linkage types and possible points of contact

with other genetically related groups. In this paper, we hope to have shown that further inquiry of verbs, their predications, and their linkage types could prove extremely useful to our delineation of areal relations in West Africa, as well as Niger-Congo. These areal relations might then be useful for comparison to genetic relations, which are most often based on lexical features.

Abbreviations and orthographic conventions

Orthographic conventions for languages in this paper derive from their respective sources with this additional note on vowels: orthographic underlines, are often used in sources for half open vowels, as in *o* for [ɔ], but we have chosen to write these with IPA equivalents throughout this chapter. Tone is represented as in the original; if tone is not marked in the original, it is not marked here. Abbreviations used in morphological glosses for grammatical morphemes follow their respective sources.

Abbreviations for the 31 language names in Tables in Section 4 are as follows:

AK Akan	EM Emai	MA Mandinka
AV Avatime	ES Esan	NJ Najamba
BA Baule	EW Ewe	OB Obola
BB Bambara	FG Fongbe	SU Supyire
BI Bini	GA Ga	TA Tafi
BN Bunoge	IB Igbo	VA Vata
DA Dagaare	IJ Ijọ	YK Yukuben
DD Dogul Dom	JB Jóola Banjal	YR Yoruba
DE Degema	KN Kana	YS Yorno So
DF Diola-Fogny	KS Kasem	
EB Ebira	LO Logba	

Abbreviations compiled from examples drawn from other sources, some of which do not following Leipzig Glossing conventions:

1, 2, 3	1st, 2nd, 3rd person	CMP	completive aspect
ACC	accusative	COMP	complementizer
ANSG	animate singular	CONT	continuous
APP	applicative	CPL	common plural prefix
AUX, A	auxiliary	D	ditransitive
CL#	class number	DDEMSG	distal demonstrative
CM	class marker		singular

DEF	definite	PL	plural
DEM	demonstrative	POS	positive
DF	definite future	POSS	possessor
FACT	factitive	PREF	prefix
FE	factive enclitic	PRX	proximal
FUT	future	PSM	possessum
GEN	genitive	R	recipient
INC	inceptive	SBJ	subject
LK	linker	SEC	secondative
NARR	narrative auxiliary	SG, S	singular
NEG	negative	SGSCL	singular subject clitic
NP	noun phrase	SM	subject marker
NSP	neutralized subject	SPA	simple past
	prefix	SPECI	specific
OBJ	object	T	theme
OBL	oblique	TAM	tense-aspect-modality
PART	particle	TR	transitive
PAST	past tense	V	verb
PERF, PFV,	perfective		
PF			

Acknowledgments

An initial draft of this paper was prepared while Schaefer spent a semester at the University of Ghana in Legon and its Department of Linguistics. It was stimulated in part by a question about areal studies in West Africa posed by Masha Koptjevskaja-Tamm, and it benefited from encouragement by Samuel Obeng. While we thank these individuals for their inspiration, data presentation and interpretation remain our responsibility.

References

- Aaron, Uche. 1999. *Tense and aspect in Obolo grammar and discourse*. Dallas, TX: Summer Institute of Linguistics.
- Adiva, John R. 1984. *A descriptive study of the verbal piece in Ebira: A language of Kwara State Nigeria*. University of London. (Doctoral dissertation).
- Agheyisi, Rebecca. 1990. *A grammar of Edo*. Unpublished manuscript.

- Ameka, Felix K. 2013. Three place predicates in West African serializing languages. *Studies in African Linguistics* 42. 1–32. DOI: 10.32473/sal.v42i1.107273.
- Anyanwu, Rose-Juliet. 2013. *Reference grammar of Yukuben (Jukunoid, Nigeria)*. Cologne: Rüdiger Köppe.
- Atoyebe, Joseph, Martin Haspelmath & Andrej Malchukov. 2010. Ditransitive constructions in Yorùbá. In Andrej Malchukov, Martin Haspelmath & Bernard Comrie (eds.), *Studies in ditransitive constructions: A comparative handbook*, 145–165. Berlin: De Gruyter Mouton. DOI: 10.1515/9783110220377.145.
- Bassène, Alain-Christian. 2007. Ditransitive constructions in Jóola Banjal. In Andrej Malchukov, Martin Haspelmath & Bernard Comrie (eds.), *On the typology of ditransitive constructions*, 145–165. Berlin: De Gruyter Mouton. DOI: 10.1515/9783110220377.190.
- Bobuafor, Mercy. 2013. *A grammar of Tafi*. Utrecht: Netherlands Graduate School of Linguistics.
- Bodomo, Adams. 1997. *The structure of Dagaare*. Stanford: CSLI Publications.
- Borg, Albert J. & Bernard Comrie. 1984. Object diffuseness in Maltese. In Frans Plank (ed.), *Objects: Towards a theory of grammatical relations*, 109–126. London: Academic Press.
- Bouveret, Myriam. 2021. *Give constructions across languages*. Amsterdam: John Benjamins.
- Carlson, Robert. 1994. *A grammar of Supyire*. Berlin: Mouton de Gruyter.
- Comrie, Bernard. 2012. Some argument structure properties of ‘give’ in the languages of Europe and Northern and Central Asia. In Pirkko Suihkonen, Bernard Comrie & Valery Solovyev (eds.), *Argument structure and grammatical relations: A crosslinguistic typology*, 17–35. Amsterdam: John Benjamins. DOI: 10.1075/slcs.126.02com.
- Creissels, Denis. 2007. *A sketch of Bambara argument structure*. Unpublished manuscript.
- Creissels, Denis. 2015. Valency properties of Mandinka verbs. In Andrej Malchukov & Bernard Comrie (eds.), *Valency classes in the world’s languages*, vol. 1, 221–260. Berlin: Mouton de Gruyter. DOI: 10.1515/9783110338812-012.
- Creissels, Denis & Jeremie Kouadio. 2010. Ditransitive constructions in Baule. In Andrej Malchukov, Martin Haspelmath & Bernard Comrie (eds.), *On the typology of ditransitive constructions*, 166–189. Berlin: Mouton de Gruyter. DOI: 10.1515/9783110220377.166.
- Defina, Rebecca. 2016. Serial verb constructions and their subtypes in Avatime. *Studies in Language* 40. 648–680. DOI: 10.1075/sl.40.3.07def.

- Desclés, Jean-Pierre & Zlatka Guentchéva. 2012. Universals and typology. In Robert I. Binnik (ed.), *The Oxford handbook of tense and aspect*, 123–154. New York: Oxford University Press. DOI: 10.1093/oxfordhb/9780195381979.013.0004.
- Dorvlo, Kofi. 2008. *A grammar of Logba (Ikpana)*. Utrecht: Netherlands Graduate School of Linguistics. (Doctoral dissertation).
- Dzameshie, Alex K. 2004. Multi-word verbs in Ewe. In Mary Esther Kropp Dakubu & E. Kwesu Osam (eds.), *Studies in the languages of the Volta Basin II*, 158–165. Legon: University of Ghana.
- Ejele, Philomena E. 1986. *Transitivity, tense and aspect in Esan*. University of London. (Doctoral dissertation).
- Elugbe, Ben. 1989. *Comparative Edoid: Phonology and lexicon*. Port Harcourt: University of Port Harcourt Press.
- Essegbey, James. 1999. *Inherent complement verbs revisited: Towards an understanding of complement structure in Ewe*. Leiden University. (Doctoral dissertation).
- Faraclas, Nicholas. 1984. *A grammar of Obolo*. Bloomington: IULC.
- Gruber, Jeff S. 1992. Proceedings of the Kwa comparative syntax workshop. In Chris Collins & Victor Manfredi (eds.), *MIT working papers in linguistics 17*, 139–165. Cambridge, MA: Department of Linguistics & Philosophy.
- Heath, Jeffrey. 2016. *A grammar of Dogul Dom*. Unpublished manuscript.
- Heath, Jeffrey. 2017a. *A grammar of Bunoge*. Unpublished manuscript.
- Heath, Jeffrey. 2017b. *A grammar of Najamba*. unpublished manuscript.
- Heath, Jeffrey. 2017c. *A grammar of Yorno So*. Unpublished manuscript.
- Heine, Bernd & Tania Kuteva. 2002. *The world lexicon of grammaticalization*. New York: Cambridge University Press.
- Hewer, Philip L. 1983. *A basic grammar of Kasem*. Tamale: GILLBT Press.
- Ikoru, Suanu. 1996. *The Kana language*. Leiden: Research School CNWS.
- Kari, Ethelbert. 2004. *A reference grammar of Degema*. Köln: Rüdiger Köppe.
- Kittilä, Seppo. 2006. The anomaly of the verb ‘give’ explained by its high (formal and semantic) transitivity. *Linguistics* 44. 569–612. DOI: 10.1515/LING.2006.019.
- Koopman, Hilda. 1984. *The syntax of verbs: From verb movement rules in the Kru languages to Universal Grammar*. Dordrecht: Foris.
- Kropp Dakubu, Mary Esther. 2003. Observations towards a typology of multi-verb constructions in the languages of the Volta Basin I. In Mary Esther Kropp Dakubu & E. Kwesu Osam (eds.), *Studies in the languages of the Volta Basin*, 31–60. Legon: University of Ghana.
- Kropp Dakubu, Mary Esther. 2004. The Ga pre-verb auxiliary *ke* revisited. In Mary Esther Kropp Dakubu & E. Kwesu Osam (eds.), *Studies in the Languages of the Volta Basin II*, 113–184. Legon: University of Ghana.

- Kropp Dakubu, Mary Esther. 2009. *Ga-English dictionary with English-Ga index*. Accra: Black Mask Ltd.
- Kuteva, Tania, Bernd Heine, Bo Hong, Haiping Long, Heiko Narrong & Seongha Rhee. 2019. *The world lexicon of grammaticalization*. 2nd edn. New York: Cambridge University Press.
- Lefebvre, Claire & Anne-Marie Brousseau. 2002. *A grammar of Fongbe*. Berlin: Mouton de Gruyter.
- Lord, Carol. 1993. *Historical change in serial verb constructions*. Philadelphia: John Benjamins Publishing.
- Malchukov, Andrej, Martin Haspelmath & Bernard Comrie. 2011. *Ditransitive constructions: A typological overview*. Berlin: De Gruyter Mouton. DOI: 10.1515/9783110220377.1.
- Margetts, Anna & Peter Austin. 2007. Three participant events in the languages of the world: Towards a crosslinguistic typology. *Linguistics* 45. 393–451. DOI: 10.1515/LING.2007.014.
- Nabaarese, Joseph Aloa. 2013. *Kawuri ne Nanjara*. Tamale: GILLBT Press.
- Newman, John. 1996. *Give: A cognitive linguistic study*. Berlin: Mouton De Gruyter.
- Newman, John. 1998. *The linguistics of giving*. Amsterdam: John Benjamins.
- Osam, E. Kweku. 2004. *An introduction to the structure of Akan: Its verbal and multiverbal systems*. Legon: University of Legon, Department of Linguistics.
- Sapir, David J. 1965. *A grammar of Diola-Fogny*. London: Cambridge University Press.
- Schaefer, Ronald P. & Francis O. Egbokhare. 2007. *A dictionary of Emai: An Edoid language of Nigeria*. Köln: Rüdiger Köppe.
- Schaefer, Ronald P. & Francis O. Egbokhare. 2010. On the typology of ditransitive constructions. In Andrej Malchukov, Martin Haspelmath & Bernard Comrie (eds.), *Studies in ditransitive constructions*, 1–30. Berlin: Mouton de Gruyter. DOI: 10.1515/9783110220377.115.
- Schaefer, Ronald P. & Francis O. Egbokhare. 2017. *A grammar of Emai*. Berlin: Mouton de Gruyter.
- Shluinsky, Andrey. 2017. An intragenetic typology of Kwa serial verb constructions. *Linguistic Typology* 21. 333–385. DOI: 10.1515/lingty-2017-0008.
- Uwalaka, M. A. A. N. 1988. *The Igbo verb: A semantico-syntactic analysis*. Wien: Institute für Afrikanistik und Ägyptologie der Universität Wien.
- Whaley, Lindsay. 1997. *Introduction to typology: The unity and diversity of language*. Thousand Oaks, CA: Sage Publications.
- Williamson, Kay. 1965. *A grammar of the Kolokuma dialect of Ijo*. London: Cambridge University Press.

Williamson, Kay & Roger Blench. 2000. Niger-Congo. In Derek Nurse & Bernd Heine (eds.), *African languages: An introduction*, 11–42. Cambridge, UK: Cambridge University Press.

Chapter 8

Intertextuality in discourse: Chief Obasanjo's open letter to Dr. Jonathan

Victor Temitope Alabi

Brown University

This study employs the concept of intertextuality to examine the open letter written by Chief Olusegun Obasanjo to the then-president of Nigeria, Dr. Goodluck Jonathan. The open letter titled *Before it is too late* had two main themes: first, that Dr. Jonathan had failed as a leader, and second, that he should not seek re-election for a second term in office. Direct quotations and allusions were the forms of intertextuality employed in the open letter. I conduct a descriptive analysis by classifying intertextuality in the open letter into five categories: reference to a speech earlier delivered by Chief Obasanjo, reference to a speech earlier delivered by Dr. Jonathan, reference to quotations from published texts, reference to English and Yorùbá proverbs, and reference to the Bible. I propose that the use of intertextuality in the open letter, as well as access to classified information in the letter made available on the Internet to the public, may have contributed to Dr. Jonathan's loss in the 2015 general elections in Nigeria.

1 Introduction

In this paper, I employ the concept of intertextuality (Allen 2011, Bakhtin 1981, Kristeva 1980) to examine the 18-page open letter written by the former president of Nigeria, Chief Olusegun Obasanjo, to the then-president of Nigeria, Dr. Goodluck Jonathan. The letter titled *Before it is too late* was published in newspapers on December 2, 2013. According to the opening of the letter, it was a follow-up to several letters written to Dr. Jonathan, which were neither acknowledged nor replied to. There are two main reasons for analyzing this letter by Chief Obasanjo.



Victor Temitope Alabi. 2024. Intertextuality in discourse: Chief Obasanjo's open letter to Dr. Jonathan. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 167–184. Berlin: Language Science Press. DOI: 10.5281/zenodo.11091833

First, it was the first open letter written by Chief Obasanjo (who had had experience as both a military head of state and a democratically elected president of Nigeria) to Dr. Jonathan, the Nigerian president from a minority ethnic group in Nigeria, as stated in the letter. Second, the contents of the letter, whether advertently or inadvertently, had the effect of exposing details about the inadequacies of the Jonathan-led administration and reminded Nigerians about the inconsistencies of Dr. Jonathan, thus suggesting that he could not be trusted for a second term. This may have conceivably led to Dr. Jonathan losing his bid for a second term in office in the 2015 presidential election.

In the letter to Dr. Jonathan, Chief Obasanjo criticized the Jonathan government and advised Dr. Jonathan not to seek re-election in 2015. It is important to note that Chief Obasanjo campaigned for Dr. Jonathan when the latter ran for the office of the president of Nigeria in 2011. Moreover, Chief Obasanjo and Dr. Jonathan were members of the same political party, the People's Democratic Party (PDP), but Chief Obasanjo left the party a couple of months after writing the open letter. Interestingly, Chief Obasanjo went on to support the main opposition party candidate, Muhammadu Buhari, of the All Progressives Congress (APC), who eventually won the 2015 presidential election. In fact, Chief Obasanjo stated that without his support, Muhammadu Buhari and the APC could not have won the presidential election (see Ezezi 2018). Thus, it is pertinent to unravel the linguistic features of the letter and to explore how and why it may have led to Dr. Jonathan losing the presidential election.

Chief among the linguistic features employed in the letter to Dr. Jonathan was the use of intertextuality. The function of intertextuality is to present other credible voices within that of Chief Obasanjo. The aim of these voices is to amplify the issues raised in the letter. Thus, if Dr. Jonathan decided not to listen to Chief Obasanjo's voice at the time, he should at least remember his promise to Nigerians. I classify the use of intertextuality in the letter into five broad categories: (i) reference to Chief Obasanjo's speech; (ii) reference to Dr. Jonathan's speech; (iii) reference to quotations from published texts; (iv) reference to English and Yorùbá proverbs; and (v) reference to the Bible. Chief Obasanjo's referred to sources include writings, speeches, sayings, and scriptures by writers that Dr. Jonathan was likely to hold in high honor; that is, sources that were unlikely to be faulted. That Chief Obasanjo made it an open letter shows that he wanted Nigerians and indeed the world to appreciate his views on the state of the nation.

In the next section, I review previous studies on the letter(s) of Chief Obasanjo and on intertextuality. In the third section, I examine the method of analysis. In the fourth and fifth sections, I discuss an overview of intertextuality and the

background of the open letter respectively. In the sixth section, I analyze the data, while in the seventh section, I make concluding remarks.

2 Review of previous studies

Several studies have explored the open letter under study by Chief Obasanjo to Dr. Jonathan. For instance, Ojo et al. (2022) employed M. A. K. Halliday's *Systemic Functional Grammar* to analyze what they called "six discourse features" in the open letter, while Ekhareaho & Ambrose (2015) use Critical Discourse Analysis (CDA) to analyze the open letter. In addition, Fawunmi & Taiwo (2021) analyzed rhetoric, ideology, and power relations in two open letters – *Before it is too late* and *Points for concern and action* – written by Chief Obasanjo. Other studies have explored the open letter under study by Chief Obasanjo and the response from Dr. Jonathan (to the open letter), which was also an open letter. For example, Unuabonah & Boluwaduro (2020) examined the pragmatic acts employed in the letters by both Chief Obasanjo and Dr. Jonathan, while Monehin (2015) conducted a stylistic analysis of the open letters by Chief Obasanjo and Dr. Jonathan. Moreover, studies like Igwebuike & Kamalu (2015) explored the open letters written to Chief Obasanjo when he was Nigeria's president between 1999 and 2007. None of these studies have examined the functions of the different voices in the open letters by Chief Obasanjo, which has motivated this study. Intertextuality, or the intertext, is worth studying to unravel the voices evident in the written discourse and their overall implications for political discourse analysis.

Some studies have examined intertextuality along the lines employed in Obasanjo's open letter, for instance, the use of biblical intertextuality in letters and speeches (Obeng 2011, 2016). Intertextuality has also been analyzed in how political actors quote or allude to other texts in political discourse (e.g., Hodges 2008, Obeng 2011, 2016, Orwenjo 2009). Moreover, intertextuality has been explored in relation to language planning and policy (e.g., Johnson 2015), in relation to other theoretical frames (e.g., Fairclough 1992b), in academic discourse (e.g., Chandra-soma et al. 2004), in literary and media studies (Ott & Walter 2000; Ho 2011), as well as in legal/judicial discourse (e.g., Matoesian 1999). Raj (2015) examines various perspectives that relate to Kristeva's notion of intertextuality. The current study applies insights from these existing studies into engaging the use of intertextuality in Chief Obasanjo's open letter to Dr. Jonathan.

3 Method of analysis

Data for this study (the open letter itself) were obtained from Vanguard Newspaper, which was published on December 12, 2013. Though other newspapers around the same period reported the same open letter by Chief Obasanjo, Vanguard Newspaper was randomly selected for this study. The intertext in the letter was analyzed for content and language. Berelson (1957: 18) asserts that content analysis deals with the “objective, systematic and quantitative description” of data. I explored aspects in the letter where other voices were used to amplify the voice of the writer (Chief Obasanjo). Five groups of voices were identified in the letter: Chief Obasanjo’s voice, Dr. Jonathan’s voice, quotations from published texts, English and Yorùbá proverbs, and the Bible. I analyzed these voices to unravel and explore the implications of letter writing in political discourse.

4 Intertextuality

Studies of intertextuality date back to the work of Julia Kristeva (1980). Kristeva was the first to coin the word *intertextualité* in her analyses of Bakhtin’s works on literary semiotics. Allen (2011: 3) asserts that Kristeva’s “attempt to combine Saussurean and Bakhtinian theories of language and literature produced the first articulation of intertextual theory”. Bakhtin (1981), cited in Obeng (2016), argues that texts do not occur in a vacuum. Rather, they are situated within history and society, and speakers and/or writers insert themselves within them (i.e., the texts) by rewriting (and in some cases by speaking) the texts. The “semiotic notion of intertextuality introduced by the literary theorist Julia Kristeva is associated primarily with poststructuralist theorists” (Chandler 2007: 197). Kristeva observes that intertextuality deals with “the insertion of history (society) into a text” (Kristeva 1980: 39, cited in Fairclough 1992a: 195). She asserts that rather than confining one’s focus to the structure of a text, one should study its “structuration”, that is, how the structure came into being (Chandler 2007: 197). Alfaro (1996: 268) argues that the “theory of intertextuality insists that a text cannot exist as a self-sufficient whole.” Johansen & Larsen (2002: 126) assert that intertextuality “means that the texts refer to each other, quote each other, that there are allusions in the text to other texts. Such an influence can, for example, take the form of adopting the conventions, material, action, or themes of other texts”.

The intention of intertextuality is to cause us to remember a person, place, or thing in relation to what one is currently discussing, and by so doing, motivate us into action. Language users, for instance, religious leaders and political actors,

adopt intertextuality to foreground their position on certain issues. For example, in the Epistle of Jude (see *The English Standard Version Bible*, 2009), Jude refers to texts in the Old Testament about Cain's way, Balaam's error, and Korah's rebellion. The intention of Jude was to state that the actors mentioned had done certain things that the readers of Jude's epistle were encouraged not to do. In addition, politicians employ intertext in their speeches. An example can be found in Barack Obama's eulogy at the funeral service of Elijah Cummings, a US Congressman, in October 2019. He states at the outset: "The seed on good soil, the parable of the Sower tells us, stands for those with a noble and good heart, who hear the word, retain it, and by persevering produce a crop. The seed on good soil". From the outset, Obama employs biblical intertextuality to foreground the background of Elijah Cummings.¹

Plett (1991: 5) observes that an intertext is "not delimited, but de-limited, for its constituents refer to constituents of one or several other texts. Therefore, it has a two-fold coherence: an intratextual one which guarantees the immanent integrity of the text, and an intertextual one which creates structural relations between itself and other texts". Chandler (2007) argues that Kristeva's (1980: 69) work refers to "texts in terms of two axes: a horizontal axis connecting the author and reader of a text, and a vertical axis, which connects the text to other texts" (see also Johnson 2015, Raj 2015). Fairclough (1992b: 271) identifies *manifest intertextuality*, which involves the verbatim use of texts, for instance, via the use of quotations. Instances of manifest intertextuality employed in the open letter to Dr. Jonathan include direct quotations and allusions.

Within the confines of Critical Discourse Analysis (CDA), Fairclough (1992b) proposes that "the theory of intertextuality should be combined with a theory of power since the meaning of a text is not infinitely innovative, but will be limited by conditions of power relations" (Johnson 2015: 168). Fairclough further states that the use of intertextuality in texts is an instance of discourse practice, as well as social practice. In the data under study, power relations via the use of quotations and allusions are seen not only by virtue of the writer being older than the then-president but also by being more experienced than the then-president. This may be a reason why American presidents, for over thirty years now, have had the tradition of writing letters to their successors. Their position of experience as outgoing presidents makes them qualified to advise their successors.² Chief Obasanjo had been military head of state and president for about eleven years in

¹<https://www.theatlantic.com/politics/archive/2019/10/barack-obamas-eulogy-elijah-cummings/600697/>

²<https://www.georgewebushlibrary.gov/research/topic-guides/transition-letters>

total while Dr. Jonathan had been president for just three years. Thus, this position also makes it possible to use proverbs to communicate with Dr. Jonathan. In the Yorùbá culture (Chief Obasanjo's ethnic group), most elders use proverbs to advise, warn, or caution younger people. Younger people are not permitted to directly use proverbs to advise, warn, or caution an older person. In the following section, I discuss the background of the open letter written by Chief Obasanjo to Dr. Jonathan.

5 Background of the open letter

Chief Obasanjo was the military head of state in Nigeria from 1976–1979. According to an article in the Tribune Newspaper, published on January 25, 2018, Chief Obasanjo had a tradition of writing letters publicly condemning military heads of state and democratically elected presidents after him. For example, he publicly condemned the democratic government of Alhaji Shehu Shagari (1979–1983) and the military rule of both General Ibrahim Babangida (1985–1993) and General Sani Abacha (1993–1998). Unlike Shagari and Babangida, who ignored him, General Abacha implicated Chief Obasanjo in a coup attempt and jailed him. This was after Chief Obasanjo had publicly condemned his military government. It is worthy of note that in the open letter to Dr. Jonathan, Chief Obasanjo referred to what he called the “Abacha era” because, while in prison, Chief Obasanjo had again written letters to General Abacha. The report in the Tribune Newspaper published on January 25, 2018, read (in part) that “usually, Obasanjo's public condemnation of presidents or military heads of state signals the beginning of the end of such administrations”. Since Chief Obasanjo's tenure as a democratically elected president from 1999–2007, his successors, the late Alhaji Umaru Yar'Adua, Dr. Goodluck Jonathan, and the current president, Muhammadu Buhari, have all received open letters/criticisms from Chief Obasanjo on his concerns over their governance, notwithstanding that he campaigned for each of them.

In the letter to Dr. Jonathan, Chief Obasanjo referred to the time that he met Dr. Jonathan (where private discussions were not made public). This indicates that meeting Dr. Jonathan to discuss matters was not impossible. Rather, Chief Obasanjo chose to write an open letter, I would propose, to make his concerns known to the public. It is noteworthy that as of December 2013, it was less than one and half years before the March 2015 elections, and thus, there was ample time for Dr. Jonathan to possibly make changes in his governance.

Written texts about political issues both in Africa and the wider world have, over time, been replete with intertextual sources to justify the writer and to give

credence to the writing (see Obeng 2016). Political actors often employ what I call *voices of the past*, as well as voices of other people to add to their plea for change. Obeng (2020) presents an analysis of the letters written by Dr. Danquah to Dr. Nkrumah on the infringement of his (Dr. Danquah's) liberty. Dr. Danquah presents relevant voices in his letter to give credence to his writing and plea for his liberty.³

In the opening of the letter, Chief Obasanjo gives ten reasons why he chose to write the open letter to Dr. Jonathan. The ten reasons presented in the letter to Dr. Jonathan point to issues such as Dr. Jonathan's personality (e.g., not responding to four or more letters). Other issues include the implications of his governance within Nigeria (e.g., not "dividing the country along weak seams of North-South and Christian-Muslim"), and outside Nigeria (e.g., international friends getting worried about signs and signals coming out of Nigeria).

In the "Special Press Statement" to President Buhari in the Punch Newspaper, published January 24, 2018, titled *The Way Out: A Clarion Call for Coalition for Nigeria Movement*, Chief Obasanjo stated,

But my letter to President Jonathan titled: *Before It Is Too Late* was meant for him to act before it was too late. He ignored it and it was too late for him and those who goaded him into ignoring the voice of caution.

In the case of this Special Press Statement issued about the Buhari-led government, Chief Obasanjo expressed his displeasure at the failures of the Buhari-led government, including the failure of government to end the Boko Haram insurgency, as well as the Fulani herders who had killed Nigerian citizens in states like Benue and Kaduna. In 2018, President Buhari spent over three months in a London hospital, to which Chief Obasanjo remarked that he was unfit for office. Chief Obasanjo again issued a press statement in January 2019, a few weeks before the February 2019 general elections, raising an alarm that President Buhari was planning to rig the elections in his favor.

The open letter to Dr. Jonathan was over 7,300 words. These words were more than both the January Press Statement and a July open letter⁴ to President Buhari combined, which were over 3,500 words and over 1,600 words, respectively. Even

³Dr. J. B. Danquah and Dr. Kwame Nkrumah were political actors who had worked together for the cause of an independent Ghana. In one letter analyzed in Obeng (2020), Dr. Danquah employs voices of the past in his letter to Dr. Nkrumah. Dr. Danquah compares how the British treated them both as prisoners and how Dr. Nkrumah was treated him (Dr. Danquah) as a prisoner.

⁴<https://punchng.com/full-text-of-obasanjos-open-letter-to-buhari/>

though intertextuality was employed in Chief Obasanjo's Press Statement and open letter to President Buhari, I observe that there was a higher frequency of intertextuality in the open letter to Dr. Jonathan. It is thus important to examine the reasons why intertextuality was used to such a high degree and to analyze the functions of intertextuality in the letter to Dr. Jonathan. In the next section, I analyze the functions of intertextuality in Chief Obasanjo's open letter to Dr. Jonathan.

6 Analysis of the letter

A close look at the open letter shows that intertextuality features prominently via the use of direct quotations and allusions. The effect of this strategy is that it would be difficult for not only Dr. Jonathan, the recipient of the letter, but also the public, to deny the validity of the voices in the letter. For example, it includes direct quotation from Chief Obasanjo's and Dr. Jonathan's speeches made before the April 2011 presidential election. As an elder political leader, Chief Obasanjo uses the voices of people who will, to a considerable extent, appeal to Dr. Jonathan, for instance, in the use of published texts, the use of proverbs, and the use of Biblical allusions. Next, I examine the five different categories of intertextuality in the open letter to Dr. Jonathan.

6.1 Reference to a speech earlier delivered by Chief Obasanjo

During the campaign before the 2011 election that got Dr. Jonathan elected to office, Chief Obasanjo made a speech to Nigerians on how important it was to vote for Dr. Jonathan. This was significant because it was the first time that someone from a minority group, the Ijaw ethnic group in the South-South region, would contest an election to become president of Nigeria. Obasanjo stated, in the presence of Dr. Jonathan, that Dr. Jonathan had promised to run for a single term. This motivated Nigerians to vote massively for him because political actors in African countries and outside Africa rarely make campaign promises to run for a single term in office (see Papaioannou & Van Zanden 2015). In the letter under analysis, Chief Obasanjo made it clear that Dr. Jonathan should not run for a second term in office. He stated in the letter that there were signs that Dr. Jonathan was attempting to seek re-election. It is interesting to note that, at that time, Dr. Jonathan had not made any public announcements to run for a second term. Chief Obasanjo's use of intertextuality was to remind Dr. Jonathan of the promise made to the Nigerian people. Reference to Chief Obasanjo's speech was a clue that the promise to run for a single term was about to fail, which would

portray Dr. Jonathan as someone who was not true to his word. I present an excerpt from the letter below in which Obasanjo is quoting himself.

You did not hesitate to confirm to me that you are a strong believer in a one-term of six years for the President and that by the time you have used the unexpired time of your predecessor and the four years of your first term, you would have almost used up six years of your first term and you would not need any more term or time. Later, I heard from other sources including sources close to you that you made the same commitment elsewhere, hence, my inclusion of it in my address at the finale of campaign in 2011 as follows:

PDP should be praised for being the only party that enshrines federal character, zoning and rotation in its Constitution and practices it. PDP has brought stability and sustainability to the polity and to the system. I do not know who will be President of Nigeria after Dr. Goodluck Jonathan.

In the present circumstance, let me reiterate what I have said on a number of occasions. Electing Dr. Goodluck Ebele Jonathan, in his own right and on his own merit, as the president of Nigeria will enhance and strengthen our unity, stability and democracy. And it will lead us towards the achievement of our Nigeria dream.

There is press report that Dr. Goodluck Jonathan has already taken a unique and unprecedented step of declaring that he would only want to be a one-term President. If so, whether we know it or not, that is a sacrifice and it is statesmanly. Rather than vilify him and pull him down, we, as a party, should applaud and commend him and Nigerians should reward and venerate him. He has taken the first good step.

Let us encourage him to take more good steps by voting him in with landslide victory as the fourth elected President of Nigeria on the basis of our common Nigerian identity and for the purpose of actualising the Nigerian dream.

Dr. Jonathan became acting president after the death of Alhaji Umaru Yar'Adua in 2010. Chief Obasanjo, who had worked for Alhaji Umaru Yar'Adua to succeed him, also worked for Dr. Jonathan to become Nigeria's president. Chief Obasanjo was reminding Dr. Jonathan in the letter that Dr. Jonathan had expressed his support for a one-year term of six years for Nigerian presidents. By referring to his speech, which arguably contributed to Dr. Jonathan's victory in the 2011 presidential election, Chief Obasanjo was reminding him of the premise on which he won the election. Chief Obasanjo campaigned with Dr. Jonathan in Nigerian states for the 2011 elections. Also, since he completed over a year of the remaining

term of the late Umaru Yar'Adua, Chief Obasanjo was making it clear that he would have spent more than a term of four years in office.

6.2 Reference to a speech earlier delivered by Dr. Jonathan

Chief Obasanjo reminded Dr. Jonathan of the speech the latter gave during the campaign for the 2011 presidential election on another occasion in the open letter. Here, Dr. Jonathan was warned not to attempt to break his promise by Chief Obasanjo, who alluded to the fact that bloodshed might result in this alleged decision. Dr. Jonathan, in the letter in response to Chief Obasanjo, stated that he had not made the intention known to run for a second term. Chief Obasanjo was presenting a case that Dr. Jonathan was not being sincere about not running for a second term in office. Citing Dr. Jonathan's speech was an attempt to remind him that since he was not willing to take any action that could cause bloodshed in the 2011 elections, he should not be willing to do the same in the 2015 elections. An excerpt from the open letter is presented below.

Please Mr. President be mindful of that. You were exemplary in words when during your campaign in the 2011 elections, you said "My election is not worth spilling blood of any Nigerian." From you it should not be if it has to be, let it be. It should be from you, let peace, security, harmony, good governance, development and progress for Nigeria. That is also your responsibility and mandate. You can do it again and I plead that you do it. We all have to be mindful of not securing pyrrhic victory on the ashes of great values, attributes and issues that matter as it would amount to hollow victory without honour and integrity.

Dr. Jonathan's language use in 2011, about not wanting any blood spilled, was an indirect response to his major opponent, Muhammadu Buhari, who then was the presidential candidate of the Congress for Progressive Change (CPC). Muhammadu Buhari had threatened unrest if the election results were not in his favor. Chief Obasanjo also blamed Dr. Jonathan for the fact that his advisors were encouraging him to run for a second term. Bull et al. (2008: 324) noted the importance of political commitment, observing that: "voters may question the extent to which politicians can be trusted to keep their word or to implement their promises". Thus, a reminder of the speech made by Dr. Jonathan in 2011 was a signal that if Dr. Jonathan decided to run for a second time, it meant that Dr. Jonathan could not be trusted.

6.3 Reference to quotations from published texts

Chief Obasanjo also quoted from renowned West African writers in his open letter. He cited Chinua Achebe, who was not only from Southern Nigeria but also a celebrated literary figure within and outside of West Africa. Chief Obasanjo was using the words of Achebe about integrity to advise Dr. Jonathan not to compromise his stand, even if he was being persuaded to do so by his colleagues to run for a second term in office. In the excerpt below, Chief Obasanjo did not state explicitly that Dr. Jonathan had publicly declared his intention to run for a second term in office, but Chief Obasanjo was depending on hearsay. Chief Obasanjo wrote in the letter that he had observed signs that showed that Dr. Jonathan was planning to run for a second term and advised him against compromising the promise he made in 2011. Chief Obasanjo's quotation of Achebe in the open letter is presented below.

Chinua Achebe said, "one of the truest tests of integrity is its blunt refusal to be compromised."

