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A Grammar of Goemai

by

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Abbreviations and Conventions

The following abbreviations are used in interlinear glosses:

ADVZ	adverbializer
ANT	anterior
ASSOC.PL	associative plural
bec.	become (inchoative)
BEN	benefactive
CL	classifier
COMIT	comitative
COND	conditional
CONJ	conjunction
CONS	consequence clause
DEF	definite
DEM.DIST	demonstrative (distal)
DEM.PROX	demonstrative (proximal)
DIM	diminutive
DIR	direction / vicinity of
DUR	durative
EMPH	emphasis
F	feminine
FOC	focus
FOC.IRR	irrealis (focused)
FUT.CL	close future
FUT.DEF	definite future
FUT.IMM	immediate future
GEN	genitive
HAB	habitual
I	independent pronoun
IDEOPH	ideophone
INTERJ	interjection
INTERR	interrogative
IRR	irrealis
LOC	locative
LOC.ANAPH	locative anaphor
LOG.AD	logophoric (addressee)
LOG.SP	logophoric (speaker)
M	masculine

NEG	negation
NOMZ	nominalizer
O	object pronoun
OBLIG	obligative
ORD	ordinal number
PAST.CL	close past
PAST.REM	remote past
PAST.YEST	yesterday past
PERM	permissive
PL	plural
POSS	possessive
PRES	presentative
PROGR	progressive
PROH	prohibitive
PUR	purpose
REDUP	reduplication
RESULT	resultative
S	subject (intransitive and transitive) pronoun
SEQ	sequential
SG	singular
SPEC	specific-indefinite article

In addition to the abbreviations listed above, spatial nominals (e.g., *sék* ‘BODY’ (= location at the ‘body’ of an entity)) as well as clausal particles and conjunctions (e.g., *yìn* ‘SAY’ (= reported speech)) are glossed in small caps to remind the reader of their grammatical functions. Proper names are put in angular brackets and glossed in small caps, too (e.g., *Gòelóng* ‘<NAME>’).

Occasionally, constituents are overtly marked in example sentences. In such cases, the following abbreviations are used:

[...]A	transitive subject
[...]ADV	adverbial phrase
[...]COMP	complement clause
[...]COND	conditional clause
[...]N	noun
[...]NOMZ	nominalized clause
[...]NP	noun phrase
[...]O	direct object
[...]S	intransitive subject
[...]SVC	serial verb construction
[...]V	verb

[...]VCC	verbless clause complement
[...]VCS	verbless clause subject
[...]VP	verb phrase

The following notation and transcription conventions are used in example sentences:

intonation break	/
omission of material (in middle or at end)	(...)
omission of material (at beginning)	example starts with small letter
capitalization and punctuation	only in natural and stimuli examples, not in elicited examples

The example source is added in brackets after the free translation. The following conventions apply:

Type	Conventions	Example
elicited examples	{speaker.code}-{recording.date}	A-17/02/00
natural and stimuli examples	{genre} b = video/photo elicitation c = conversation d = descriptive text f = folktale h = historical narrative m = matching game o = other (song, speech routine) p = procedural text q = questionnaire r = story retelling s = speech {year.of.recording} {speaker.code} {mnemonic}	D00JANIMAL9
example from literature	{citation}	TIEMSAN 1999: IV

Chapter 1

Introduction

This chapter introduces both the Goemai language and this grammar: it presents the language and its speakers (section 1), describes the fieldwork setting (section 2), outlines the main typological characteristics of the language (section 3), and summarizes the structure of the book (section 4).

1. The Goemai language and its speakers

Goemai is an Afroasiatic (Chadic, West Chadic A, Angas-Goemai group) language that is spoken in Central Nigeria by around 200,000 speakers. The name ‘Goemai’ [gèmâi] is used by the speakers themselves to refer to both their language and their ethnic group. To outsiders, they are better known under the name ‘Ankwe’ – a name that is also commonly found in the older linguistic, anthropological and historical literature.¹

This section summarizes information on the language (section 1.1) and its speakers (section 1.2).

1.1. Linguistic classification and history of documentation

Figure (1) illustrates the classification of Goemai, depicting its position relative to its closest relatives of the Southern and Northern branches of the Angas-Goemai group of West Chadic A.

Today, the Angas-Goemai group is firmly established as a subgroup of Chadic on the basis of regular sound correspondences and pronominal forms

-
1. The origins of the names *Goemai* and *Ankwe* are unknown. *Goemai* probably derives from the singular nominalizer *gòe-* (see chapter 3, section 4.2) and an unknown root *mâi*. This root is otherwise only attested in the word *mòemâi* ‘people, strangers’ (containing the plural nominalizer *mòe-*). It is likely that these two words are diachronically related. Synchronically, however, they differ semantically, and the use of *Gòemâi* is no longer restricted to singular reference. The name *Ankwe* bears no similarity to any other Goemai word. Folk etymology attributes its origin to the Hausa word *àkwâi* ‘there is, exists’. It is said that the land was so fertile that the Goemai answered *àkwâi* ‘(yes), it exists’ whenever the early Europeans inquired whether a particular crop was farmed there.

(see Greenberg 1966; Hoffmann 1975; Jungraithmayr and Ibriszimow 1994; Jungraithmayr and Shimizu 1981; P. Newman and Ma Newman 1966; P. Newman 1977a; Takács 2004). Initially, however, languages of this group proved difficult to classify: Westermann and Bryan (1952) left them unclassified (and included Fyam, a non-related Benue-Congo language, as part of this group); Greenberg (1955) subsumed Tarok (Benue-Congo) under Angas-Goemai; and other researchers explicitly commented on lexical and grammatical similarities to surrounding Benue-Congo languages (Hoffmann 1970; Jungraithmayr 1963b). Such difficulties in classification are not surprising given that these languages are spoken in a region that constitutes a linguistic area or *sprachbund* (see section 1.2).

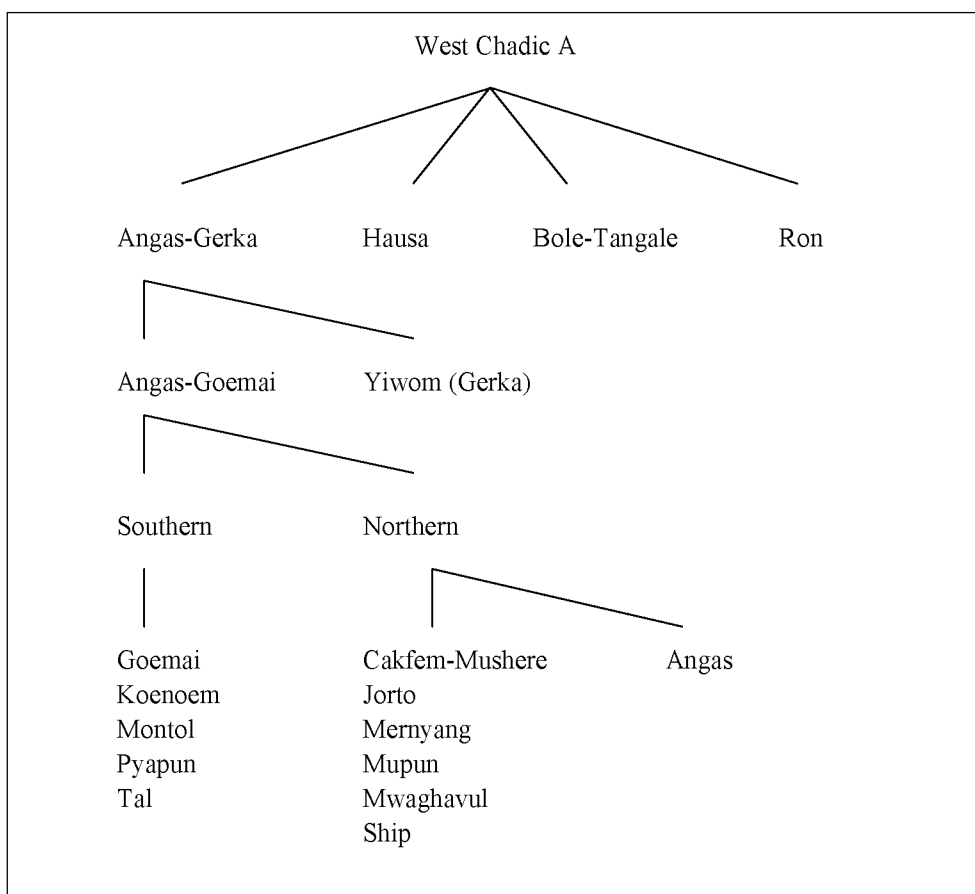


Figure 1. The linguistic classification of Goemai

The Angas-Goemai group is divided into a Northern and a Southern branch. Most of our knowledge is restricted to the Northern branch: there are extensive grammars and dictionaries of Angas (Burquest 1973; Foulkes 1915; Gochal 1994; Jungraithmayr 1964b; Ormsby 1912, 1913), Mupun (Frajzyngier 1991a, 1993) and Mwaghavul (Jungraithmayr 1963a); and some additional information is available on Ship (Hoffmann 1975; Jungraithmayr 1964a; Kraft 1981) and Mernyang (Hoffmann 1975; Netting 1967, 1977). All Northern languages are closely related, sharing many grammatical and lexical characteristics.