The quotation by Chinua Achebe is employed in Chief Obasanjo's letter to remind Dr. Jonathan that though he may be advised to run for a second term, thereby compromising his earlier stand not to run for a second term, his integrity was more important than making a compromise.

One of the charges that Chief Obasanjo leveled against Dr. Jonathan to buttress the point that he had failed as a leader and should not run for a second term was that he was allegedly hiding criminals and using them to his own advantage. Chief Obasanjo cited a publication by the journalist, Lansana Gberie, who had written extensively about politics, conflict, and security in African countries. The 28-page paper, published in 2013, is titled *State Officials and their Involvement in Drug Trafficking in West Africa*. Chief Obasanjo employed Gberie's work to foreground the failures of the Jonathan government in bringing Kashamu, a drug peddler, to book (i.e., to justice) in addition to the allegation that Kashamu was being used for Dr. Jonathan's political ambition of running for a second term in office. This allegation about the relationship between Kashamu and the Jonathan administration further presented a negative aspect of his government. I present the excerpt about Gberie (2013) from the open letter below.

It may be instructive if I quote fairly extensively from Lansana Gberie's recent paper titled, *State Officials and Their Involvement in Drug Trafficking in West Africa*:

“The controversial and puzzling case of Buruji Kashamu, a powerful figure in the ruling Peoples Democratic Party (PDP), suggests that a successful and wealthy politician’s association with drug trafficking is hardly disabling. Kashamu was indicted by a grand jury in the Northern District of Illinois in 1998 for conspiracy to import and distribute heroin to the United States. The indictment named him under his own name as well as two suspect aliases: ‘Alhaji’ and ‘Kasmal.’ His whereabouts were unknown at the time, however, and his co-accused were tried and convicted.

Later that year, he was found living comfortably in England, and, on receipt of an extradition request from the US, the UK arrested Kashamu. After a very protracted proceeding lasting until 2003, however, an English judge refused to extradite Kashamu on grounds of uncertainty about his true identity. Kashamu triumphantly returned to Nigeria and soon after became a key political figure.

He is now believed to be very close to President Goodluck Jonathan, because of his ability to mobilize votes in key states in Western Nigeria. The US government reviewed Kashamu’s case, with the famous Judge Richard Posner presiding. Posner concluded that while Kashamu’s identity remains murky, there is little doubt that the figure now exercising authority in Nigeria’s PDP is the same as Kashamu the ‘Alhaji’ who was indicted for conspiracy to smuggle illicit drugs into the United States.”

Chief Obasanjo alluded to the writing of Lansana Gberie to present a link between Kashamu and Dr. Jonathan. The example above shows the function of an intertext to the disadvantage of a political actor. Since this was an open letter to Dr. Jonathan, the public was exposed to the writings of Lansana Gberie about the alleged relationship between Kashamu and Dr. Jonathan even if they had not read any of Gberie’s writings in the past. I propose that these quotations about the Jonathan administration contributed significantly to the loss of Dr. Jonathan’s run for a second term in office. This indicates the importance of other voices in addition to one’s voice, which could make or mar a political situation. Chief Obasanjo’s quotation of this text was a strategy of letting Dr. Jonathan know that he had failed and could not be trusted as a leader.

6.4 Reference to English and Yorùbá proverbs

From the perspective of the Yorùbá culture (Chief Obasanjo’s ethnic group), proverbs are the horses of communication, and if communication is lost, proverbs

are used to find it (Owomoyela 2005: 497). This means that effective discourse is not possible without resorting to proverbs. Orwenjo (2009: 144–145), commenting on the use of proverbs by Africans in political discourse, observes that proverbs have:

retained certain core discourse functions in the society. They are still the undisputed spices that give the right flavour to any significant dialogue. They still offer one of the most accessible and efficient means of avoiding direct critique by alluding to the criticized matter in an indirect, less aggressive manner. Nowhere is the need to avoid direct critique so urgent and paramount than in political discourse.

The use of proverbs in Chief Obasanjo's letter is an instance of indirectness in political discourse (Obeng 1997) because, from the cultural perspective of being a Yorùbá, it is socially unacceptable to directly make a negative statement to someone especially in authority, even if the person in authority is younger in age. Chief Obasanjo states, "The Yorùbá adage says, 'The man with whose head coconut is broken may not live to savor the taste of the succulent fruit'". This Yorùbá proverb literally means that "whoever takes foolhardy risks in pursuit of an end seldom lives to enjoy it" (Owomoyela 2005: 117). Chief Obasanjo essentially tells Dr. Jonathan that the people advising him to train snipers and other armed people for political reasons will eventually implicate him, and in the end, he will suffer the consequences. Chief Obasanjo does not mention his source of information by stating "if it is true". This means that he was not affirming that Dr. Jonathan was training people against his political rivals but rather implying that his own concerns should be the concern of all Nigerians.

Chief Obasanjo, to avoid making direct negative statements about the Nigerian economy, which relied heavily on oil, resorted to the proverbial route to inform the president to act on time. He states, "We should make hay while the sun shines" so that Nigeria does not lag in the African continent. He also advised him on looking at ways of improving the oil sector with advanced technology and stated three things that he said were "imperative in the oil and gas sector". To *make hay* means to act. The implication of the proverb was that Dr. Jonathan was inactive in a time of opportunity for the prosperity of Nigeria's economy.

6.5 Reference to the Bible

The use of biblical intertextuality as well as mentioning *God* 17 times presents Chief Obasanjo as (a) a religious person who believes in God; (b) one standing

on the right side with God, while “the guard” who has become “the thief” stands on the wrong side. He adopts a strategy of delegitimization (Chilton 2004: 47), that is, creating a picture of the “negative other presentation” of Dr. Jonathan. This is effective given that Nigerians are religious, and Nigeria is one of the most religious countries in the world (Nag 2018). Thus, the intent of the letter is for Nigerians to stand on the side of Chief Obasanjo because many Nigerians believe in a supreme being. Chief Obasanjo does not mention the “bible” but only “God”, but the former is implicit in his message. Chief Obasanjo, in stating that “God is watching, waiting, and biding his time to dispense justice” makes it clear that even though he cannot do anything about the situation in the nation, he had resigned to God’s judgment. The biblical text used is not about speaking words of blessings or words of faith with the hope of a better Nigeria, but that God is watching, and at the right time, would pronounce his judgment. In Zechariah 3:5, the Bible states that God dispenses judgment. I present an excerpt from Chief Obasanjo’s letter below.

Let me repeat that as far as the issue of corruption, security and oil stealing is concerned, it is only apt to say that when the guard becomes the thief, nothing is safe, secure, or protected in the house. We must all remember that corruption, inequity and injustice bred poverty, unemployment, conflict, violence and wittingly or unwittingly create terrorists because the opulence of the governor can only lead to the leanness of the governed. But God never sleeps. He is watching, waiting and bidding his time to dispense justice. If we leave God to do His will and we don’t rely only on our own efforts, plans and wisdom, God will always do his best. As I go round Nigeria and the world, I always come across Nigerians who are first-class citizens of the world and who are doing well where they are and who are passionate to do well for Nigeria. My hope for our country lies in these people. They abound and I hope that all of us will realize that they the jewels of Nigeria wherever they may be and not those who arrogate to themselves eternal for ephemeral.

His reference to God who never sleeps comes from Psalms 121 in the Bible. God is one who does not support evil (James 1:13). Here, Chief Obasanjo is indirectly saying that God is not in support of the actions within the PDP. Earlier in the letter, he stated that Dr. Jonathan was the leader of the party. Thus, he alludes to the fact that God is not in support of the evil actions within the party, under the watch and leadership of Dr. Jonathan. This is important because Chief Obasanjo is indirectly stating that there are “destroyers” within the party whom, if not

exposed, will not only ruin the party but the country. He was also indirectly calling on those interested in the progress of the country to “step aside to think”. Chief Obasanjo stated in the letter:

God is not a supporter of evil and will surely save PDP and Nigeria from the hands of destroyers. If everything fails and the Party cannot be retrieved from the hands of criminals and commercial jobbers and discredited touts, men and women of honour, principles, morality, and integrity must step aside to think.

By choosing to state that God will act, Chief Obasanjo resorted to solace in God who will save the party and the country. He believed that some people were about to destroy the party and the country. In other words, if the president, who is the leader of the party and the country, will not play his part, God, as the last option will act to save the party and the country.

7 Conclusion

In this study, I have examined intertextuality as a discourse strategy in the open letter by Chief Olusegun Obasanjo to the then-president of Nigeria, Dr. Goodluck Jonathan. The use of intertextuality in the open letter revealed the ills in the Jonathan administration and consequently the reasons why Dr. Jonathan should not seek a second term as president. Chief Obasanjo, in the open letter, alluded to various texts to validate his stance on the state of governance in Nigeria. Chandler (2007: 202) observes that by “alluding to other texts and other media this practice reminds us that we are in a mediated reality”. Intertextuality is used as a mediator between the writer and the recipient of the writing. Chief Obasanjo's use of direct quotations and allusions helps to foreground his messages to Dr. Jonathan and indeed to Nigerians.

The open letter exposed to the public the inadequacies of the government. Dr. Jonathan's reply, dated December 20, 2013, read in part that Chief Obasanjo was writing about some “classified information”, which had a negative impact on the Jonathan-led government. The classified information and the allegations arguably contributed, I would argue significantly, to why Dr. Jonathan lost his bid in the 2015 general elections. The use of intertextuality in the letter helped to remind both the recipient (Dr. Jonathan) and the Nigerian public about the speeches by both Chief Obasanjo and Dr. Jonathan before the 2011 presidential election. The function of this was to call Dr. Jonathan to remember where he began from, as well as the promises he made to Nigerians. The use of proverbs

and biblical allusions represented ageless sayings, which are assumed to be credible oftentimes by individuals who belong or (sometimes) do not belong to the culture or religion respectively. Also, references to writings by Chinua Achebe and Lansana Gberie helped to foreground that Dr. Jonathan was on the wrong path because of his alleged association with a questionable individual. The implications of this study in political discourse are that intertextuality via quotations and allusions in oral or written discourse (e.g., an open letter) would appear to have the ability to reshape the minds of a people for or against the recipient of the letter thereby leading to an upturn or downturn of events, especially in the political space.

Acknowledgments

The idea to write this paper was conceived in one of my classes, *Political Discourse Analysis*, with Prof. Samuel Obeng. Prof. Obeng is an excellent teacher and researcher. He also served as my doctoral dissertation advisor and his extraordinary mentorship has been key to my academic progress. For these reasons I am grateful to him. I also appreciate the reviewers and editors of this volume for their invaluable and insightful comments on this paper.

References

- Alfaro, María Jesús Martin. 1996. Intertextuality: Origins and development of the concept. *Atlantis* 18. 268–285.
- Allen, Graham. 2011. *Intertextuality*. 2nd edn. London: Routledge.
- Bakhtin, Mikhail. 1981. *The dialogic imagination: Four essays*. Austin: University of Texas Press.
- Berelson, Bernard. 1957. *Content analysis in communication research*. Glencoe, IL: Free Press.
- Bull, Peter, Anita Fetzer & Marjut Johansson. 2008. Analysing the fine details of political commitment. *Journal of Language and Social Psychology* 27. 324–332.
- Chandler, Daniel. 2007. *Semiotics: The basics*. 2nd edn. London & New York: Routledge.
- Chandrasoma, Ranamukalage, Celia Thompson & Alastair Pennycook. 2004. Beyond plagiarism: Transgressive and nontransgressive intertextuality. *Journal of Language Identity and Education* 3. 171–193. DOI: 10.1207/s15327701jlie0303_1.

- Chilton, Paul. 2004. *Analysing political discourse: Theory and practice*. London: Routledge.
- Ekhareaf, Ofomegbe Daniel & Chinenye Lynda Ambrose. 2015. Critical discourse analysis of Obasanjo's letter *Before Is Too Late* to Jonathan. *IJAH: International Journal of Arts and Humanities* 4. 291–298. DOI: 10.4314/ijah.v4i3.24.
- Erezi, Dennis. 2018. *My support won presidential election for Buhari in 2015, says Obasanjo*. <https://guardian.ng/news/my-support-won-presidential-election-for-buhari-in-2015-says-obasanjo/>.
- Fairclough, Norman. 1992a. Discourse and text: Linguistic and intertextual analysis within discourse analysis. *Discourse and Society* 3. 193–217.
- Fairclough, Norman. 1992b. Intertextuality in critical discourse analysis. *Linguistics and Education* 4. 269–293.
- Fawunmi, Mayowa & Rotimi Taiwo. 2021. "I am concerned as a Democrat": Rhetoric, ideology and power in Olusegun Obasanjo's open letters. *Language. Text. Society* 8. 291–298.
- Gberie, Lansana. 2013. *State officials and their involvement in drug trafficking in West Africa*. <https://www.globalcommissionondrugs.org/wp-content/uploads/2017/02/State-Officials-and-Drug-Trafficking-2013-12-03.pdf>.
- Ho, Victor. 2011. What functions do intertextuality and interdiscursivity serve in request e-mail discourse? *Journal of Pragmatics* 43. 2534–2547. DOI: 10.1016/j.pragma.2011.04.002.
- Hodges, Adam. 2008. The dialogic emergence of "truth" in politics: Reproduction and subversion of the "war" on "terror" discourse. *Colorado Research in Linguistics* 21. 1–12. DOI: 10.25810/gkzf-q768.
- Igwebuike, Ebuka & Ikenna Kamalu. 2015. A critical discourse analysis of rhetorical strategies in open letters to President Olusegun Obasanjo in selected Nigerian newspapers. In Akin Odebunmi & Joyce T. Mathangwane (eds.), *Essays on language, communication and literature in Africa*, 250–274. Newcastle upon Tyne: Cambridge Scholars.
- Johansen, Jørgen & Svend Erik Larsen. 2002. *Signs in use: An introduction to semiotics*. London: Routledge.
- Johnson, David Cassels. 2015. Intertextuality and language policy. In Francis M. Hult & David Cassels Johnson (eds.), *Research methods in language policy and planning: A practical guide*, 166–180. Oxford: Wiley. DOI: 10.1002/9781118340349.ch15.
- Kristeva, Julia. 1980. *Desire in language: A semiotic approach to literature in art*. New York: Columbia University Press.
- Matoesian, Gregory. 1999. Intertextuality, affect, and ideology in legal discourse. *Text and Talk* 19. 73–109. DOI: 10.1515/text.1.1999.19.1.73.

- Monehin, F. 2015. *A stylistic analysis of language politics in the open letters exchanged between Chief Olusegun Obasanjo and President Goodluck Jonathan*. BA thesis, Redeemer's University Nigeria.
- Nag, Oishimaya Sen. 2018. *Most religious countries in the world*. <https://www.worldatlas.com/articles/most-religious-countries-in-the-world.html>.
- Obeng, Samuel G. 1997. Language and politics: Indirectness in political discourse. *Discourse and Society* 8. 49–83.
- Obeng, Samuel G. 2011. Biblical intertextuality and metaphor in United States political text and talk: A discursive analysis of Martin Luther King Jr's "I've been to a mountain top" speech. *Issues in Political Discourse Analysis* 3. 56–78.
- Obeng, Samuel G. 2016. Biblical intertextuality in Ghanaian political text and talk. *Issues in Political Discourse Analysis* 5. 1–20.
- Obeng, Samuel G. 2020. Grammatical pragmatics: Language, power, and liberty in Ghanaian political discourse. *Discourse and Society* 31. 85–105. DOI: 10.1177/0957926519877693.
- Ojo, George Adekunle, Samuel Adebayo Omotunde & Samuel Oluwole Akintoye. 2022. Discourse strategies in Chief Olusegun Obasanjo's letter to President Goodluck Ebele Jonathan. *European Scientific Journal* 18. 50–64. DOI: 10.19044/esj.2022.v18n10p50.
- Orwenjo, Daniel Ochieng. 2009. Political grandstanding and the use of proverbs in African political discourse. *Discourse and Society* 20. 123–146.
- Ott, Brian & Cameron Walter. 2000. Intertextuality: Interpretive practice and textual strategy. *Critical Studies in Media Communication* 17. 429–446. DOI: 10.1080/15295030009388412.
- Owomoyela, Oyekan. 2005. *Yoruba proverbs*. Lincoln: University of Nebraska Press.
- Papaioannou, Kostadis J. & Jan Luiten Van Zanden. 2015. The dictator effect: How long years in office affect economic development. *Journal of Institutional Economics* 11. 111–139. DOI: 10.1017/S1744137414000356.
- Plett, Heinrich. 1991. Intertextualities. In Heinrich Plett (ed.), *Intertextuality*, 3–29. New York: Walter de Gruyter.
- Raj, Prayer Elmo. 2015. Text/texts: Interrogating Julia Kristeva's concept of intertextuality. *Research Journal of Humanities and Social Sciences* 11. 111–139.
- Unuabonah, Foluke & Eniola Boluwaduro. 2020. Conflict-motivated acts in the open letters of two former Nigerian presidents. *English Text Construction* 13. 158–177. DOI: 10.1075/etc.00039.unu.

Chapter 9

Names as communicative acts: A study of Yoruba names

Taiwo Ehineni

Harvard University

This paper discusses the nature of names from an ethnopragmatic framework, with the aim of explicating how names are formed, their various cultural contexts as well as the critical functions they play in specific ethnolinguistic ecologies. Drawing theoretical perspectives from Samuel Gyasi Obeng's work on African anthroponymy, data from the Yoruba context of naming are analyzed and discussed. It is argued that names are not just linguistic tags or labels, they have deep sociocultural undertones. They may show family situation, circumstances of birth, religious orientation, death situation, and profession. As Yoruba names reflect, names are communicative acts whose varied functions and meanings are informed by their contexts, situated within specific cultural frames. Furthermore, I opine that names are not just linguistic forms in a sense of structure, but crucially, they are communicative acts in the sense of meaning.

1 Introduction

The study of anthroponyms, specifically African anthroponyms, has been investigated by a diverse range of scholars, creating a comprehensive body of knowledge that traces the sociocultural influences, linguistic complexities, and functional roles of names in African societies. Key contributions include research by Agyekum (2006), Makondo (2009), Mmadike (2014), and Obeng (1997, 1998, 1999, 2001), among others. In this introduction, I review the contributions of these authors before turning to Yoruba naming in the remainder of this chapter.

Agyekum (2006) embarked on an in-depth examination of personal names within the Akan community of Ghana. His study offered a sociolinguistic and cultural anthropological perspective, exploring the typology of Akan names, such



as day names (names based on days of the week on which a child is born), circumstantial names (names based on parental experience, birth order, etc.), family names, and religious names, as well as their significance as markers of sociocultural identity. Agyekum's work elucidated the sociocultural implications and functional roles of names within the Akan community. Makondo's study (2009) paralleled Agyekum's approach, focusing on Shona anthroponyms – an exploration underscored by a functional perspective. His research shed light on the Shona naming system and the social variables that shape it, using a pragma-semantic decompositional approach. His research accentuated how naming practices could provide insight into the sociocultural contexts of African societies.

Taking a linguistic lens, Mmadike (2014) explored the linguistic processes that guide the formation of Àlà forenames given to male children among the Igbo ethnic group of Nigeria. His work detailed the simplification process that desententializes a sentence to generate a concise lexical form, using mechanisms like nominalization, vowel assimilation, and segment deletion. Mmadike's work contributed to the understanding of the linguistic complexities in Àlà names and the practical necessity for brevity that drives this process.

Additionally, Obeng (1997) explicates the linguistic formation of hypocoristic names (diminutive forms of names, including pet names) in Akan where he identifies morphological and phonological processes that occur in them. He argues that hypocoristization often involves morphological processes such as compounding and reduplication as well as (morpho)phonological processes such as deletion, vowel harmony, and tonal change. Thus, hypocoristic names, Obeng notes, offer a rich revelation of morphological status marking. Furthermore, Obeng underscores the different contexts in which the names are used, which could be among equals as well as in superior-to-subordinate or subordinate-to-superior interactive contexts. Obeng indicates that in a superior-to-subordinate context, hypocoristic names express affection, tenderness, playfulness, warmth, the idea of being loved or worth caring for. They may also denote the smallness of the referent. However, while hypocoristic names may indicate playfulness, oneness or solidarity among peers, they may also express disrespectfulness, unusual familiarity with the referent and unusual friendliness on the part of the speaker if used by a social subordinate in reference or in addressing a social superior. Thus, function is informed by context. The communicative contexts of use determine the functions the names perform and how discourse participants respond to these uses.

Crucially, Obeng's paper provides invaluable insights into the structure and functions of hypocoristic day-name formation. At the level of structure, Obeng examines morphological and morphophonological processes, while in terms of

function, he discusses the different sociolinguistic roles that these names play and the contextual factors that influence their use in Akan society. Obeng's linguistic analyses provide rich insights into the structure of Akan hypocoristic forms and demonstrate how various linguistic processes operate in other naming and social contexts.

In a more detailed linguistic analysis, Obeng (2001) provides a rich discussion of the structure of personal names in different African communities. Obeng not only identifies and categorizes different African personal names based on their structures and contexts, he explores and explicates the basic linguistic processes – both morphological and phonological – that these names utilize in their formation. For instance, he reveals that some African day-names are compounds formed through certain affixes. In Akan names, Obeng illustrates that the *kwa*-prefix is affixed to a root to form masculine day-names, while the formation of feminine day-names involve both *a*-prefix and *-wa* suffix, as in examples such as *Kwadwo* 'Monday-born male child', *Kwabena*, 'Tuesday-born male child', *Adwoa* 'Monday-born female child', and *Abenaa* 'Tuesday-born female child' (Obeng 2001: 10). Note that although *-wa* indicates feminine day names, the glide /w/ is subsequently deleted (2001: 11).

When contextualizing the above linguistic processes in the Yoruba linguistic landscape, we find comparable phenomena. For instance, the vowel harmony and tonal change processes cited by Obeng in Akan names, also occur in Yoruba names. In Yoruba names like *Gbẹ̀bẹ̀* [gbẹ̀bẹ̀] meaning 'take plea'. Both vowels are Retracted Tongue Root (RTR) vowels, reflecting harmony in the distribution of vowels within the name. Similarly, in the name *Tẹ̀mì* [tẹ̀mì] meaning 'mine', we find ATR (Advanced Tongue Root) vowels. Tonal change, another essential aspect of word formation patterns in Akan naming, is revealed in the formation process of Yoruba names as well. This phenomenon is observable in hypocoristic names such as *Ádéádè* derived from [ádé], meaning 'crown', where the high tone on the second syllable [dé] changes to low in the last syllable [dè]. Similarly, *Gbémisiplá* meaning 'lift me to wealth', may undergo tonal change, with the mid tone on the penultimate syllable [sī-...òlá] becoming a high tone [gbémisìlá]. These tonal alterations often arise due to the addition of affixes in forming names; i.e., these phonological changes are morphologically induced. Intriguingly, these processes often do not adhere to the regular language rules. For instance, the anticipated tonal patterns in names may be altered, where names being formed might adopt new tones, such as a high tone turning into a low tone. This insight, gleaned from Obeng's study, underlines the unique linguistic approach to the study of African names, suggesting that names may exhibit processes not typically found in the general language.

As noted by Obeng's numerous publications (as well as others previously mentioned), names depict a symbiotic relationship between language and culture. Working within this conceptual framework, this chapter identifies the naming contexts and the various factors within the Yoruba ethnic community that influence and/or motivate the formation of these anthroponyms. The Yoruba names that this study focuses on were collected through personal observation during participation in various naming ceremonies in South-West Nigeria. Over 100 names were collected, and their meanings and functions are identified based on further discussions with native speakers. In Section 2, I discuss the naming context among the Yoruba. Section 3 will explore the meanings of these names and the communicative acts they perform in detail. A conclusion is provided in Section 4.

2 The naming context of Yoruba

As noted by Ehineni (2019), the giving of names is an important socio-cultural facet of the Yoruba community; hence it is always accompanied by ceremonial activities. Naming is a symbolic event that is usually historically constructed, socially maintained, and based on shared assumptions and expectations of members of a particular community. It is a ritual that is based on historical traditions passed down from generation to generation and a communal festive occasion celebrated jointly by relatives, friends, neighbors, acquaintances, and well-wishers. In Yoruba society, naming is referred to as *isomólórúko*, which literally translates to 'giving a child a name'. Traditionally, the naming ceremony usually takes place on the seventh day after birth, if the child is a girl, but if the child is a boy, it occurs on the ninth day. However, in the case of twins, the seventh day is also the day of naming, if the twins are both females, but the naming ceremony is held on the eighth, if the children are male and female twins, while if both twins are male, then the naming takes place on the ninth day (Ilésanmí 1987).

The difference in days of naming is based on the traditional Yoruba belief that females have seven ribs while males have nine (Akinnaso 1980). This is based on the Yoruba belief that males are physically stronger than women. Furthermore, several studies on naming in Yoruba culture have also identified the use of symbolic elements, such as *omi* 'water', *epo* 'palm oil', *orógbó* 'bitter kola', *obi* 'kola nuts', *ataare* 'alligator pepper', *àádùn* 'grounded roasted corn made into paste with palm oil', *iyò* 'salt', *ìrèké* 'sugar cane', *otí* 'liquor', and so on (Adeoye 1979, Daramola & Jeje 1967, Ilésanmí 1987, Ladele et al. 1986, Ogunbowale 1979).

These "symbolic elements" embody greater cultural association beyond their basic denotations. For example, *omi* 'water' is essential for life and might be used

symbolically to wish someone a life full of essential blessings or fluidity. *Epo* ‘palm oil’ is a staple in many African diets and may symbolize wealth, nourishment, or the richness of life. *Obi* ‘kola nuts’ and *orógbó* ‘bitter kola’ are traditionally used in Yoruba ceremonies and could symbolize hospitality, respect, or community bonds. *Ataare* ‘alligator pepper’ is often associated with spiritual rituals and might symbolize protection or spiritual strength. In this case, the “symbolic” usage of these terms in naming can serve to bestow upon the named individual the positive traits, blessings, or protections that these cultural items represent. Thus, these names function not just as labels, but as a form of prayer, aspiration, or spiritual protection for the individual.

It should be noted that all these traditional elements are important to Yoruba people, and as Akinyemi (2005: 116) points out, despite longstanding contact with Europeans and the adoption of the Western calendar, the naming ceremony takes place on the morning of the eighth day after the birth of a child, with a party or social gathering following later in the afternoon. That is, unlike the customary practice in American and European societies, where parents are expected to provide a name for their child on the day of birth, the Yoruba people must not announce a child’s name until a week after their birth.

Tradition allows parents, grandparents, great grandparents, relations, and family friends to give names to a newborn during the naming ceremony (Akinyemi 2005: 116). Hence, a Yoruba child may have as many as five or six names. Of course, it is ultimately the biological parents who decide on the name that a child will eventually use (Akinyemi 2005: 116). It should be noted, however, that many factors come into play when making this decision, as discussed later in this paper.

3 Communicative acts in Yoruba names

3.1 Naming contexts in the Yoruba tradition

The Yoruba have a popular maxim which says *ilé làá wò kató sọ ọmọlórúko*, meaning ‘the condition of the home determines a child’s name’. This maxim emphasizes the indispensability of the social or circumstantial context when naming a child (Ehineni 2019). Consequently, names are informed by sociocultural considerations. Also, Obeng (1998: 163) observed that names may “reflect their users’ geographical environment where a child or its parents inhabit, as well as their fears, religious beliefs and philosophy of life and death. Children’s names may even provide insights into important cultural or socio-political events at the time of their birth”. Hence, among the Yoruba, names may communicate significant

information, such as parental experience, birth circumstance, religious affiliation, professional history, or proximity to the death of another member of the immediate or extended family, among others. This communicative function is explored in the subsections below.

3.2 Parental experiences in the family

The family situation refers to concurrent experiences or events in the life of the family when the child was born. These experiences also include those of the parents. For instance, if a child was born after a major breakthrough in a family or during a successful achievement by the parents, the child could be given the following names:

- (1) a. *Ayòdipúpò* ‘joy has become much’
b. *Ọlámilékan* ‘my wealth has been added to’
c. *Ayòdipúpò* ‘wealth has become much’
d. *Ayòmíkún* ‘my joy is now full’
e. *Ọládipúpò* ‘wealth has become much’
f. *Iremidé* ‘my goodness has come’

These names are given to commemorate good moments in a family’s life. Parents usually give these names to express emotions such as joy and happiness. Also, these names are given to show that the child was born at a time when things were going well in a family. Thus, a name is given to mark progress or positive developments. Names may also communicate parents’ tough times or misfortunes.

- (2) a. *Fijàbí* ‘born while in conflict’
b. *Ayésòro* ‘life is difficult’
c. *Ayéjùsùnlé* ‘life is not worth relying on’
d. *Ajéníyà* ‘success has suffering’

These names are motivated by hard times and problems endured by parents during the time of the birth of a child. For instance, the name *Fijàbí* ‘born while in conflict’, is a name given to a child born in times of war or during rivalry between the parents or community and other people or communities. As Akinyemi (2005) observes, names are a public means through which Yoruba people document their histories; the names given in this section document parents’ experiences.

3.3 Circumstance of birth

The Yoruba believe that the way a child is born may say a lot about their destiny (Ehineni 2019). Names given based on the birth circumstance describe the physical condition of a child at delivery, such as their posture or position during the birthing process. A child born with an unusual posture at birth, such as a breech presentation, may be said to have *orúkọ àmútorunwá* ‘a name brought from heaven’. Hence, a name is given to indicate this uniqueness. Names may also be based on the circumstances surrounding the birth such as the place or time period of birth, such as during festivals or sacred days. Examples of such names are given as follows:

- (3) a. *Ìgè* ‘born feet first’
- b. *Àjàyí* ‘born face down’
- c. *Òkẹ́* ‘born with amniotic sac’
- d. *Òjó* ‘male-child born with umbilical cord twined around neck’
- e. *Àiná* ‘female-child born with umbilical cord twined around neck’

Another aspect of circumstantial names is the period of birth. These names are given to indicate the time or moment when a child is born. These names inform about traditional festivals, religious celebrations or other social events (coronation, war, etc.) as provided below.

- (4) a. *Abódúndé* ‘come with the new year’
- b. *Abíoyè* ‘born during coronation’
- c. *Abiogun* ‘born during war’

The name *Abíódún* may be used when a child is born during any of the traditional festivals (*Egúngún* ‘masquerade’ festival, *Iṣu túntún* ‘new yam’ festival, *Iléyá* ‘homecoming’ festival, etc). Names such as *Abiogun*, etc. are given to denote that a child was born during fierce moments of war. It should be noted that children given such “war names” are perceived as potentially strong and vigorous, and they are therefore able to confront and deal with any tough challenges they will face later in life. According to Blum (1997: 364), suggests that names are believed to influence a child’s destiny, correlating with the time and place of their birth. This view also applies to the Yoruba context where it is believed that by designating the period of birth, the names may influence the personality or destiny of the child.

3.4 Order of children in the family

There are names in the Yoruba tradition that reflect the order in which children are born into a family. For instance, the first child in a family may be called *Àlàbí* ‘first to be born’. However, a common situation in which names are positionally given to children based on the order of birth among the Yoruba is in the case of twins. Children who are born twins and those who follow or are born after them are given names that show the order in which they follow the twins.

- (5) a. *Táyewò* ‘have the first taste of the world’
- b. *Kẹhìndé* ‘one who comes later’
- c. *Ìdòwú* ‘one that comes after twins’
- d. *Àlabá* ‘one that survives for us to meet’
- e. *Ìdògbé* ‘one born third after twins’
- f. *Ìdòkún* ‘one born fourth after twins’

The first of the twins is called *Táyewò* (also known as *Táíwò*) while *Kẹhìndé* is given to the second twin. The next child born after the twins is called *Ìdòwú*, meaning ‘one that comes after twins’. The child born after is *Ìdòwú* called *Àlabá*, while the child born after *Àlabá* is called *Ìdògbé*. The child born after *Ìdògbé* is called *Ìdòkún*. These names are positionally determined and reflect the order of birth of children. It is also important to note that for twins, especially concerning the issue of birth order, while *Táyewò* is born before *Kẹhìndé*, *Kẹhìndé* is considered *Táyewò*’s senior. This is because the Yoruba believe that *Táyewò* [tọ-ayé-wò] meaning ‘taste the world to see’ is a forerunner for *Kẹhìndé* ‘last to come’. *Táyewò* comes first to taste the world to see if it is a place to live and after tasting the world to see how it is, *Táyewò* informs *Kẹhìndé* with a good report about the world. Hence, *Kẹhìndé* comes after *Táyewò*. Thus, *Táyewò* is a messenger, who visited the world on errands for *Kẹhìndé*. The Yoruba believe it is the older that sends the younger on errands. This belief makes *Táyewò* the younger (although the first born of the twins), while *Kẹhìndé* (although the last of the twins) is considered the elder. Thus, birth order names also foreground Yoruba psychology and philosophy.

3.5 Gender

Yoruba names may also communicate the sex of the child – either male or female. For instance, if a woman witnessed several losses of children at childbirth, a surviving male child born after that experience is named *Àjàní* ‘fight to have’,

while a surviving female child is called *Àbẹ̀bí* ‘child who was begged to be born’. It should be noted that a male child may not be given *Àbẹ̀bí*, neither can a female child bear *Àjàní* – it is culturally inappropriate. More examples of these names are as follows, with masculine names in (6) and feminine names in (7):

- (6) a. *Bánkólé* ‘build a house for me’
- b. *Akin* ‘strong one’
- c. *Àjàní* ‘fight to have’
- d. *Àkànní* ‘meet to have’
- e. *Wálé* ‘come home’
- f. *Gbádé* ‘take crown’
- (7) a. *Títílàyò* ‘forever is joy’
- b. *Àdùnní* ‘sweet to have’
- c. *Àríké* ‘see to pamper’
- d. *Àjíké* ‘wake up to pamper’
- e. *Wùnmí* ‘desire me’
- f. *Yémisí* ‘honor me’

What is important to note in describing the nature of gender-oriented names in Yoruba is that feminine names often reflect ideas such as sweetness, pampering, desiring, etc., while masculine names may be characterized with ideas involving action or responsibility. For instance, *Bánkólé* ‘build a house for me’ in Yoruba, is a name accompanied with a social responsibility given to a male child at birth to build a house for his parents.

3.6 Religious affiliation

A name may show the religious orientation of a person’s family. This connection is made, traditionally, through the reference to deities recognized in each clan. There are different deities that are revered in the Yoruba traditional society and names may be given to reflect beliefs in these deities. A description of these deities is given in (8) from Ehineni (2019: 78).

- (8) a. *Ogún* ‘god of iron’
- b. *Ifá* ‘god of wisdom’
- c. *Sàngó* ‘god of lightning and thunder’
- d. *Èṣù* ‘god of roads and schemes’

- e. *Òsanyín* ‘god of the forest’
- f. *Ọya* ‘goddess of fertility’
- g. *Yemoja* ‘goddess of the sea’
- h. *Ọsún* ‘goddess of beauty and love’
- i. *Ajé* ‘god of wealth’

As Ehineni (2019) explained, these deities are believed to be supernatural beings with extraordinary powers. They are therefore worshipped by people who desire their blessings. Each deity has a shrine with priests or a priestess that people meet for spiritual consultations. Also, every clan or lineage in the Yoruba community has a family deity that is worshipped and venerated via the ancestors. Thus, when a child is born into such a family, a name is given to reflect the deity that is worshipped. Hence, names may express people’s beliefs in these deities.

- (9)
- a. *Ògúnnńwọ* ‘Ògún has respect’
 - b. *Ògúnrótimí* ‘Ògún stands with me’
 - c. *Fábùnmi* ‘Ifá gives me’
 - d. *Fákọyà* ‘Ifá rejects suffering’
 - e. *Èṣùsànyà* ‘Èṣù repaid my suffering’
 - f. *Èṣùgbémí* ‘Èṣù supports me’
 - g. *Ọṣuntókun* ‘Ọṣun is up to the river’
 - h. *Ọṣundáre* ‘Ọṣun justifies’
 - i. *Ẓàngódélé* ‘Ẓàngó arrived home’
 - j. *Ẓàngógbà mí* ‘Ẓàngó saves me’
 - k. *Ọyadìran* ‘Ọya becomes a vision’
 - l. *Ọyadàrà* ‘Ọya performs wonders’

Essentially, names are “pointers to their users” religious beliefs and practices (Obeng 2001: 144), and through names “Africans are able to reveal how the natural and the supernatural function together to construct an individual’s fate and destiny” (Obeng 2001: 144). This idea expressed by Obeng is reflected in the meanings of the names provided above.

3.7 Profession

Names may also showcase professions ancestrally associated with a family. Akin-yemi (2005: 118) explains that Yoruba society is characterized by all kinds of professions, and even though these professions vary according to gender, each has

a prefix that can be added to names to reflect the professional affiliation of the name bearer's family. For instance, as Akinyemi illustrates, the prefix *Akin* in *Akinjidé* 'the strong one has arrived' may only be used in naming male children born into a family of warriors (Akinyemi 2005: 118). It should be noted that what is meant by the designation 'warriors' is that there is a specialized group of people who are trained to fight for a community against external forces. Among the Yoruba, there used to be inter-ethnic wars where different clans fought against one another to show superiority and assert domination over others. Historically, the Yoruba, being a significant ethnic group, maintained a cadre of highly trained warriors proficient in various weapons, including spears, arrows, traditional firearms, and cutlasses. This warrior class held a revered and respected position within Yoruba society, ensuring the protection of various sub-communities. Consequently, children born into these families received names that signified their heritage as descendants of warriors (Ehineni 2019).

It is a spiritualized belief of people in a given profession that their vocation makes them successful in all areas of their endeavors - including childbirth. Children born into a family of hunters may have the prefix *Qdẹ* 'hunter' in their names. Similarly, in a family of drummers, the word *Àyàn* 'drum', is often prefixed to their names. Additionally, a name may show the profession of art and sculpture. For instance, *Ọ̀nà mú yí wá*, 'Artwork has brought this child' reflects a belief that artistic talent played a role in making the birth of the child possible, while *Ọ̀nà yẹ mí*, 'Artwork befits me', demonstrates a family's pride in their art profession.

3.8 Death situation

The Yoruba believe that if a mother suffers repeated infant mortality, then the reason is that the child's mother in the underworld does not want the child to stay in the world of the living. Such a child is regarded as an *àbí kú* 'born-to-die' (Ehineni 2019). As Akinyemi (2005) notes, the Yoruba believe that the giving of such death situation names can prevent the untimely death of born children. This practice has also been observed in other African communities that by "giving children death-prevention names, the children's biological parents hope that even if the members of the spirit world recognize the children eventually, they will be so angry (because of the ugly nature of the death-prevention name) that they will not call the child to the spirit world. Specifically, the spiritual parents will be 'incapacitated' by the death-prevention names and this will enable the child to live" (Obeng 1998: 166). In many cases, a name may be given as an address to death as follows:

- (10) a. *Kúforìjì* ‘death, forgive this one’
b. *Kúfisilẹ̀* ‘death, leave this one alone’
c. *Kújénỳò* ‘death, allow me to rejoice’
d. *Kúmáyòmí* ‘death, don’t make jest of me’
e. *Kúmápàyí* ‘death, don’t kill this one’

In some cases, names may be presented in the form of a command to the child to stay, especially when the parents are deeply frustrated after losing many children. These command-like names are given as follows:

- (11) a. *Málòmó* ‘don’t go again’
b. *Máku* ‘don’t die’
c. *Dúrójayé* ‘wait to enjoy life’
d. *Dúrósimí* ‘wait to bury me’
e. *Bánjókòò* ‘sit down or stay with me’
f. *Bámitálẹ̀* ‘stay with me till the night’

Furthermore, these death-situation names may also convey nagging or nastiness, which reflects the observation about death-prevention names that “they [death-prevention names] may be nasty names of migrant labourers, dangerous animals, nasty objects, filthy places and expressions of emotions” (Agyekum 2006: 221; see also Obeng 2001, 1998). Examples of this group of death-situation names are provided below.

- (12) a. *Akísàátán* ‘no more rags’
b. *Ìgbẹ̀kọ̀yí* ‘the bush rejects this’
c. *Emèrè* ‘the bewitched’
d. *Kílànkó* ‘what are we collecting’

The name *Akísàátán* ‘no more rags’ is a nagging name to inform the *àbíku* child that the parents do not have clothing material in which to bury them, if they die. Also, by using the word ‘rags’, the child is being humiliated as someone who deserves only rags, not good clothes. *Ìgbẹ̀kọ̀yí* ‘even the bush rejects this one’ is another nasty name to insult the *àbíku* child that they would be rejected in case they die again.

3.9 Praise or eulogy

Personal names may be given to convey certain attributes peculiar to a specific family. An aspect of personal names where the function of praise is largely manifest is totemic names. Totemic names may be referred to as *oríkì orílẹ̀* (Oduyoye 1972). The term *oríkì orílẹ̀* literally means ‘praise belonging to family’ (Ehineni 2019). These names often derive from totems such as *òkín* ‘peacock’, *erin* ‘elephant’, *òpó* ‘staff’, and *oyin* ‘honey’, which are used to categorize family character. For instance, in the family of kings, apart from a kingship personal name, a child may also be given a totemic personal name based on the totem associated with dominion in the Yoruba community. In other words, such a child may be referred to as *Adeníyí Erinfolámí*, meaning ‘crown has honor’ and ‘the elephant that breathes with wealth’, respectively (see Ehineni 2019 for more discussion). Basically, these names are given to children to eulogize and valorize certain qualities of the family into which such children are born.

3.10 Commentary on human nature

Names may express certain ideals or morality. They may be referred to as proverbial names since they express cultural truisms and inform about human nature in general (Obeng 2001). Examples of Yoruba names with such a communicative goal are *Olówóòkéré*, ‘the wealthy one is not a small person’, *Ọlàoşebikan* ‘wealth alone does not solve a problem’, or *Olówópòròkú* ‘the wealthy one destroys poverty’. These names may also ask rhetorical questions to call people to logical or critical thinking. Among such names are: *Tanimòla* ‘who knows tomorrow?’, *Tántólòun* ‘who’s like the supreme God?’, *Tanimòpòwò* ‘who knows how to cater for them?’ Furthermore, these names may also be clipped as *Èhineni* ‘one’s back’ (from *èhineniníbanikalé* ‘one’s back stands with one till the end’, *Bàòkú* ‘as long as we are not dead’ (from *bàòkúiseòtán* ‘as long as we are not dead work does not end’). It is also important to note that the message in these names may be indirectly communicated – for instance, in *Tanimòla* ‘who knows tomorrow?’ a message that no one knows everything is indirectly conveyed; see Obeng (1994, 2001: 49–68) for a more detailed discussion of indirectness. More importantly, Yoruba proverbial names demonstrate that names are deeply rooted in the socio-cultural context of the Yoruba people, and it is difficult to understand the names without a thorough knowledge of the Yoruba society, beliefs, philosophy, and psychology.

4 Conclusion

This study underscores the profound significance of names, which are formed in response to pivotal cultural contexts. Our examination of personal names reveals their multifunctional roles within society, bolstering their communicative relevance. Names are potent tools for expressing individuals' identities, social statuses, experiences, and emotions. Furthermore, they can serve an educational purpose, imparting instructions, or lessons to community members, thereby demonstrating their didactic value. Such an investigation into naming practices underscores the intimate interweaving of language and culture, reaffirming that language is profoundly rooted in a given ethnic community's cultural beliefs, traditions, and practices. They echo and shape one another in an inseparable relationship.

References

- Adeoye, C. L. 1979. *Àṣà àti iṣe Yorùbá [The culture and practices of the Yorubas]*. Ibadan: University Press Ltd./Oxford University Press.
- Agyekum, Kofi. 2006. The sociolinguistics of Akan personal names. *Nordic Journal of African Studies* 5. 206–235. DOI: 10.53228/njas.v15i2.24.
- Akinnaso, Niyi. 1980. The sociolinguistic basis of Yoruba personal names. *Anthropological Linguistics* 22. 275–304.
- Akinyemi, Akintunde. 2005. Integrating culture and second language teaching through Yorùbá personal names. *The Modern Language Journal* 89. 115–126. DOI: 10.1111/j.0026-7902.2005.00268.x.
- Blum, Susan. 1997. Naming practices and the power of words in China. *Language and Society* 26. 357–379.
- Daramola, Olu & Daramola Jeje. 1967. *Àwọn àṣà ti òrìṣà Ilẹ̀ Yorùbá [The cultures and deities in Yorubaland]*. Ibadan: Onibon-Oje Press.
- Ehineni, Taiwo. 2019. The ethnopragmatics of Yoruba personal names: Language in the context of culture. *Studies in African Languages and Cultures* 53. 69–90. DOI: 10.32690/SALC53.4.
- Ilésanmí, Thomas. 1987. Naming ceremony among the Yorùbá. *ORITA: Ibadan Journal of Religious Studies* 14. 108–119.
- Ladele, T. A., O. Mustapha & I. A. Aworinde. 1986. *Àkójọpọ̀ iwádúú ijínlẹ̀ àṣà Yorùbá [Collections of thorough research on Yoruba culture]*. Ibadan: Macmillan.
- Makondo, Livingstone. 2009. *An investigation into language use for specific purposes with special reference to the anthroponyms of the Shona society*. Pretoria, University of South Africa. (Doctoral dissertation).

- Mmadike, Benjamin Ifeanyi. 2014. Anthropolinguistic study of Àlà names in Igbo. *Journal of Humanities and Social Science* 19. 11–19. DOI: 10.9790/0837-191061119.
- Obeng, Samuel G. 1994. Verbal indirection in Akan informal discourse. *Journal of Pragmatics* 21. 1–18. DOI: 10.1016/0378-21669490046-9.
- Obeng, Samuel G. 1997. Language and politics: Indirectness in political discourse. *Discourse and Society* 8. 49–83.
- Obeng, Samuel G. 1998. Akan death-prevention names: A pragmatic and structural analysis. *Names* 46. 163–187. DOI: 10.1179/nam.1998.46.3.163.
- Obeng, Samuel G. 1999. Apologies in Akan discourse. *Journal of Pragmatics* 31. 709–734. DOI: 10.1016/S0378-2166(98)00089-7.
- Obeng, Samuel G. 2001. *African anthroponymy: An ethnopragmatic and morphophonological study of names in Akan and some African societies*. Munich: LINCOM Europa.
- Oduyoye, Modupe. 1972. *Yoruba names*. Ibadan: Daystar Press.
- Ogunbowale, P. O. 1979. *Àṣà Ìbílẹ̀ Yorùbá [The Yoruba traditional culture]*. Ibadan: University Press Limited.

Chapter 10

Linguistic “oddities” explained

Paul Newman

Indiana University

This paper investigates irregular phenomena or “oddities” in Hausa, Kanakuru, and Tera, three languages belonging to the Chadic family. These phenomena appear odd in that they seem to be at variance with the patterns and normal grammatical formation rules in these languages. The Hausa anomalies are the plurals of the words *màatáa* ‘woman’ and *’yáa* ‘daughter, small’ (*máatáa* ‘women’ and *’yáa* ‘daughters’, respectively). The Kanakuru anomaly, which also involves plurality, is the strange pair *buut* ‘he-goat’, plural *bukurin* ‘he-goats’. The anomaly in Tera relates to the form of the Linker *-t(ə)*, which normally suffixes to the stem, e.g. *luku* ‘garment’, *luk-tə-ku* ‘garments’, but in rare cases replaces the final consonant of the noun to which it is attached, e.g., *sədi* ‘snake’, *sə-tə-ku* ‘snakes’. It is shown that with a fuller and richer understanding of these languages, one can explain all of these supposed oddities as manifestations of regular morphological and phonological processes, whether viewed as deep synchronic morphophonology or as historical vestiges.

1 Introduction

The essence of descriptive fieldwork and analysis is not only collecting raw data but at the same time identifying patterns and regularities that make up the structure of a language. Of course, exceptions, irregularities, and oddities – whatever one likes to call them – invariably emerge, and in the early stages of one’s work, one has to put these aside to avoid going off on a tangent and being distracted from one’s (hopefully coherent) research plan. Nevertheless, abnormal examples should not be neglected forever, as often happens. With well-described languages such as Hausa, the oddities become so familiar and commonplace that one forgets that they are abnormal, and one fails to see them as examples needing attention.



Paul Newman. 2024. Linguistic “oddities” explained. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 201–211. Berlin: Language Science Press. DOI: [10.5281/zenodo.11091837](https://doi.org/10.5281/zenodo.11091837)

At some point, as researchers get deeper into a language and acquire a greater understanding of it, they should relish the exciting challenge of trying to figure out why these oddities exist, where they fit in, and what they add to our understanding of the language being studied.

A fundamental question to address is whether a seeming oddity is truly an unsystematic orphan that tells us nothing about the structure of the language, whether it is an unwelcome counterexample that undermines or requires reformulation of some rules or generalities, or whether, in fact, the odd surface form can be shown to derive by application of established rules and thus reinforce our confidence in their validity. In this latter case, the seeming exception not only demonstrates the efficacy of a rule or rules but can lead to further discovery and understanding of related phenomena. In this modest contribution, I discuss examples drawn from three different Chadic languages – Hausa (iso 639-3: hau), Kanakuru (iso 639-3: kna), and Tera (iso 639-3: ttr) – showing how seemingly odd phenomena result from and fit naturally into the structure and mechanisms of the individual languages.

2 Hausa plurals

Hausa is well known for its incredible complexity in the area of noun pluralization. It has numerous and varied ways of forming noun plurals (some 40 different formatives being evidenced) variously involving suffixation, suffixal reduplication, infixation, internal reduplication, gemination, tonal alternation, and combinations thereof (Newman 2000). The processes typically involve dropping the final vowel and tones of the singular, and sometimes the language's *-iyaa* and *-uwaa* feminine endings as well, thereby leaving a toneless, consonant-final base for the plural to be built upon. Several examples are given in Table 1.¹

In two special cases, there are plurals that stand out as strange even by Hausa standards. One is *màatáa* 'woman, wife', pl. *máatáa*, the forms being segmentally identical but tonally divergent. The other is *'yáa* 'daughter, small female', pl. *'yáa*, the forms being both segmentally and tonally identical. The unanswered question – often not even asked – is why should these peculiar plural forms exist given the multiplicity of regular plural formatives available in the language? As is often the case, once one looks at aberrations carefully and asks oneself what could account for their weird shapes, an explanation emerges from the abyss.

¹In the transcription system employed here, long vowels are indicated by double letters. Tone is marked only on the first of the two vowels in these instances, with the understanding that the tone extends over the entire syllable. <'y> indicates a glottalized palatal semivowel.

Table 1: Examples of plural formatives

Singular	Gloss	Plural	Base
ràagóo	‘ram’	ràagúnàa	raag-
gùdúmàa	‘mallet’	gùdúmóomii	gudum-
gùlbii	‘stream’	gùlàabée	gulb-
túdùu	‘hill’	tùddái	tud-
sàlkáa	‘hide water bottle’	sálèekánii	salk-
jìmináa	‘ostrich’	jìminúu	jimin-
tsúmángiyáa	‘cane stick’	tsùmàngúu	tsumang-
gàbàarúwáa	‘acacia tree’	gàbàarii	gabaar-

The *màatáa/máatáa* pair is aberrant in that although Hausa does sometimes employ tone change for grammatical purposes, the change normally takes place at the end of the word and is usually accompanied by some other change as well, e.g. *ídò* ‘eye’, but *ídó* ‘in the eye’, and *bàakú* ‘mouth’, but *bákà* ‘in/on the mouth’. The pair is also strange since we expect pluralization to involve some segmental addition to, or modification in, the word, whether a fully specified suffix, suffixal partial reduplication, or at least replacement of the final vowel.

The key to understanding the *màatáa/máatáa* exception lies in the realization that the phonetically identical *aa*’s at the end of the words are morphologically not the same. There are two different *aa*’s! The *aa* at the end of the singular is an integral part of the lexical representation: it is simply the final vowel of the word. It is not preserved in the plural, as it appears, but rather is dropped in creating a toneless, final-vowel-less base in accordance with the general pattern, i.e., *màatáa*, base *maat-*. The *-aa* in the plural form *máatáa* is instead a plural suffix that is found in other basic words such as *míjii* (< *mázii) ‘man, husband’ (base *maz-*), pl. *mázáa*, *kúusùu* ‘rat’ (base *kuus-*), pl. *kúusáa*, and [WH]² *kàrèè* ‘cornstalk’ (base *kar-*), pl. *kàráa*, with the last of these having been reinterpreted in Standard Hausa as a singular with the regular reduplicative plural *kàràarée*. As seen in these examples, this plural suffix has an associated H(igh) tone melody that extends leftwards across the entire plural form. The reason why the plural *máatáa* has all H tone is not because the L(ow) tone of the *àa* in the first syllable

²The term “Standard Hausa” used here refers to the variety of Hausa found in the greater Kano area. This is the variant typically used in dictionaries (e.g., Newman & Ma Newman 2020), newspapers, and other media. WH (= (North)-Western Hausa) is an inexact term for the Hausa dialects spoken in Sokoto and elsewhere in that general geographical region.

was raised to H in some ad hoc fashion but because it had added what I refer to as a “tone-integrating” suffix (Newman 1986), namely a suffix with an associated tone melody that spreads from right to left and overrides the underlying lexical tones. In sum, the *màatáa/máatáa* example is a seeming aberration, but, in fact, it turns out to be an ordinary, perfectly regular singular/plural pair.

Viewed historically, the story is even more interesting. From a functional point of view, the vowel suffix *-aa* would seem to be a weak, inadequately distinct plural marker as compared, for example, to other overtly well-marked plural suffixes such as *-unaa* (e.g., *dáakúnàa* ‘rooms’), *-annii* (e.g., *wàtánníi* ‘months’), or *-anii* (e.g., *fàrèetáníi* ‘fingernails’). The bare vowel *-aa* as a plural marker is particularly poor because Hausa has innumerable *aa*-final singular nouns with all H tone, both masculine and feminine, as seen in the examples in Table 2. A final *-aa* suffix is perhaps better than a simple tone change, which is what we originally thought was the plural formative, but not by much.

Table 2: Examples *aa*-final singular nouns

Singular	Gloss	Plural
súunáa <i>m.</i>	‘name’	súnàayée
ràanáa <i>f.</i>	‘sun, day’	ràanàikúu
bísáa <i>f.</i>	‘pack animal’	bísàashée
bóokáa <i>m.</i>	‘herbalist’	bóokàayée
ḡúrmáa <i>f.</i>	‘rat trap’	ḡúràmée
kwálláa <i>f.</i>	‘large basin’	kwállàayée
gúzúmáa <i>f.</i>	‘old cow’	gúzàamée
túkúrwáa <i>f.</i>	‘bamboo pole’	túkúrwóoyii

As it turns out, there is a simple historical explanation here involving a natural phonological change that had significant morphological consequences. The original suffix was not **-aa*, as appears synchronically, but **-an*, with a final /n/, thereby giving singular/plural pairs such as *màatáa/*máatán*. The loss of the /n/ was due to an early historical change in Hausa, discovered by Schuh (1976), whereby **N > Ø / __ #*, i.e., all word-final nasal consonants, both **n* and **m*, were deleted. This regular and seemingly exceptionless sound change is well documented and well established. What we have failed to see until now is its relevance to the analysis of *aa*-final plurals of the *màatáa/máatáa*, *míjii/mázáa* type.

The other Hausa oddity to be discussed, *’yáa* ‘daughter, small (fem.)’, pl. *’yáa*, is aberrant in that the singular and the plural are identical in form.³ Although the two *’yáa* words are phonologically identical in citation form, the grammatical difference between them shows up on the surface by means of gender/number agreement rules and their form with a suffixal genitive linker attached, i.e., *’yár* vs. *’yán*,⁴ e.g., *’yá-r wúkáa tá ázùrfáa* ‘a small silver dagger’ (lit. ‘small-of (fem.) knife of (fem.) silver’), cf. *’yá-n wúkàakée ná ázùrfáa* ‘small silver daggers’ (lit. ‘small-of (pl.) knives of (pl.) silver’).

The simple and surprising explanation for the unexpected phonological identity of these singular and plural forms is that this pair actually manifests the same processes described in the *màatáa/máatáa* pair, although one cannot see it when one only looks at current-day Standard Hausa. The explanation is hidden synchronically because of a lexically restricted historical sound change that applied in Standard Hausa, but not in northwestern [WH] dialects. The historically original form of the singular word for ‘daughter, small’ was *ḍíyáa*, with L-H tone, a form still found in WH. As with other basic nouns, including *màatáa/máatáa* ‘woman, wife’ and *míjii/mázáa* ‘man, husband’, it formed its plural by means of the *-aa* suffix with an associated H tone melody. The result was, thereby, *ḍíyáa* (which, we now know was historically derived from **ḍíyán*), a form that was tonally distinct from the singular, its plural being H-H whereas the singular was L-H.

The historical change at play in this case, a seemingly ad hoc phonological change originally limited to one lexeme(!), involves the fusion of the CVC sequence **ḍiy* into a single palatalized stop **ḍy*, which subsequently was altered further into the glottalized palatal semivowel */’y/*, with this new */’y/* being a lexically restricted but high frequency phoneme in the language. Note that when the initial **ḍiy* of the disyllabic noun **ḍiyaa* changed into **ḍy* and thence */’y/*, what in origin was a disyllabic noun became monosyllabic. The tone of the resulting monosyllabic plural form *’yáa* remained H, i.e., **ḍíyáa* H-H > *’yáa* H. The

³When functioning as a noun with the literal meaning ‘child,’ rather than as a diminutive or compound formative, the plural normally takes the reduplicative shape *’yáa’yáa* rather than *’yáa*. This reduplicated form represents a secondary development, motivated by the need to avoid the identity of the feminine singular and plural forms. For our discussion, we shall focus on the original non-reduplicated variant.

⁴The feminine linked form *’yár* along with its masculine counterpart *ḍán*, literally ‘son of’, are commonly used in compound formation, both sharing *’yán* as their plural: e.g., *’yár-hàrtùm* ‘plain, long-sleeve caftan’, pl. *’yán-hàrtùm* (< *hàrtùm* ‘Khartoum’), *’yár-wàasáa/ḍán-wàasáa* ‘actress/actor’, pl. *’yán-wàasáa* (< *wàasáa* ‘playing’), *’yár-kásáa/ḍán-kásáa* ‘citizen (fem./masc.)’, pl. *’yán-kásáa* (< *kásáa* ‘land, country’), and *ḍán-kúnné* ‘earring’, pl. *’yán-kúnné* (< *kúnné* ‘in/on the ear’). A study of this rich formation goes beyond the scope of this paper.

underlying tones of the singular, on the other hand, underwent an adjustment. Hausa does not have rising tone in its tonal inventory, and so when presented with LH on a single syllable, as sometimes appears in intermediate structure, the tone simplifies to H. This can be seen in such examples as *dòomín* ‘for (the sake of)’, cf. the apocopated form *dón*, and *nàawá* ‘mine’, with the WH dialectal variant *náu* (< /náw/). In Standard Hausa, the originally L-H singular noun **ḍiyáa* – which before monophthongization was tonally distinct from the plural – became H via the sequence **ḍiyáa* > **ḍ̣y`áa* > *y`áa* > *yáa*, ultimately ending up being phonetically identical to the singular.

In short, although not evident at first glance, the explanation for the odd *y`áa* sg./*yáa* pl. pair turns out to be simple and based on the application of morphological and historical phonological rules, all of which are straightforward and perfectly natural.

3 A Kanakuru plural

Kanakuru, as described in Newman (1974), is a West Chadic language, related somewhat distantly to Hausa. Like Hausa, it typically forms noun plurals by use of various suffixes, some reminiscent of, albeit not identical to, plural formatives in Hausa, e.g., *yim* ‘name’, pl. *yimngin*; *shal* ‘monkey’, pl. *shalin*; and *maawo* ‘stranger’, pl. *maawuyan*.⁵ By contrast, the plural for the word *but* ‘he-goat’ is *bukurin*. Not only does this plural form look strange to me – the infixal /k/ is particularly curious – but my native speaker assistant was also puzzled by it, saying: “Although I told you yesterday that the plural was *bukurin*, it is not what I say. That is what my grandfather told me, so that is what I told you, but I personally say *buutingin*”. So, how do we explain this odd *bukurin* plural that doesn’t appear to make any sense?

The first step in unraveling the mystery of the relationship between *but* and *bukurin* is the correction of a transcription error. After all, facts count, and little mistakes can throw us off. The singular, which I had transcribed as *but* when first elicited, is hardly a word that would seem to present great phonological difficulty for a half-competent field worker. But, I goofed! The correct representation is *buut* with a long vowel. Hausa, the Chadic language I knew best and which was serving as the contact language between my Kanakuru fieldwork assistant and myself, has long vowels in open syllables, but it does not allow them in closed syllables. A combination of Hausa influence, plus the fact that vowel

⁵Tone is omitted in the Kanakuru examples since the matters at issue are concerned solely with consonant mutation and alternations.

length in closed syllables in Kanakuru is not terribly common, plus the fact that my close attention in transcription at that stage tended to be on getting tones right, I simply missed the long /uu/ in *buut*.

This minor error is a critical key in understanding what is going on here because, as later discovered, although Kanakuru does have long vowels in closed syllables, they almost always derive from CVCVC words where the middle C has been lost. Assuming *buut* to have come from a $C_1VC_2VC_3$ word, and paying attention to the shape of the corresponding plural form, it follows that the lost C_2 must have been /k/. Given the new pairing **bukut/bukurin* (significantly, the initial *u* in *bukurin* being short, rather than long, as in *buut*), the current forms of the singular and the plural lend themselves to a straightforward derivation. The loss of the medial /k/ in *buut* was due to the operation of two rules. First, there is a general (historical? / synchronic?) lenition rule affecting underlying stops (p / t / k) in intervocalic position whereby $*p \rightarrow w$, $*t \rightarrow r$, and $*k \rightarrow x$ (a voiceless velar fricative). Second, $x \rightarrow \emptyset$ between identical vowels, with the two vowels coalescing into a single long vowel, e.g. $*bukut \rightarrow buxut \rightarrow buut$, cf. $*dikil \rightarrow dixil \rightarrow diil$ ‘hoe’, pl. *dikilin*.

The current-day plural form *bukurin* reflects the addition to the singular of a common plural suffix *-in* (as seen in such examples as *gom/gomin* ‘baboon(s)’) plus the operation of the following morphological and phonological rules: the appearance of /r/, instead of the final /t/ of the singular, is due to the general lenition rule described above. But, having just appealed to the lenition rule, how do we account for the presence of the non-weakened /k/ in the plural?

As is widespread, but not ubiquitous, in Chadic, plural suffixes are often accompanied by gemination of an internal consonant. Assuming that this was also the case in Kanakuru, the medial consonant in a word such as **bukut* would have been geminated in the plural, i.e., **bukkurin* (cf. via the same process in the example *liwe* (< **lipe*) ‘calabash’, pl. *lipen*, which we can assume came from **lippen* with gemination of the medial /p/). The unsupported intervocalic /k/ in the singular would have undergone lenition, but the strong geminate /kk/ would not have. Subsequently, Kanakuru lost gemination entirely whereby $*/kk/ > /k/$. This change did not, however, feed the lenition processes, and so the now intervocalic stop stayed as such. Applying various morphophonological processes, all of which are regular and quite normal, one ends up with *bukurin* as the plural counterpart of *buut*. Kanakuru, of course, manifests its share of unusual phenomena, e.g., the counter-universal presence of the palatal fricative *sh* without a corresponding *s*, and the apparent hardening of word-final **r* to /t/; however, as we have pointed out, the seemingly odd plural pairing of *buut/bukurin* is not one of them.

4 The Tera linker

Tera, as discussed in Newman (1964), belongs to the Biu-Mandara (= Central) branch of the Chadic family and is even more distantly related to Hausa and Kanakuru than Hausa and Kanakuru are to each other. The problematic oddity here concerns the language's linker. When a Tera noun adds a suffix, such as the pluralizer *-ku* or the definite article *-aŋ*, or is modified in some way, e.g., by means of a postnominal possessive (noun or pronoun), the stem obligatorily adds a linker. With some nouns, the linker consists of phonological fronting of the final vowel of the noun (a form of the linker that I refer to as "Y"). This is seen in comparing *nəcaka* 'weaver' and *nəcake-ku* 'weavers', *runɡu* 'stranger, guest' and *runɡi-ku* 'strangers, guests', *mbola* 'dove' and *mbole-aŋ* (pronounced [mboljaŋ]) 'the dove', and *təla* 'roughing stone' and *tələ bərem* 'our roughing stone'.

With other nouns, the linker is a suffix *-t(ə)*, with the *t* appearing variously as [t], [d], or [nd], depending upon the preceding abutting consonant, and the schwa being automatically deleted when juxtaposed to another vowel.⁶ This suffix is added to the stem-final consonant, with the lexical final vowel, if any, being dropped: cf. *luku* 'garment', *luk-tə-ku* 'garments', and *luk-t-aŋ* 'the garment', as well as *waxi* 'rudeness' and *wax-t-aŋ* 'the rudeness' and *ʔugu* 'knife' and *ʔug-də baŋa* 'my knife'. Nouns with /d/ as the final consonant, on the other hand, behave differently. Here, one finds /t/ replacing the lexical *d* rather than being added to it, as in *sədi* 'snake' vs. *sə-t-aŋ* 'the snake', *vidi* 'monkey' vs. *vi-tə-ku* 'monkeys', and *xeda* 'mat' vs. *xe-tə banda* 'their mat'. Consonants in Tera are normally quite stable, so the question is: what is going on here? Why does the underlying *d* disappear?

Again, we find that the explanation relates to the role played by gemination and degemination. Although consonant clusters as such are rare in Chadic – and Tera is typical is not allowing them – abutting consonants across a syllable boundary are well attested. There is a large range of different C.C's abutting with one another. Examples of words with such sequences are shown in Table 3.

On the other hand, the abutting sequence *d.t*, which should be the output when the linker is added to a *d*-final stem, does not occur. I propose that when such a sequence is created morphologically, the lexical stem-final *d* is not dropped or replaced, but rather assimilates to the following *t*, thereby producing a geminate /tt/. However, with few exceptions, Tera, like Kanakuru, does not have geminates, and thus the geminates occurring in intermediate structure simplify into single

⁶Tera, like most languages in the Biu-Mandara branch of the family, has lost grammatical gender, a reconstructable feature of Proto-Chadic. The two main forms of the linker are undoubtedly historical vestiges of a former masculine/feminine gender distinction.

Table 3: Consonant contact across a syllable boundary

nyax.ɬi	‘young man’
jax.ɓa	‘termite’
lom.ku	‘bats’
wan.xa	‘maiden’
calaŋ.ku	‘cheeks’
dəl.gwàŋ	‘drummer’
kwar.cax	‘hill’
ŋgar.kɛ	‘egg’
pər.gus	‘rabbit’
yur.vu	‘fish’
ɓuɓul.ku	‘hips’
loyos.ku	‘leaves’
rap.tiki	‘friendship’
kozop.ku	‘clouds’

consonants, i.e., */tt/ → *t*. The shared degemination in Tera and Kanakuru is a wonderful example of independent parallel drift.⁷ With the words *vidi* ‘monkey’, and *sədi* ‘snake’, for example, we get the following regular derivations: *vidtəku → vittəku → *vitəku* ‘monkeys’ and *sədtəŋ → səttəŋ → *sətəŋ* ‘the snake’. Thus, what might appear to be a totally aberrant replacement of *d* by *t* in the linked form can be seen as regular suffixation plus the application of totally natural rules of assimilation, gemination, and degemination.

The above analysis, in turn, leads to a possible explanation for a problem that previously didn’t stand out. In addition to the “Y” and *-t(ə)* linkers, some nouns simply have the linker *-ə*, which, as expected, is deleted when followed by a suffix beginning with a vowel. This is the standard form of the linker for nouns with stem-final /t/. This can be seen in comparing *shipit* ‘a load, goods’ and *shipit-ə-ku* ‘loads, goods’, *ɣiɣit* ‘tsetse fly’ and *ɣiɣit-ə-ku* ‘tsetse flies’, *cicet* ‘broom’ and *cicet-ə ɓareɓ* ‘our broom’, *pəjit* ‘ashes’ and *pəjit-aŋ* ‘the ashes’, and *xəxet* ‘wind’ and *xəxet-aŋ* ‘the wind’. However, maybe what we really have here underlyingly is the common *-t(ə)* linker. That is, what appears on the surface as bare *-ə* is probably the result of the processes involving assimilatory gemination followed by degemination that we already observed, i.e., *t-tə → ttə → *tə*, where the single

⁷Insight into the role and development of gemination in Chadic, specifically in West Chadic, is found in an excellent paper by Schuh (2001).

t morphologically comprises both the *t* of the stem and the *t* of the linker. The derivation for *cicetaku* ‘brooms,’ for example, would thus be **cicet* + *tə* + *ku* (noun + Linker + plural) → *cicettaku* → *cicetaku*, and the derivation for *pəjitaŋ* ‘the ashes’ would be **pəjit* + *tə* + *aŋ* (noun + Linker + definite article) → *pəjittaŋ* → *pəjitaŋ*. Of course, this analysis needs to be verified; however, to me, it is a more likely solution than the alternative of postulating bare *-ə* as a distinct linker type, especially since *-ə* is a weak vowel that is often elided or deleted.

5 Conclusion

In basic field research, exceptions and seeming lexical and morphological oddities constitute problems that lie beyond the scope of early data-collection work and often challenge the competence and know-how of the investigator. What I have shown in this paper is that with curiosity and intellectual courage, and with deeper knowledge to draw on, one can in fact explain troubling idiosyncrasies and, moreover, that such analyses can lead to a fuller and richer understanding of the workings of the language in question. The key is truly to get to know one’s research language (and related languages) well and be willing to go beyond simple observational “what?” and ask the often more difficult question of “why?”.

Abbreviations

*	reconstructed form
f.	feminine grammatical gender
H	High tone
L	Low tone
m.	masculine grammatical gender
pl.	plural
WH	(North)-Western Hausa

References

- Newman, Paul. 1964. A word list of Tera. *Journal of West African Languages* 1. 33–50.
- Newman, Paul. 1974. *The Kanakuru language*. Leeds: Institute of Modern English Language Studies, University of Leeds & West African Linguistic Society.
- Newman, Paul. 1986. Tone and affixation in Hausa. *Studies in African Linguistics* 17. 249–267.