Our knowledge of the Southern branch, by contrast, is limited. With the exception of a short grammatical sketch of Montol (Jungraithmayr 1964a), only Goemai has received any documentation. Goemai itself is subdivided into four dialect areas that correspond to political and geographical units: Duut, East Ankwe (or Derteng), Dorok and K'wo (see map 1). These dialects are mutually intelligible, and their differences seem to be restricted to the phonological and lexical level. None of them is standardized at the expense of the others. However, both the Duut and the K'wo dialects have gained some wider currency due to the political supremacy of the town of Shendam (Duut) and the influence of the Goemai catechism (K'wo).

Hoffmann (1975) is a comparative phonological study of the Angas-Goemai group with Goemai (K'wo dialect) as the representative of the Southern branch; Kraft (1981) is a phonological sketch of Goemai that also includes a word list (possibly Dorok dialect); and H. Wolff (1959) is a phonological inventory of Goemai (Duut dialect). Furthermore, the missionary Eugene Sirlinger has compiled four unpublished documents of the language as it was spoken around 1930 (based on the K'wo dialect, but with additional information on other dialects): a catechism (Sirlinger 1931), two dictionaries (Sirlinger 1937, 1946) and a grammar (Sirlinger 1942). All manuscripts contain reliable lexical and grammatical information on an earlier stage of the language, revealing a number of interesting grammatical differences to the present-day language (which will be discussed in the relevant chapters). His catechism has played a major role in promoting literacy in the Goemai language among members of the older generation. In recent years, the Goemai Literacy and Bible Translation Committee, in cooperation with the Nigerian Bible Translation Trust, has started its translation work, has introduced a practical orthography (Ohikere and Tiemsan 1999) and has published a collection of folktales (Ohikere and Tiemsan 1998; Tiemsan 1999).

This grammar is part of a long-term project to describe and document the Goemai language. It focuses on the K'wo dialect, but contains additional information on the Dorok and Duut varieties. So far, it has resulted in a monograph and articles detailing the grammar, semantics and pragmatics of the language's postural-based system of nominal classification (Hellwig 2002, 2003, 2006c, 2007b, 2007c, 2009c), a grammatical sketch focusing on the open word classes

(Hellwig 2004), as well as descriptions of serial verb constructions (Hellwig 2006a, 2006e), pronouns (Hellwig 2008b), complementation (Hellwig 2006b), clause linking (Hellwig 2009a), property-denoting expressions (Hellwig 2007a, 2009d, 2009f), argument structure and lexical aspect (Hellwig 2006e, 2009b, 2009e), and aspects of Goemai syntax (Hellwig 2008a). This grammar represents my current state of knowledge of the Goemai language: new data were taken into account, additional parts of the grammar were investigated, and former analyses and underlying assumptions were extended further, refined and – sometimes – corrected. That is, in cases where a previous analysis differs from the one presented here, the latter should be taken as more accurate. In addition to the published work, there is a corpus of approximately 20 hours of naturally-occurring data as well as data generated with visual stimuli. All data are deposited in two electronic archives: data collected between 1998 and 2003 in the archive of the Max Planck Institute for Psycholinguistics (http://corpus1.mpi.nl/ds/imdi_browser/), and data collected between 2003 and 2005 in the Endangered Languages Archive (<http://www.hrhelp.org/archive/>).

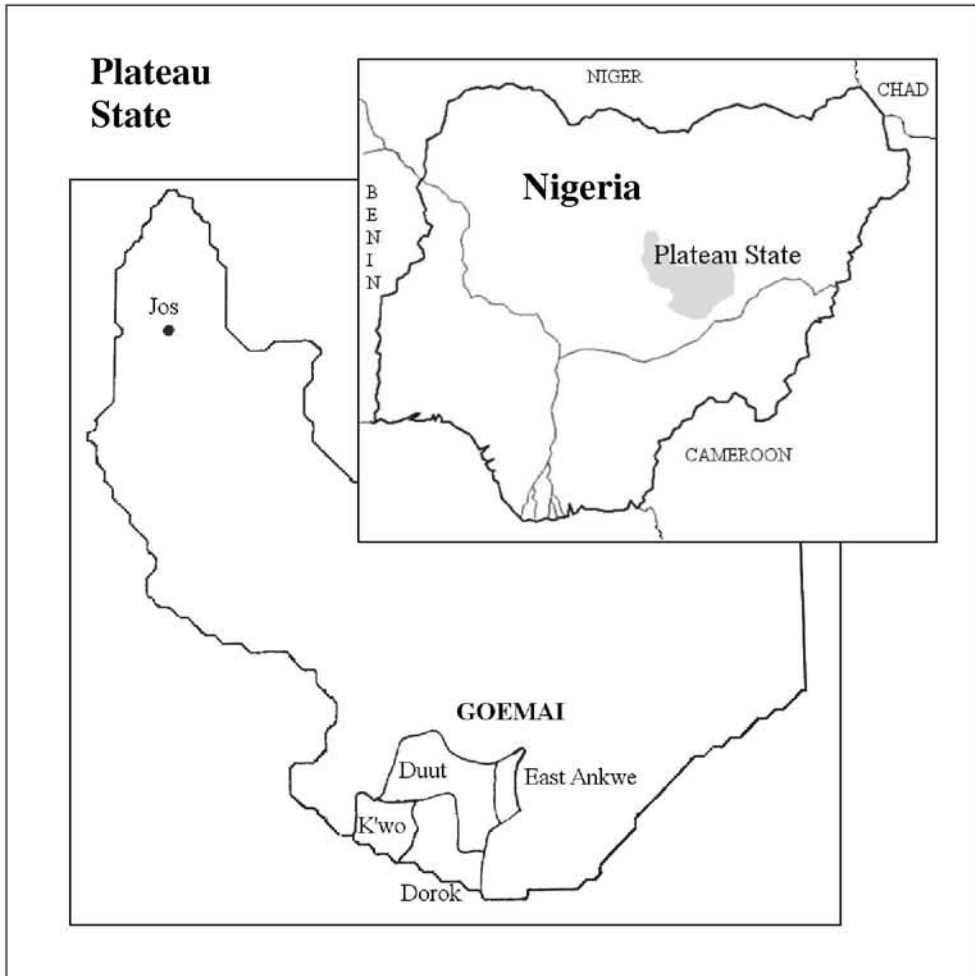
1.2. Historical and sociolinguistic background

The Goemai live as farmers, fishermen and hunters in villages throughout the lowland savannah region south of the Jos Plateau and north of the Benue River, an area that is known geographically as the Great Muri Plains (see map 1). The economy is based on agriculture (yam, millet, guineacorn, groundnut, beniseed) and is supplemented with fishing (in the Dorok area) and hunting (see also Monday 1989). Politically, the area belongs to Plateau State, and more specifically to the Local Government Areas Shendam and Qua'an Pan. Smaller Goemai speaking communities are found in surrounding Local Government Areas as well as in Jos, the capital of Plateau State.

Oral traditions suggest that speakers of Goemai migrated from the Jos Plateau to their present location in relatively recent times (see the contributions in Isichei 1982b; Yearwood 1981). It is generally assumed that the ancestors of the present-day inhabitants of the Jos Plateau did not arrive there before the 17th century. Presumably, the first speakers of Chadic languages arrived at an even later stage. They first settled on the Plateau, and later some of them, including the ancestors of the Goemai, migrated further south into the lowlands.

The history of the whole region is characterized by numerous small-scale migrations that are linked to the formation and expansion of powerful regional states: the Kororofa Empire of the Jukun (14th to 18th century) and several Emirates established in the wake of the Hausa/Fulani *jihad* (19th century) (Isichei 1981, 1982a; Morrison 1982). The lowland societies were incorporated into the newly established states, and the mountainous Plateau became a refuge.

While some refugees were integrated into the indigenous societies, others dispersed the original inhabitants, setting off a chain reaction of further migrations. As a result, new ethnic groups were formed, interethnic marriages took place, and trading networks were established (Agi 1982; Ames 1932; Banfa 1982; Danfulani 1995; Fitzpatrick 1910; Gunn 1953; Isichei 1981, 1982a; Meek 1931; Unomah 1982; Weingarten 1990). This continuous and frequent contact led to the establishment of a language (and culture) area in which unrelated Chadic and Benue-Congo languages share numerous lexical and grammatical features (Ballard 1971; Gerhardt 1983b; E. Wolff and Gerhardt 1977; Hoffmann 1970).