- Newman, Paul. 2000. *The Hausa language: An encyclopedic reference grammar*. New Haven: Yale University Press.
- Newman, Paul & Roxana Ma Newman. 2020. *Hausa dictionary (Hausa-English/English-Hausa) / Kamusun Hausa (Hausa-Ingilishi/Ingilishi-Hausa)*. [2nd printing with minor emendations, Oxford: African Books Collective, 2022]. Kano: Bayero University Press.
- Schuh, Russell G. 1976. The history of Hausa nasals. In Larry M. Hyman, Leon C. Jacobson & Russell G. Schuh (eds.), *Papers in African linguistics in honor of Wm. E. Welmers*, 221–232. Los Angeles: Department of Linguistics, UCLA.
- Schuh, Russell G. 2001. *Sources of gemination and gemination as a morpheme in Bole*. Paper presented at the 32nd Annual Conference on African Linguistics in Berkeley, CA.

Chapter 11

Coerced weight and its consequences in Bondu So verbs

Abbie Hantgan

CNRS-LLACAN

Christopher R. Green

Syracuse University

Leonardo Contreras Roa

Université de Picardie Jules Verne

Bondu So (Dogon, Mali) displays [ATR] vowel harmony that interacts with root-final consonants. This study provides evidence from five verb paradigms to show that the quality of a stem suffix, and its absence or presence, is determined by a combination of factors including [ATR], sonorancy, and prosody. Preliminary phonetic results show that, on average, root-final sonorants following [+ATR] vowels are longer than those following [–ATR] vowels. This differs from what is reported for other languages, as these consonants are neither inherently moraic, nor do they receive a mora due to their position alone. This finding suggests that, in Bondu So, [+ATR] licenses sonorant moraicity. We argue that these instances of coerced moraicity explain otherwise unexpected patterns of suffixation among these verb paradigms.

1 Introduction

Bondu So¹ is a Dogon language of central-eastern Mali spoken by approximately 8,000 people. There are an estimated 21 Dogon languages spoken across the Ban-

¹Elsewhere in the literature, the language name is written as Bondu-so in error. This paper rectifies this issue with the updated orthographic convention of separating the form *so*, meaning ‘word,’ in line with other Dogon language names such as Tommo So and Donno So.



diagara Escarpment that runs parallel to the Niger River. Bondu So speakers live in the northwestern quadrant of the cliff range. In Dogon languages, noun and verb stems are composed of a root plus derivational and inflectional suffixes.² The basic word order is SOV. Dogon languages exhibit fusional-agglutinative, suffixing morphology. Bondu So, in particular, features a robust system of classificatory suffixes on nouns with agreement on adjectives, determiners, and numerals. TAM and person are marked on verbs through suffixation. Of particular interest to this paper is that Dogon languages are subject to vowel harmony. Bondu So, in particular, exhibits sometimes opaque patterns of ATR harmony.³

Bondu So has two main varieties, Kindige and Najamba, that are described in Hantgan (2013) and Heath (2017), respectively. This study concentrates on the Kindige variety but includes some comparisons to Najamba where relevant. Pertinent to this investigation is that Heath, in his description of Najamba, analyzes the final vowel of nouns and verbs – not only in Najamba, but throughout the Dogon languages – as an integral part of the stem. Hantgan and subsequent studies (Hantgan & Davis 2012, Green & Hantgan 2019) interpret the final vowel of a verb stem as either an inflectional suffix or the result of epenthesis. Importantly, per our analysis, it is clear that the quality of these vowels is predictable based on properties of the preceding root. Under Heath's analysis, the language's vowel inventory comprises only the surface inventory [i e ε a ɔ o u], and stem-final vowels are not predictable. On the other hand, under Hantgan's analysis, a broader phonemic inventory of ten vowels is proposed as /i ɪ e ε ɶ a ɔ o ʊ u/, which she argues is crucial to motivating the surface realization of these stem-final vowels from a standpoint of ATR harmony. Key data substantiating this analytical choice are presented in Hantgan & Davis (2012).

The current investigation relies on the analysis of root shapes as being either consonant or vowel final; this paper only deals with consonant-final roots. Whereas any consonant may occupy the final position of a noun or verb root, stem-final codas can only be filled by a nasal or a liquid. It is additionally argued that properties of root vowels and root-final consonants determine the stem-final vowel's presence or absence, and its quality and length.

²For the purposes of this paper, we define a root as the underlying and most basic form of the word, without any inflectional affixes. Most roots are monosyllabic, but some have frozen derivational suffixes that we consider part of the root. A stem, as we define it for Bondu So, is a root plus inflectional or productive derivational suffixes.

³Throughout this paper, we describe patterns relative to [+ATR] and [–ATR] feature specifications, which suffice for our analytical purposes here. Bondu So vowel harmony has been described elsewhere with unary features under the assumption of featural privativity (Green & Hantgan 2019).

Our goal, in addition to providing an overview of the morphophonological patterning of the interactions between the feature [ATR] and root-final consonants among five Bondu So verb paradigms, is to present a pilot phonetic study aimed at elucidating certain articulatory aspects of the language's vowels and sonorant consonants. Our findings thus far illustrate that, on average, root-final sonorants following a [+ATR] vowel are longer than those following a [-ATR] vowel. We argue that their behavior – correlations between tongue root gesture, sonorant moraicity, sonorant lengthening, and precluded suffixation – supports a phonological account in line with that proposed by Green & Hantgan (2019), though the current analysis differs in some assumptions about the language's morphology. We appeal to mora licensing and prosodic minimality in arguing that [+ATR] root vowels license the projection of a mora from a sonorant coda. The presence of this mora, in turn, precludes the expression of an otherwise expected suffix in order to maintain stem size requirements.

The remainder of this paper is organized as follows: in §2, we present an overview of Bondu So Perfective and Past stems which show the interaction between ATR vowel harmony and root-final consonants on stem-final vowels. We complement these stems with data from the so-called *Chaining* stem in phrasal contexts to show how our analysis of moraic sonorants supplements Heath's (2017) description of *post-sonorant high vowel deletion*. Following this, we augment previously published data with new forms from the Infinitive and Nom-inative stems in §3 in order to compare the role of suffixal vowels with that of epenthetic vowels in terms of ATR harmony and its interaction with root-final consonants. Next, §4 describes the methods used for this study, including the details of the data collection. Following the methodological overview, we present the results from our pilot phonetic study in §5. Lastly, in §6, we discuss both theoretical and descriptive implications of our findings, as they apply cross-linguistically as well as specifically to other Dogon languages.

2 Overview

2.1 Previous studies

Two formal studies (Hantgan & Davis 2012, Green & Hantgan 2019) detail aspects of Bondu So vowel harmony. Here, we provide only a basic overview of the hitherto described patterns using two verb stems: the perfective aspect and past tense in §2.2 and §2.3, respectively. These are presented first as they display similar properties and illustrate root-controlled ATR harmony wherein the value of the root vowel spreads to the suffix.

2.2 Perfective stems

Examples of Perfective stems with simplified glosses are provided in Table 1. These are representative of the 3rd person, which is marked by a -VV suffix in all instances.⁴ The quality of the perfective suffix vowel is *front* in the 3rd person singular and *back* in the 3rd person plural.

Table 1: Perfective 3rd person stems with obstruent-final roots

+ATR			-ATR		
singular	plural	Gloss	singular	plural	gloss
a. bèdʒ-éè	bèdʒ-òò	bury	aa. nèg-éè	nèg-óò	lick
b. póg-èè	póg-òò	dump	bb. dòg-éè	dòg-óò	abandon
c. íb-èè	íb-òò	take	cc. bìmb-éè	bìmb-óò	scrub
d. kúmb-èè	kúmb-òò	hold	dd. gùb-éè	gùb-óò	hang
e. pág-èè	pág-òò	tie	ee. dzàmb-éè	dzàmb-óò	betray

The stems in Table 1 illustrate pertinent aspects of the Bondu So morphophonological system. First, the Perfective suffix is realized by four allomorphs whose tone and quality are dictated by characteristics of the root to which it attaches. Kindige Perfective stems are susceptible to depressor consonants, and thus, an otherwise expected HL tonal melody is realized as LHL when the root begins with a voiced consonant (whether obstruent or sonorant). Root shapes may be VC, CVC, or CVNC, where an initial consonant may be either a voiced or voiceless obstruent or sonorant. Stem-internal (i.e., root-final) consonants must be voiced.⁵ Recall that the language is SOV, and thus, the Perfective stem occurs phrase-finally. Hantgan & Davis (2012) argue that the quality of the Perfective suffix is determined by ATR harmony. More specifically, it is dictated by the [\pm ATR] specification of the root vowel which, in cases of underlyingly [-ATR] high (Table 1cc–dd) and [+ATR] low (Table 1e) vowels, is opaque.

Perfective stems with sonorant-final roots, like those in Table 2, realize different outcomes compared to obstruent-final roots. Precisely, in Kindige, nasal-final roots with [+ATR] vowels have high vowel suffixes in the Perfective. In Najamba,

⁴By this interpretation, we diverge from Heath’s (2017: 10) analysis of Najamba wherein he states that the 3rd person singular perfective aspect is a “zero suffix.”

⁵It is likely that some roots have underlyingly voiceless consonants that surface voiced intervocalically in verb stems.

all stems pattern like those shown for Kindige in Table 1, as do liquid- (Table 2d–dd) and glide-final (Table 2e–ee) roots in both varieties. Green & Hantgan (2019), in their feature geometric approach to Bondu So vowel harmony, attribute Perfective stem suffixal vowel raising in nasal-final roots to feature spreading. In their approach, nasals, unlike most other consonants, possess the vocalic height feature [closed], which licenses [ATR] spreading from the root to the nasal. A saturated Height node – specified for both [CLOSED] and [ATR] – thereafter spreads in its entirety to suffixal vowels, resulting in high, [+ATR] vowels.

Table 2: Perfective 3rd person stems with sonorant-final roots

+ATR			–ATR		
singular	plural	gloss	singular	plural	gloss
a. gòm-îi	gòm-úù	remove	aa. gòm-éè	gòm-óò	reek
b. mìn-îi	mìn-úù	wait	bb. mìn-éè	mìn-óò	swallow
c. dààn-îi	dààn-úù	grill	cc. dʒàŋ-éè	dʒàŋ-óò	study
d. pór-èè	pór-òò	let escape	dd. bèl-éè	bèl-óò	pick fruit
e. gij-éè	gij-óò	dance	ee. gij-éè	gij-óò	kill

Although not all root types are shown in Table 2, any nasal /n m ŋ/ found in the language, preceded by any [+ATR] vowel /i e ɔ o u/ takes the high vowel allomorph of the Perfective suffix. Liquids /r l/ and the glide /j/ pattern with other obstruents in having no raising effect on the final vowel of the Perfective stem. The Past stem, on the other hand, witnesses different outcomes, as detailed in the following subsection.

2.3 Past stems

A second verb stem that demonstrates interactions between root vowels and consonants, and suffixal vowels is found in the Past tense.⁶ The Past tense is formed by a verb root, and sometimes a suffixal vowel whose patterning resembles, in some ways, that of the Perfective stem but diverges from it in others. These divergences provide insight into the finer details of the morphophonology of Bondu

⁶We agree with Heath (2017: 220) who considers the stem of the Past tense paradigm (which he calls the “Past perfect”) to be a combination of the “Chaining” stem plus the clitic =b-, where person and tense are indicated through a VV suffix on the clitic.

So. Of particular interest is the behavior of [+ATR] vowel roots with sonorant codas, as they surprisingly fail to appear with the Past tense suffix.

Representative Past stem examples from the same roots shown above for the Perfective are given in their 3rd singular and plural forms in Table 3. Note that, due to space restrictions, the clitic that follows each Past stem is omitted: the 3rd singular Past tense clitic is consistently [=bɛɛ], and the plural is [=bɔɔ], with tonal melodies overlaid as in the Perfective stem. Therefore, to illustrate, ‘s/he buried’ is realized as *bèdʒ-í=bèè*, whereas ‘they removed’ would be *gòm=bòò*.⁷

Table 3: Past 3rd person stems

+ATR			-ATR		
singular	plural	gloss	singular	plural	gloss
a. bèdʒ-í	bèdʒ-ú	bury	aa. dʒàmb-é	dʒàmb-ó	betray
b. nòj-í	nòj-ú	sleep	bb. gìj-é	gìj-ó	kill
c. dààn	dààn	grill	cc. dʒàŋ-é	dʒàŋ-ó	study
d. gòm	gòm	remove	dd. gòm-é	gòm-ó	reek
e. pór	pór	let escape	ee. bèl-é	bèl-ó	pick fruit

The Past stem deviates from the Perfective stem in that it is non-phrase final, and so the addition of the Past tense clitic involves three notable differences. First, phrase-final tone lowering no longer applies, and thus each stem-final vowel (where these occur) carries a High tone. Furthermore, whereas the quality of the stem-final vowel was raised to high only after nasal-final roots with [+ATR] vowels in the Perfective, in the Past stem, it is obstruent-final roots following [+ATR] vowels that realize a raised suffixal vowel.⁸ Finally, and perhaps most strikingly: nasal- and liquid-final roots containing a [+ATR] vowel take no suffix.

2.4 Chaining stems

We follow Heath (2017) in labeling the verb stem which is used in verb chains as the *Chaining stem*. The Chaining stem itself is identical to the 3rd person singular

⁷A reviewer asks whether these sonorant moras are a result of the preservation of a lost suffixal vocalic mora. We view the suffixal vowel in these instances as an allomorph of the Past morpheme that appears only when an underlying [-ATR] root vowel cannot license a mora on a sonorant coda. As such, mora insertion, rather than preservation, is better in line with this analysis.

⁸According to Green & Hantgan (2019), the difference in behavior, as compared to the Perfective, rests in the featural specification of the suffixal vowel involved.

Past stem; Heath (2017: 220) considers them one and the same. The only difference between them is that the Past stem is followed by the clitic =*b-*, which is inflected for person. The Chaining stem, however, must be followed by another verb on which inflection is marked. Thus, the complete Chaining paradigm involves a verb root, suffixed with a short vowel, and then followed by an additional verb. Example sentences for verbs with [+ATR] and [–ATR] vowels are provided in (1) and (2), respectively, followed by the verb ‘can.’ The Chaining stems themselves are identical to those shown for the 3rd person singular in Table 3 above.

- | | |
|---|---|
| (1) nòj-í dzá-mbò-m
sleep-CHN can-FUT-1SG
‘I can sleep.’ | (2) dzàng-é dzá-mbò-m
study-CHN can-FUT-1SG
‘I can study.’ |
|---|---|

As with the Past stem, no final vowel suffix is present following sonorants in [+ATR] contexts, in both varieties of Bondu So. Examples of the Chaining stem in phrasal contexts illustrating minimal pairs of nasal-final roots are shown in (3) and (4).

- | | |
|---|--|
| (3) mìn dzá-mbò-m
wait.CHN can-FUT-1SG
‘I can wait.’ | (4) mìn-é dzá-mbò-m
study-CHN can-FUT-1SG
‘I can swallow.’ |
|---|--|

Heath (2017: 34) attributes the absence of the final vowel in these stems to a rule of *post-sonorant high vowel deletion*. While this is, of course, a descriptively accurate statement of the process, it begs the question of why high vowels would be susceptible to deletion following sonorants in the first place. It also does not address the predictable correlation between these deletions and the quality of the root vowel that we address here.

Green & Hantgan (2019) offer one possible solution to these alternations in Past and Chaining stems that is based on prosodic minimality. Crucially, they assume that verb roots can be CVC-shaped, but that stems must be minimally bimoraic. In most instances, they argue, bimoraicity is achieved via the addition of an epenthetic vowel, the quality of which is determined in part by featural characteristics of the root vowel and root-final consonant, in a way that is analogous but not identical to outcomes for the Perfective. Epenthesis is said to be required after all obstruent-final roots and also after sonorant-final roots containing a [–ATR] vowel. The exceptional cases, as we have shown, are sonorant-final roots containing a [+ATR] vowel. They further contend that the reason for the divergent behavior in suffix-less stems rests in the ability of [+ATR] root vowels

to license the projection of a mora from the sonorant coda. This mora, in turn, satisfies the minimality condition, thus obviating the epenthetic vowel.

While certain analytical assumptions that we adopt below differ from earlier work on Bondu So (Green & Hantgan 2019, Hantgan & Davis 2012), we agree in principle with Green & Hantgan's argument for a prosodic basis to these Past and Chaining stem alternations. The data presented below are from a pilot acoustic study designed to test the proposal that coda liquids and nasals are moraic following [+ATR] vowels. The data reveal that, on average, root-final sonorants following [+ATR] vowels are significantly longer than those following [-ATR] vowels. We take this as promising evidence in support of the hypothesis that, in Bondu So, the [+ATR] feature indeed licenses sonorant moraicity.

3 Epenthetic vowels

In this paper, although we disagree with Green & Hantgan (2019) concerning their proposal that Past and Chaining stems involve an epenthetic vowel, we nonetheless find evidence for such vowels elsewhere in Bondu So. More specifically, we find alternations in two verbal contexts – the Infinitive and Nominative stems – that are more clearly epenthetic in nature.

To begin, Infinitive and Nominative stems involve regressive spreading such that the vowels of the verb stem surface [+ATR], making these stand out relative to other contexts discussed thus far.⁹ In other ways, however, the behavior of the Infinitive and Nominative stems resembles that of the Perfective and Past stems. Both stems are followed by a clitic: =*loŋ* ~ =*doŋ* and =*le* ~ =*de*, respectively. All verb roots with final obstruents are followed by a vowel, which is [i] in all instances. Roots ending in sonorants differ somewhat – a vowel is present in most instances (78%) of the Infinitive stems, and is absent in most instances (24%) of the Nominative stems in our dataset. In some instances, the same verb was realized with both an epenthetic vowel and without one, even for the same speaker at different tokens in our dataset.

Despite this variation, what is important for our purposes here is that when a vowel is present, it is always [i]. Recall that this unified vowel quality differs from the Perfective, Past, and Chaining forms, where the height of stem-final vowels

⁹The Infinitive stem label is somewhat speculative and its suitability will be the subject of future research. Correlates of what we refer to as the “Infinitive” suffix are not well represented among descriptions of other Dogon languages. The only instance of this suffix, or one like it, mentioned in the literature is in Culy (1994: 120) for Donno So. However, there, the suffix is described alternatively as a participle or an infinitive.

(where present) alternated depending on the characteristics of the root. Examples of sonorant-final roots across vowel heights in Infinitive and Nominative stems are provided in Table 4.

Table 4: Sonorant-final roots in Infinitive and Nominative stems

+ATR			-ATR		
Infinitive	Nominative	Gloss	Infinitive	Nominative	Gloss
a. góm=dòŋ	góm=dè	remove	aa. kún-í=lòŋ	kún=dè	fatten
b. némbil=lòŋ	némbil=lè	beg	bb. bél=lòŋ	bél=lè	pick fruit
c. ín-í=lòŋ	ín=dè	go	cc. mín-í=lòŋ	mín=dè	swallow
d. bár=lòŋ	bár=lè	help	dd. sár=lòŋ	sár=lè	ask

We believe it is pertinent that these stems with [+ATR] vowels and sonorant-final roots in some ways resemble what occurs in the Past and Chaining stems: a stem-final sonorant coda is permissible, but only following a [+ATR] vowel. Yet, in the Past and Chaining stems, the motivation for the appearance of a vowel following obstruent-final roots is categorical and clear – to prevent impermissible consonant contact. What is not immediately apparent, however, is what drives the presence or absence of the epenthetic vowel among permissible clusters such as those shown for the Infinitive and Nominative stems in Table 4, for example (4a) and (4d) versus (4c) and (4cc).¹⁰ One possibility is that the tendency of Infinitive stems to take an epenthetic vowel even after some sonorants may be due to the CVC shape of the clitic, the presence of which may lead to a dispreferred phonotactic sequence, or perhaps relatedly, to a problematic prominence clash. This would not be an issue for the Nominative. We leave the matter of what conditions and presence vs. absence of the epenthetic vowel in Infinitive and Nominative stems to future research.

4 Methodology

The data upon which this study is based were gathered by the first author from 2008–2010 in Douentza, Mali, for the purpose of investigating acoustic correlates of [ATR]. They represent the productions of one male speaker, who was between the ages of 30 and 40 (specific ages among the Dogon are not calculated) at the

¹⁰ Additionally, although only alveolar nasals are shown here, each instance of a velar nasal in the coda of the root also takes an epenthetic vowel across both paradigms.

time of recording.¹¹ Verbs were elicited from a list drawn from a dictionary of the language. Recordings were made in a quiet room of a home with a Marantz handheld recorder and microphone.

All of the data are available in the Supplemental Materials. The present study is focused on verb stems: the Perfective, Past, and Chaining stems, which all consist of a verb root plus a suffixal vowel, as well as the Infinitive and Nominative stems, which are formed by a verb root and an epenthetic vowel. The details of each stem are discussed above in §2 and §3.

For the phonetic portion of the study, a total of 308 verb tokens were analyzed for root-vowel quality; and then a subset of 294 sonorant-final verb tokens from across 5 paradigms (PFV, PST, CHN, INF, NOM) were considered, all produced by the one, previously-mentioned, male speaker consulted for this study.¹² Verbs were phonetically and phonemically transcribed and manually aligned in Praat (Boersma & Weenink 2022). Vowels in roots were transcribed as /a, e, i, o, u/ [+ATR] and /a, ɛ, ɪ, ɔ, ʊ/ [-ATR]. Sonorants in the dataset include the nasals and liquids [m n ŋ l r]. Each verb stem was annotated at the level of the phoneme, root, stem, and gloss.

An ad-hoc Praat script was created to extract the following acoustic data from root-final sonorants and their preceding vowels (e.g., from both /o/ and /m/ in /gom/ ‘remove’, and from both /ɪ/ and /l/ in /ambɪl/ ‘lower price’):

- duration (s)
- F1, F2 and F3 values (Hz)
 - point values at 25%, 50% and 75% of the of the segment
 - mean values throughout the entire segment
- center of gravity (Hz)
 - with a 50–11000 Hz Hann band filter (100 Hz smoothing)
 - taken from the central 20% portion of the segment

Aside from being the acoustic correlate of the articulatory feature [±OPEN], we were particularly interested in F1 because it has been identified as one of the main acoustic cues associated with ATR (Hess 1992, Koffi 2016, Olejarczuk et al. 2019). These studies identify other less statistically reliable phonetic factors that

¹¹This speaker was the only person available and able at the time to travel to the city to make the recordings in a relatively quiet setting with electricity. Future studies will be based on a larger group of speakers including female speakers as well as males.

¹²The other 14 stems were obstruent-final.

can be related to ATR as well, such as F1 bandwidth and voice quality (e.g., creaky or breathy voice). The latter can be a physiological consequence of tongue root lowering or raising but is not always a reliable factor on its own, since vocal fold tension is not solely dependent on tongue root position. The same applies to other measures such as the first harmonics H1–H2 (Yang 2021), which we did not measure since we wanted to concentrate on the resonance aspects of advanced tongue root position.

Additionally, we chose to analyze center of gravity (COG) – the spectral mean – of root-final sonorants. Although this measure is usually studied as an acoustic correlate for the place of articulation of fricatives (Figueroa & Kim 2021), studies on ATR harmony have used it as well, as it can account for variations in vocal tract resonances in cases where there is overlap in representations of the acoustic space of vowels that rely only on F1 and F2 (Anderson 2007, Kingston et al. 1997). In other words, as a result of the interaction between [OPEN] and [ATR], F1 means can sometimes be neutralized and result in similar values in spite of differences in tongue root position. COG data can provide a bigger picture of the distribution of frequencies and their intensities across the whole spectrum.

In order to target spectral differences associated to vowel resonances, we adapted the COG extraction method by applying a Hann band filter from 50 Hz to 11000 Hz. Articulatorily speaking, lower COG values account for bigger resonance spaces inside of the vocal tract, which can be achieved by the modification of tongue root position, as interpreted phonologically as [±ATR], but also by other means such as larynx lowering or spreading of the faucial pillars.

Finally, we calculated Pillai scores to determine how these acoustic measures overlap in [±ATR] vowel pairs. The Pillai score, also known as the Pillai-Bartlett Trace (Pillai 1955), is a statistical measure that is used to evaluate the overlap between two populations. The score ranges from 0 to 1, where 0 indicates complete overlap (the two populations are identical), and 1 indicates no overlap at all (the two populations are completely distinct). In phonetics, this measure has often been used to assess the overlap between two vowel classes to determine whether pairs of vowels can be considered as merged or split (Freeman 2023, Kelley & Tucker 2020, Mairano et al. 2019). The Pillai score is calculated using a Multivariate Analysis of Variance (MANOVA) test. This test takes at least two continuous dependent variables and evaluates whether they come from the same distribution in a multivariate space. In the context of vowel analysis, these dependent variables could be different measures of the vowel characteristics such as frequency (F1 and F2), duration, or center of gravity (COG). The `manova()` function in R is typically used to perform this test, and the Pillai score is part of the output from this function when a summary statistic is requested.

5 Results

5.1 Acoustic analyses

In this section, we report the acoustic analyses of the dataset of word-list recordings to determine if there are durational, spectral, or other phonetic cues associated with ATR that may provide insight into its apparent ability to license mora projection from root-final sonorants.

5.2 Vowels

Formant data show the surface differences between [+ATR] and [−ATR] vowels among Perfective, Past, and Chaining stems as illustrated in Figure 1. Infinitive and Nominative stems were excluded from the vowel space analysis because they are all [+ATR] due to spreading from their respective clitics. Further, for this part of the study, both obstruent and sonorant-final verb roots were incorporated.

The phonetic merger between the high vowels (front and back) /ɪ, ʊ/ to [i, u] appears complete, whereas the mid vowels [ɛ, ɔ] and [e, o] remain divergent between [+ATR] and [−ATR] qualities. The strikingly fronted [u] tokens in the chart are explored further below. Unfortunately, our dataset contains only two roots with the [+ATR] mid front vowel [e]. However, the mid back vowels illustrate that the contrast still exists between [+ATR] and [−ATR] vowels, which can be compared with the high back vowels.

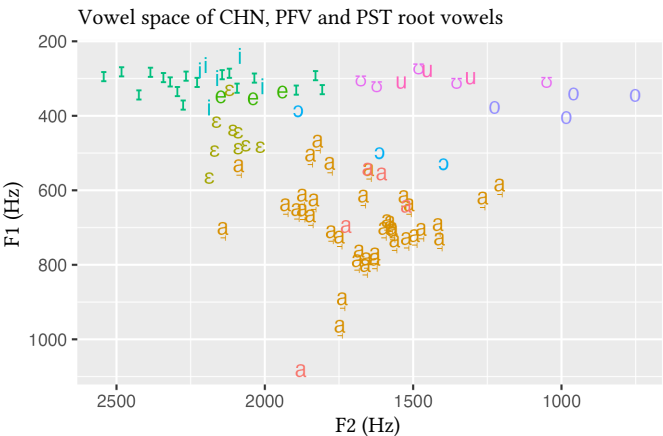


Figure 1: F1 vs F2 Vowel space of CHN, PFV, and PST paradigms by [ATR] specification

On the other hand, acoustic qualities for the low vowels /a, a/ to [a], are somewhat more variable, but nonetheless, their merger appears complete on the F1/F2 dimension. This can be seen in the synthetic chart in Figure 2 which more clearly illustrates the differences in vowel spaces in terms of means and standard error.

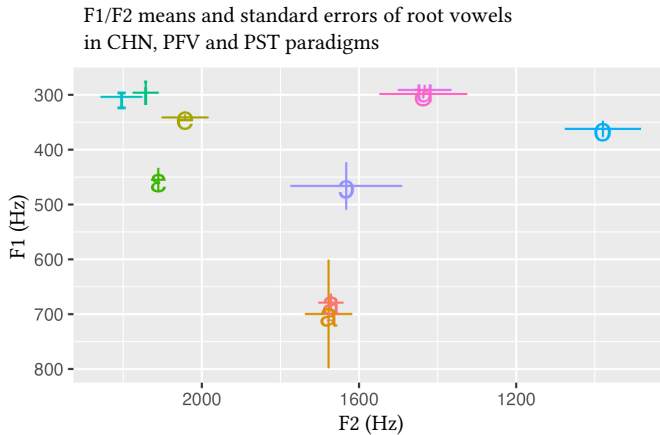


Figure 2: F1 vs F2 Vowel space of CHN, PFV, and PST paradigms by [ATR] specification, means and standard error

Figure 2 shows that the high vowels have merged on the surface, even though, based on the phonological patterning in Bondu So, the underlyingly contrast between these vowels still plays a role in the language. The low vowel is merged between the [+ATR] and [-ATR] qualities to surface only as [-ATR]. In [+ATR] conditions, F1 values are overall slightly higher, which coincides with the acoustic features of an open vowel, whereas in the considerably less common [-ATR] condition in our dataset, F1 values resemble those of a mid or open-mid vowel [e ~ ə].¹³

Another interesting finding is the broad distributions of [u, ʊ] across the F2 axis, as represented by the wide horizontal error bars in Figure 2. We initially hypothesized that this could have been on account of noise in the recording or of problems during data extraction: formant identification algorithms sometimes wrongly interpret F1 and F2 peaks in close proximity across the spectrum and merge them. This might result in F2 interpreted as F1, F3 interpreted as F2, and so on. However, auditory and spectral slice observation of the extreme occurrences

¹³Most – if not all, assuming that some loanwords have yet to be detected – of the occurrences of [-ATR] low vowels in the dataset were found in loanwords.

of these vowels, [u] in *tún-ìì* ‘s/he put’ and [ʊ] in *gùb-éé* ‘s/he hung,’ confirm clear perceptive fronting of [u] which could be heard as [y] in *tún-ìì*.

As shown in Figure 3, formant peaks were distinct and had not been incorrectly merged. Whether this fronting is the effect of a [+ATR] articulation or of a regressive assimilation of place of articulation towards the locus of the subsequent /n/ in *tún* needs to be determined with further analyses and comparable data.

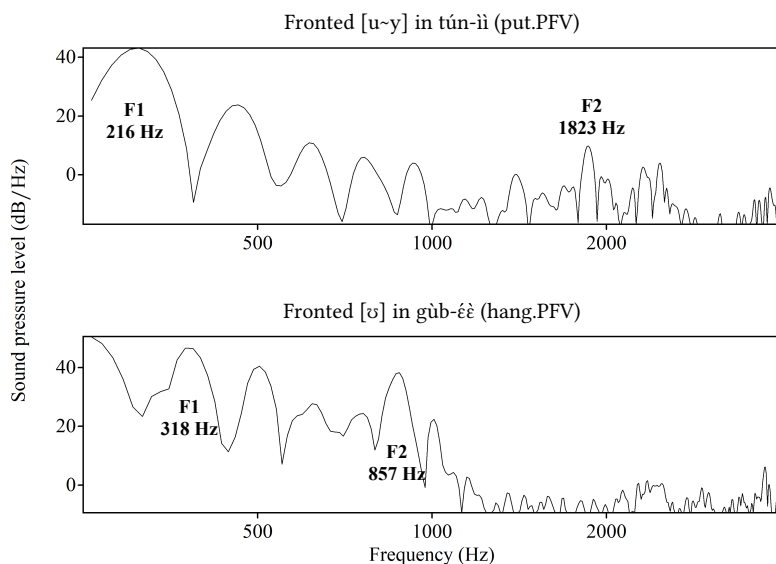


Figure 3: Spectral slices showing F1 and F2 for fronted [u~y] in *tún-ìì* (top) and [ʊ] in *gùb-éé* (bottom)

Duration values for individual vowels are reported in Figure 4. Marked differences are observed in front vowel pairs, while all other vowel pairs display similar duration values. These preliminary data suggest that the target acoustic correlate which differentiates the [+ATR] and [-ATR] vowels in Bondu So is not length, however future studies will consider a broader range of data to gain a more complete picture from the range of vowel features.

Finally, COG data, illustrated in Figure 5A, show overall lower COG values in [+ATR] vowel spectra, which is consistent with the articulatory features of advanced tongue root position: slower frequencies are reinforced due to there being a larger resonance space inside of the vocal tract. This results in a lower spectral mean.

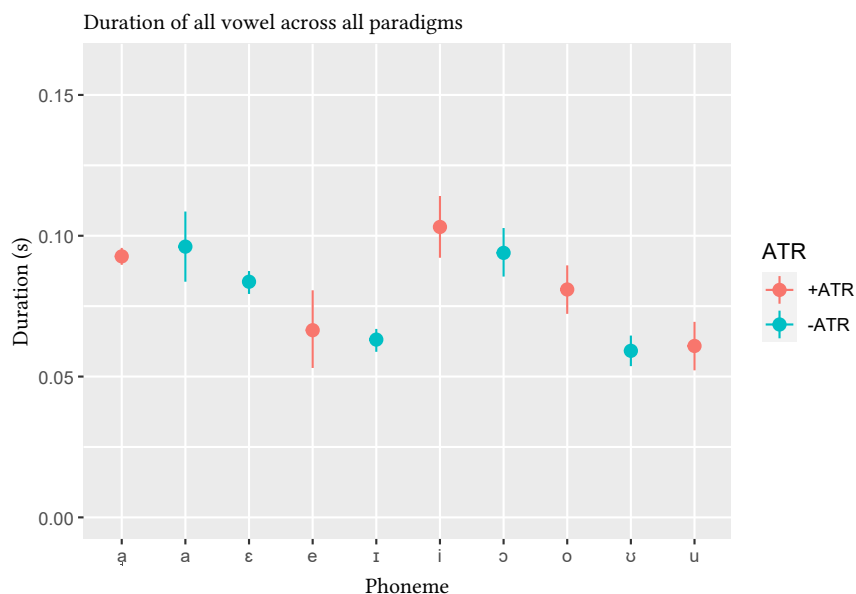


Figure 4: \pm ATR Vowel durations across all paradigms

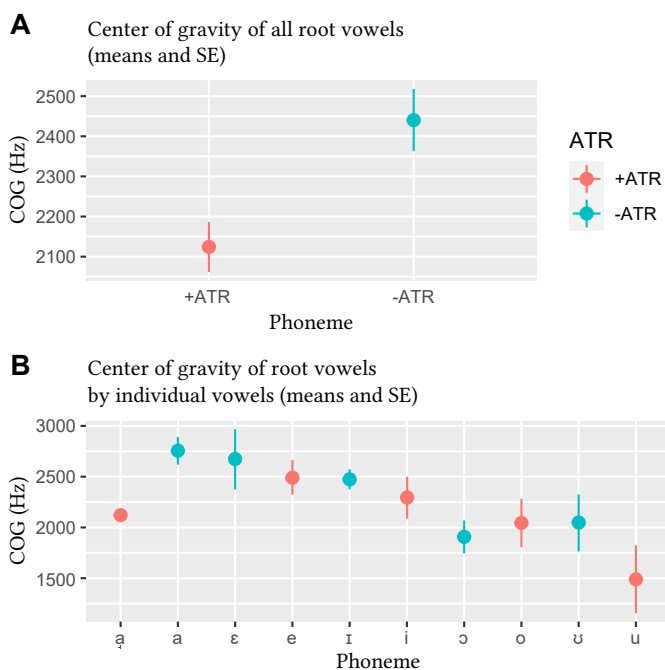


Figure 5: Center of gravity of root vowels by [ATR], means and standard error

Results by vowel in Figure 5B show the individual contribution of each [\pm ATR] vowel pair to this difference: although most vowel pairs have the expected higher COG values in the [$-$ ATR] condition, the pairs [a, ʌ] and [ʊ, u] have the highest contrast. The only pair that shows the opposite trend, i.e. higher COG values in the [$+$ ATR] condition, is [o, ɔ]. However, these vowels show a marked difference in vowel space with no overlap in terms of F1 and F2, as shown in Figure 2 above.

As described in the methodology, the COG data provide a broader perspective on the distribution of frequencies and their intensities across the entire spectrum, capturing spectral differences associated with vowel resonances. Notably, the pairs /a, ʌ/ and /ʊ, u/ exhibited the highest contrast in COG values despite showing no marked contrasts in F1 and F2 values (Figure 2). These results are of interest to the interpretation of the Bondu So vowel inventory as our phonological analysis posits a contrast between /a, ʌ/ and /ʊ, u/, as well as between /ɪ, i/, despite these vowels exhibiting F1/F2 mergers, as seen above. It may be that such subtle acoustic cues, as contributed by COG, contribute to the maintenance of a contrast between these vowels. This matter will be of key importance in our future research.

The COG values of vowels in the dataset are of further relevance to this study for two reasons: first, these results support our proposition that the feature implicated in the phenomena under study may reasonably be [ATR]. Secondly, as is discussed in the following section, the COG of root-final sonorants *agrees* with the [ATR] value of the preceding vowel: the COG of root-final sonorants in the [$+$ ATR] condition is lower than that of the [$-$ ATR] condition. Taken together, these findings would appear to support a phonological analysis involving the spreading of the [ATR] feature, not only from vowels to other vowels in the stem, but also to sonorants.

In summary, we calculated MANOVA tests to obtain the Pillai scores for all vowel pairs so that we could determine to what extent they overlap. We added dependent variables progressively to assess the cumulative contribution of each one, starting with F1 and F2 (Table 5a), then adding duration (Table 5b) and then adding COG (Table 5c). These tables show the Pillai scores for different vowel pairs with associated degrees of freedom (Df), F-statistics (approx F), numerator degrees of freedom (num Df), denominator degrees of freedom (den Df), and *p*-values ($\text{Pr}(> F)$).

The highest Pillai scores were obtained for vowel pairs /o, ɔ/ and /e, ε/, respectively. They rise slightly as the variables' duration and COG are added to the MANOVA analysis, but overall they remain constant. This means that, all variables considered, /o, ɔ/ show little overlap, i.e. they are two distinct vowels

Table 5: Pillai scores for various factors ~ATR

(a) Pillai scores for (F1, F2) ~ATR

Vowel pair	Df	Pillai	approx F	num Df	den Df	Pr(>F)
a, ʌ	1	0.013126	0.53202	2	80	0.5895
e, ε	1	0.42747	4.1065	2	11	0.04655 *
i, ɪ	1	0.0049833	0.09766	2	39	0.9072
o, ɔ	1	0.73795	15.489	2	11	0.0006325***
u, ʊ	1	0.054655	0.26017	2	9	0.7765

(b) Pillai scores for (F1, F2, duration) ~ATR

Vowel pair	Df	Pillai	approx F	num Df	den Df	Pr(>F)
a, ʌ	1	0.015991	0.42794	3	79	0.7335
e, ε	1	0.51257	3.5052	3	10	0.05731
i, ɪ	1	0.30903	5.6651	3	38	0.002615 **
o, ɔ	1	0.74097	9.5353	3	10	0.002794 **
u, ʊ	1	0.056648	0.16013	3	8	0.9202

(c) Pillai scores for (F1, F2, duration) ~ATR

Vowel pair	Df	Pillai	approx F	num Df	den Df	Pr(>F)
a, ʌ	1	0.065554	1.368	4	78	0.2527
e, ε	1	0.52434	2.4803	4	9	0.1186
i, ɪ	1	0.31339	4.2219	4	37	0.006479 **
o, ɔ	1	0.74691	6.6403	4	9	0.009001 **
u, ʊ	1	0.10446	0.20413	4	7	0.9282

acoustically speaking, and /e, ε/ show a slight overlap. These values are statistically significant for both vowel pairs in Table 5a, but retain their significance only for /o, ɔ/ in the remaining two tables. The only Pillai score that increases substantially when adding duration (Table 5b) and COG (Table 5c) is that of /i, ɪ/, and significantly so. However, the 0.3 Pillai score it attains is rather low and implies a high degree of overlap between these two vowels.

Taken together, these exploratory phonetic measurements of vowels in Bondu So provide some hints in support of the phonological hypothesis that there was once a 10-vowel system in the language with contrasts for [±ATR] at all vowel heights. The COG measurements of individual vowels, in particular, suggest that there may still be a signal of the contrast, even among the vowels that appear to be completely merged according to formant values. In the following section, we show further support for the supposition that there exists an underlying divergence between [+ATR] and [−ATR] vowels in the language as witnessed in the behavior of root-final sonorants.

5.3 Consonants

Root-final sonorants were, across all the paradigms considered in this study, longer following [+ATR] vowels than [−ATR] ones, as displayed in Figure 6. This is a significant finding that, at the very least, indicates that a correlation exists between these vowels and the articulatory realization of the sonorants that follow them. As we shall see, effects differed somewhat between liquids and nasals, by TAM context, and by syllable position of the sonorant (onset vs. coda), but the overall effect is promisingly robust.¹⁴

The results are divided by paradigm below, beginning with the Perfective and Past stems illustrated in Figure 7. As seen in the figure, in Perfective stems, sonorants trend longer following [+ATR] vowels than following [−ATR] ones, but this does not appear significant based on the current pilot data set. The effect does appear somewhat clearer following nasals as opposed to liquids. For example, root-final [l] in [−ATR] *ɪl-èè* (ascend-PFV) is shorter than root-final [l] in [+ATR] *úl-èè* (spit/vomit-PFV), but for root-final nasals, the difference is greater. That is, root-final [n] in [−ATR] *dìn-éè* (find-PFV) is considerably shorter than root-final [m] in [+ATR] *dàm-û* (speak-PFV).

¹⁴A reviewer asks whether there are also acoustic and/or durational differences that affect other root-final sonorants in the [+ATR] vs. [−ATR] conditions. We have not yet explored this possibility, as our focus has been on the properties of sonorants and their divergent phonological behavior. Nonetheless, the data to do so are in hand, though this must await a future study.

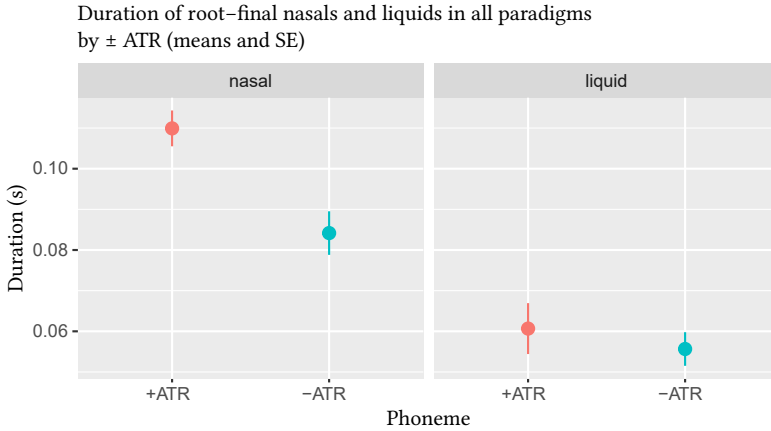


Figure 6: Root-final sonorant durations by [ATR] across all paradigms

Unlike the Perfective, there are clear and significant differences observed for root-final nasals in the Past stems, which are undeniably longer in [+ATR] conditions. The effects in the corresponding liquid-final roots were largely absent, at least for this paradigm. Nonetheless, recall from Figure 6 that the effect of [+ATR] in the liquid context was at least weakly significant overall.

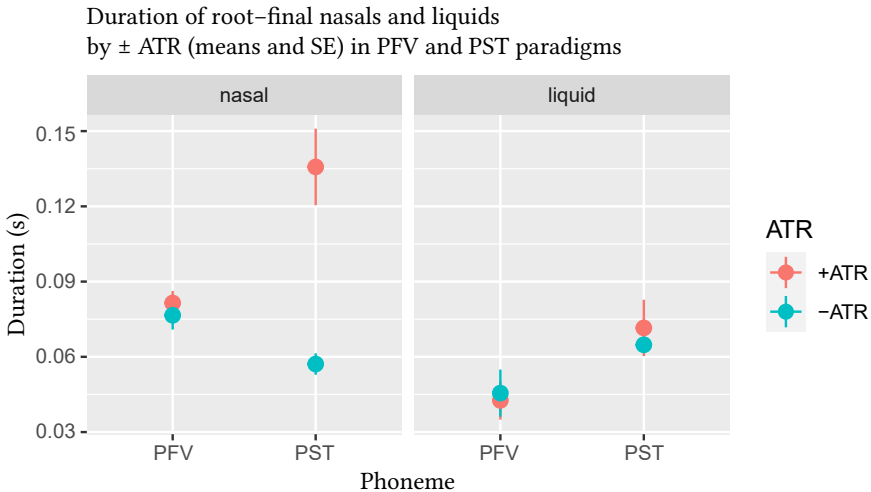


Figure 7: Root-final sonorant duration by [ATR] in Perfective stem (syllable onset) and Past stem (syllable coda)

One might question why a weak duration effect is noted even in Perfective stems relative to ATR status, but we find that this is unsurprising. After all, as Green & Hantgan (2019) have argued, it is clear that [+ATR] still spreads to these consonants given their behavior in vowel harmony; suffixal vowels in the Perfective are consistently raised following roots with [+ATR] vowels.

Recall from §2 that the Perfective and Past stems differ from one another in that a root-final nasal occupies a syllable onset in the former context yet a coda position in the latter. To illustrate this with the example cited above, ‘s/he spoke’ syllabifies as [dà.mû] whereas ‘speech’ is [dám.dè]. Given this fact, we must ask ourselves whether and how syllabification contributes to the duration differences that have revealed themselves, strongly in some instances, and less so in others.

The effects in Figure 8a, from Infinitive and Nominative stems, suggest that a sonorant’s status as onset vs. coda does affect its duration, at least in the case of nasals. Recall that the Infinitive and Nominative both contain vowels that are all [+ATR] due to harmonization from a dominant clitic vowel, and that root-final sonorants in these paradigms appear in these syllable positions under different conditions. There is a strong effect in this regard for nasals, but the liquid results are inconclusive.

We compare the results from the Perfective and Past stems with those in Figure 8b, for Chaining and Past stems, where the [ATR] specification determines whether a stem surfaces with a final vowel (CVC-i) or a final sonorant (CVSon). Across both stems, root-final sonorants are consistently and significantly longer following [+ATR] vowels. Again, and more broadly, we see that sonorants (and particularly nasals) are, irrespective of their syllabic position, longer following [+ATR] vowels.¹⁵

One challenge inherent in interpreting these results is that Bondo So provides us no means of directly comparing the duration of coda sonorants in [+ATR] vs. [-ATR] contexts. This is because [-ATR] roots, such as in the Past and Chaining stems, surface with suffixal vowels. Despite this, given sonorants’ rather consistent articulatory correlates related to duration, regardless of context and syllable position, we would argue that this provides compelling support for the phonological patterning of sonorants as moraic when they appear in syllable codas in [+ATR] contexts.

As we next illustrate, duration is not the only phonetic correlate that distinguishes sonorants from one another following [+ATR] vs. [-ATR] vowels. Fig-

¹⁵ A reviewer asks whether or not there is a difference in duration based on nasal place or vowel quality. In response to this, we feel that our dataset is too limited at this time to make any real predictions based on place or quality but will investigate these questions further in subsequent work.

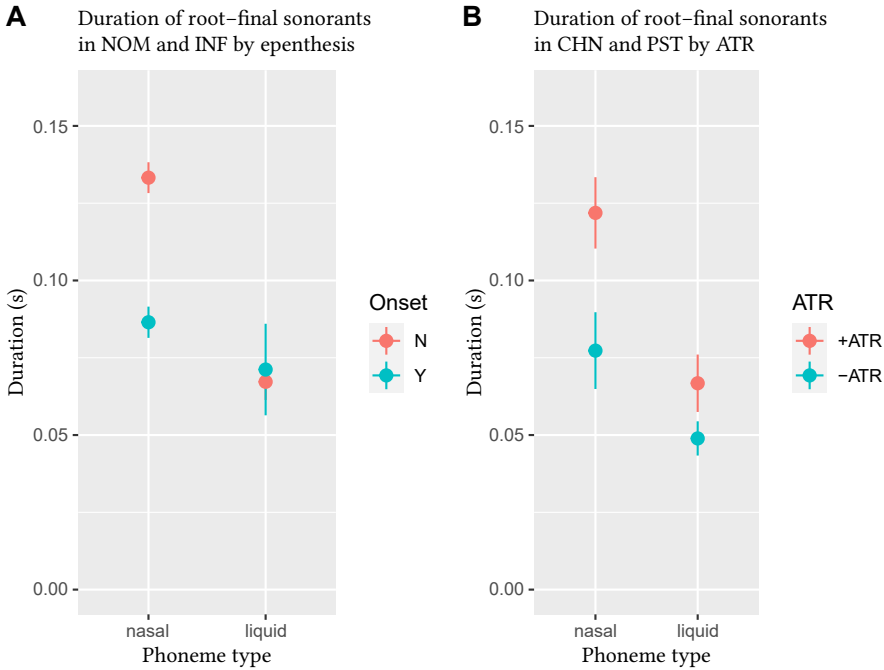


Figure 8: Root-final [+ATR] sonorant duration in either coda (N) or onset (Y) position among Nominative and Infinitive stems compared to duration of [+ATR] sonorants as codas in Chaining and Past stems

ure 9 shows COG results for root-final nasals [m, n, ŋ] and liquids [r, l] across all five paradigms. The COG of root-final nasals and liquids following [+ATR] vowels is consistently lower than those of nasals and liquids following [-ATR] vowels. These results display similar trends as those of vowel COG shown above in §5.2, as well as those of prior studies focusing on ATR differences in vowels. Thus, we take this as further evidence that there is a surface distinction between [+ATR] vs. [-ATR] sonorants in Bondu So.

The interplay of this phonetic evidence (COG, F1, Duration) supports the hypothesis that there are articulatory differences in the production of both sonorants and vowels under the two ATR conditions. These differences are not only observed throughout the articulation of vowels, but would also seem to spread over the articulation of the sonorant consonants that follow them.

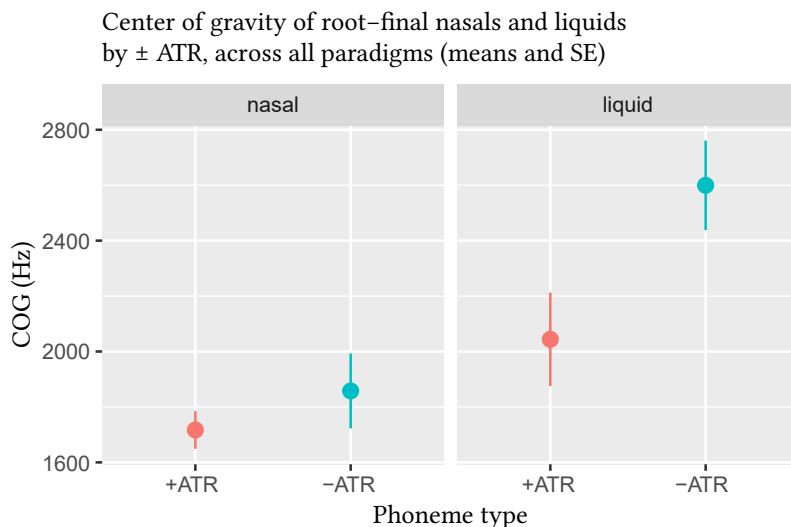


Figure 9: Root-final sonorant center of gravity by [ATR] across all paradigms

6 Discussion and next steps

6.1 Contributions to the literature

The outcomes presented here contribute to a small but growing literature on the properties of sonorants variously described as [+ATR], *tense*, or *fortis*. More specifically, if our interpretation of the Bondu So facts is correct, this language provides an example of a phonology wherein a segmental feature like [ATR] has the ability to coerce the morafication of sonorants. So too do these outcomes have implications for how best to understand core morphological and phonological characteristics of Bondu So, such as the structure of verb roots and the roles played by moras and metrification in morphophonological processes in this language. These outcomes may also provide new insight into how best to view similar phenomena in other Dogon languages.

6.2 Implications for phonological theory

Our phonetic findings, though preliminary, are intriguing such that they offer a quantifiable illustration that sonorants following [+ATR] vowels are different from those found after [-ATR] vowels. As noted above, Heath (2017) states that

high vowels are lost after sonorants in Bondu So, but this offers little explanation for why the process occurs and, moreover, for why it occurs only in some instances and not in others.

The crux of the analysis argued for here, following that suggested in Green & Hantgan (2019), is that [+ATR] vowels spread their [ATR] feature specification to sonorants. Sonorants are argued to license [ATR] by virtue of possessing Vowel-Manner features and, moreover, a location within their vocalic geometry's Height node to which the feature can spread. Green & Hantgan (2019), in turn, contend that the presence of [ATR] within the sonorant geometry licenses the projection of a mora, thereby satisfying a bimoraic stem condition in the language.

While it is certainly unsurprising that coda consonants, and sonorant codas in particular, can be associated with a mora, the mechanism by which the mora appears to have come about in Bondu So is of interest. In contemporary versions of moraic theory, coda consonants are either inherently moraic (Hyman 1985) or receive a mora by rule (Hayes 1995), but neither of these neatly applies to Bondu So. There is no evidence to suggest that all codas are moraic. Rather, it is this particular configuration ([+ATR] vowel plus sonorant) that leads to these sonorants' moraicity – sonorants are coerced to be moraic in the presence of [ATR], which we contend implicates feature spreading. As such, the Bondu So outcomes add to our inventory of known *contextual* or *context-dependent* weight phenomena, but differ from well-known instances of such phenomena wherein moraicity depends, for example, on word position (Hayes 1994, 1995, Rosenthal & van der Hulst 1999). In other instances, codas may differ in their weightfulness depending on their sonority (Zec 1995). Weight may depend on prosodic necessity, as in Kashmiri, where CVC syllables pattern as heavy only in the absence of another heavy stressable (i.e., CVV) syllable within a word (Morén 2000), or Jóola Eegimaa wherein Hantgan et al. (2020) posit only voiced plosives as being moraic in coda position.

The ability for *tense* or *fortis* sonorants, whether explicitly or implicitly, to be associated with [+ATR] is not entirely new either, but it is yet to be fully explored. One explicit discussion of such consonants is found in Carnie (2002) who, citing Ni Chiosáin (1991) and several others, analyzes two alternations – vowel lengthening and diphthongization – before *tense* or *long* sonorants associated with [+ATR] in some varieties of Irish. Examples in Table 6 are adapted from Carnie (2002); we follow the practice adopted in the source material to represent *tense* sonorants phonetically with a capital letter.

Although the details vary by dialect, the gist of the phenomena shown in Table 6 is that *tense* sonorants, when in coda position, trigger compensatory length-

Table 6: Compensatory lengthening and diphthongization in Irish (Carnie 2002)

	Surface	Orthography	
a.	[fi:L]	fill	‘bend’ (V)
b.	[fi:Lte]	fillte	‘bent’
c.	[fi:Lə]	filleadh	‘bend’ (N)
d.	[pauL]	poll	‘hole’ /poL/
e.	[paiL]	poill	‘holes’ /peL/

ening of a preceding vowel, but not when in an onset. Diphthongization occurs under similar conditions. There are similar outcomes reported by Archangeli et al. (2011) for Scottish Gaelic.

The argument for the correlation between moraicity and [+ATR] in Irish is best substantiated by the quality of resulting diphthongs. The presence of [+ATR], as donated by the sonorants, entails raising to a high vowel, given phonotactic constraints on the language’s vocalic inventory. High vowels do not diphthongize as in Table 6d–e, but rather lengthen, as in Table 6a–b. Carnie proposes that these outcomes, taken together, implicate a moraicity contrast in Irish sonorants – in coda position, an underlyingly moraic sonorant vacates its mora, leading to compensatory lengthening.

Analogous outcomes involving compensatory lengthening before moraic sonorants are reported for Quiaviní Zapotec in Uchihara & Pérez Báez (2016), though no necessary connection to ATR is proposed. For Quiaviní Zapotec, it is argued that the language encodes a *fortis/lenis* contrast in all consonants (including sonorants) that is based on the presence vs. absence of a mora, respectively. Evidence for this contrast, in part, comes from the fact that some coda consonants (i.e. *fortis* consonants) block compensatory lengthening of short vowels, which otherwise occurs to achieve bimoraic minimality.

Both the analyses described in this subsection propose coda moraicity and, in the case of Irish, a connection between moraicity and the presence of [+ATR] to explain alternations affecting stem vowels. Importantly, both appeal to the contrastive, underlying presence of moras which are given up or vacated under some conditions. Our analysis of the Bondu So alternations is reminiscent of, but not identical to, these other outcomes: there is a correlation between moraicity and [+ATR] that has both featural and prosodic consequences. Bondu So differs, however, in that there is no evidence that codas of any type are underlyingly moraic.

Rather, sonorant codas are contextually moraic only under certain featural conditions. As such, the phonetic effects detailed above are accordingly witnessed on the sonorants themselves, and secondarily make themselves apparent by precluding affixation.

6.3 Implications for the description of Dogon languages

We hope that it is clear, based on the discussion thus far, that moras undeniably play an important, although not always immediately apparent, role in Bondu So morphophonology. In fact, because sonorants may not appear in codas in [–ATR] contexts, the language provides us no means of direct comparison. However, given their rather consistent acoustic correlates related to duration, and regardless of syllable position, we believe that the vocalic alternations observed in Past and Chaining stems are perhaps more telling than they appear, as they require one to revisit core assumptions about the language’s structural characteristics, and notably the very shape of its verb stems. Recall that Heath (2017) assumes that all verb stems are vowel-final, but that some lose high vowels by rule. In their appeal to coerced coda moraicity, Green & Hantgan (2019) instead posited that verb roots can be consonant-final, with any following stem vocalic material being either affixal or epenthetic. We propose another alternative here which effectively draws upon the strengths of both earlier analyses. Like Heath, we propose that the vowels most often seen in the Past and Chaining stems are lexical, though we treat them as affixes, rather than as part of the root. Additionally, like Green & Hantgan (2019), we believe that the noted alternations are prosodically motivated.

Based on a broader comparison of both Bondu So varieties (Najamba and Kindige), we believe that this proposition is further supported if one considers parallels between the Perfective and Past stems, as well as the Chaining stem. The Chaining and Past stems are formed periphrastically from a verb base and following enclitic or subsequent verb; Heath (2017) often refers to the Chaining form as the *bare* stem. The Perfective requires no such clitic, and, in Kindige, its vocalic suffix differs only marginally (in quality and length) from what occurs in the same position in the Chaining and Past forms.

Though it is well beyond the scope of this paper to treat the matter fully, we would propose that these outcomes find a coherent explanation in a shared morphological origin for these vowels. If one takes the pre-clitic vowel found in most Chaining/Past stems as basic, its quality is readily predictable from the established stem-controlled alternations attributed to vowel harmony; see Green & Hantgan (2019) for a detailed featural analysis. Briefly here, in most instances,

the base-final vowel surfaces [i]/[u] after [+ATR] root vowels and [ɛ]/[ɔ] after [−ATR] root vowels. The exception, as we have seen, is [+ATR] roots ending in sonorants, after which the suffix fails to appear. This outcome, we reiterate, is due to a bimoraic stem requirement in the Past/Chaining context, which we assume pertains to subcategorization requirements of the accompanying clitics.

The Perfective's exponence, we would argue, entails the addition of a single feature, [OPEN] (in accordance with Green & Hantgan's previous analysis), to the same suffixal vowel, and the addition of a mora. Other alternations in quality are thereafter predictable, once again, from the stem-controlled harmonic alternations established elsewhere in the literature. Metrically, the Perfective presumably yields stems composed of an unbalanced (CV.CVV) iamb, while the Past and Chaining forms, instead, are (CV.CV)=(CVV) or (CV_[+ATR]C_[sonorant])=(CVV), the latter being representative of roots with [+ATR] vowels and sonorants, as we have discussed throughout this paper. Arriving at a better understanding of these patterns would benefit from a closer study of metrification across the language, but it may be that metrically unbalanced feet are possible only by virtue of their phrase-final position.

6.4 Next steps

The planned next phase of this project is to resume fieldwork with a larger number of Bondu So speakers from both varieties Kindige and Najamba and thus to collect a more robust number of tokens to further substantiate the claims that we make here. Further, we will obtain and analyze acoustic data for other verb paradigms in the language, including those which were discussed in previous studies such as the Imperative and Mediopassive stems, which involve suffix-controlled [−ATR] spreading, as well as noun stems with noun class suffixes, which also involve harmony patterns, to determine if the same patterns discussed here also apply to nominal stems.

We believe that these data and the analysis we propose here complement prior work on Bondu So, and on Dogon languages, in general. The current study contributes to our understanding of the diachrony of the Bondu So morphophonological system, and, in the near future, it will add to the comparative literature on Dogon languages within the context of other West African languages and their phonological patterns. Unfortunately, some experimental methods that might shed more detailed light on the phenomena described here, as well as others, will understandably remain out of our reach, given the remoteness of the geographic area in which Bondu So is spoken. Nonetheless, we will continue to pursue acoustic correlates of [ATR] among vowels and consonants, not only in Bondu So, but in other Dogon languages as well.

Abbreviations

PFV	Perfective
PST	Past
CHN	Chaining
INF	Infinitive
NOM	Nominative

Acknowledgments

We are particularly grateful to Bondu So speakers, HS and IS, for their patience and collaboration with this research. We are also indebted to three reviewers and additional comments from Samson Lotven that have allowed us to improve this work. We appreciate the critical but helpful feedback from audience members at ACAL 54 that provided a somewhat different perspective on our data than we had received from others. Of course, any remaining shortcomings are ours to deal with. Many thanks to Gary Mullin for assistance with formatting of figures.

This study has received funding from the European Research Council (ERC) under the European Union's Horizon Europe Framework Programme (HORIZON) grant number 101045195, as well as the United States National Science Foundation (NSF), award number 1263150.

Contributions

AH contributed to writing of the original draft, review, and editing. CG contributed to writing, theoretical underpinnings, and relevance to the literature on other types of coerced moraicity. LCR contributed to writing, methodology, and performed the acoustic analysis.

References

- Anderson, Colleen G. 2007. F1 and center of gravity interplay in the maintenance of phonological height within a statistical model of a communal grammar: The case of Foodo [ATR] acoustics. *UTA Working Papers in Linguistics* 2006-2007. 2-29.
- Archangeli, Diana, Jeff Berry, Andrew Carnie, Muriel Fisher, Nicole Hunt, Sun-jing Ji & Keisha Josephs. 2011. ATR in Scottish Gaelic tense sonorants: A preliminary report. In Andrew Carnie (ed.), *Formal approaches to Celtic linguistics*, 283-306. Newcastle upon Tyne: Cambridge Scholars.

- Boersma, Paul & David Weenink. 2022. *Praat: Doing phonetics by computer*. Version 6.3.03. <http://www.praat.org>.
- Carnie, Andrew. 2002. A note on diphthongization before tense sonorants in Irish: An articulatory explanation. *Journal of Celtic Linguistics* 7. 129–148.
- Culy, Christopher. 1994. A note on logophoricity in Dogon. *Journal of African Languages and Linguistics* 15(2). 113–125.
- Figueroa, Mauricio & Young Shin Kim. 2021. Measuring consonants. In Rachael-Anne Knight & Jane Setter (eds.), *The Cambridge handbook of phonetics*, 285–311. Cambridge, UK: Cambridge University Press.
- Freeman, Valerie. 2023. Production and perception of prevelar merger: two-dimensional comparisons using Pillai scores and confusion matrices. *Journal of Phonetics* 97. 101213.
- Green, Christopher R. & Abbie Hantgan. 2019. A feature geometric approach to Bondu-so vowel harmony. *Glossa* 4(1). 1–29. DOI: 10.5334/gjgl.793.
- Hantgan, Abbie. 2013. A grammar of Kindige. Unpublished manuscript.
- Hantgan, Abbie & Stuart Davis. 2012. Bondu-so vowel harmony: A descriptive analysis with theoretical implications. *Studies in African Linguistics* 41(2). 1–26.
- Hantgan, Abbie, Serge Sagna & Stuart Davis. 2020. Moraic preservation and equivalence in Gújjolaay Eegimaa perfective reduplication. *Journal of African Languages and Linguistics* 41(1). 29–56. DOI: 10.1515/jall-2020-2003.
- Hayes, Bruce. 1994. Weight of CVC can be determined by context. In Jennifer Cole & Charles Kisseberth (eds.), *Perspectives in phonology*, 61–79. Stanford, CA: CSLI.
- Hayes, Bruce. 1995. *Metrical stress theory: Principles and case studies*. Chicago: University of Chicago.
- Heath, Jeffrey. 2017. *A grammar of Najamba (Dogon, Mali)*. Language Description Heritage Library (online). DOI: 10.17617/2.2397771.
- Hess, Susan. 1992. Assimilatory effects in a vowel harmony system: An acoustic analysis of advanced tongue root in Akan. *Journal of Phonetics* 20(4). 475–492.
- Hyman, Larry M. 1985. *A theory of phonological weight*. Dordrecht: Foris.
- Kelley, Matthew C & Benjamin V Tucker. 2020. A comparison of four vowel overlap measures. *The Journal of the Acoustical Society of America* 147(1). 137–145.
- Kingston, John, Neil A. Macmillan, Laura Walsh Dickey, Rachel Thorburn & Christine Bartels. 1997. Integrality in the perception of tongue root position and voice quality in vowels. *The Journal of the Acoustical Society of America* 101. 1696–1709.

- Koffi, Ettien. 2016. The acoustic correlates of [±ATR] vowels: An analysis by reference levels of Anyi vowels. *Linguistic Portfolios* 5. https://repository.stcloudstate.edu/stcloud_ling/vol5/iss1/9.
- Mairano, Paolo, Caroline Bouzon, Marc Capliez & Valentina de Iacovo. 2019. Acoustic distances, Pillai scores and LDA classification scores as metrics of L2 comprehensibility and nativelikeness. In *Proceedings of the 19th International Congress of Phonetic Sciences, Melbourne, Australia 2019*.
- Morén, Bruce. 2000. The puzzle of Kashmiri stress: Implications for weight theory. *Phonology* 17. 365–396.
- Ni Chiosáin, Maire. 1991. *Topics in the phonology of Irish*. University of Massachusetts Amherst. (Doctoral dissertation).
- Olejarczuk, Paul, Manuel A. Otero & Melissa M. Baese-Berk. 2019. Acoustic correlates of anticipatory and progressive [ATR] harmony processes in Ethiopian Komo. *Journal of Phonetics* 74. 18–41.
- Pillai, K. C. S. 1955. Some new test criteria in multivariate analysis. *The Annals of Mathematical Statistics* 26(1). 117–121. DOI: 10.1214/aoms/1177728599.
- Rosenthal, Sam & Harry van der Hulst. 1999. Weight-by-position by position. *Natural Language & Linguistic Theory* 17. 499–540.
- Uchihara, Hiroto & Gabriela Pérez Báez. 2016. Fortis/lenis glides and vowels in Quiavini Zapotec. *Glossa* 1. 1–24.
- Yang, Byunggon. 2021. Measuring vowels. In Rachael-Anne Knight & Jane Setter (eds.), *The Cambridge handbook of phonetics*, 261–284. Cambridge University Press. DOI: 10.1017/9781108644198.011.
- Zec, Draga. 1995. The role of moraic structure in the distribution of segments within syllables. In Jacques Durand & Francis Katamba (eds.), *Frontiers in phonology*, 149–179. London: Longmans. DOI: 10.1017/CBO9780511486371.009.

Chapter 12

Morphophonology of Dholuo noun pluralization

Beatrice Ng'uono Okelo

Indiana University

There are several types of plural formation observed for Dholuo nouns. The type of plural formation selected by a particular singular noun is unpredictable and therefore encoded in the lexicon. As such, speakers must memorize which plural form is applicable to which noun (Tucker 1994). Even though there are many descriptive studies on Dholuo, there is little in-depth published work focusing on the morphophonology of plural formation in the language. Even the most sophisticated of analyses encounter problems when a full range of data is taken into consideration. This paper aims to fill this lacuna by (i) identifying and classifying a full range of Dholuo plural noun formation types and (ii) providing a detailed synthesis and analysis of the various phonological and morphophonological processes that take place in their formation.

1 Introduction

This paper seeks to examine the morphophonology of plural noun formation in Dholuo. The term *Dholuo* refers to one of the many languages of the Luo group within the Western Nilotic branch of the Nilo-Saharan language family. The Luo ethnic group can be viewed as comprising a sub-family of diverse ethnolinguistically affiliated languages. Luos inhabit an area from Southern Sudan, through Northern Uganda and Eastern Congo (DRC), into Western Kenya towards the upper tip of Tanzania. In addition to Dholuo, other Luo languages include Lang'o, Dhopadhola, Acholi (spoken in Uganda), Alur (spoken in Uganda and DRC), and Shilluk, Burun, Maban, Luwo, Thuri, and Anuak (spoken in South Sudan). According to anthropologists and ethnolinguists, notably Ndeda (2019), the Luo of



Kenya are also referred to as River-Lake Nilotes because they come from Nyanza Province in the Western region of Kenya, a region that is close to Lake Victoria and is also surrounded by many rivers. The two other divisions of Nilotes in East Africa are the Plain Nilotes and the Highland Nilotes.

This paper focuses on Dholuo as spoken by the Luo of Kenya, called *Joluo*. There are two main Dholuo dialects: Trans-Yala Dholuo and South Nyanza Dholuo, though several other sub-dialects are mentioned in Tucker (1994). The dialect represented in this work is South Nyanza Dholuo, which is the native dialect of the author and the dialect that is spoken in various parts of the South Nyanza region of Kenya and most parts of Central Nyanza. It is the dialect that is most commonly spoken among the Luo people of Kenya and used in educational materials, most Dholuo media houses, and in the Dholuo Bible.

Plural formation in Dholuo is complex, as there is not one specific rule that can be used to derive plural nouns from corresponding singular noun forms in the language. Most singular nouns in Dholuo have plural forms, though some nouns (e.g., verbal nouns and abstract nouns) do not. Different approaches have been taken to account for the formation of plural nouns in Dholuo. For instance, voicing polarity, as proposed by Alderete (1999: 16), states that “[voice] specification for the stem-final obstruent in the singular is reversed in the corresponding plural.” This can be seen as problematic, primarily because exceptions to this generalization abound. For example, while such a “polarity” analysis might seem to apply in pairs like *bat* ‘arm’ and *bede* ‘arms’ (voiceless SG, voiced PL) and *ogudu* ‘hat’ and *ogute* ‘hats’ (voiced SG, voiceless PL) that Alderete provides, it cannot account for pairs like *chik* ‘law’ and *chike* ‘laws’, where no voicing alternation occurs.