Map 1. Nigeria, Plateau State and the Goemai area (based on Kurungtiem 1991)

Like other groups in this region, the Goemai had (and still have) extensive contacts with speakers of different languages. As a lowland society, they were under the influence of first the Jukun Empire and later the Bauchi Emirate (Agi 1982). In both cases, they were integrated politically, culturally and economically into the regional states. In fact, many present-day Goemai speakers trace their origins back to the Jukun, i.e., to speakers of a Benue-Congo language. Despite this firm integration, they continued to maintain close personal and commercial ties to societies on the Jos Plateau (Unomah 1982).

The regional states disintegrated with the arrival of the British colonial authorities at the beginning of the 20th century (Isichei 1981, 1982a; Kurungtiem 1991; Onotu 1982). In 1901, the British established their headquarters in Shendam and, in 1908, centralized the Goemai chieftaincy under the leadership of the chief of Shendam. Around the same time, missionaries of the Roman Catholic Church arrived, settled in Shendam (in 1907), and later established secondary missionary centers in Demshin (in 1909) and Kwande (in 1931). In 1911, Shendam became headquarters for the Prefecture North-East; and from 1931 onwards, it hosted the Vernacular Training College, which supplied parts of Nigeria with trained teachers. Shendam was thus an early administrative, religious and educational center of Northern Nigeria. For the Goemai, this colonization process resulted in establishing their political and ethnic unity (under the authority of Shendam); and their education within the colonial system allowed many of them to assume leading roles throughout Nigeria.

The population of the present-day Goemai area is heterogeneous. Sizeable immigrant communities in search of fertile farmland have settled in and around all villages, including speakers of both closely-related Chadic and non-related Benue-Congo languages. Goemai is the major indigenous language in this area, but its importance is decreasing rapidly in favor of Hausa. Hausa is the language used in administrative, religious and educational settings as well as in everyday contacts with non-Goemai neighbors. Among the younger generation, Hausa has become the language of everyday communication even in intra-group contexts. And children in all larger settlements grow up with Hausa as their first, and often only, language. To date, there are an estimated 200.000 ethnic Goemai (SIL 2008), but the number of actual speakers is assumed to be less: while members of the older generation are still fluent speakers, the variety spoken by middle-aged speakers already shows considerable influence from Hausa; and those among the younger generation who still speak Goemai resort to extensive code-mixing and code-switching strategies. The growth of a regional lingua franca at the expense of a minority language is a common pattern all over Africa (see, e.g., Bamgbose 2000). The Nigerian national language English, by contrast, has not gained the same distribution as Hausa, although it encroaches on some official domains.

2. The fieldwork setting

The data for this grammar were collected during 14 months of fieldwork (between 1998 and 2005) among the K'wo Goemai in the village of Kwande (in the main Goemai area) and the city of Jos (to the north of this area). This distribution of fieldwork across two settings was partly motivated by choice, and partly by necessity. In the beginning, Kwande was the main fieldsite, as it was possible there to observe people speaking Goemai in their daily interactions. During this time, Jos was retained as a minor fieldsite, because it happened to be the residence of Mr. Louis Longpuan – a very gifted speaker of Goemai, who became more and more of a colleague in the course of the fieldwork. Towards the end, the political situation in the main Goemai area deteriorated, and civil strife made access difficult. Jos and its sizeable Goemai community now became the main host.

Throughout this time, a number of different speakers have contributed linguistic data to the project on a regular basis. Table (1) lists all major contributors, together with their (approximate) age in the year 2000, sex and dialect.

Table 1. Major contributors to this grammar

Code	Name	(Approximate) age in 2000	Sex	Dialect
A	Louis Longpuan	65	male	K'wo
B	Yusufu Sule	65	male	K'wo
C	Maria Miaphen	60	female	K'wo
D	Thomas Longpuan	52	male	K'wo
E	Philomena Njin Abau	32	female	K'wo
F	Moegaji	25	male	K'wo
G	Mesenji	25	male	K'wo
H	Tsoho	24	male	K'wo
I	Victor Longpuan	24	male	K'wo
J	Shalyen Mbai Nwang	23	male	K'wo
K	Naanshep Longpuan	18	male	K'wo
L	Immanuel Mbai Nwang	17	male	K'wo
M	Naantwaam Kwande	17	male	K'wo
N	Andreas Shakum	60	male	Dorok
O	Augustine Shakum	60	female	Dorok
P	Bibiana Lockur	60	female	Dorok
Q	Eugene Maigari Longnaan	24	male	K'wo

Each consultant is assigned a code letter, which appears as part of the identifier of example sentences, i.e., all examples in this grammar can be traced back to their speaker (see *Abbreviations and Conventions* for details). Most consultants are men, either in the age range between 15 and 30, or above 50 years; unfortunately, it proved difficult for many female and middle-aged speakers to find the necessary time. All speak Goemai as their first language – most speak the K'wo dialect, and some speak the Dorok dialect; data on the other dialects was obtained through consulting with the late Pastor Jimoh Ohikere who worked with the Goemai Literacy and Bible Translation Committee in Ajikamai and Shendam. All consulted speakers are bilingual in Hausa; most also speak other local languages and some also English.

The corpus collected with the help of these speakers contains about 20 hours of recorded texts (approximately 250.000 words), covering a variety of genres (including conversations, different types of narratives, descriptive texts, procedural texts, speeches, riddles, proverbs and songs). All recordings are computerized, transcribed, linked to the time axis, glossed and translated. Parts of these data were volunteered by the speakers, while other parts were prompted, i.e., speakers were asked to talk about specific topics (so-called “staged communicative events” in the terminology of Himmelmann 1998). These data were then supplemented with data from focused elicitation: to minimize the risk of misunderstanding that inevitably occurs when relying on translation equivalents, elicitation was based, whenever possible, on natural text examples and visual stimuli (see, e.g., the discussions in J. Lyons 1977; Samarin 1967: 205–217; Vaux and Cooper 1999: 37–43). In addition, responses to non-verbal stimuli and questionnaires were collected. All three types of data – natural, elicited and stimuli-based – were taken into account for the grammatical analysis presented in this book (see Hellwig 2006c, 2006d, 2007a, 2009c, 2009f for further discussions of Goemai fieldwork), and the identifier of each example sentence contains information about the type of data (see *Abbreviations and Conventions*).

3. Language profile

This section introduces the salient characteristics of the Goemai grammar (section 3.1), and highlights possible diachronic origins (section 3.2).

3.1. Typological sketch

Goemai is a tonal language with two level tones (high, low), two contour tones (falling, rising) plus a predictable downstep. The functional load of tone is restricted: most minimal pairs belong to different parts of speech, grammatical

tone often neutralizes lexical tone, and grammatical constructions are primarily marked by segmental morphemes rather than tone. Nevertheless, tone plays an important role in that many constructions also exhibit a distinctive tonal pattern. The segmental phonology is characterized by a complex consonant inventory that includes a three-way distinction in all obstruents (voiceless aspirated, voiceless non-aspirated and voiced), as well as implosives. The vowel system has undergone some recent changes, presumably triggered by the reanalysis or loss of consonants. In present-day Goemai, seven vowel phonemes are recognized, and there is evidence for vowel length being contrastive. The syllable structure is CV(V)(C), whereby the first consonant can be modified by the secondary features of labialization, palatalization or prenasalization. Morphemes tend to be monosyllabic, and words tend to be monomorphemic.

Goemai can thus be characterized as a predominantly isolating language. As such, it has retained only few remnants of the inherited Chadic verbal morphology (largely restricted to number marking on verbs). But notice that it is currently developing some nominal morphology (connected to marking the modifying function and number), and it makes use of cliticization (mostly of nominal modifiers and subject pronouns). Given its largely isolating nature, word classes are identified on the basis of syntactic criteria, i.e., on the basis of distributional and combinatorial possibilities. Their identification is aided by a certain syntactic rigidity: Goemai has fixed word and constituent order, its lexical expressions are usually not indeterminate as to their word class, and the syntactic functions of different classes usually do not overlap. As such, it is possible to identify word classes, and give evidence for the existence of phrasal units.

The open word classes are nouns, verbs and adverbs. Goemai does not have a word class of underived adjectives.

Nouns usually have concrete reference, and there is a scarcity of underived nouns that denote activity and abstract concepts. Overall, the nominal lexicon is characterized by a high degree of semantic generality: most nouns are compatible with singular, plural and collective interpretations, some also with mass interpretations; and many nouns can refer to both an entity and its natural or man-made produce (e.g., a single word is used for clay as well as for the bricks made from that clay, or for a plant, its leaves and its fruits). This type of semantic generality has probably motivated recent developments in the area of nominal morphology. More specifically, Goemai has innovated a system of nominal classification based on canonical postures (coded in deictic classifiers and classificatory verbs) as well as an elaborate system of modification and number marking (which derives number-marked modifiers and headless modifiers from all parts of speech). Both systems serve to restrict the reference of semantically-general nouns. But notice that classification, modification and number are usually expressed in different elements within the noun or verb phrase, while un-

derived nouns tend to be monomorphemic. Goemai has retained only remnants of Chadic number-marking morphology on the noun (in some kinship, bodypart and collective nouns), and it has largely lost the Chadic category of gender (only retained in speech act contexts); there is some evidence for remnants of a Benue-Congo noun class prefix that has entered the language through contact (marking nouns that denote insects, birds and small animals). Nouns are the only words that function underived as heads of noun phrases. They cannot function as modifiers within simple noun phrases, nor can they function as heads of predicates.