Onyango’s (2016) discussion of Dholuo plural formation focuses on place of articulation. The analysis provided describes a process of articulatory harmony that must hold between corresponding segments in singulars vs. plurals. The data analyzed in Onyango’s study propose that the stem-final consonant of a singular noun and that of its plural counterpart must share the same place of articulation. However, there are ample instances in which this does not hold, as seen for [l] vs. [k] in *driel* ‘goat’ and *diek* ‘goats’.

While it is true that voicing polarity and articulatory harmony do apply in at least some instances of Dholuo plural formation, there are several other morphophonological processes that extend beyond these two approaches. These include instances of suffixation, prefixation and substitution, subtraction, and suppletion. To best understand the characteristics of these various pluralization strategies, I propose that it is best to divide Dholuo nouns into several morphological classes (one might call them noun classes) based on their plural formation. I

shall define each class based on the primary morphophonological process(es) that the nouns within the class undergo in plural formation. There are also instances of “irregular” plural formation that defy clear categorization. Other processes such as vowel harmony, vowel deletion, consonant alternations, tone assimilation, and other tone alternations further complicate the phenomena.

The remainder of this paper is laid out as follows. In Section 2, I provide a brief description of some segmental and tonal matters that are relevant to this research. Section 3 briefly states the methodology followed and the organization of data. Section 4 provides a detailed look at the different morphological classes of plural formation, as well as a possible analysis to address the many interrelated instances of pluralization by the suffix *-e*. Subsections cover pluralization via three different suffixes, as well as by suppletion and subtraction. Concluding remarks and a summary of findings are provided in Section 5.

2 Overview of Dholuo phonology

In this section, I provide a brief overview of some phonological details that are relevant to this study. As introduced above, because plural formation variously involves alternations in consonants, vowels, and tones, it is important to have a baseline understanding of the language’s sound inventory. This section contains information about Dholuo’s consonant inventory and vowel inventory, as well as the role played by the feature [ATR] in the language. It concludes with a brief introduction to the language’s tonal system.

2.1 Consonants

There are 26 consonant phonemes in Dholuo, as shown in Table 1.¹ In the language’s orthography, each consonant phoneme is typically represented using a single alphabetic symbol akin to its IPA counterpart. The exception to this are eleven consonants that are represented as follows:

interdental fricatives - /θ, ð/	<i>th, dh</i>
palato-alveolar affricates - /tʃ, dʒ/	<i>ch, j</i>
palatal nasal - /ɲ/	<i>ny</i>
velar nasal - /ŋ/	<i>ng’</i>
prenasalized consonants - / ^m b, ⁿ ð, ⁿ d, ⁿ dʒ, ^ŋ g/	<i>mb, ndh, nd, nj, ng</i>

¹Bilab - Bilabial, LabDent - Labiodental, IntDent - Interdental, Alv - Alveolar, PalAlv - Palatoalveolar, Pal - Palatal, Vel - Velar, Glot - Glottal

Table 1: Dholuo consonant phonemes

	Bilab	LabDent	IntDent	Alv	PalAlv	Pal	Vel	Glott
Stop	p b			t d			k g	
Fricative		f	θ ð	s				h
Affricate					tʃ dʒ			
Nasal	m			n		ɲ	ŋ	
Prenasal	^m b		ⁿ ð	ⁿ d	ⁿ dʒ		ⁿ g	
Lateral				l				
Trill				r				
Glide	w					j		

Gregersen (1961) does not list prenasalized consonants as phonemes in Dholuo’s inventory. Rather, he refers to them as “clusters”. Onyango (2016) recognizes these segments, but he lists them only in the phonetic inventory. Oduor (2002) and Njuki (2019) claim they are prenasalized stops that function as unit phonemes. Ombijah (2020) says that they are phonemic units as well, contending that they can appear as onsets or codas.

Okoth-Okombo (1997: 17) discusses these segments at length and calls them nasal-stop “compounds”. It is said that they function as unit phonemes: “Foreigners usually find Dholuo nasal-stop compounds hard to pronounce in a native-like manner. Take, for instance, the compound *mb*, as in *mbaka* ‘conversation’. To produce a native-like quality of *mb*, the lips should be brought together without muscular tension and kept together until the release-stage for *b*. The nasal quality must characterize the whole of the compound segment, although the final release is mainly through the mouth. In principle the same procedure can be used to produce all the nasal-stop compounds of Dholuo, the only variation being in the point of articulation”.

2.2 Vowels

Most native Dholuo speakers would consider the language to have five vowels – *a*, *e*, *i*, *o*, *u* – but this is because the feature [ATR], which is both contrastive and pertinent to vowel harmony, is not overtly represented in the orthography. Okoth-Okombo (1997: 18) states that “Dholuo orthography underdifferentiates vowel phonemes”, noting that “the whole system uses only five symbols, one for /a/ and one for each of the four [phonemic] pairs” discussed later in this section.

Given that [ATR] is contrastive in Dholuo, specifically for high and mid vowels, there are in fact nine phonemic vowels, as shown in Table 2, which can be divided based on their specification for the feature [ATR].

Table 2: Dholuo vowel phonemes

	[+ATR]		[-ATR]	
	Front	Back	Front	Back
High	i	u	ɪ	ʊ
Mid	e	o	ɛ	ɔ
Low				a

For each of the four [ATR] vowel pairs, one easily finds minimal pairs illustrating that the corresponding vowels are contrastive and thus separate phonemes. Table 3 provides examples of each. I have provided both the orthographic representations and their corresponding IPA transcriptions. To clearly demonstrate that the vowel pairs are contrastive based on their ATR qualities and not as a result of tonal differences, the selected pairs share the same tone as well.

Table 3: Vowel phonemes minimal pairs on [ATR]

Phonemes	Orthography	IPA	Gloss
a) /i/ vs. /ɪ/	<i>pith</i>	[pìθ] [pìθ]	‘slope’ ‘rearing of animals/poultry’
b) /e/ vs. /ɛ/	<i>ler</i>	[lér] [lér]	‘vein’ ‘cleanliness’
c) /o/ vs. /ɔ/	<i>romo</i>	[ròmò] [ròmò]	‘meet, have a meeting’ ‘be enough, fill up (with food)’
d) /u/ vs. /ʊ/	<i>bur</i>	[bùr] [bùr]	‘hole (in ground)’ ‘boil (of skin)’

2.2.1 Status of [a]

As shown in Table 2, unlike other Dholuo vowels, /a/ does not have a contrastive [+ATR] counterpart. However, an [+ATR] counterpart to this vowel, namely [ɐ], does arise, though not consistently, in [+ATR] vocalic environments for some

speakers in some instances. As such, one would need to posit that it is simply an allophonic variant of /a/ for these speakers. Barasa (2018: 61) makes a similar claim to explain the vocalic facts in Ateso, an Eastern Nilotic language. Just as in Dholuo, his study found that the presence of this variant “is conditioned by neighbouring [+ATR] vowels or glides, and hence does not have phonemic status; instead, it is treated as an allophone of /a/”.

According to Borowsky & Avery (2009), an ATR distinction in Dholuo for the vowel /a/ appears not to be salient for most speakers. In my experience as a linguist and as a native speaker of the language, I concur with this finding both from the standpoint of production and perception. I assume, however, that given the allophonic alternations that this vowel participates in for some speakers, /a/ in Dholuo is best treated as underlyingly [-ATR]. It typically displays neutral behaviour in that it can occur within a word with any other vowel, regardless of the vowel's ATR quality. Casali (2003: 37–38) shares similar sentiments in this regard, arguing that the vowel /a/ in Dholuo “does not function as a genuinely [+ATR] vowel in the language; it is still clearly a [-ATR] vowel in a number of respects.” To support his argument, he further states that vowel /a/ “has the voice quality characteristics of other [-ATR] vowels” and, from an empirical perspective, he points out that “roots containing only /a/ take [-ATR] rather than [+ATR] forms of harmonizing affixes”.

Likewise, in reporting on the behavior of the vowel /a/, Ojal (2015: 80) affirms that “this vowel is a neutral one in Dholuo, and like other neutral vowels, it is underlyingly [-ATR]”. In coming to this conclusion, Ojal tested this vowel's behavior with infinitives. The infinitive suffix in Dholuo is [-o] or [-ɔ], depending on the ATR nature of the stem vowels, with the former patterning with [+ATR] stems and the latter with [-ATR] stems. In his analysis, Ojal (2015: 79) compared the behavior of the vowel /a/ with [+ATR] stem vowels. Based on his findings, he claims that “the vowel /a/ is the only vowel in Dholuo that lacks the [+ATR] suffix [-o]”. and “this confirms Casali's assertion that roots containing only /a/ take [-ATR] rather than [+ATR] forms of harmonizing affixes”.

2.2.2 /a/ to [e] alternations

Another matter pertaining to the vowel /a/ concerns alternations between /a/ and [e]. In sections below, it will be shown that many instances of this alternation are found in the presence of different plural suffixes. For example, if the stem vowel of a singular noun is underlyingly /a/, it alternates to [e] when a plural suffix containing a front vowel – *-e*, *-ni*, or *-i* – is added to the stem. It is therefore

important to consider why this is so in order to fully account for the language's plural formation.

In his study on the status of the vowel /a/ in Dholuo, Ojal (2015) uses a list of nouns (singular and plural) and verbs (imperatives and gerunds) to examine the occurrence of the vowel /a/ with the plural suffixes *-e* and *-ni*, alongside the verbal-noun suffix *-o*. These three suffixes are inherently [+ATR]. The vowel /a/ was the stem vowel for all the nouns and verbs in the data. His findings, specifically for nouns and verbs from the South Nyanza Dholuo dialect, reveal that “/a/ becomes [e] when [+ATR] suffixes /-ni/, /-e/ and /-o/ are attached to a root containing it.” He concludes that “this is a clear case of vowel raising or shift where /a/, a low vowel has been raised to [e], a mid-high vowel” (p. 78). He adds that “this raising or shift is occasioned by the fact that there is need for harmony since the suffixes are inherently [+ATR] while the root vowel [a] lacks a [+ATR] harmony counterpart” (p. 78). As such, one can view this as the vowel [e] filling a gap as the arguably closest [+ATR] vowel to /a/. I concur with Ojal's argument regarding /a/ to [e] “harmony”. This explanation will serve as a point of reference whenever there is an instance of /a/ to [e] alternation below.

2.3 Tone

Dholuo is a tone language wherein tone is both lexical (i.e., can be used to distinguish meaning in words) and grammatical (i.e., can convey grammatical distinctions, such as in tense/aspect or part of speech). Remarkably little detail is known about its tone system, however, and even basic facts about its characteristics are often conflicting (cf. Gregersen 1961, Okoth-Okombo 1982, 1997, Ombijah 2020, Tucker 1994). With this in mind, I assume that vowels are the tone bearing units, and there are four primary tones on these vowels: High tone (ṽ), Low tone (v̇), Falling tone (v̂), and Rising tone (v̌). Besides these, Tucker (1994) establishes a variety of allotones in Dholuo, for instance, downstepped high tone, undulating tone, extra high tone, extra low tone, extra high falling, and low descending tone. In this paper, the only allotone that I will assume is downstepped High tone (ṽ'v̌), which is non-automatic, as it is usually caused by Obligatory Contour Principle (OCP; Leben 1973) effects on High tones associated with adjacent vowels. Just like in the case of ATR feature, Dholuo orthography does not overtly represent tone.

3 Methodology

This study employs a qualitative research strategy, and the data used are drawn from a sample of native Dholuo nouns, including several that are borrowings from Swahili and English. As mentioned above, the data are specifically representative of the South Nyanza dialect of Dholuo which is spoken in various parts of the South Nyanza region of Kenya and most parts of Central Nyanza. I rely mainly on my intuitions as a native Dholuo speaker in presenting and analyzing the data.

The data are organized and analyzed in various morphological classes which are defined upon the primary morphophonological process(es) that the nouns within the class undergo during plural formation.

The morphophonological analysis of native Dholuo nouns offered below is primarily descriptive. That said, it expands upon previous works that have sought to analyze the sometimes seemingly unusual alternations witnessed between the language's singular and plural nouns. Besides attempting to offer a more comprehensive overview of the various pluralization patterns found in the language, a key contribution of this chapter is my proposal of a novel analysis of *-e* pluralization that involves the suffix /-tE/.

4 Data and analysis

In this section, I provide a description and analysis of the various phonological and morphophonological processes that take place in the formation of plural nouns in Dholuo. I begin with discussing plural formation via suffixation, which is by far the most common strategy. There are three different suffixes employed, though suffixation via *-e* is the most widely attested among the three. I later turn to other strategies for pluralization, namely subtraction and stem suppletion. Data are presented using IPA notation. Vowels within a word are considered to have the same ATR feature specification, as is characteristic in Dholuo morphophonology (Okello 2020). Tones are marked according to the conventions defined above.

4.1 Pluralization by *-i* and *-ni*

As stated above, there are three suffixes involved in Dholuo plural formation. Two of these, *-i* and *-ni*, exhibit fairly straightforward behavior such that they do not involve the same type and number of consonant mutations seen below for *-e* suffixation. Pluralization via *-i* and *-ni* are discussed first in this section before turning to the more complex behavior of *-e* pluralization.

Examples of *-i* pluralization are in Table 4. These nouns consistently realize a voiced stem-final consonant in the plural, which is voiceless in the singular when no suffix is present. I assume, therefore, that the stem-final consonant in these stems is underlyingly voiced that the outcomes in the singular as involving a straightforward instance of word-final devoicing, and, more specifically, they involve voicing neutralization.

Table 4: *-i* suffixation

	Singular	Plural	
a.	rùàθ	rùèðì	‘bull’
b.	rùòθ	rúóðì	‘king/chief’
c.	gùòk	gúógî	‘dog’
d.	dʒùòk	dʒùògî	‘spirit’
e.	ò ⁿ dièk	ò ⁿ diégî	‘hyena’
f.	mùòk	múógî	‘antbear/aardvark’
g.	dàk	dègî	‘pot’
h.	òt	ùdì	‘house’

Note that if the stem vowel of a singular noun is /a/, it alternates to [e] in the plural. Along similar lines, [-ATR] stem vowels in the singular become [+ATR] when appearing before plural *-i*. Somewhat surprisingly, however, there are occasions in which a [-ATR] mid vowel will alternate in both [ATR] and height, as in Table 4h.

Here and elsewhere, it will become clear that alternations in tone between singular and plural forms involving *-i* and *-e* are typically not predictable. For example, in Table 4, sometimes the tone on noun stems changes from Low to High (as in Table 4b,c), whereas in others, like (Table 4g,h), there is no tone alternation. As will be shown below for *-e* pluralization, still other stem tone alternations are attested, such as High to Low, or Rising to High. Pluralization involving *-ni*, however, always results in an alternation of the stem tone to Low tone.

Pluralization by *-ni*, as seen in Table 5, is even simpler than by *-i*, as it involves no alternations affecting stem consonants. That said, a stem-final vowel, as seen in singular forms, is lost upon addition of the plural suffix. Others who have described Dholuo pluralization have noted this vowel loss (e.g., Gregersen 1961, Okoth-Okombo 1982), but have simply stipulated that it occurs. I will tentatively assume that this loss is grounded in metrification whereby the second short vowel in a sequence of three is lost. It will be shown that this assumption

stems from alternations involving *-e* pluralization discussed in the next subsection.

Table 5: *-ni* suffixation

	Singular	Plural	
a.	kó ^m bé	kò ^m bni	'hole in tree'
b.	tʃùlá	tʃùlni	'island'
c.	hónó	hònni	'miracle'
d.	ⁿ dígà	ⁿ dignì	'bicycle'
e.	àgúlú	àgùlni	'clay pot'
f.	kóbé	kùbni	'jerrican'
g.	lăw	lèwni	'clothing/garment'
h.	ɔgá ⁿ dá	ògè ⁿ dni	'kingdom'
i.	àgwátá	àgùètni	'calabash'
j.	lúá ⁿ dá	lùè ⁿ dni	'rock'
k.	ⁿ dàrà	ⁿ dèrni	'road'

Other predictable vocalic and harmonic alternations are triggered by the *-ni* suffix, and as stated above, the presence of *-ni* entails Low tone on the stem.

4.2 Pluralization by *-e*

Pluralization by the addition of the suffix *-e* is by far the most common strategy encountered in Dholuo. It can be thought of as a default strategy of sorts, as it is productive and applicable in the incorporation of loanwords (Gregersen 1961: 91). That said, the process is more complex than simply adding this suffix. In addition to now expected alternations affecting vowels, as introduced above, many instances of *-e* pluralization involve some alternation or mutation that affects the last consonant of the stem. As will be seen in the remainder of this subsection, there are no fewer than ten unique outcomes to be discussed that fall under the heading of *-e* pluralization, as previewed in Table 6.

Given the number and sometimes unusual nature of the alternations involved in *-e* pluralization, morphophonologists have been both intrigued and puzzled by their outcomes and have offered several ways to analyze them formally. One such treatment by Alderete (1999) involving *consonant voice polarity* was introduced above and problematized as failing to address those cases where no such polarity occurs. Trommer (2011: 245) instead argues, drawing inspiration from perspectives raised in Tucker (1994), that rather than simply involving the suffix *-e*, pluralization of this type involves an abstract suffix /-Ce/ whose surface

Table 6: *-e* suffixation

	Singular	Plural	
a.	tʃík	tʃíkè	‘law/regulation’
b.	òsíkí	òsíkê	‘tree stump’
c.	gòt	gòdè	‘hill/mountain’
d.	ògùdú	ògútê	‘hat/cap’
e.	kùdnì	kútê	‘worm’
f.	bù ^ŋ gú	bú ^ŋ gê	‘bush/forest’
g.	kóm	kò ^m bè	‘chair’
h.	mòmâ	mò ^m bè	‘Bible’
i.	tól	tò ⁿ dè	‘rope’
j.	lér	lètʃè	‘vein’

realization (in both quality and voice) depends on featural properties of the stem consonant. While it is far beyond the scope of this paper to provide a formal analysis of all outcomes weighed against Trommer’s, I submit that a somewhat simpler solution can be posited if one considers this suffix to be underlyingly /-tE/.

4.2.1 Voiceless stems with no voice alternation

The simplest instances of *-e* pluralization involve no voicing alternation of the final consonant in the stem. Examples are provided in Table 7. As pointed out by Tucker (1994), all such non-alternating stems involve an underlying stem-final voiceless consonant, a perspective which I adopt here. Note that here and elsewhere, though I use the term *stem-final*, I extend this to mean the last consonant in a stem, which emerges as stem final as a result of stem-final vowel loss, a process also posited elsewhere (Trommer 2011, Tucker 1994).

C-final stems of this type undergo word-final devoicing vacuously, while corresponding V-final stems realize no voicing alternation. Upon pluralization, I assume that /-tE/ is added to the stem, though the suffixal consonant is ultimately lost. The alternation is simple for C-final stems, though the same occurs for V-final stems following the noted stem-final vowel loss. That is, stem-final vowel loss precedes suffixal consonant loss. The importance of the suffixal consonant to my analysis will become clear below. Briefly here, however, I assume that there is no voicing alternation because both the suffixal vowel and the stem vowel are voiceless. A different outcome occurs under other conditions. The surface quality of the suffixal vowel, of course, is predictable by ATR harmony.

Table 7: C- and V-final stems with no voicing alternation

	Singular	Plural	
a.	tʃík	tʃíkè	'law/regulation'
b.	làk	lékè	'tooth'
c.	wátʃ	wètʃè	'word, information, news'
d.	òsíép	òsièpè	'friend'
e.	òfis	òfisè	'office'
f.	sì ⁿ dàn	sì ⁿ dénè	'needle'
g.	òsíkí	òsíkè	'tree stump'
h.	òdzìkò	òdzíkè	'spoon'
i.	òfúkò	òfúkè	'pocket'
j.	dirísà	dirísè	'window'
k.	dùkà	dúkè	'store'

4.2.2 C-final obstruent stems: voiceless SG, voiced PL

For consonant-final stems with a final obstruent that is voiced in the plural and alternates to voiceless in the singular, I assume that this obstruent is voiced underlyingly. Examples of this type are shown in Table 8. Here, the alternation to voiceless in the singular is due to word-final devoicing when the plural suffix is not present. Like in the plurals described just above, the suffixal consonant is not realized. It will be shown in the next subsection, however, that in V-final stems of this type, the suffixal consonant finally exerts its influence.

Table 8: C-final obstruent stems - voiceless SG, voiced PL

	Singular	Plural	
a.	gòt	gòdè	'hill/mountain'
b.	wàt	wédè	'relative'
c.	bàt	bédè	'arm'
d.	tʃàk	tʃégè	'milk'
e.	gùòk	gúógî	'dog'
f.	lòθ	lòðè	'staff/rod'
g.	pìθ	pìðè	'slope (inclined surface)'
h.	pùθ	púðè	'crippled person'

4.2.3 V-final obstruent stems: voiced SG, voiceless PL

Singular/Plural pairs with consonant-final stems in Table 8 can be directly compared to those in Table 9 which have vowel-final stems. The two types are markedly different from one another. Whereas the former have a voiceless consonant in the singular and a voiced consonant in the plural, the latter realize the exact opposite outcome: voiced singular, voiceless plural.

Table 9: V-final stems - voiced SG, voiceless PL

	Singular	Plural	
a.	lwédô	lúétê	‘hand’
b.	kidí	kitê	‘stone’
c.	ògûdú	ògútê	‘hat/cap’
d.	tùgò	túkê	‘game/sport’
e.	òsògò	òsóké	‘weaver bird’
f.	tʃògó	tʃókê	‘bone’
g.	àdʒóògá	àdʒùókê	‘diviner’
h.	pùòðó	pùóθê	‘farmland’
i.	àîðá	àíθê	‘squirrel’
j.	kóðð	kòθε	‘thorn’

I posit that this difference in stem shape is closely tied to the alternations that they participate in. Under the assumption of the suffix $/-tE/$, I would argue that C-final stems simply involve loss of the suffixal consonant: $/gɔd+tE/ \rightarrow [gɔ̀dɛ]$ (8a). V-final stems, on the other hand, following a rule of metrically-conditioned vowel loss introduced above, witness a rule of voicing agreement (analogous to that proposed by Trommer 2011) that is active, but only in derived environments. As such, one arrives at a derivation like $/kidi+tE/ \rightarrow [kid+tE] \rightarrow [kit+tE] \rightarrow [kítê]$ (9b). The suffixal consonant is arguably lost, but not before it exerts its influence on the voicing specification of the newly stem-final consonant.

Such an approach would offer an explanation for seemingly unrelated singular/plural pairs like *kùdni/kútê* ‘worm/worms’ and *kògnò/kókê* ‘nail/nails (of fingers or toes)’. Under the analysis just proposed, one could posit that the underlying form of ‘worms’ is $/kudn+tE/$. Via a rule of nasal deletion between the adjacent stops, a derived environment is created whereafter the suffixal stop is able to affect devoicing on the remaining stem consonant.

4.2.4 Prenasalized stop stems: No voicing alternation

Stems whose final consonant is a prenasalized stop constitute a separate subgroup that exhibits unique properties. These stems undergo no consonant alternations or mutations between the singular and plural that affect their stem consonants. Representative examples are shown in Table 10.

Table 10: NC-final stems

	Singular	Plural	
a.	bù ^ŋ gú	bú ^ŋ gê	'bush/forest'
b.	ró ^m bô	rò ^m bè	'sheep'
c.	tà ^ŋ gì	té ^ŋ gê	'tank'
d.	rù ^ŋ gú	rú ^ŋ gê	'club (weapon)'

The behavior of these nouns is easily captured in the analysis under development thus far in this paper. Despite being V-final stems, and presumably undergoing stem-final vowel loss, the /-tE/ suffix realizes no effect on the stem consonant. I assume that this situation arises because pre-nasalized consonants are complex segments for which an alternation in voice would entail subsequent alternations that would be too phonologically or phonotactically costly to be realized, and thus they remain unaffected.

4.2.5 Nasal stems

Noun stems whose final consonant is a nasal also support the proposed analysis with a plural suffix whose underlying form is /-tE/. As seen in the C-final nasal stems in Table 11, all such stems that end in a singleton nasal in the singular are realized with a prenasalized stop in the plural.

The alternations seen here are easily accounted for if one appeals to some rather uncontroversial phonotactic properties of Dholuo. Indeed, reference works like Tucker (1994) and formal works like Trommer (2011) similarly appeal to phonotactic restrictions (or constraints) in the language to explain a variety of other outcomes in the language's morphophonology. If one posits that Dholuo avoids nasal+voiceless stop sequences, and also that any sequence of nasal + voiced stop must be homorganic, the outcomes in Table 11 easily emerge. Via the proposed suffix /-tE/, the stem-final nasal could simply be seen as progressively assimilating the suffixal consonant to its specification for both voicing and place of articulation.

Table 11: C-final stems - nasal alternations

	Singular	Plural	
a.	kóm	kòm ^m bè	‘chair’
b.	θim	θim ^m bè	‘wilderness’
c.	tím	tì ^m bè	‘behavior, manners’
d.	nàm	né ^m bê	‘lake’
e.	lùm	lú ^m bê	‘grass’
f.	jíèn	jìè ⁿ dè	‘tree’
g.	pìèn	pié ⁿ dê	‘skin, hide, leather’
h.	pìŋ	pì ^ŋ dʒè	‘country, nation’
i.	lwéŋ	lwè ^ŋ dʒè	‘war, battle’
j.	tón	tò ^ŋ gè	‘egg’ or ‘spear’
k.	wàŋ	wé ^ŋ gê	‘eye’

Outcomes like those seen for V-final nasal stems in Table 12 require little additional explanation, provided that one recognizes stem-final vowel loss, as discussed here and elsewhere. Such vowel loss would simply feed the downstream assimilations just mentioned.

Table 12: V-final stems - nasal alternations

	Singular	Plural	
a.	mòmâ	mòm ^m bè	‘Bible’
b.	òlèmò	òlé ^m bê	‘fruit’
c.	jàmò	jé ^m bê	‘wind’
d.	pìnò	pí ⁿ dê	‘wasp’
e.	sígáná	sìgè ⁿ dè	‘story’
f.	kòŋò	kó ^ŋ gê	‘alcoholic drink’
g.	ŋìŋò	ŋí ^ŋ dʒè	‘iron (metal)’
h.	lwàŋŋì	lúé ^ŋ gê	‘housefly’

4.2.6 Stems with /l/ to [ʳd] alternations

Alternations discussed in this subsection, as well as those in the next subsection, are admittedly more complex, but still, they are transparently accounted for by

the proposed analysis. Alternations seen in the examples in Table 13 involve what I will call “lateral stems”, namely those whose final consonant is [l]. In the plural, one observes an alternation to [ʰd].

Table 13: Stem-final lateral alternations

	Singular	Plural	
a.	tól	tò ⁿ dè	‘rope’
b.	ògwàl	ògúé ⁿ dè	‘frog’
c.	thùòl	thúó ⁿ dè	‘snake’
d.	bùl	bù ⁿ dè	‘drum’
e.	tɛ̀l̀ò	tíé ⁿ dé	‘foot/leg’
f.	àǎòlá	àǎò ⁿ dè	‘wound’

The alternations seen here also have an explanation grounded in Dholuo’s phonotactics. If one surveys the language’s syllable contact sequences and its broader syllable phonotactics, it can be seen that liquid-stop sequences like *[lt] and *[rt] do not appear. In morphologically-derived environments where such sequences might be expected to appear, they are repaired. The chosen repair for *[lt] is [ʰd], which involves two steps, though the order in which the steps occur is not entirely clear. I will assume that *[lt] is first repaired by progressive voicing assimilation to *ld, though this is subsequently repaired to [ʰd] given that, as just stated, liquid-stop sequences, in general, are dispreferred in the language.

4.2.7 Stems with /r/ to [tʃ] alternations

Last among instances of *-e* pluralization are those nouns with stem-final /r/. These nouns witness an alternation to [tʃ] in their plural. Alternations like this are similar in ways to those described just above which repair an illicit *[lt] sequence. Like such sequences, a *[rt] sequence is similarly disallowed in Dholuo. Examples of nouns exhibiting these alternations are in Table 14.

From a featural standpoint, and once again assuming /-tE/, one can understand these outcomes such that an alternation from /r/ to [tʃ] involves an alternation in the features [continuant] and [sonorant]. Alternations in both features emerge in favor of the suffixal consonant which is [-continuant, -sonorant]. That said, [r] is [+high], and this appears to be maintained on the resulting consonant, as affricates and other similarly palatalized sounds are often considered to be [+high]. If this is true, then the outcome is motivated by phonotactics and thus by featural preferences, with two features contributed by the suffixal consonant, but one from the stem consonant.

Table 14: Stem rhotic alternations

	Singular	Plural	
a.	òṇèr	òṇétǵè	‘monkey’
b.	lér	lètǵè	‘vein’
c.	síbúòr	síbúótǵè	‘lion’
d.	bùr	bùtǵè	‘hole’
e.	bòr	bòtǵè	‘boil’
f.	dèrò	détǵè	‘granary’
g.	kùèro	kùètǵè	‘taboo’
h.	ᵐgéro	ᵐgètǵè	‘proverb’
i.	jùòrò	júótǵè	‘sibling-in-law’
j.	bùrà	bútǵè	‘meeting’
k.	àòrà	àótǵè	‘river’
l.	tǵíró	tǵítǵè	‘market’
m.	màsîrà	màsîtǵè	‘tragedy’

4.3 Plural formation via suppletion

Having described the many outcomes involving pluralization via suffixation in the sections above, focus turns now to other mechanisms of pluralization. In this section, I discuss Dholuo plural nouns whose formation involves the process of suppletion, whether involving the first element of a compound or the stem itself. Instances of suppletion in compounding are partial or “weak” – they involve forms that are clearly morphologically related, yet deriving one form from the other is not strictly phonological. Instances of stem suppletion in Dholuo pluralization are either “weak” or “strong”. I begin with a brief illustration of the comparatively less extensive matter of stem suppletion before turning to compounds.

4.3.1 Stem suppletion

As mentioned, stem suppletion between singular and plural nouns may involve stems that are either demonstrably related to one another, as in Table 15, or otherwise clearly derived from entirely different stems, as in Table 16. The former represents a case of weak suppletion, while the latter is strong suppletion.

Table 15: Weak stem rhotic suppletion

	Singular	Plural	
a.	wuòrò	wúónê	'father'
b.	mìjò	mínê	'mother'
c.	pì	pígê	'water (body of)'
d.	túô	tuòtfè	'disease'
e.	ǎàŋ	ǎòk	'cow'
f.	jò	jòrè	'way/path'
g.	dìèl	dìèk	'goat'
h.	lièl	liétê	'funeral, grave'

Table 16: Strong stem suppletion

	Singular	Plural	
a.	ǎákô	món	'woman'
b.	dálâ	mìèr	'homestead, usually in a village'
c.	ŋàtò	jì	'person/people'

4.3.2 Suppletion in compounds

Gregersen (1961: 115–116) points out the difficulty of distinguishing between compounds and phrases in Dhouluo. Even for constructs that he defines as compounds, he often refers to their first element as a “prefix”. With this inherent challenge in mind, several instances of plural formation involving these constructs are discussed below. In each, the first element, which is the head of the resulting construction, is inflected for plural number. The second, non-head element is largely unaffected as a result of the process, except tonally in some instances.

The first two instances of suppletion discussed here do appear more prefix-like in that involved morphemes appear attenuated relative to the noun from which they are known to be derived. The first involves alternations affecting what I shall call the agentive prefix *dʒà-*, which alternates to *dʒò-*. The other involves alternations affecting what I shall call the diminutive prefix *pà-*, which alternates with *pí-*. Both are characterized as weak suppletion given their shared consonantal content, though the involved vocalic alternation is challenging to motivate phonologically in that it involves a morphologically-conditioned height mutation.

Starting with the former, agentive nouns and nouns for professions are formed by the addition of the agentive prefix to nouns, verbal nouns, or adjectives. The resulting noun means ‘a person or people of’, ‘a person or people who come(s) from a geographical location X’, or ‘a person who does some job, profession, or action’. The person/people referred to is/are usually male. As such, they function as the masculine counterparts of diminutive *ɲà-/ɲí-* prefixation, which is typically used for females, as discussed below.

The singular agentive prefix *dʒà-* is derived from the noun *dʒàl* or *dʒàgò* ‘person’, while its plural counterpart arguably derives from *dʒògò* ‘the people’ or ‘those people’. Thus, whether one considers the operation to be truly prefixation following by inflection for number, or otherwise a type of compounding is open to interpretation. As elsewhere, stems further undergo various processes ranging from suffixation and subtraction, to consonantal, vocalic, and tonal alternations, all of which are covered elsewhere in this chapter. Examples of these nouns are given in Table 17.

Table 17: Agentive nouns with *dʒà-/dʒò-*

	Singular	Plural	
a.	<i>dʒàlúô</i>	<i>dʒòlúô</i>	‘Luo person’
b.	<i>dʒàsê^mbò</i>	<i>dʒòàsê^mbò</i>	‘[male] person from Asembo’
c.	<i>dʒàkóm</i>	<i>dʒòkóm</i>	‘chairperson’
d.	<i>dʒàké^lnó</i>	<i>dʒòké^lnó</i>	‘treasurer’
e.	<i>dʒàwèr</i>	<i>dʒòwèr</i>	‘singer’
f.	<i>dʒàpùr</i>	<i>dʒòpùr</i>	‘farmer’
g.	<i>dʒàgé^ldó</i>	<i>dʒògé^ldó</i>	‘mason’
h.	<i>dʒàlú^lpó</i>	<i>dʒòlú^lpó</i>	‘fisherman’
i.	<i>dʒàθièθ</i>	<i>dʒòθièθ</i>	‘doctor/medicine man’
j.	<i>dʒàpúóⁿdʒ</i>	<i>dʒòpúóⁿdʒ(è)</i>	‘teacher’
k.	<i>dʒàsòⁿgá</i>	<i>dʒòsòⁿgá</i>	‘boastful person’
l.	<i>dʒàwùòrò</i>	<i>dʒòwùòtʃê</i>	‘selfish person’

Based on the nouns from which these prefixes are derived, we can assume that the vowels of both prefixes are underlyingly [-ATR]. However, the examples given illustrate, at least for the plural suffix, that they alternate regressively to the ATR quality of the vowels within the stem that they are attached to. This behavior is in line with ATR harmony, as seen elsewhere in Dholuo. The low vowel of the singular prefix notably does not alternate to [e]. I assume that perhaps the

failure of this alternation to occur is that it does not apply to prefixal elements, or otherwise does not cross a word boundary, rather applying only to stems and suffixes.