Verbs tend to express a change of state, and there are only very few unambiguous activity and stative verbs. This predominant type of lexicalization has probably motivated the innovation of structures to derive activity expressions (i.e., cognate object structures) and stative expressions (i.e., serialized and nominalized structures). In particular, Goemai employs its few stative verbs – the postural-based classificatory verbs – to derive stative expressions. Verbs tend to be morphologically simple: a subset of verbs has retained remnants of Chadic number-marking morphology (indicating participant number in one of their arguments), but there is no evidence for distinguishing verb classes on the basis of segmental or suprasegmental shape; nor has Goemai retained any of the verbal extensions that serve to indicate or change the thematic role or the transitivity of an expression. Instead, the language employs formally unmarked argument structure constructions (one intransitive, three transitive and one ditransitive construction). Many verbs participate underived in more than one of these constructions, and their possibilities are determined by their lexical participant structure and lexical aspect. Goemai has only limited possibilities for detransitivizing expressions, but it freely adds participants in adverbial function or through verb serialization and juxtaposition. Syntactically, verbs can only ever function as heads of verb phrases.

Adverbs express quantification (including numerals), space, time and aspect, and (less commonly) manner and evaluation. They are formally similar to nouns in that they can be modified by some nominal modifiers and conjoined by nominal conjunctions. Despite these similarities, the syntactic functions of nouns and adverbs are clearly distinct and do not overlap. Quantifying adverbs share also similarities with nominal modifiers in that they are not only event-oriented, but also participant-oriented (i.e., they are oriented towards a participant of the event), thus allowing them to semantically modify noun phrases. Syntactically, however, they still function as adverbials, and they need to be formally derived in order to function as nominal modifiers. Most present-day adverbs seem morphologically complex: it is very likely that they were derived from other word classes by means of prefixes and reduplication. But since their sources are no longer attested in present-day Goemai, they have to be analyzed synchronically as non-derived.

In addition to these three open word classes, Goemai has the following parts of speech:

- Pronouns. Their independent form constitutes a subset of nouns, while their dependent form is currently developing into a grammatical system for cross-referencing subject arguments on the verb. The pronouns include two sets of logophoric pronouns that indicate co-reference with the speaker and the addressee respectively. Both sets, as well as 2SG pronouns, distinguish gender – i.e., Goemai maintains remnants of the Chadic gender distinction in speech act contexts.
- Modifiers. These occur within noun and adverbial phrases, where they code the referential status of their head, qualify the head or (less commonly) quantify it.
- Ideophones. They are analyzed as a subset of adverbials. Interestingly, they do not only serve an expressive function, but also – or even predominantly – a lexical aspect function, in that their presence conveys an accomplished state-change. As such, they are largely restricted to co-occurrence with inchoative state-change verbs.
- (Spatial) prepositions, prefixes and nominals. All three parts of speech function as heads of prepositional phrases, marking spatio-temporal relations as well as peripheral arguments. Goemai has only one preposition and one prefix, but employs a large number of spatial nominals (which usually derive from bodypart nouns).
- Particles and coordinators (marking tense / aspect / mood, focus and emphasis, topic, question, negation and different clause types), interjections, and interrogatives.
- Some recently-developed proclitics, enclitics and prefixes.

Most lexical expressions belong to one word class only – only inherently-locational nouns and spatial nominals can participate in more than one class (i.e., they function underived as nouns and adverbs, and are hence analyzed as ambiguous). Derivational mechanisms exist, but their possibilities are limited: the adverbialization of verbs derives adverbs that occur in some restricted environments; verbs cannot be derived from any other word class; and although nominalization is widespread, the resulting expressions often do not have the same syntactic possibilities as non-derived nouns. Goemai nominalizes verbs to create abstract nouns and activity nouns, and it nominalizes members of all word classes to create modifiers and headless modifiers. In both cases, the nominalization serves to close a gap in the lexicon: there are only few underived abstract and activity nouns; and there is no class of adjectives. Goemai further nominalizes verb phrases (to function as participles and as complements of auxiliary verbs) and clauses (to function as modifiers and adverbials).

Goemai clauses have strict AVO / SV constituent order, and grammatical relations are conveyed through this constituent order alone. But notice that there is an incipient system of cross-referencing A/S arguments on the verb. There is no case marking on nouns; and peripheral arguments are marked through prepositions and prefixes. Some core arguments (3SG A/S and inanimate O) are omitted if they are recoverable from the linguistic context. TAM categories are expressed by means of free particles and discontinuous constructions whose diachronic origins are often still transparent. The most common form is the verb unmarked for TAM, but the language allows for the grammaticalized expression of absolute tenses, different aspectual categories (progressive, habitual, durative, anterior, resultative) as well as different types of irrealis modalities. Some of these TAM categories can be expressed in both verbal and non-verbal clauses.

Verbal clauses are used for a great variety of states-of-affairs, including those that commonly receive non-verbal expressions in other Chadic languages: locative, existential and presentative concepts. And although there are non-verbal strategies for expressing equative, ascriptive and possessive concepts, these domains are gradually being taken over by verbal strategies as well. Again, it is the set of postural-based classificatory verbs that is used in all these domains.

Goemai has a variety of multiverb constructions that impose different types of restrictions on the expression of TAM, person and polarity. In particular, it makes extensive use of different types of serial verb constructions to express temporal relationships, lexical aspect and deictic concepts; and of juxtaposition to express logical relationships. In addition, there are overtly marked complex clauses: adverbial clauses that serve to indicate temporal relationships; two complement clauses that occur with verbs of attention and thinking, and verbs of starting and stopping respectively; one consequence clause; different types of purpose and sequential structures; a reason clause; reported speech structures; and a conditional clause. There are indications that many of these more specific clause types constitute recent innovations, and it is likely that Goemai originally made more extensive use of the formally unmarked strategies of verb serialization and juxtaposition. Furthermore, Goemai has borrowed many conjunctions from Hausa.

The paragraphs above have outlined some salient typological characteristics of Goemai. In particular, two predominant lexicalization patterns deserve to be highlighted. First, the verbal lexicon is characterized by a large number of state-change verbs, with only few activity and stative verbs. This includes the predominant lexicalization of property (or adjectival) concepts as state-change verbs. Second, both the verbal lexicon and the nominal lexicon are characterized by semantic generality: many nouns have neutralized number distinctions

and do not distinguish between entities and their produce; and many verbs allow for the expression of different thematic roles, transitivity values and lexical aspect categories. As a result, a large part of Goemai grammar consists of strategies that fill gaps in these lexicalization patterns (i.e., that create stative and activity expressions, or that derive abstract nouns) and that restrict the meaning potential of expressions (i.e., that allow for the categorization and classification of verbs and nouns). Given the typological profile of Goemai, these strategies are usually not expressed morphologically. Goemai is a predominantly isolating language that prefers to make use of syntactic strategies. In particular, it has developed a number of morphologically-unmarked constructions that allow for the co-occurrence of lexical items and that convey specific grammatical meanings. In all cases, there is evidence that these meanings do not derive directly from the individual meanings of the co-occurring items, but rather from the construction as a whole.² These very general semantic and formal characteristics underlie the following pervasive patterns:

- A large part of Goemai grammar obligatorily makes use of a contrastive set of five postural-based elements: locative, presentative, serial verb, progressive, ascriptive and demonstrative constructions. In all contexts, Goemai speakers are required to choose one of the five elements, and to thereby pay constant attention to the position of referents in space. The spread of these expressions throughout Goemai grammar is motivated by their lexical properties. They are among the very few stative verbs of the language, and Goemai employs them to create stative expressions. And they classify nominal concepts – i.e., they serve to pick out referents from among the many possible referents of a semantically-general noun.
- The modifying construction is another construction that has spread throughout Goemai grammar. This construction originally served to create stative predicates, in particular, to create stative property (or adjectival) expressions. In later developments, these stative expressions were first integrated as nominal modifiers into the noun phrase, and then the construction was extended to derive modifiers from all kinds of other expressions. As modifiers, they serve to restrict the reference of semantically-general nouns. Furthermore, the construction also distinguishes

2. Given this characterization, constructional approaches are considered most promising in analyzing Goemai grammar (e.g., Goldberg 1995). And although this grammar is not explicitly written within the framework of constructional grammar, it nevertheless subscribes to the view that constructions can be defined in terms of their form and their meaning; and it attempts to describe both the constructions and the integration of lexical items into constructions.

number and thus further restricts the reference. In fact, the modifying construction is currently being extended to mark nouns, i.e., to overtly mark number on nouns. Notice that this construction is one of the very few constructions that receives a morphological – and not a syntactic – expression.