Analogous outcomes are found with the prefix *ɲà-*, which serves several purposes in Dholuo. One of its functions is as a diminutive morpheme, in which case, when it is attached to an animate noun, it forms the diminutive form of the noun in question. The prefix itself is derived from *ɲàθî*, 'child, young one'. Its plural is *ɲíθî*. Accordingly, a plural diminutive noun requires the prefix *ɲí-*. As was the case above for *dʒa-*, it is unclear whether it is best to treat the formation of these words as an instance of affixation or compounding. Either way, the witnessed alternation in *ɲà-/ɲí-* can be considered a case of weak suppletion. Note that the singular prefix has an optional variant *ɲàr-* that occurs before vowel-initial stems. Examples of singular and plural nouns formed with this prefix are in Table 18.

Table 18: Diminutive nouns with *ɲà-/ɲí-*

	Singular	Plural	
a.	ɲàgwènò	ɲígúén	'chick'
b.	ɲàró ^m bô	ɲírô ^m bè	'lamb'
c.	ɲàrwaθ	ɲírúêðî	'bull-calf'
d.	ɲàròjà	ɲírôji	'calf (of a cow)'
e.	ɲàdièl	ɲídíèk	'kid (goat)'
f.	ɲàguòk	ɲígúógî	'puppy'
g.	ɲàkwàrɔ	ɲíkwâjò	'grandchild'
h.	ɲàθî	ɲíθîndò	'child (of a human)'
i.	ɲàr asê ^m bò/ɲasê ^m bò	ɲí asê ^m bò	'[female] person from Asembo'
j.	ɲàr sàkwà/ɲàsàkwà	ɲí sàkwà	'[female] person from Sakwa'

As these examples illustrate, the prefix *ɲà-* may also be attached to a locative noun to express the idea 'a [female] person from place/region X'. To be clear, one prefix *ɲà-* is derived from the word *ɲàθî* 'child or young one [of]'. This is the *ɲà-* that functions as a diminutive. A second prefix, *ɲàr-* is derived from the word *ɲàr* 'daughter of'. It is the latter that is attached to a locative noun to express the idea 'a [female] person from place/region X', and in the plural, it is *ɲí* 'the daughters of'. These morphemes *ɲà-* or *ɲàr* and *ɲí(-)* are the feminine counterparts of the morphemes *dʒa-* and *dʒɔ-* that were discussed above, specifically when the latter

pair of morphemes is used to refer to a person or people from a particular geographical location. The morpheme *ní* occurs as a word (i.e., a free morpheme) when used with nouns and as a prefix when used together with bound stems.

Other examples of apparent compounding can be found that largely align with the behavior discussed for the agentive and diminutive, though their first element or head is arguably less attenuated. While not discussed in works like Gregersen (1961), these nonetheless exhibit properties that he otherwise attributes to compounds. Two of these have in common that their complement is a verbal noun. One involves the noun *gír*, which generally refers to a ‘tool/item used for X’. Consider *gír òt* ‘household item’ or ‘tool for (a/the) house’ which is composed of this noun and the word for ‘house’. When pluralized, the head noun is closely related *gík*. Both are subject to regressive ATR harmony. Additional examples are in Table 19.

Table 19: Compounds with *gír/gík*

	Singular	Plural	
a.	<i>gír pùòðó</i>	<i>gík púòðó</i>	‘farm supply/tool’
b.	<i>gír tǵíró</i>	<i>gík tǵíró</i>	‘market supply’
c.	<i>gír óhálá</i>	<i>gík óhálá</i>	‘business item/commodity’
d.	<i>gír òt</i>	<i>gík ót</i>	‘household item’
e.	<i>gír tǵògò</i>	<i>gík tǵógò</i>	‘something to play with’
f.	<i>gír tǵé’ńó</i>	<i>gík tǵé’ńó</i>	‘tool for sewing’
g.	<i>gír pùó^hdǵó</i>	<i>gík pùó^hdǵó</i>	‘teaching aid/supply’
h.	<i>gír tédò</i>	<i>gík tédò</i>	‘cooking utensil/appliance’

Compounds involving *kàr* ‘a place for’ are similar in that they take a verbal noun complement. Here, however, forming the plural involves much stronger suppletion of the stem to *kùò^hdé*. Examples are provided in Table 20.

A final compound of this type involves singular *wùòn* and its plural counterpart *wêg* which selects a nominal complement and derives nouns meaning ‘owner of X’. Examples are in Table 21.

These are unique in that the nominal complement can optionally be pluralized to yield a “double plural”, a possibility mentioned in passing in Gregersen (1961). Consider, for example, *wùòn pùòðó* ‘farmland owner’, which can be realized *wêg púòðó* ‘farmland owners’, with only the head being pluralized, or as *wêg pùóthê* ‘owners of farmlands’, with both nouns pluralized.

Table 20: Compounds with *kàr/kùòⁿdé*

	Singular	Plural	
a.	kàr nì ⁿ dò	kùò ⁿ dé nì ⁿ dò	'place for sleeping/sleeping area'
b.	kàr tèdò	kùò ⁿ dé tèdò	'place for cooking/cooking area'
c.	kàr tʃíé ^l mó	kùò ⁿ dé tʃíé ^l mó	'eating area/location'
d.	kàr bòḍò	kùò ⁿ dé bòḍò	'resting area/place for relaxing'
e.	kàr rò mò	kùò ⁿ dé rò mò	'meeting place/venue'
f.	kàr pì	kùò ⁿ dé pì	'place where water is stored/fetched/sold'
g.	kàr pé ⁿ dʒ	kùò ⁿ dé pé ⁿ dʒ	'exam location/venue'

Table 21: Compounds with *wùòⁿ/wêg*

	Singular	Plural	
a.	wùò ⁿ òt	wêg ôt	'house owner'
b.	wùò ⁿ kòm	wêg kóm	'owner of chair'
c.	wùò ⁿ pùòḍó	wêg púòḍó	'farmland owner'
d.	wùò ⁿ lewni	wêg léwni	'owner of clothing'
e.	wùò ⁿ gùòk	wêg gúòk	'dog owner'
f.	wùò ⁿ tígô	wêg tígô	'necklace owner'

4.4 Plural formation by subtraction

A final type of plural formation to be discussed in Dholuo involves shortening or truncation of a singular noun form by eliding its final vowel. This morphological process is referred to as subtraction. Most nouns in this category usually occur in their plural forms, and thus, one can perhaps assume that the plural noun forms the base upon which a singular noun is formed. One possible explanation for this is that, under normal circumstances, a person does not (for example) own only one fowl (especially in Luoland), and birds are usually seen in groups, rather than individually. Similar reasoning could be extended to most (but not all) other nouns behaving in this way. Table 22 below shows a few examples of plural nouns formed by the process of subtraction.

Table 22: Plural formation via subtraction

	Singular	Plural	
a.	kwànnò	kwán	‘count/total number/calculation’
b.	únô	ùn	‘thick rope’
c.	wìpńó	wìpń	‘bird’
d.	wùotfè	wúótɸ	‘shoe’
e.	gwòńńó	gwóńń	‘rash’
f.	gwènò	gúén	‘fowl’

5 Summary and concluding remarks

This paper has examined plural formation in Dholuo by providing a description and analysis of various morphological and morphophonological processes that take place in the inflection of nouns for number. I have proposed, following others’ perspectives on the language, that there are several morphological classes that dictate a given noun’s plural formation. Notably, I have proposed a novel possibility to unify and explain six interrelated patterns involving *-e*, or better yet */-tE/*, suffixation.

This analysis and other findings of this study build on previous research on Dholuo plural formation and also make a resourceful contribution to future research on the language, and perhaps other Nilotic languages. By providing a detailed synthesis of the various patterns and processes involved in number inflection, this study fills a gap left in most studies previously done in Dholuo plural formation that often discuss only a portion of the possible patterns, or otherwise fail to take into account all alternations involved in a given pattern. This study thus can serve as a point of reference not only for future linguistic research, but also current and future speakers and learners of Dholuo.

Abbreviations

ATR	Advanced Tongue Root
PL	Plural
SG	Singular

Acknowledgments

Writing this paper has been both a learning process and a rewarding experience. I would first like to express my utmost appreciation to Prof. Samuel Obeng for his guidance and invaluable support during my PhD studies at Indiana University. To the editors of this volume, Christopher Green and Samson Lotven, I am thankful to you both for the tremendous amount of time and effort that you've put into this project to make the writing and publishing of this book a reality. I would also like to express my sincere thanks to the reviewers for all the time they took to read my paper and others' as well. Thank you very much for your useful comments and suggestions, and detailed feedback.

References

- Alderete. 1999. *Morphologically governed accent in Optimality Theory*. University of Massachusetts Amherst. (Doctoral dissertation).
- Barasa, David. 2018. ATR vowel harmony in Ateso. *Stellenbosch Papers in Linguistics* 54. 61–69. DOI: 10.5842/540751.
- Borowsky, Toni & Peter Avery. 2009. Dhochi: A Dholuo language game. *Australian Journal of Linguistics* 29. 169–194. DOI: 10.1080/07268600902823094.
- Casali, Roderic. 2003. [ATR] value asymmetries and underlying vowel inventory structure in Niger-Congo and Nilo-Saharan. *Linguistic Typology* 7. 307–382. DOI: 10.1515/lity.2003.018.
- Gregersen, Edgar Alstrup. 1961. *Luo: A grammar*. Yale University. (Doctoral dissertation).
- Leben, William. 1973. *Suprasegmental phonology*. MIT. (Doctoral dissertation).
- Ndeda, Mildred A. J. 2019. Population movement, settlement and the construction of society to the east of Lake Victoria in precolonial times: The western Kenyan case. *The East Africa Review* 52. 83–108. DOI: 10.4000/eastafrica.473.
- Njuki, Muriithi Gerald. 2019. *The phonology and lexical variation within Kisumu-South Nyanza dialect of Dholuo*. University of Nairobi. (MA thesis).
- Oduor, Jane Akinyi Ngala. 2002. *A study of syllable weight and its effects on Dholuo phonology*. University of Nairobi. (Doctoral dissertation).
- Ojal, Were George. 2015. The status of the vowel [a] in Dholuo: A phonological look at the vowel in terms of [ATR] value. *IOSR Journal of Humanities and Social Science* 20. 76–80. DOI: 10.9790/0837-20547680.
- Okelo, Beatrice N. 2020. *Aspects of Luo anthroponymy: Morphophonological and ethnopragmatic perspectives*. Indiana University, Bloomington. (Doctoral dissertation).

- Okoth-Okombo, Duncan. 1982. *Dholuo morphophonemics in a generative framework*. Berlin: Reimer.
- Okoth-Okombo, Duncan. 1997. *A functional grammar of Dholuo*. Köln: Rüdiger Köppe.
- Ombijah, Z. S. 2020. *Intonation in Luo*. University of Essex. (Doctoral dissertation).
- Onyango, Ong'ayo Francis. 2016. Articulatory harmony in plural formations in Dholuo phonology. *International Journal of Academic Research in Progressive Education and Development* 5. 7–14. DOI: 10.6007/IJARPED/v5-i1/1970.
- Trommer, Jochen. 2011. Phonological sensitivity to morphological structure. In Marc van Oostendrop, Colin J. Ewen, Elizabeth Hume & Keren Rice (eds.), *The Blackwell companion to phonology*, vol. 4. DOI: 10.1002/9781444335262.wbctp0103.
- Tucker, Archibald Norman. 1994. *A grammar of Kenya Luo (Dholuo)*. Köln: Rüdiger Köppe.

Chapter 13

Poised to pivot: Kenyan Maay's restricted tone system

Christopher R. Green

Syracuse University

Katrina Smith

University of Florida

This paper explores characteristics of languages with restricted tone systems, with a focus on dialects of the Cushitic language Maay. Languages with restricted tone systems, referred to by a variety of terms such as *reduced tone*, *pitch accent*, and *non-stress accent*, among others, display several stress-like properties despite remaining definitionally tonal. We discuss two Maay dialects (Kenyan Maay and Baydhabo Maay) that have been on similar pathways toward stresshood, though each has retained different properties of tone systems. We present the Maay facts and compare these dialects' tonal behavior to that of other closely related languages with similarly restricted systems. Through consideration of relevant phonological and morphological processes in these languages, we examine the dividing line between tone and stress, in service of better understanding observed variation between restricted tone systems and pathways to stresshood. We propose an analysis that accounts for the “near pivot” status of these Maay tonal systems.

1 Introduction

Prosodic typology has long drawn a distinction between two main types of prosodic systems: tone and stress (accent). As recognized in the published literature (Beckman 1986, Hyman 2009a, McCawley 1970, 1978, Mous 2021, van der Hulst 2011, among others), however, this simple dichotomy falls short of capturing the true diversity of prosodic systems found in the world's languages. This issue



Christopher R. Green & Katrina Smith. 2024. Poised to pivot: Kenyan Maay's restricted tone system. In Christopher R. Green & Samson Lotven (eds.), *The Ghanaian linguistics nexus*, 269–287. Berlin: Language Science Press. DOI: 10.5281/zenodo.11091843

is explored in Hyman's (2006) cross-linguistic survey of *word-prosodic typology* which illustrates an extensive array of languages whose prosodic systems "pick and choose" (p. 225) or select properties common to other tone or stress systems, rather than fitting fully or neatly into one category or the other. Various terms have been used to discuss and categorize these languages with hybrid prosodic systems, with *pitch accent* and *non-stress-accent* (Beckman 1986) being the best known among them. From the standpoint of prosodic typology, however, not all of these prosodically hybrid systems exhibit the same properties. Hyman (2009a) argues, therefore, that such languages do not constitute a definable type of their own and are instead better treated as having "restricted" or "reduced" tonal systems.

While Clements & Goldsmith (1984) use "transitional" to describe such systems, the term "pivot" system has also been used in reference to restricted tonal systems that could be analyzable as either tone or stress (Hyman 2006: 228, 2009a: 234). The best known example of such a system is in Nubi [iso 639-3: kcn], a Sudanese Arabic-lexified creole spoken in Kenya and Uganda. Gussenhoven (2006) explains that Nubi is neither a typical stress nor tone language. For example, it has no "lexically idiosyncratic" pitch marking, and metrically designated pitch and stress align with one another precisely, meaning that tone and stress cannot be disentangled from one another, or are redundant. For these and other reasons, Nubi's prosodic system is said to be analyzable either as a tone system or a stress system (Gussenhoven 2006, Hyman 2009a).¹

To be considered a tonal language, the bar is set fairly low. The well-known criterion that Hyman (2001) adapts from Welmers (1959) is that a language has a tonal system if it encodes pitch contrasts for "at least some morphemes." These pitch contrasts must be phonologized along one or more featural dimensions and accordingly must be active in some way in the phonological grammar. Beyond these basic requirements, however, tonal systems vary widely in the properties that they exhibit. For example, tonal prominences may occur once, more than once, or even not at all in a given word. The prominence bearer itself may be the syllable or the mora, and tones may or may not be metrically organized (see

¹Alongside Nubi, other languages discussed in the aforementioned works by Hyman are said to have pivot systems, but we would contend that they are different – they do not display the same analytically ambiguous properties that Nubi does. Rather, they are still criterially tonal, albeit in a highly restricted sense. We believe that it is worthwhile to differentiate these non-analytically-ambiguous systems from analytically-ambiguous systems like Nubi's, in order to make clear that they are still best treated as tonal. That said, some such systems, like those found in dialects of Maay, exhibit properties that closely approach the tone/stress pivot. As such, we refer to these as "near pivot" systems.

Akinlabi & Liberman 2001, Green 2015, Leben 1997, 2003, Pearce 2013). These are just a few of the dimensions of tone system variation discussed in Hyman (2009a).

While there is just one definitional parameter for tone systems, the properties of stress systems are more stringently defined. Hyman (2009a) proposes that, in total, there are six parametric settings that are “definitional” and thus *required* of a stress system. Notable among these are that stress systems must exhibit prominence that is both privative and obligatory – there is one, and only one stress in a given word – and that it is realized on syllables, rather than on moras. Languages with stress systems also metrically arrange syllables which bear prominence relations to one another. One potential dimension of variation, however, is that the phonetic correlates of stress may involve length, intensity, vowel quality measures (F1, F2), and pitch, or some combination of these.

With this imbalance in definitional parameters, it is easy to see how variation in the properties of tonal systems might abound relative to stress systems. As should be clear from the preceding discussion, a given tonal system may exhibit some (or even several) stress-like properties, and this is precisely what occurs in languages with restricted tonal systems. These languages tend to display multiple stress-like characteristics, but yet they are unamenable to a stress-based analysis, minimally due to their maintenance of some phonologized featural contrast.

When it comes to languages with restricted or near pivot systems, particularly those that have arguably changed diachronically from being more prototypically tonal to a point where they are one or two parameters away from stresshood, there are several important questions to be asked that can provide insight into changes in and the typology and diachrony of prosodic systems more broadly. For example, for a given restricted tonal system, what property or properties prevent one from classifying it as a stress system? Can a given system's prosodic holdout be predicted from other properties of its grammar? A larger goal would be to assess what property/properties are more common prosodic “holdouts” than others. In the case of Maay, we shall see that pathways toward stresshood in different dialects appear to correlate with different responses taken to the historical loss of tone bearing units at the right edge of a word.

In the remainder of this paper, we begin by providing some necessary details of the prosodic properties of Maay, a Lowland East Cushitic language whose dialects exhibit markedly different tonal systems. Two of these dialects – Kenyan Maay (KM) and Baydhabo Maay (BM) – can be described as highly reduced tonal systems. As we shall see, these systems have changed diachronically to a point where they now stand at the line that separates tone and stress, yet they have done so in different ways. We illustrate that the ways in which they differ

prosodically correlate with other aspects of their grammars. In doing so, Maay appears to be following a broader trend noted elsewhere that some Cushitic languages “have moved, or may be moving toward a predictable, syllable-counting stress-based (prosodic) system” (Appleyard 1991). For additional context, we also discuss closely related languages whose properties flank those of KM and BM. One of these is Lower Jubba Maay, another variety of Maay which has lost its tonal system entirely in favor of a syllable-based stress system with no pitch correlates. The other is Somali, whose prosodic system is at least marginally more tonal, such that it displays fewer characteristics otherwise typically associated with stress systems.

2 Background on Maay and Cushitic tone

Maay [iso 639-3: ymm] is also known as Af-Maay, Maay Maay, or Rahanweyn. In some earlier literature (e.g., Biber 1982, Saeed 1982), it has also been called Central Somali. Though internal classifications differ between scholars, most would agree that Maay is rightly classified among other Lowland East Cushitic languages, the best described among which is Somali [iso 639-3: som]. In addition, Maay and Somali are closely related to the so-called *Digil* languages (Dabarre [iso 639-3: dbr], Garre [iso 639-3: gex], Jiiddu [iso 639-3: jii], and Tunni [iso 639-3: tqj]), as well as to Ashraaf (also called Marka or Shingani), which has not been assigned an iso code.

Compared to Somali and to other East Cushitic languages like Afar and Oromo, there has been little linguistic research conducted on Maay. Perhaps best known is Saeed’s (1982) sketch of “Central Somali” which describes the variety of Maay spoken near Baydhabo (Baidoa), Somalia. Another series of articles and chapters by Paster (2007, 2010, 2018) and colleagues (Comfort & Paster 2009, Paster & Ranero 2015) describe aspects of Lower Jubba Maay phonology and morphology.

Of particular interest to the goals of this paper is Biber (1982), which describes aspects of Maay’s tonal system, focused on the dialect spoken in Mandera, Kenya. In addition, Smith’s (2022) MA thesis is on the nominal tonal system of the Maay spoken in Dadaab, Kenya. The current paper builds upon the description of Kenyan Maay offered by Smith, and the data herein are drawn from an expansion of Smith’s corpus. These data are from a female L1 speaker of the language who was raised through age 15 in Dadaab, Kenya, and thereafter resettled in the US with her family in 2013. She has since lived in sizable diaspora communities of Maay speakers. She currently lives in a close-knit community of approximately 200 Maay speakers in Syracuse, New York. Maay remains the primary language

of her household and day-to-day interactions with family and other close relations. She is also fluent in English and has some conversational proficiency in Somali and reading proficiency in Arabic. While we recognize that there are potential shortcomings of having only a single speaker's productions represented here, we take care to point out that our data closely match what is reported for Kenyan Maay in Biber (1982), both segmentally and tonally, though our data are more extensive and cover more contexts.²

In what follows, in addition to addressing our broader typological questions about the pathways of diachronic change in prosodic systems, we hope that this paper will contribute specifically to the microtypology of Cushitic prosodic systems. Fortunately, compared to what is known about most aspects of Cushitic phonology, there are reliable (though sometimes preliminary) descriptions of the prosodic characteristics of many of these languages that can serve as a basis for comparison to what we have observed for Maay. As one might glean from this parenthetical, however, there is much work that remains to be done on the subject. Notably, there is a fair amount of disagreement about the nature of Cushitic prosodic systems, namely whether they involve tone, stress, or "pitch (tonal) accent." The Cushitic survey by Tosco (2000) proposes that a divide can be made within the group such that many languages in the group, including the Highland East Cushitic sub-group, are stress (accent) languages. Others in the group, including most Lowland East Cushitic languages, are instead tone (accent) languages, at least synchronically. For further information on this prosodic divide, the reader is encouraged to consult the typological survey of Cushitic prosodic systems and a summary of competing viewpoints on the matter in Mous (2021), which is replete with references to many relevant works on the subject.

3 Tone in Maay

3.1 Overview

Reconstructions of Proto-Lower East Cushitic (Appleyard 1991, Lamberti 1986) propose that the language exhibited a tonal contrast on the final two moras of most noun stems and that this contrast correlated with grammatical gender – grammatically masculine nouns had H tone on the penultimate mora (e.g., *gaála 'he-camel') while feminine nouns had H tone on the final mora (e.g., *kimbiró

²Throughout the paper, data are presented as they occur in the source cited. High (H) tone is indicated by an acute accent, as is customary in the Africanist tone literature. Data are presented in broad phonemic transcription, as there is no standard orthography for Maay. Morpheme boundaries are indicated by a hyphen "-" wherever relevant.

‘bird’). Based on broad comparison between Cushitic languages, these same scholars argue that some modern East Cushitic languages exhibit evidence of a historical *accent shift*, ultimately resulting in a leftward retraction of H tone by one mora. This shift was accompanied by subsequent final vowel loss in some instances, thus at least partially obscuring the process.

While many (but not all) languages tonally maintain this historical grammatical gender contrast, not all do so in the same way. Somali, for example, witnessed both accent shift and final vowel loss. It maintains a contrast analogous to what is proposed for the Proto language: H tone is found on the penultimate mora of masculine words (e.g., *gáal* ‘he-camel’) and on the final mora of feminine words (e.g., *shimbír* ‘bird’). Maay, on the other hand, witnessed no such uniform “shift”, yet it did experience final vowel loss. Compare KM *gaál* ‘he-camel’, which maintains H tone on the same mora as the Proto language, with *shímbir* ‘bird’, where H tone surprisingly surfaces on the first mora of the stem, seemingly in the opposite distribution relative to Somali. As we shall see, however, this is not always the case. To explore Maay tone further, our initial focus will be on Kenyan Maay (KM) before turning to Baydhabo Maay (BM) and Lower Jubba Maay (LJM).

3.2 Kenyan Maay

The varieties of KM described in Biber (1982) and Smith (2022) share many of the same properties, though ultimately the variety of word shapes and phrase types covered in Smith are more extensive than those in Biber. As illustrated in Smith (2022), H tone location is diagnostic of a noun’s grammatical gender, except in the case of monosyllabic CVC noun stems – nouns of this shape in both gender series have H tone on their vowel, as in masculine *más* ‘snake’ (Table 1f) and feminine *líf* ‘bone’ (Table 1l). The examples in Table 1 further illustrate this point, where notably the location of High tone in grammatically masculine nouns with consonant-final stems is invariable, surfacing on the stem’s final vocalic mora. In grammatically feminine nouns, the location of H tone differs, but predictably so, based on stem shape and context. In addition, determiner shape and type also play a role in dictating surface H tone location in these nouns.

As seen in Table 1, in isolation, most consonant-final Feminine nouns have High tone on their penultimate vocalic mora (Table 1g–j). There is variation for CVVC nouns, however, which surface either as *c’vc*, similar to what occurs for other stem shapes (Table 1j), or instead *c’vc* (Table 1k), with a flat High span across the entire monosyllabic word. We return to this matter of variation below. As seen thus far, however, the tonal distinction between most Masculine and Feminine stems of the same shape is lexically determined and thus idiosyncratic.

Table 1: Tone in Masculine and Feminine nouns – C-final, isolation

Masculine			Feminine		
a.	saháj	‘plate’	g.	bílaŋ	‘woman’
b.	ʕonók	‘child’	h.	ɲájur	‘cat’
c.	wəreék	‘circle’	i.	daróor	‘cloud’
d.	gaál	‘camel’	j.	wéel	‘calf’
e.	tuqææŋ	‘store’	k.	búúr	‘heel’
f.	más	‘snake’	l.	líf	‘bone’

Exceptions to this surface tonal contrast between Masculine and Feminine nouns are seen only in limited contexts, and notably in nouns with vowel-final stems in isolation. Examples can be seen in Table 2, where the tonal distinction between them is neutralized, as in (Table 2a) vs. (Table 2e), etc.

Table 2: Tone in Masculine and Feminine nouns – V-final, isolation

Masculine			Feminine		
a.	dəβó	‘bull’	e.	ʃaqá	‘work’
b.	wəβé	‘river’	f.	boðá	‘thigh’
c.	waxtá	‘time’	g.	toorá	‘knife’
d.	hoŋgʊrí	‘meal’	h.	aayó	‘mother’

In some but not all other contexts, for nouns of this same shape, a surface tonal contrast between these nouns emerges. For example, in Table 3, we see that before a basic definite determiner - *Cə* - the tonal distinction remains neutralized. However, before *Cii*, the remote definite determiner (REM), whose use is appropriate only with referents that were previously active in the discourse, a surface tonal contrast appears. Here and elsewhere, determiners may be indicated as beginning with *C*, a consonant placeholder for a grammatical gender prefix. The basic forms of these agreement prefixes are *k* (Masculine) and *t* (Feminine), though they have other predictable variants.

Given the static nature of High tone in Masculine nouns and its predictable distribution in Feminine nouns, Smith (2022) analyzes KM's behavior in terms of a privative High vs. toneless contrast for Masculine vs. Feminine nouns, respectively. More specifically, she argues that Masculine nouns are underlyingly

Table 3: Tone in Masculine and Feminine nouns – V-final, with determiners

	Masculine		Feminine	
Basic	gurú-yə	‘the house’	qahwə-ðə	‘the coffee’
Remote	gurú-yii	‘the (REM) house’	qáh-wə-ðii	‘the (REM) coffee’

specified for High tone on their final vocalic mora in all instances, while Feminine nouns are instead toneless. Due to a requirement for obligatory High tone on all nouns, however, a High tone is provided by the phonology and assigned to Feminine nouns based on several interrelated factors pertaining to word shape. Consider, for example, the nouns modified by the basic definite determiner in Table 4.

Table 4: Tone in Masculine and Feminine nouns – basic definite

	Masculine		Feminine	
C-final	fə́rəs-kə	‘the horse’	bɪ́ɪŋ-tə	‘the lip’
V-final	rootí-yə	‘the bread’	bɛɛsí-ðə	‘the money’

As expected, Masculine nouns have H tone on the final vocalic mora of the stem. Feminine nouns, however, have H tone on the determiner if the stem is C-final and on the final stem vowel if the stem is V-final. For nouns modified by the proximal demonstrative determiner in Table 5, H tone surfaces on the determiner for all Feminine nouns.

Table 5: Tone in Masculine and Feminine nouns – proximal demonstrative

	Masculine		Feminine	
C-final	fə́rəs-yəŋ	‘this horse’	bɪ́ɪŋ-təŋ	‘this lip’
V-final	rootí-yəŋ	‘this bread’	qahwə-ðəŋ	‘this coffee’

Yet another outcome for Feminine nouns is seen in the presence of a possessive determiner. In Table 6, for the first person singular, H tone in Feminine contexts surfaces on the determiner in C-final nouns. For V-final nouns, however, H instead surfaces on the stem. The difference, compared to basic definites in Table 4,

where H also surfaces on the stem, is that High is now in penultimate, rather than final position.³ Taken together, stem shape, as well as determiner shape and type, play a role in dictating surface H tone location in Feminine nouns.

Table 6: Tone in Masculine and Feminine nouns – first singular possessive

	Masculine		Feminine	
C-final	fərəs-key	‘my horse’	bɪʃɪŋ-táy	‘my lip’
V-final	rootí-yey	‘my bread’	qáhwə-ðey	‘my coffee’

These data and generalizations strongly suggest that KM has a restricted tonal system. The language exhibits a privative tonal contrast between H and toneless stems. High tone is predictably assigned to underlyingly toneless stems based on stem shape and the presence vs. absence of modifiers of different types. High tone is also obligatory on all content words (i.e., nouns and verbs), except in one syntactic context, namely on post-verbal objects, regardless of their focus status. Such a postlexical, syntactically-defined instance of non-obligatoriness is reminiscent of Nubi, for which Gussenhoven (2006) argues that phrasal phonology affects a “deaccenting rule” on gerunds when they take an object. This differs from Somali, for example, where the two instances in which High tone is absent are morphologically determined (Green & Lampitelli 2022, Hyman 1981).

Despite the fact that a H may appear on a stem in some contexts, or on a modifier in others, there are never any instances in which a H appears on both at once. In this way, H in KM is culminative in all contexts that we have explored. This analysis is further substantiated by looking at nouns and certain modifiers, including plural suffixes and other derivational suffixes. Most telling are *-yaál* plurals, like those in Table 7, whose suffix is underlyingly tonal.

The *-yaál* suffix has a static H, analogous to, and in the same position as H on Masculine noun stems. The suffix itself is also grammatically masculine; it

³A reviewer asks whether there is any evidence that diphthongs are bimoraic such that H could be said to be assigned to the penultimate mora of the determiner in forms like ‘my lip’ in Table 6. We tentatively follow Smith (2022) in assuming that this is true, and also that word-final consonants appear to “count” in the calculation of tone assignment. We believe that this plays a key role in dictating why H tone assignment differs in C-final vs. V-final Feminine nouns under different conditions. Unfortunately, independent evidence for this assertion is yet difficult to come by for Maay. For closely related Somali, however, the role of moras, both vocalic and consonantal, is well established. This is evidenced from a variety of outcomes pertaining to reduplication (Orwin 1996) and poetic metrics (Orwin 2001), as well as word minimality and syllable shape distribution (Green 2022).

Table 7: Tone in Masculine and Feminine nouns – *-yaál* plurals

Masculine			Feminine		
a.	fərəs	‘horse’	d.	gəlaŋ	‘arm’
b.	fərəs-yaál	‘horses’	e.	gəlaŋ-yaál	‘arms’
c.	fərəs-yaál-kii	‘the (REM) horses’	f.	gəlaŋ-yaál-kii	‘the (REM) arms’

requires masculine agreement on any modifying determiner. In the presence of this plural suffix, High tone fails to be realized on the noun stem. This includes Masculine nouns that otherwise exhibit a lexical High tone – when a second High is contributed by the plural suffix, only one tone (the suffixal High) survives.

Similar outcomes obtain when a derivational suffix with a static H tone modifies the stem. When forming agentive nouns and gerunds, H appears on the suffix, effectively overriding the stem High. This is particularly apparent for Masculine nouns given their otherwise static lexical High tone (cf. *degaál* ‘fight’, *degaal-á* ‘killer’, and *degaal-ə-mó* ‘fighting’). Alternation of the stem High is also observed in nominal compounds where, in a N1 + N2 compound, a single H appears on N2.

What remains an outstanding issue is defining the domain of culminativity. Importantly, one must ask whether determiners are prosodified with the stem that they modify (e.g., perhaps as clitics or suffixes), or whether they (or at least some of them) should instead be considered separate prosodic words.

While it is true that individual determiners behave differently in terms of their ability to bear a H tone, this may simply be a consequence of their shape, as opposed to their wordhood status. Unlike Somali, where some determiners function as independent words (Green & Morrison 2016), our KM language consultant was reluctant to use determiners in this way. Moreover, it is worthwhile to note that in Saeed (1982: 90–91), all determiners are listed with a “hyphen” (e.g., *-kaas/-taas*), suggesting that they were analyzed as affixal in that research. We assume, therefore, that a noun and its modifying determiner form a single word, and thus, we take the domain of H tone culminativity to be the word. We do so in full acknowledgment that the matter deserves further attention.

Another matter of importance concerns KM’s *prominence bearer*. Though there are various stress-like properties manifested in KM’s restricted tonal system, the language still clearly counts moras for the purpose of High tone assignment, and the mora remains the surface prominence bearer. Recall that this property of tone systems differs from the definitional requirement of stress systems that the syllable be the prominence bearer. There is some evidence, however, that the identity of the language’s prominence bearer is in flux. More specifically, we

find that for Feminine nouns where one might expect the phonology to assign a H that would result in a rising contour, KM conspires to avoid this outcome in several ways.

For example, vowel-final Feminine stems of the shape *cvvcv* (as in Table 2), when modified by the remote definite determiner (where we would otherwise expect H tone retraction to yield *cv'vcv*), surface with one of three different lexically-determined outcomes:

- High remains on the final vowel, as in *bɛɛsí-ðii* 'the (REM) money'
- High retracts and also decontours, as in *téési-ðii* 'the (REM) fly'
- High retracts to the first mora of the first syllable, yielding a fall, as in *tóora-ðii* 'the (REM) knife'

These facts taken together suggest that derived rising contours are dispreferred in the language and that their creation is avoided whenever possible. Despite this, however, such contours are not necessarily banned outright in KM. There is no rising contour avoidance in Masculine nouns: H tone on consonant-final Masculine stems in isolation is always on the final mora, including on the second mora of a long vowel, which yields a rising contour. This High tone is also immune to alternation in the presence of determiners: cf. *gaál* 'camel' and *gaál-kii* 'the (REM) camel'.⁴ Likewise, as seen above, such contours are not disallowed in the formation of *-yaál* plurals, which behave in many ways like other Masculine nouns.

The noted generalization about the avoidance of derived contours finds further support in the behavior of some Feminine nouns in isolation, and extends even to falling contours. Recall from Table 1 that some monosyllabic Feminine *cvvc*-shaped nouns surface with a flat *cv'vc* tonal contour, rather than an otherwise expected falling *cvvc* sequence. These tonal sequences are considered derived under an analysis where Feminine nouns are underlyingly toneless and H tone is assigned only later by the phonology.

Given the behavior of Masculine nouns and *-yaál* plurals in various contexts discussed above, we assume that the maintenance of these contours is indicative of the language prioritizing tonal faithfulness, despite contours being otherwise dispreferred in the language. When tonal faithfulness is not at play, as

⁴Recall that some suffixes attract H tone from stems across the board, similar to what occurs in forming compounds. Interrogative determiners, like in Somali (Green 2021: 245, Saeed 1999: 114), also behave exceptionally in that they attract H tone in all instances.

in Feminine nouns, contours are actively selected against. As such, the alternations discussed above concerning High tone assignment in modified Feminine nouns appear to be driven by markedness (i.e., the avoidance of tonal contours), and they have implications for our understanding of the KM prosodic system overall.⁵

When left to the phonology, as opposed to the lexicon, it would appear that KM's tone assignment algorithm requires little explicit reference to the mora. The location of High tone assignment could easily be defined by syllable (penultimate or final), with the key considerations being stem and determiner shape. In some instances, an otherwise expected moraic tonal contrast on long vowels is being leveled via decontouring, though as we have seen, there remain some instances where a fall emerges across a long vowel, instead of decontouring, as one way to avoid creating a rise: cf. *toorá* 'knife' and *tóorá-ðii* 'the (REM) knife', **toórá-ðii*. Elsewhere, however, even falling contours are leveled, as we have seen in some monosyllabic Feminine nouns in isolation. Of course, reference to the mora remains indispensable to describe the tonal behavior of Masculine nouns. Despite this, however, if the classification of KM's prosodic systems as 'near pivot' rests in large part on its moraic prominence bearer, one might question whether such outcomes (and instances of variation) in Feminine nouns portend the language's eventual restructuring in the direction of syllables.