- Verbal clauses instantiate one of five argument structure constructions that differ in their lexical aspect and in the linking of thematic roles to argument slots. Verbs usually have the potential to participate in several of these constructions (i.e., they are compatible with a number of different thematic roles and lexical aspect interpretations). The constructions serve to highlight specific thematic roles and aspectual properties (and downplay others), thus restricting the meaning potential of verbs.

Edward Sapir (1921) speaks about the “genius” of a language, i.e., the logic that underlies it, that makes it unique and that motivates its grammatical structures. For Goemai, it can be argued that its grammar is driven by the above verbal and nominal lexicalization patterns, combined with a scarcity of overt morphology.

3.2. Diachronic origins

The diachronic origins of present-day Goemai grammar can be traced to different sources. There is linguistic evidence for two types of language contact: an ancient contact with languages of the Jos Plateau area (including both closely-related Chadic and non-related Benue-Congo languages), and a more recent contact with the regional lingua franca Hausa.³ More specifically, Goemai shares many features that characterize the Jos Plateau *sprachbund* as a whole, including similarities in lexicon and non-productive morphology (e.g., formatives expressing verbal number and noun class), phonotactics (e.g., syllable types and the distribution of consonants within syllables), lexicalization patterns (e.g., a predominant lexicalization of property or adjectival concepts as state-change verbs) and syntax (e.g., verb serialization). Goemai – like many other Jos Plateau languages (including both Chadic and Benue-Congo languages) – has also lost most of its inherited morphology, and has developed isolating structures instead. The more recent contact with Hausa has led to extensive lexical borrowings and to the introduction of new categories (e.g., the categories of auxiliary verbs and of sentential and phrasal conjunctions). Currently, younger speakers are in the process of shifting towards Hausa. In the

3. In the first case, it is often not possible to trace the origins of a specific feature. In the second case, the direction of borrowing is clearly from Hausa to Goemai.

absence of detailed sociolinguistic studies, it is thus not always transparent whether a specific Hausa form or pattern has been integrated into the Goemai language, or whether it results from code-switching.

This widespread contact has shaped Goemai grammar to the extent that it has to be considered a fairly untypical Chadic language. Its initial classification was based largely on common lexical and pronominal forms, on regular sound correspondences and on the presence of implosive sounds (see section 1.1). Based on the discussions in this grammar, it is now also possible to add the following features to the list of Chadic retentions:

- remnants of a distinction in vowel length;
- presence of the widespread Afroasiatic prefix **ma-*: (i) some remnants in nouns of location, (ii) productive use in deriving (plural) nouns of agent, and (iii) further spread to mark the modifying function;
- unproductive remnants of Chadic number-marking morphology on verbs and a few nouns;
- remnants of verbal suffixes that occur as unanalyzable parts of a handful of present-day verbs;
- possible reflex of a sequential morpheme **k-*.

All of the above features can be traced to the phonology and morphology of a proto-language (Afroasiatic, Chadic or West Chadic), and thus constitute further evidence for classifying Goemai as Chadic. At the same time, this list also indicates that the loss of Chadic morphology has been considerable: morphologically, present-day Goemai looks very different from many other Chadic languages. With the loss of morphology, Goemai has also experienced a complete or partial loss of typical Chadic categories such as grammatical gender (retained in speech act contexts only), nominal number (retained in unproductive morphology; but being currently re-invented), or a perfective / imperfective dichotomy marked on the verb stem.

On the one hand, these differences are undeniable, and they are described in more detail throughout this grammar. On the other hand, however, Goemai shares considerable similarities with other Chadic languages – not in the area of morphology, but in the area of semantics. Possible similarities are pointed out in the relevant chapters, but given that our morphological knowledge is more advanced than our semantic knowledge, more research is needed to ascertain the extent and nature of such putative semantic similarities, and to distinguish reliably between inherited and contact-induced similarities. Two important candidates for inherited semantic patterns are (i) a sensitivity towards the lexical aspect and thematic roles of verbs (resulting in strategies that affect the semantics and syntax of verbs); and (ii) the predominant lexicalization of verbs as state-change verbs (resulting in strategies that derive activity and stative

expressions). That is, Goemai and other Chadic languages very likely share semantic patterns that motivate the existence of some grammatical strategies. But due to the typological characteristics of the languages involved, these strategies differ formally: Goemai, which is predominantly isolating, tends to have syntactic strategies, while other Chadic languages tend to have morphological strategies. The first semantic pattern seems to be restricted to Chadic languages, while the second pattern is probably attested in Benue-Congo languages, too. In-depth semantic studies of both Chadic and Benue-Congo languages are likely to reveal more such similarities as well as differences, thereby making an important contribution to comparative Chadic linguistics, as well as to the study of language contact on the Jos Plateau.

While many grammatical structures can be traced to either language contact or inheritance, there are other structures that seem to result from independent developments. Most importantly, Goemai has innovated a system of nominal classification based on postural information. And although the motivation for this system – the lack of underived stative expressions and the semantic generality of nouns – is probably shared with other Jos Plateau and/or Chadic languages, only Goemai is known to have developed such a system.

4. Structure of the grammar

This grammar is structured as follows: chapter 2 discusses the phonology and tonology; chapters 3 to 5 focus on the open word classes and their phrasal structure (nouns, verbs and adverbials); chapter 6 outlines the closed word classes and remaining parts of speech; chapter 7 summarizes the system of tense, aspect and modality; and chapter 8 describes the structure of simple and complex clauses.

Chapter 2

Phonology and tonology

This chapter describes the phonology and tonology of Goemai: section 1 discusses the inventory of phonemes and tonemes, and presents the practical orthography; sections 2 and 3 outline segmental and suprasegmental processes observed on the word and clause levels respectively; and section 4 summarizes the chapter.

1. Phonemes, tonemes and orthography

Table (2) summarizes the Goemai phonemes and tonemes (written between slashes / /), non-phonemic sounds (written between square brackets []), and their orthographic representation (written without bracketing).

Table 2. Phonemes, tonemes and their orthographic representation

(1) Consonants

	Labial	Alveolar	Palatal	Velar	Glottal
Stops					
voiceless aspirated	/p ^h / p	/t ^h / t		/k ^h / k	[ʔ] ʔ
voiceless non-aspirated	/p/ p'	/t/ t'		/k/ k'	
voiced	/b/ b	/d/ d		/g/ g	
implosive	/ɓ/ ɓ'	/ɗ/ ɗ'			
Fricatives					
voiceless aspirated	/f ^h / f	/s ^h / s	/ʃ ^h / sh		/h/ h
voiceless non-aspirated	/f/ f'	/s/ s'	/ʃ/ sh'		
voiced	/v/ v	/z/ z	/ʒ/ j		
Nasals	/m/ m	/n/ n		/ŋ/ ngh ¹ , ng ²	
Liquids					
lateral		/l/ l			
trill		/r/ r			
Glides	/w/ w ¹ , u ²		/j/ y ¹ , i ²		

¹syllable-initial / -medial ²syllable-final

(2) Vowels

	Front unrounded		Central		Back rounded	
Short						
close	/i/	i	[ɨ]	<u>u</u>	/u/	u
mid	[e]	e	/ə/	e ¹ , oe ²	[o], [ɔ]	o
open			/a/	a		
Long						
close	/i:/	ii	/ɨɨ/	<u>uu</u>	/uu/	uu
close-mid	/e:/	ee			/oo/	oo
open-mid					/ɔɔ/	<u>oo</u>
open			/a:/	aa		
¹ syllable-initial / -medial		² syllable-final				

(3) Tones

Level		Contour	
high	é	falling	ê
mid	ē	rising	ě
low	è		

Some phonemes are represented by more than one orthographic symbol: these mismatches reflect positional alternations, and result from an attempt to integrate speakers' wishes, dialectal variation and existing orthographies (Ohikere and Tiemsan 1999; Sirlinger 1937, 1942, 1946; Tiemsan 1999) (see sections 1.1 and 1.3). The table also contains additional non-phonemic sounds: a glottal stop and some short vowels. The glottal stop occurs in predictable environments (before vowel-initial morphemes), and is written in word-medial position only (see section 1.1). The distinction between short and long vowels is not always phonemic, but length is nevertheless represented in the orthography (see sections 1.2 and 1.3).

This section discusses in more detail the phonemes and tonemes, their distribution and their realization. Whenever possible, comparative Chadic data is taken into account. Section 1.1 focuses on consonants, section 1.2 on secondary articulation, section 1.3 on vowels, and section 1.4 on tones. Section 1.5 then summarizes the orthographic conventions adopted.

1.1. Consonants

The full consonant inventory, as depicted in table (2) above, is only attested in morpheme-initial position, and the discussions and illustrations in this section reflect this distribution (see section 2.1 for other positions).

The most striking and typologically unusual aspect of the Goemai consonant system is its contrast among the obstruents: between voiceless aspirated, voiceless non-aspirated, voiced and, in some places, implosive. Cross-linguistically, a contrast between aspirated and non-aspirated consonants is well-attested in stops, but rare in fricatives (Ladefoged and Maddieson 1996: 66–70, 176–179). In previous work on Goemai, this contrast was sometimes noted, but analyzed differently.⁴ H. Wolff (1959), for example, labels it as an opposition between fortis and lenis stops, but does not discuss its phonetic correlates further. Since these two labels are often used to subsume quite different features (see Ladefoged and Maddieson 1996: 95–99) and thus not very informative, they will not be used in this book.⁵ Hoffmann (1975), and possibly Sirlinger (1937, 1942, 1946) analyze the same contrast as an opposition between glottalized and non-glottalized obstruents. In my data, glottalization does play a role in the realization of the velar non-aspirated stop /k/, which is alternatively realized as non-aspirated [k] or as glottalized [k'] (see the discussion below). In all other cases, however, waveforms and spectrograms indicate a contrast in aspiration rather than glottalization (as illustrated in figure 2 below). For these reasons, I use the label ‘aspiration’ in the description of Goemai, not ‘fortis / lenis’ or ‘glottalization’.⁶

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4. Horvel (1985), Kraft (1981), Ohikere and Tiemsan (1998, 1999), and Tiemsan (1999) only note a contrast between plain /k/ and /s/, on the one hand, and glottalized /k'/ and /s'/, on the other. Their analyses are possibly influenced by comparing Goemai to Hausa, which has only /k'/ and /s'/ as glottalized consonants.
 5. Some Benue-Congo languages spoken on the Jos Plateau are said to have a fortis / lenis contrast among word-initial obstruents (in particular the languages of the Plateau-2 subgroup, including Kaje, Kagoro, Katab and Atakar, but excluding Zarek). These languages mark fortis consonants through lengthening and affrication. Gerhardt (1980) convincingly analyzes this opposition as a language-internal development, resulting from the loss of palatal noun class prefixes and verbal extensions. It is unlikely that this fortis / lenis contrast is related in any way to the aspirated / non-aspirated contrast in Goemai.
 6. Pawlak (2002: 56) notes that the variety of Hausa spoken on and around the Jos Plateau tends to replace the glottalized consonants with non-glottalized consonants. She suggests that this loss of glottalization may result from the lack of such consonants in the indigenous languages. Sirlinger (1937, 1942, 1946) possibly noticed the important role of aspiration (rather than glottalization) in Goemai: in his

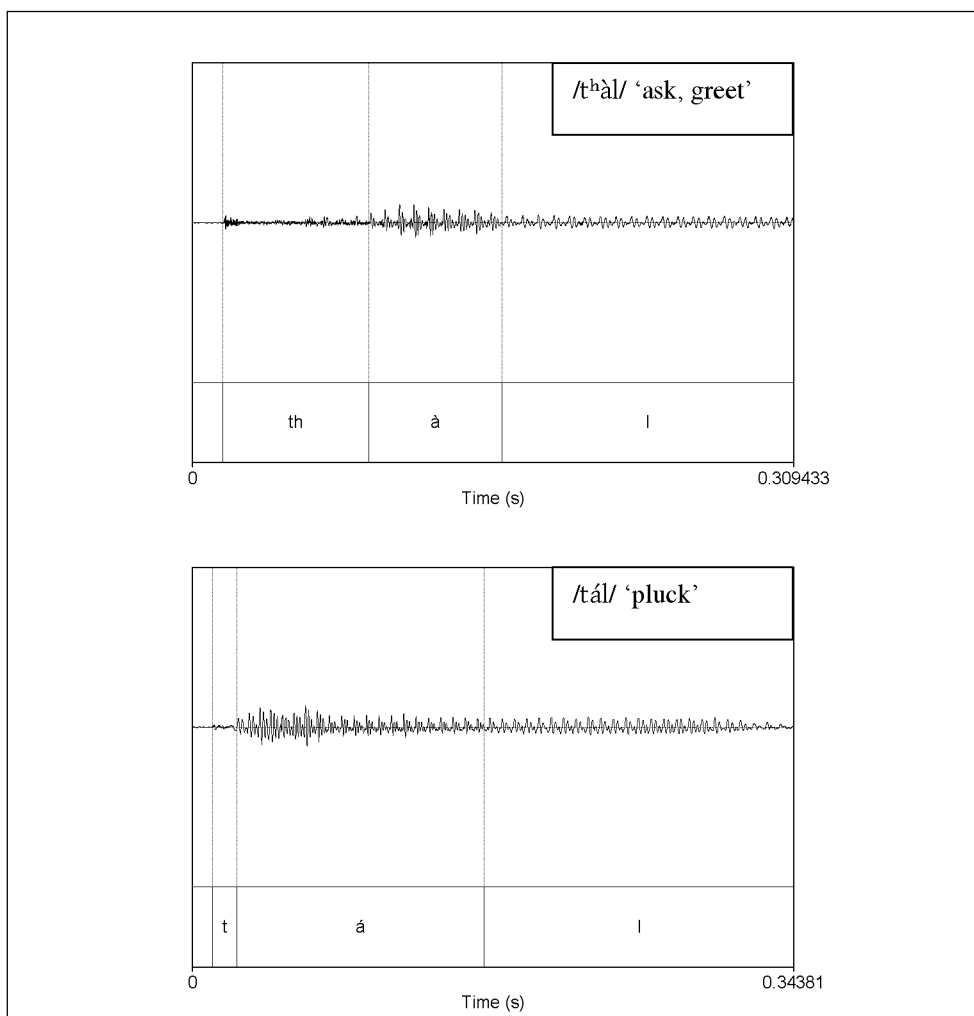


Figure 2a. Voiceless obstruents: Stops

orthography, he represents one of the fricatives as *s'h* (corresponding to */sʰ/*); and he occasionally (but not systematically) represents stops as *ph* and *th* (corresponding to */pʰ/* and */tʰ/* respectively).

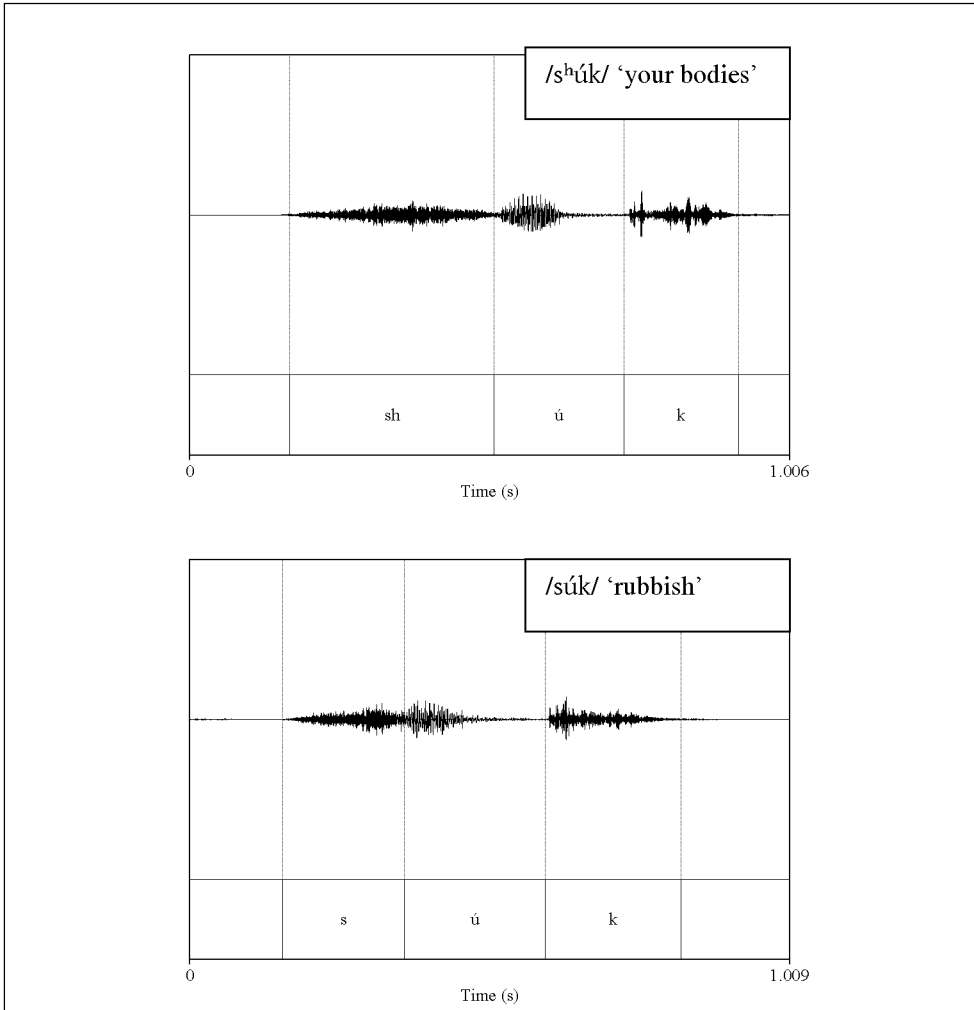


Figure 2b. Voiceless obstruents: Fricatives

In the case of aspirated stops (figure 2a), the release of the oral closure is followed by a period of aspiration (between 50 and 90 milliseconds in duration) before the onset of the voicing period of the following vowel. This period is absent with the non-aspirated stops: a weak release burst is followed immediately by the voicing period of the vowel, whose formants have not yet reached their target value. In the case of aspirated fricatives (figure 2b), the period of aspiration tends to be longer than that of their non-aspirated counterparts. During this period, formant transitions are often visible, and the formants are close to target-like value once the voicing period of the vowel starts. Non-aspirated