Synchronically, KM's tonal system may not be actively seeking out moras as tone bearing units, though the mora's role in this regard remains as a residue of the lexicon. Put another way, faithfulness to underlying stem tone is effectively preserving the mora as the language's tone bearing unit, but only in a subset of the lexicon.

With the behavior of Kenyan Maay now established, we turn our attention to Baydhabo Maay. As will be seen, this second dialect of Maay has also developed more stress-like properties over time, but it has done so in a way that differs from KM.

3.3 Baydhabo (Baidoa) Maay

Saeed (1982) reports that for *Central Somali*, i.e., Maay, the language's tonally-encoded grammatical gender contrast in nouns, unlike what is observed in Somali and in KM, has nearly been neutralized. Illustrative examples from Saeed (1982) are shown in Table 8.

⁵KM's strong preference to avoid rising contours is perhaps not unexpected given that such contours are known to be marked relative to falling contours cross-linguistically. Contours, in general, are of course more marked than level tones. For more on tonal markedness, see reference works like Gordon (2001), Hyman (2009b), and Yip (2002: 27–30), among many others.

Table 8: Tone in Masculine and Feminine nouns – Baydhabo Maay

Masculine			Feminine		
a.	boodá	‘thigh’	g.	osbá	‘salt’
b.	kirkirá	‘wild pig’	h.	ɖilmaapá	‘mosquito’
c.	gorgór	‘vulture’	i.	aftiin	‘light’
d.	fárow	‘zebra’	j.	ókun	‘egg’
e.	búr	‘flour’	k.	bad	‘ocean’
f.	wээр	‘jackal’	l.	buur	‘mountain’

We see here that most grammatically masculine (Masculine) and feminine (Feminine) nouns have a single High tone on their final syllable, regardless of word shape. This applies, regardless of whether the stem is consonant- or vowel-final, provided that the noun stem is larger than one syllable (Table 8a–c, g–i). Another smaller group of nouns has a High on the penultimate syllable, but once again, there is no contrast between Masculine and Feminine nouns (Table 8d, j). For these nouns, grammatical gender is recoverable only via agreement on determiners and verbs. Monosyllabic nouns differ in that a tonal contrast is maintained between the presence (on Masculine nouns) vs. absence (on Feminine nouns) of tone (Table 8e–f, k–l). Thus, for larger noun stems, tone location is lexically idiosyncratic, while for monosyllabic stems, the same can be said about presence vs. absence of tone.

These examples show that there is no need to invoke moras to analyze Baydhabo Maay (BM) tone assignment. Indeed, the mora is never mentioned in Saeed’s description. It is worthwhile to note that Saeed (1982: 8) does mention pitch, length, and loudness as phonetic correlates of “stress” on syllables with a High tone: “This tone opposition could possibly be described in terms of accent or stress. Prominent syllables are higher in pitch, slightly longer than their non-prominent counterparts (whether short or long), and louder.”

In comparing these examples in BM to those from KM above, it should be clear that while the varieties share several properties, they are distinct from one another prosodically. While KM has obligatory tone and at least residual reference to the mora for tone assignment, BM fails to exhibit High tone on some content words, as seen in (Table 8e–f). Where H tone is present, no reference to the mora is necessary to describe its distribution.

With this in mind, one way to view BM relative to KM is that BM, as a result of the historical final vowel loss described above, has begun to neutralize its

lexical tonal contrast rather than to reconfigure it. Where neutralization occurs, that is, in monosyllabic nouns, it obviates tonal reference to the mora. Recall that in each variety, reference to the mora is still required outside the tonal system (there is a length contrast for vowels and some consonants). Viewed in this way, BM could also be seen as having a “near pivot” system, but one in which the parametric “hold out” relates instead to obligatoriness of tone. Moreover, according to Saeed’s description of BM, pitch and other acoustic properties that align with it as prominence correlates are redundant, just as what occurs in Nubi’s “pivot” system.

For KM, one could easily imagine the language extending its decontouring rule to Masculine nouns, and for BM, one could similarly imagine the emergence of obligatory H tone on monosyllabic Feminine nouns. Both varieties could perhaps be seen as ‘poised to pivot’ from tone to stress. They might not necessarily do so, though another dialect of Maay appears to have done so.

3.4 Lower Jubba Maay

In the interest of arriving at a more complete picture of Maay’s potential path(s) to stresshood, it is worthwhile to note that Lower Jubba Maay (LJM), as described in works by Paster and colleagues (Comfort & Paster 2009, Paster 2007, 2010, 2018, Paster & Ranero 2015), has already passed the pivot point. These works report obligatory, syllable-based prominence on all content words; and moreover, it is claimed that there are no pitch correlates associated with this prominence. LJM is thus rightfully analyzable as a stress accent language. The data in Table 9 provide a few illustrative comparisons between LJM, BM, and KM. We follow the aforementioned works on LJM in indicating stress by underlining the stressed syllable.

Table 9: Select comparisons between LJM, BM, and KM

	LJM	BM	KM	Gloss
a.	w <u>el</u>	wéel	wéel	‘calf’
b.	us <u>b</u> o	usbá	usbá	‘salt’
c.	bood <u>o</u>	boodá	bodá	‘thigh’ (BM/KM) ‘heel’ (LJM)
d.	l <u>u</u> k	lug	lúk	‘leg’
e.	ro <u>o</u> p	róob	roóp	‘rain’

While this comparison highlights the high degree of lexical similarity shared by the three Maay dialects, it also shows some ways in which they depart from one another prosodically. Comparison (Table 9a), for a monosyllabic masculine noun, and also (Table 9b–c) for V-final nouns, show that there are sometimes close prosodic correlations between the three varieties. However, comparison (Table 9d) shows that the varieties sometimes differ markedly from one another – some monosyllabic feminine CVC nouns which are toneless in BM are instead toned in KM. Comparison (Table 9e) further shows a masculine CVVC noun which exhibits the basic gender-neutralized pattern in BM but the static rising contour expected of KM nouns of this type.

4 Next steps and concluding remarks

In this paper, we have focused on properties – both synchronic and diachronic – of two “near pivot” restricted tone systems in dialects of Maay. For each, we have seen that their synchronic prosodic parameters position them on the cusp of stresshood. Our primary goal has been to explore whether some aspect of their grammar – their phonology, lexicon, etc. – may have contributed to their particular paths from tonehood toward stresshood. Though undoubtedly tentative, we have identified that, following a reported historical prosodic erosion at the right edge of the noun stem via final vowel loss, these dialects have made different adaptations to compensate for the loss of final tone bearing units. Kenyan Maay has maintained a grammatical tonal contrast between stem types by reconfiguring the historical penultimate vs. ultimate distribution of tones. Baydhabo Maay has lost this tonal distinction in nearly every instance. From a parametric standpoint, Kenyan Maay marginally maintains the mora as its surface prominence bearer while Baydhabo Maay instead fails to require an obligatory tonal prominence in a small subset of the lexicon. Thus, we have observed two synchronic near pivot points that would appear to have arisen in systems with different diachronic phonological developments.

Let us consider briefly a comparison to Somali. We discussed above that Somali's prosodic system is tonal, but to quote Hyman (2009a: 216), it is “far from anyone's ideal or prototypical tone system.” Despite this, and when compared to KM and BM, Somali's prosodic system seems rather robust. Somali has maintained the Proto Lower East Cushitic tonal contrast and has done so via leftward tone shift by one mora. It also exhibits a privative tonal contrast with High tone remaining both culminative and obligatory in the lexicon. However, under two morphological conditions – in non-focused subjects and indicative (realis) mood

verbs – High tone is lost. High tone is assigned by mora count, and the mora is the surface prominence bearer, though there is variation whereby rising contours are flattened (Banti 1988); falling contours, however, are widely attested. Based on these characteristics, one could assert that Somali exhibits fewer stress-like properties than either Maay variety, though it ultimately has more in common with KM than with BM. Both Somali and KM have obligatory prominence in the lexicon whose primary correlate is pitch, and both rely on the mora as the tone bearing unit. Relatedly, both do realize some instances of decontouring, though this occurs less commonly in Somali.

The question that remains is whether or not the commonalities between Somali and KM truly extend from both varieties having reconfigured (and thus, maintained) the tonal contrast reconstructed for the Proto language. These two languages, as we have seen, differ from BM, which has not reconfigured the Proto tonal contrast. At the very least, these correlations are intriguing and worthy of further exploration. If and whether similar correlations obtain more broadly must await future research on other restricted tone languages. Other Lowland East Cushitic languages could certainly offer clues in this regard and provide an ideal testing ground to delve more deeply into this line of inquiry.

Abbreviations

BM	Baydhabo (Baidoa) Maay	L	low tone
H	high tone	LJM	Lower Jubba Maay
KM	Kenyan Maay	REM	remote definite determiner

Acknowledgments

The authors are grateful to Samson Lotven and to three reviewers for their constructive and critical feedback on this paper. We also thank audience members at ACAL 53 and members of the International Research Network's Somali Working Group for their comments and suggestions on aspects of our data and analysis. Special thanks go to Habiba Noor, the Syracuse Northside Learning Center, and to the Syracuse University Department of Languages, Literatures & Linguistics for their financial support of this research.

References

- Akinlabi, Akinbiyi & Mark Liberman. 2001. Tonal complexes and tonal alignment. *NELS* 31.
- Appleyard, David. 1991. The role of tone in some Cushitic languages. *York Papers in Linguistics* 15. 5–32.
- Banti, Giorgio. 1988. Two Cushitic systems: Somali and Oromo nouns. In Harry van der Hulst & Norval Smith (eds.), *Autosegmental studies on pitch accent*, 11–50. Berlin: de Gruyter.
- Beckman, Mary E. 1986. *Stress and non-stress accent*. Dordrecht: Foris.
- Biber, Douglas. 1982. Accent in the Central Somali nominal system. *Studies in African Linguistics* 13. 1–10.
- Clements, G. Nick & John Goldsmith. 1984. Autosegmental studies on Bantu tone: Introduction. In G. Nick Clements & John Goldsmith (eds.), *Autosegmental studies on Bantu tone*, 1–17. Berlin: De Gruyter Mouton. DOI: 10.1515/9783110864465.1.
- Comfort, Jade & Mary Paster. 2009. Notes on Lower Jubba Maay. In Masangu Matonda, Fiona McLaughlin & Eric Potsdam (eds.), *Selected proceedings of the 38th Annual Conference on African Linguistics: Linguistic theory and African language documentation*, 204–216. Somerville, MA: Cascadilla.
- Gordon, Matthew. 2001. A typology of contour tone restrictions. *Studies in Language* 25. 423–462.
- Green, Christopher R. 2015. The foot domain in Bambara. *Language* 91. e1–e26.
- Green, Christopher R. 2021. *Somali grammar*. Berlin: De Gruyter Mouton.
- Green, Christopher R. 2022. Moraic mismatches in Somali phonology: Coda consonants reconsidered. *Afrika und Übersee* 95. 49–75. DOI: 10.15460/auue.2022.95.1.240.
- Green, Christopher R. & Nicola Lampitelli. 2022. Conditions on complex exponence: A case study of the Somali subject marker. *Phonological Data & Analysis* 4. 1–31. DOI: 10.3765/pda.v4art4.63.
- Green, Christopher R. & Michelle E. Morrison. 2016. Somali wordhood and its relationship to prosodic structure. *Morphology* 26. 3–32. DOI: 10.1007/s11525-015-9268-x.
- Gussenhoven, Carlos. 2006. Between stress and tone in Nubi word prosody. *Phonology* 23. 193–223. DOI: 10.1017/S0952675706000881.
- Hyman, Larry M. 1981. Tonal accent in Somali. *Studies in African Linguistics* 12. 169–203.

- Hyman, Larry M. 2001. Tone systems. In Martin Haspelmath, Ekkehard König, Wulf Oesterreicher & Wolfgang Raible (eds.), *Language typology and language universals: An international handbook*, 1367–1380. Berlin: Walter de Gruyter.
- Hyman, Larry M. 2006. Word-prosodic typology. *Phonology* 23. 225–257. DOI: 10.1017/S0952675706000893.
- Hyman, Larry M. 2009a. How (not) to do phonological typology: The case of pitch-accent. *Language Sciences* 31. 213–238.
- Hyman, Larry M. 2009b. Universals of tone rules: 30 years later. In Tomas Riad & Carlos Gussenhoven (eds.), *Tones and tunes vol. 1: Typological studies in word and sentence prosody*, 1–34. Berlin, New York: De Gruyter Mouton.
- Lamberti, Marcello. 1986. *Die Somali-Dialekte: Eine vergleichende Untersuchung*. University of Cologne. (Doctoral dissertation).
- Leben, William. 1997. Tonal feet and the adaptation of English borrowing into Hausa. *Studies in African Linguistics* 25. 139–54.
- Leben, William. 2003. Tonal feet as tonal domains. In John Mugane (ed.), *Trends in African linguistics 5: Linguistic typology and representation of African languages*, 129–38. Trenton, NJ: Africa World Press.
- McCawley, James D. 1970. Some tonal systems that come close to being pitch accent systems but do not quite make it. *CLS* 6. 526–531.
- McCawley, James D. 1978. What is a tone language? In Victoria Fromkin (ed.), *Tone: A linguistic survey*, 113–131. New York: Academic Press.
- Mous, Maarten. 2021. The grammatical primacy of tone in Cushitic. *Stellenbosch Papers in Linguistics* 62. 91–106. DOI: 10.5842/62-0-898.
- Orwin, Martin. 1996. A moraic model of the prosodic phonology of Somali. *African Languages and Cultures Supplement* 3. 51–71.
- Orwin, Martin. 2001. On consonants in Somali metrics. *Afrikanistische Arbeitspapiere* 65. 103–127.
- Paster, Mary. 2007. Aspects of Maay phonology and morphology. *Studies in African Linguistics* 35. 73–120.
- Paster, Mary. 2010. Optional multiple plural marking in Maay. In Franz Rainer (ed.), *Current issues in linguistic theory 310: Variation and change in morphology* (CILT 310). Amsterdam: John Benjamins.
- Paster, Mary. 2018. Gender instability in Maay. In Jason Kandybowicz & Harold Torrence (eds.), *Selected proceedings of the 45th Annual Conference on African Linguistics* (Contemporary African Linguistics 3), 205–218. Berlin: Language Science Press. DOI: 10.5281/zenodo.1251732.
- Paster, Mary & Rodrigo Ranero. 2015. *CASL Introductory structural sketches for African languages: Maay*. Technical Report 2.9b (DO0050). University of Maryland Center for Advanced Study of Language.

- Pearce, Mary. 2013. *The interaction of tone with voicing and foot structure: Evidence from Kera phonetics and phonology*. Stanford: CSLI.
- Saeed, John I. 1982. Central Somali: A grammatical outline. *Monographic Journals of the Near East: Afroasiatic Linguistics* 8. 1–43.
- Saeed, John I. 1999. *Somali*. Amsterdam: John Benjamins.
- Smith, Katrina. 2022. *The Maay Maay nominal system and its tonology*. Syracuse University. (MA thesis).
- Tosco, Mauro. 2000. Cushitic overview. *Journal of Ethiopian Studies* 33. 87–121.
- van der Hulst, Harry. 2011. Pitch accent systems. In Marc van Oostendrop, Colin J. Ewen, Elizabeth Hume & Keren Rice (eds.), *The Blackwell companion to phonology*. Oxford: Wiley-Blackwell. DOI: 10.1002/9781444335262.wbctp0042.
- Welmers, William E. 1959. Tonemics, morphotonemics, and tonal morphemes. *General Linguistics* 4. 1–9.
- Yip, Moira. 2002. *Tone*. Cambridge, UK: Cambridge University Press.

Name index

- Aaron, Uche, 144
Abaglo, Poovi, 56
Aboh, Enoch Oladé, 55
Adeoye, C. L., 188
Adewole, Stephen Monday, 58, 59
Adiva, John R., 147
Agheyisi, Rebecca, 150
Agyekum, Kofi, 78, 79, 82, 85, 92, 95,
96, 112, 119, 185, 196
Akanbi, Timothy Adeyemi, 58
Akindele, Dele Femi, 106, 112
Akinlabi, Akinbiyi, 58, 271
Akinnaso, Niyi, 188
Akinyemi, Akintunde, 189, 190, 194,
195
Alderete, 244, 252
Alhassan, Ayanniyi Bako, 102
Allen, George D., 19
Allen, Graham, 167
Ambrose, Chinenye Lynda, 169
Ameka, Felix K., 54, 55, 57, 58, 63, 102,
113, 128
Ameyaw, Kwabena, 104
Anderson, Colleen G., 223
Anderson, Jonathan C., 21
Ansah, Gladys Nyarko, 78, 79
Anyanwu, Rose-Juliet, 146
Appiah, Peggy, 88
Appleyard, David, 272, 273
Archangeli, Diana, 56, 236
Atoyebi, Joseph, 148
Austin, Peter, 157
Avery, Peter, 248
Awobuluyi, Oladele, 59
Awoyale, Yiwola, 58, 60, 62
Bakhtin, Mikhail, 167, 170
Bamgbose, Ayo, 59, 64
Banti, Giorgio, 284
Barasa, David, 248
Barker, Gary, 102
Bassène, Alain-Christian, 138
Basson, Alec, 85
Batibo, Herman M., 106
Beavon-Hamm, Virginia, 56
Beckman, Mary E., 269, 270
Berelson, Bernard, 170
Berkson, Kelly, 57
Berry, Jack, 113
Biber, Douglas, 272, 274
Blench, Roger, 103, 104, 140
Blum, Susan, 191
Bobuafor, Mercy, 135
Bodomo, Adams, 136
Boersma, Paul, 222
Bole-Richard, Remy, 55
Boluwaduro, Eniola, 169
Bonhert, Amanda, 17
Booij, Geert, 68
Borg, Albert J., 160
Borowsky, Toni, 248
Bouveret, Myriam, 125
Breedveld, Anneke, 102
Brousseau, Anne-Marie, 132–134

- Browman, Catherine P., 18
Brown, Penelope, 111
Bull, Peter, 176
Bybee, Joan, 48
- Carling, Gerd, 54, 60, 61
Carlson, Robert, 142, 143
Carnie, Andrew, 235, 236
Casali, Roderic, 248
Chamo, Isa Y., 106
Chandler, Daniel, 170, 171
Chandrasoma, Ranamukalage, 169
Charteris-Black, Jonathan, 83
Childs, Tucker George, 53
Chilton, Paul, 180
Chomsky, Noam, 10
Chow, Ivan, 20
Clements, G. Nick, 48, 270
Comfort, Jade, 272, 282
Comrie, Bernard, 160
Coupland, Justine, 110
Creissels, Denis, 128, 129, 141, 142
Crentsil, Perpetual, 102
Culy, Christopher, 220
Cummins, Fred, 21
- Daramola, Olu, 188
Dart, Sarah N., 19
Davis, Stuart, 10, 214–216, 220
de Jong, Kenneth, 10, 11, 16, 18, 20, 27, 48
de Lacy, Paul, 46, 48
Defina, Rebecca, 134
Desclés, Jean-Pierre, 156
Diffloth, Gerard, 60
Dimmendaal, Gerrit J., 104
Dingemanse, Mark, 54, 60, 65, 67, 68
Dolphyne, Florence, 27, 28, 31, 32, 49
Dorvlo, Kofi, 135
- Duranti, Alessandro, 110, 112
Dzameshie, Alex K., 112, 119, 131
Dzokoto, Vivian Afi, 78, 79
- Egblewogbe, E. Y., 105, 112, 119, 120
Egbokhare, Francis O., 148–150, 157
Ehineni, Taiwo, 59, 188, 189, 191, 193–195, 197
Ejele, Philomena E., 150
Ekhareafo, Ofomegbe Daniel, 169
Eleshin, Bisoye, 59
Elugbe, Ben, 148
Erezi, Dennis, 168
Esenova, Orazgozel, 83
Essegbey, James, 55, 56, 62, 102, 131, 132
- Fairclough, Norman, 169–171
Faraclas, Nicholas, 144
Fawunmi, Mayowa, 169
Faytak, Matthew, 17
Fennig, Charles D., 104
Figueroa, Mauricio, 223
Filipczuk-Rosińska, Sylwia, 84
Finnegan, Ruth, 92, 112
Firth, John Rupert, 60
Foley, William A., 105
Franich, Kathryn, 20
Freeman, Valerie, 223
- Gathigia, Moses Gatambuki, 83–85
Gberie, Lansana, 177
Goffman, Erving, 111
Goldberg, Adele, 68
Goldsmith, John, 10, 270
Goldstein, Louis, 18
Goody, Jack, 104
Gordon, Matthew, 280

Name index

- Green, Christopher R., 214, 215, 217–220, 232, 235, 237, 271, 277–279
- Gregersen, Edgar Alstrup, 246, 249, 251, 252, 260, 263
- Grenoble, Lenore, 103
- Gruber, Jeff S., 157, 160
- Grząsko, Agnieszka, 83
- Guentchéva, Zlatka, 156
- Güldemann, Tom, 104
- Gussenhoven, Carlos, 270
- Gyan, Sylvia E., 102
- Gyekye, Kwame, 78, 79
- Halle, Morris, 10
- Hantgan, Abbie, 214–220, 232, 235, 237
- Hayes, Bruce, 235
- Heath, Jeffrey, 140, 214–219, 234, 237
- Heine, Bernd, 127
- Hess, Susan, 222
- Hewer, Philip L., 136
- Hinton, Leanne, 61
- Ho, Victor, 169
- Hodges, Adam, 169
- Hume, Elizabeth, 30
- Hyman, Larry M., 235, 269–271, 277, 280
- Igwebuike, Ebuka, 169
- Ikoro, Suanu, 144, 145
- Ilésanmí, Thomas, 188
- Jeje, Daramola, 188
- Jespersen, Otto, 48
- Johansson, Niklas E., 54, 60, 61
- Johnson, David Cassels, 169, 171
- Johnson, Jessica, 102
- Johnson, Marion M., 53
- Johnson, Mark, 82
- Jordan, Dean, 104
- Kamalu, Ikenna, 169
- Kari, Ethelbert, 151
- Kelley, Matthew C, 223
- Kelso, J. A. Scott, 19
- Kilian-Hatz, Christa, 54
- Kim, Young Shin, 223
- Kingston, John, 223
- Kita, Sotaro, 102
- Kittilä, Seppo, 157, 160
- Klamer, Marian A. F., 53
- Koffi, Ettien, 222
- Koopman, Hilda, 138, 139
- Kotei, Amon N., 113
- Kouadio, Jeremie, 128, 129
- Kövecses, Zoltán, 82, 83, 87
- Kristeva, Julia, 167, 170
- Kropp Dakubu, Mary Esther, 131
- Kunene, Daniel P., 53
- Kuteva, Tania, 127
- Ladele, T. A., 188
- Lakoff, George, 78, 82
- Lamberti, Marcello, 273
- Lampitelli, Nicola, 277
- Leben, William, 11, 32, 249, 271
- Lefebvre, Claire, 132–134
- Levinson, Stephen C., 111
- Lewis, Marshall, 56
- Liberman, Mark, 58, 271
- Lin, Yu-jung, 20
- Lombardi, Linda, 46
- Lord, Carol, 148
- Lotven, Samson, 55, 57
- Ma Newman, Roxana, 203
- Madugu, Isaac S. George, 68

- Mairano, Paolo, 223
Maitaria, Joseph Nyehita, 83–85
Makondo, Livingstone, 185
Malchukov, Andrej, 125
Malinowski, Bronislaw, 110
Manu-Barfo, Esther, 103, 104, 120
Margetts, Anna, 157
Markstrom, Carol A., 102
Martin, Samuel, 55
Matoesian, Gregory, 169
McCarthy, John J., 68
McCawley, James D., 269
Mmadike, Benjamin Ifeanyi, 185, 186
Momoh, Campbell Shittu, 92
Monehin, F., 169
Moradi, Roozbeh, 106, 112
Morén, Bruce, 235
Morrison, Michelle E., 278
Morton, John, 19
Mous, Maarten, 269
Munhall, Kevin G., 18
Murray, Robert, 29, 47, 48

Nabaarese, Joseph Aloa, 136
Nag, Oishimaya Sen, 180
Ndeda, Mildred A. J., 243
Newman, John, 125
Newman, Paul, 54, 65, 202–204
Ni Chiosáin, Maire, 235
Njuki, Muriithi Gerald, 246
Nketia, Joseph Hanson Kwabena, 86, 88, 90, 91
Nwoye, Onuigbo G., 105, 110, 119

Obeng, Samuel G., 10, 11, 16, 27, 48, 55, 78, 111, 169, 170, 173, 179, 185–187, 189, 194–197
Oduor, Jane Akinyi Ngala, 246
Oduyoye, Modupe, 197

Ofori, Seth Antwi, 27, 113
Ogunbowale, P. O., 188
Ohala, John J., 60
Ojal, Were George, 248, 249
Ojo, George Adekunle, 169
Okazaki, Sumie, 78, 79
Okelo, Beatrice N., 250
Okoth-Okombo, Duncan, 246, 249, 251
Okpewho, Isidore, 92
Olejarczuk, Paul, 222
Ombijah, Z. S., 246, 249
Onyango, Ong’ayo Francis, 246
Opoku, Kofi Asare, 96
Orwenjo, Daniel Ochieng, 169
Orwin, Martin, 277
Osam, E. Kweku, 129, 130
Ott, Brian, 169
Owomoyela, Oyekan, 179
Owusuh, E. S. K., 104

Painter, Colin, 104
Papaioannou, Kostadis J., 174
Paster, Mary, 272, 282
Pearce, Mary, 271
Pérez Báez, Gabriela, 236
Pillai, K. C. S., 223
Port, Robert, 21
Prince, Alan, 68
Pulleyblank, Douglas, 58, 59

Raj, Prayer Elmo, 169, 171
Ranero, Rodrigo, 272, 282
Rapp, K., 19
Ricardo, Christine, 102
Rice, Keren, 46, 48
Rosenthal, Sam, 235
Rowlands, E. C., 58

Saeed, John I., 272, 279

Name index

- Sallabank, Julia, 103
Salzman, Elliot L., 18
Sapir, David J., 138
Schaefer, Ronald P., 148–150, 157
Schechter, Sandra, 87
Schlegel, Joh. Bernhard, 55
Schleicher, Antonia Yétúndé, 58, 59, 112, 120
Schleicher, Charles P., 59
Schmid, Hans-Jörg, 83
Schottman, Wendy, 120
Seidl, Amanda, 59
Selkirk, Elizabeth, 48
Semino, Elena, 82
Shadle, Christine, 17
Sharifian, Farzad, 77, 80–82
Shluinsky, Andrey, 128
Simons, Gary. F., 104
Siweya, Tryphosa, 102
Smith, Katrina, 274, 277
Smolensky, Paul, 68
Spolsky, Bernard, 111
Stahl, Ann B., 104
Stemberger, Joseph Paul, 56
Steriade, Donca, 48

Taijma, Keiichi, 21
Taiwo, Rotimi, 169
Trommer, Jochen, 252, 253, 255, 256
Tucker, Archibald Norman, 243, 244, 249, 252, 253, 256
Tucker, Benjamin V, 223
Tuller, Betty, 19
Turner, Mark, 78

Uchihara, Hiroto, 236
Ungerer, Fredrich, 83
Unuabonah, Foluke, 169
Uwalaka, M. A. A. N., 147

van der Hulst, Harry, 235, 269
Van Zanden, Jan Luiten, 174
Vennemann, Theo, 29, 47, 48
Voeltz, F. K. Erhard, 54
Voorhoeve, Jan, 17

Walter, Cameron, 169
Weenink, David, 222
Westermann, Dierdrich, 55
Whalen, D. H., 21
Whaley, Lindsay, 103, 127
Williamson, Kay, 140, 145
Wójtowicz, Beata, 102, 111

Yang, Byunggon, 223
Yankah, Kwesi, 92
Yip, Moira, 280

Zec, Draga, 47, 48, 235

Language index

Akan, 10, 23, 27–49, 77–97, 113, 129,
186, 187

Akuapem (Akwapem), 14, 29, 39, 46

Ashraaf, 272

Ateso, 248

Avatime, 134

Bambara, 142, 143

Baule, 128

Baydhabo Maay, 280, 281

Bini, 150

Bondu So, 213–238

Cantonese, 20

Cushitic languages, 272, 273

Dagaare, 135, 137

Degema, 151, 155, 160

Delta Cross languages, 144, 154

Dholuo, 243–265

Digil languages, 272

Diola-Fogny, 138, 139

Dogon languages, 140

Dogul Dom, 140

Dompo, 101–121

Donno So, 220

Ebira, 146, 147

Edoid languages, 148, 153, 155, 156,
158

Emai, 67, 148–150, 156

English, 20, 85, 250

Esan, 150

Ewe, 54, 55, 57, 58, 62, 63, 67, 112, 113,
131, 132, 138, 160

Fongbe, 132, 133, 138, 160

Ga, 113, 131

Gbe languages, 54, 56, 62

Gengbe, 55–58

Gonja, 104

Hausa, 202–206

Igbo, 147

Ijo, 145

Ijoid languages, 145, 154

Irish, 235

Japanese, 55

Jóola Banjal, 138, 139

Jóola Eegimaa, 235

Jukunoid languages, 146, 153

Kana, 144

Kanakuru, 206–207

Kasem, 136, 137

Kashmiri, 235

Kenyan Maay, 274–280

Kwa languages, 128, 139

Limba, 112

Logba, 135

Lower Jubba Maay, 282

Luo languages, 243

Language index

Lutuv, 17

Mandarin, 20

Mande languages, 142

Mandinka, 141

Medumba, 17, 20

Nafaanra, 105

Najamba, 140

Nubi, 270, 277

Obolo, 144

Persian, 112

Polish, 84, 85

Quiavini Zapotec, 236

Scottish Gaelic, 236

Siwu, 67

Somali, 272, 274, 277–279, 283

Supyire, 142

Swahili, 250

Sūzhōu Chinese, 17

Tafi, 135

Tera, 208–210

Togo Mountain Languages, 134

Twi, 10, 18

Vata, 138

Yorno So, 140

Yoruba, 58–60, 112, 148, 155, 156, 158,
160, 185–198

Yukuben, 146

Subject index

- abstractness, 214, 225, 253
- agentive, 260, 278
- agreement, 205
- allomorphy, 216
- allusion, 171, 174, 180
- applicative, 148, 149
- areality, 128, 152, 156, 160
- articulatory harmony, 244
- aspect, 62, 139
- ATR, 12, 30, 31, 35, 41, 48, 187, 214, 226, 246, 247, 250, 251, 261
- biblical intertextuality, 179, 180
- center of gravity, 223, 226, 228, 233
- cliticization, 218–220, 232
- coarticulation, 16
- coerced weight, 234
- compensatory lengthening, 37, 57, 235
- compounding, 54, 59, 64, 205, 259–263, 278, 279
- conceptual metaphor, 82, 84, 86, 88, 90
- consonant duration, 232, 237
- consonant length, 230
- consonant mutation, 250, 252
- contextual weight, 235, 237
- contrast preservation, 28, 33, 44, 48, 49, 228
- culminativity, 277, 278, 283
- cultural linguistics, 79, 82
- death-prevention names, 195
- definiteness prohibition, 130
- degemination, 208, 209
- delabialization, 29, 32, 36, 38, 44
- delegitimization, 180
- depressor effects, 216
- diachrony, 14, 17, 204, 205, 271, 274, 283
- diminutive, 260, 262
- feature binarity, 30, 214
- feature geometry, 217, 235
- feeding interaction, 37, 40, 44, 45
- final devoicing, 251
- foregrounding, 171, 177
- fricative vowels, 17
- gemination, 207, 208
- gesture timing, 18
- grammatical gender, 273, 280
- grammatical tone, 65, 187, 203–205, 251
- grammaticalization, 127
- hypocoristics, 186
- iconicity, 54, 60–63, 65, 67
- implicature, 179
- indirectness, 176, 179, 180
- infixation, 206
- labio-palatalization, 11, 13, 29, 32, 37, 38, 44

Subject index

- language endangerment, 101, 103–105
lenition, 207
linear ordering, 127, 129, 135, 141, 150

markedness, 28, 46–48, 280
metrification, 238, 251, 255, 271
minimality, 215, 219, 235
mora licensing, 215, 220

neutralization, 251, 275, 280, 282
non-verbal communication, 119, 121

obligatoriness, 271, 276, 277, 281, 283
Obligatory Contour Principle, 11, 32, 63, 249

P-center, 19, 20, 22
palatalization, 48
palatography, 16
phonetic merger, 224
phonotactics, 11, 27, 31, 33, 43, 47, 206–208, 221, 256, 258
Pillai scores, 223, 228
pluralization, 202, 206, 278
politeness, 102, 111, 119, 121
possession, 132, 133, 157, 276
prenasalized consonants, 246, 256
privativity, 30, 214, 271, 275, 283
prominence, 270, 271, 278, 280–282, 284
prosodic typology, 269, 270
prosodification, 278, 283
proverbs, 88, 94, 172, 174, 178
puberty rites, 102

quotation, 171, 174, 178

reduplication, 54, 56, 57, 59, 62, 65, 66, 203, 205

rhythm, 19, 21
rule ordering, 42, 44, 45, 255, 257

secondary articulation, 11, 13, 14, 38, 39
semantic avoidance, 33, 44
sonority, 46–49
subtraction, 264
suppletion, 259, 260, 263
Syllable Contact Law, 29
synthetic speech, 18

taboo, 118
templatic morphology, 65, 66
tense/fortis sonorants, 235
tone-integrating suffixes, 204
tonotactics, 279
trivalent predicates, 160

underspecification, 36, 256

variation, 21, 32, 35, 39, 40, 46, 127, 136, 203, 205, 220, 249, 279
voicing polarity, 244, 252
vowel harmony, 10, 31, 187, 214, 232, 246, 253
vowel length, 226

The Ghanaian linguistics nexus

There is a long and rich tradition of excellence in Ghanaian linguistics and the detailed study of Ghanaian languages. This tradition has expanded by leaps and bounds in recent years, thanks in part to a cadre of renowned and highly productive Ghanaian linguists conducting research at universities around the globe, as well as in Ghana itself. So too has the commitment to careful description, documentation, and theorizing underlying this tradition been extended to the students that these scholars have trained. The papers in this volume reflect the vast reach of this research tradition, grounded in but expanding beyond Ghanaian languages, ranging from experimental phonetics, to language description, to political discourse analysis.