fricatives, by contrast, are shorter and are followed immediately by the voicing period of the vowel. Notice that the velar non-aspirated stop /k/ can be realized either as non-aspirated or as glottalized, occurring in free variation. Its glottalized realization could be the result of either of two factors: it could be a contact influence from Hausa (which has a velar ejective); or it could reflect the cross-linguistic tendency of glottalized consonants developing in the velar series before developing elsewhere (Ladefoged and Maddieson 1996: 78).

In addition to voiceless aspirated and non-aspirated obstruents, Goemai has voiced obstruents and implosives. The implosives are similar to the creaky voiced implosives of Hausa and other Chadic languages, i.e., they are characterized by a few irregular periods of voicing during the closure and an irregularity in the first few voicing periods at the onset of the vowel (as described in Ladefoged and Maddieson 1996: 85–86).

Table (3) illustrates these contrasts among obstruents with the help of some (near) minimal pairs.

Table 3. (Near) minimal pairs: Obstruents

/p ^h /		/p/		/b/		/ɓ/	
p ^h ít	red monkey	pít	net	dí.bít	all	ɓít	day
p ^h úk	tree type	púk	calf	búk	return	ɓú	grass
p ^h əp	master	pət	exit	bó.báp	pigeon	ɓəp	fish type
p ^h ó:l	hide	pət	narrow	bô:i	cowrie	ɓót	tie
p ^h áj	puffadder	páj	stone	báj	calabash	ɓáj	red

/t ^h /		/t/		/d/		/ɗ/	
t ^h íp	press	tít	sprinkle	díp	all	ɗíp	hair
t ^h ù	kill	tú	bottle	dǔ	PL.LOG.SP	ɗú	smell
t ^h əp	black	təp	next	dəp	penis	ɗək	up/down
t ^h ók	practice	tój	sit	dók	past	ɗək	quiet
t ^h áj	search	táj	bat	dáj	tail	ɗáj	lizard

/k ^h /		/k/		/g/	
k ^h ú	coil	kú:r	burn	gǔ	2PL
k ^h əp	lake	kəp	short	gép	cut
k ^h ój	stream	kój	snake type	gój	nose
k ^h áj	join	káj	guard/wait	gáj	palm

Table 3 (continued). (Near) minimal pairs: Obstruents

/f ^h /		/f/		/v/	
f ^h ín	grinding stone	fím	cotton	ví.líŋ	circle
f ^h úm	fold	fú	scatter	vú	tuber
f ^h è	owner	fál.fé	viper	vè.lú	grass type
?		fó:t	listen	vò:m	blind
f ^h à.làk	liver	fál.fé	viper	vá.rám	grass type

/s ^h /		/s/		/z/	
s ^h úk	body.2PL.POSS	súk	rubbish	bè.zúŋ	chest
s ^h óm	body.1PL.POSS	sém	name	zèm	like
s ^h ó:l	iron	só:m	horn	zò:m	cold
s ^h án	body.1SG.POSS	sán	slip	zàŋ	barren

/ʃ ^h /		/ʃ/		/ʒ/	
ʃ ^h ím	skin	ʃím	iguana	ʒím	ferment
ʃ ^h él	game	ʃél	wound	ʒél	surround
ʃ ^h ó:m	guineafowl	ʃó:l	locust	ʒó:m	chin
ʃ ^h áŋ	glance	ʃáŋ	hunt	ʒáŋ	careless

The diachronic status of the different types of Goemai obstruents is not quite clear. The existence of labial and alveolar – and possibly velar – implosives is a typical Chadic phenomenon, and can be traced back to Proto-Chadic (Jungraithmayr and Ibrizimow 1994; P. Newman 1977a).⁷ Goemai does not have a velar implosive, but it is possible that it has merged with the alveolar implosive. The existence of two sets of voiceless obstruents, by contrast, has not been reconstructed for Proto-Chadic or any proto-language below this level. It has been suggested though that they may reflect an earlier voicing contrast. Greenberg (1958) was the first to argue that the Proto-Chadic contrast between voiced and voiceless bilabial stops was neutralized in the Northern Angas-Goemai group languages, but preserved in Goemai (and possibly the whole Southern group) in the form of voiceless and ejective bilabial stops (i.e., aspi-

7. Implosives have proved to be a stable feature in language contact situations: Chadic languages have tended to retain their implosives, while Benue-Congo languages have tended to not borrow them. Conversely, the co-articulated stops typical of Benue-Congo languages (such as /k͡p/) have usually not been borrowed into Chadic (H. Wolff 1959; E. Wolff and Gerhardt 1977).

rated and non-aspirated in my analysis).⁸ And Hoffmann (1975) posits parallel developments for all obstruents (see also Jungraithmayr and Ibriszimow 1994: xx–xxix; P. Newman 1977a: 15; P. Newman and Ma Newman 1966: 226). Under this scenario, the existence of voiced obstruents in the Angas-Goemai group does need an explanation. They may go back to either prenasalized voiced consonants (as suggested by Greenberg 1958; Jungraithmayr and Ibriszimow 1994: xx–xxix), or they may have entered the languages through recent borrowings from Chadic Bole-Tangale languages (as suggested by Yalwa 1998). Table (4) illustrates the presumed sound shifts (adapted from the discussion in Greenberg 1958; Hoffmann 1975; Jungraithmayr and Ibriszimow 1994; P. Newman 1977a; P. Newman and Ma Newman 1966).

Table 4. Possible sound correspondences: Obstruents

Proto-Chadic	Northern Angas-Goemai	Goemai
voiceless {p, t, c, k; f, s}	voiceless {p, t, c, k ~ c; f, s}	voiceless non-aspirated {p, t, k; f, s, ʃ}
voiced {b, d, ɟ, g; v, z}		voiceless aspirated {p ^h , t ^h , k ^h ; f ^h , s ^h , ʃ ^h }
(?) voiced prenasalized { ⁿ b, ⁿ d, ⁿ ɟ, ^{ng} ; ⁿ v, ⁿ z}	voiced {b, d, ɟ, g; v, z}	voiced {b, d, g; v, z, ʒ}
implosive {ɓ, ɗ, ɠ}	implosive {ɓ, ɗ, ɠ}	implosive {ɓ, ɗ}

If the diachronic scenario depicted in table (4) is true, then Goemai has retained contrasts that were neutralized in closely related languages, thereby making Goemai of special importance for the reconstruction of Proto-Chadic. However, there is an alternative scenario suggesting that the contrasts found within Goemai result from independent developments (Takács 2004: xxiii–xxiv). Under this scenario, the merger of Proto-Chadic voiced and voiceless obstruents

8. Greenberg (1958) bases his analysis on the assumption that Goemai contrasts voiceless and ejective stops. Phonetically, it is conceivable that Proto-Chadic voiced stops would become voiceless, while voiceless stops would become ejective. In the analysis adopted here, however, the contrast is in aspiration (and the lexical comparison suggests that his ‘ejective’ corresponds to my ‘non-aspirated’). That is, it would now be necessary to account for why Proto-Chadic voiced stops became voiceless aspirated, and why voiceless stops became voiceless non-aspirated.

already occurred at the level of Proto-Angas-Goemai. It is possible that, at this stage, the merged voiceless obstruents were realized aspirated, but had a non-aspirated allophone in some environments, notably at the onset of unstressed syllables. Such a situation is reported for present-day Angas (Burquest 1971: 37–39), and possibly also for Mwaghavul (Jungraithmayr 1963a: 16–17; H. Wolff 1959) and Cakfem-Mushere (Takács 2004: xxiii–xxiv). In Goemai, this conditioned variation could then have been reanalyzed as a phonemic contrast. Such a scenario would explain the fact that non-aspirated and aspirated obstruents only contrast in syllable-initial position. However, further comparative research is needed to determine the likelihood of either explanation.

Table (4) above indicates a further development: the development of Goemai palatal fricatives from the palatal stops of the proto-language. This diachronic development has its synchronic parallels in that Goemai speakers realize the voiced palatal fricative alternatively as a voiced palatal stop (in free variation). While some present-day palatal fricatives are reflexes of palatal stops, others probably result from a more recent development: a reanalysis of velar stops and alveolar fricatives (see below). Table (5) summarizes the two possible origins of palatal fricatives in Goemai.

Table 5. Two possible origins for palatal fricatives

Origins	Present-day Goemai
(1) Sound change affecting palatal stops {c, ɟ, ɲ} of Proto-Angas-Goemai	} palatal fricative {ʃʰ, ʃ, ʒ}
(2) Language-internal reanalysis of:	
- velar stop {kʰ, k, g} + {i, i:}	
- alveolar fricative {sʰ, s, z} + {i, i:}	
- alveolar fricative {sʰ, s, z} + palatalization	

Evidence for a language-internal reanalysis comes from the synchronic distribution of vowels: with very few exceptions, velar stops and alveolar fricatives are not followed by a close front vowel; and alveolar fricatives never occur with the secondary feature of palatalization.⁹ It is likely that the velar stops

9. I am only aware of the following two exceptions: /kʰɪlɪp/ ('kitchen', which has a variant /tʰɪlɪp/) and /kʰũrkʰi/ (an archaic word occurring in the context of riddle-telling). Palatalized velar stops are attested (unlike palatalized alveolar fricatives), but they are subject to a dialectal alternation: palatalized velar stops in K'wo corre-

and alveolar fricatives, in the specified environments, became reanalyzed as palatal fricatives. There are even some words that synchronically alternate between an alveolar plus /a/ and a palatal plus /i/, e.g., /zàráp/ ~ /ʒìráp/ ‘girls’. A comparable type of palatalization has been described for Mupun (Frajzyngier 1993: 3–32).

The above analysis is further supported by the realization of palatal fricatives. The secondary feature of palatalization is often still audible in the case of the non-aspirated voiceless palatal fricative, occurring in free variation with the non-palatalized form, e.g., [ʔó:n] ~ [ʃó:n] ‘nail’, [ʔǎŋ] ~ [ʃǎŋ] ‘hunt’. Furthermore, palatal fricatives do not allow for the secondary feature of labialization. This restriction presumably follows from the observations that labialization and palatalization are mutually exclusive and that labialization cannot occur in the environment of a close front vowel. That is, labialization could not have occurred in the environments that gave rise to the palatal fricatives (see section 1.2 for labialization and palatalization).

In addition to the obstruents discussed above, Goemai has a glottal stop and a glottal fricative. Their phonemic status is not entirely clear, and they are best discussed together with the two glides, as they may constitute allophones in certain environments, i.e., in the realization of vowel-initial syllables. P. Newman (1977a: 12, 14) assumes that Proto-Chadic allowed for vowel-initial syllables, although many present-day Chadic languages do not. He argues that phonetic variation in the realization of vowel-initial syllables gave rise to new phonemes in several Chadic languages, notably to a glottal stop, but also to a glottal fricative. It is possible that a similar development occurred in Goemai. In Goemai, all vowel-initial syllables are phonetically preceded by a glottal stop. As such, the occurrence of the glottal stop is predictable, and it is (tentatively) not analyzed as a phoneme. However, the analysis is complicated by the observation that there are no close front or back vowels in vowel-initial syllables. The glides, by contrast, show a complementary distribution in precisely this environment: /j/ precedes /i/, and /w/ precedes /u/. This distribution suggests that at least some glides are phonetically-conditioned variants, preceding close vowels in vowel-initial syllables. In other environments, however, glides do contrast, and are thus considered phonemes. A further complication is introduced by the glottal fricative: it is possible that it also plays a role in the realization of vowel-initial syllables, as it never precedes close front or back vowels. Nevertheless, it was not possible to determine any difference in its distribution compared to that of the glottal stop, and it is thus (tentatively) assigned phonemic status. The distribution of glottal stop, glottal fricative and the two glides is illustrated in table (6).

spond to palatalized alveolar stops in Duut and Dorok, e.g., /kʰák/ ~ /tʰák/ ‘heart/neck’, /kʰǎm/ ~ /tʰǎm/ ‘blood’.

Table 6. Distribution of [ʔ], /h/, /w/ and /j/

	[ʔ]		/h/		/w/		/j/	
i	–		–		–		jìn	say
u	–		–		wún	sweat	– ¹⁰	
ə	ʔó.rém	beans	hǎn	1SG	wén	search	jén	plenty
o	ʔó	yes	hó	greetings	wò	snake	jó	rise
a	ʔán	mind	háj	tree	wáj	pot	jáj	stalk

Finally, Goemai has nasals and liquids. In the case of nasals, Goemai contrasts three places of articulation (as shown in table 7). While the labial and alveolar nasals are frequently found in initial position, the velar nasal occurs only very rarely in this environment. In the case of liquids, Goemai contrasts a lateral and a trill (as shown in table 8). It is generally assumed that Proto-Chadic had a lateral fricative, which has become a simple lateral consonant in West Chadic (P. Newman 1977a: 11, 13). Like other West Chadic languages, Goemai does not have a lateral fricative – although the plain lateral is occasionally realized as a lateral fricative (occurring in free variation), e.g., /là/ ~ /ʎà/ ‘produce’, /lí:s/ ~ /ʎí:s/ ‘tongue’.

It should be noted that Goemai does not have any geminated consonants occurring in native Goemai words. Pawlak (2002: 62) also comments that the Hausa variety spoken on and around the Jos Plateau has lost its geminate consonants. Outside the Jos Plateau, by contrast, geminate consonants are common in Chadic (and Afroasiatic) languages.

Table 7. (Near) minimal pairs: Nasals

/m/		/n/		/ŋ/	
mì	be related	ní	elephant		
mù.rú	fig tree	nú	sea		
mě	1PL	nó	1SG.POSS		
móŋ	study			ŋóŋ	bells
màŋ	take	náj	DEM.DIST	ŋáj	monkey

10. The only attested counter-examples are /jù:t/ ‘accumulate’ and possibly /n’ú/ ~ /n’jú/ ‘chieftaincy title’.

Table 8. (Near) minimal pairs: Liquids

/l/		/r/	
gè.líp	bird type	mé.ríp	soul
lú	settlement	rú	enter
mé.lép	wink	rép	itch
kʰók.lók	small	ròk	sweet
láj	hang/move	rǎj	think

1.2. Secondary articulation

Most morpheme-initial consonants can occur with a secondary articulation of labialization, palatalization or prenasalization (as illustrated in table 9 below). Labialization and palatalization are common in all branches of Chadic, including the Angas-Goemai group. But despite their widespread distribution, there are many irregularities resulting from assimilation processes, and it proved almost impossible to reconstruct labialized and palatalized consonants (Jungraithmayr and Ibriszimow 1994: xix; P. Newman and Ma Newman 1966: 229). Only P. Newman (1977a: 11) reconstructs labialized and palatalized velar stops for Proto-Chadic. A similar picture emerges in the case of prenasalization (see also footnote 12).

In Goemai, labialization and palatalization are mutually exclusive, but prenasalization can co-occur with either of them. Since it was not always possible to find minimal pairs exemplifying all four oppositions, some of the words in table (9) simultaneously illustrate labialization / palatalization and prenasalization. Notice that there are some systematic gaps in the table (marked “–”) and that labialization is sometimes realized as [ʷ] and sometimes as [ɸ].

Most gaps result from the diachronic process summarized in table (5) above: alveolar palatalized fricatives developed into palatal fricatives (thus accounting for the gap in the alveolar fricatives), and the new palatal fricatives cannot be palatalized again, nor can they be labialized since palatalization and labialization are mutually exclusive (thus accounting for the gap in the palatal fricatives). The gaps in /h/, /w/ and /j/ probably follow from their restricted occurrence (as summarized in table 6 above). Notice also that palatalization and labialization never occur before close vowels. It is likely that such sequences have been reanalyzed as long vowels, possibly [ʷu] as [u:], and [ʲi] as either [ɪ:] or [i:] (see section 1.3 on long vowels).

Labialization is alternatively realized as [ɸ]: all labial and glottal consonants only ever occur with the variant [ɸ], thus forming the diphthongs [ɸə] and

[ua(a)]. The other logically possible diphthongs [ue(e)], [uo(o)] and [uə(ə)] are not attested. Given that the corresponding labialized sequences [we(e)], [wo(o)] and [wə(ə)] are possible (albeit rare), I consider their absence an accidental gap in the data. With non-labial and non-glottal consonants, only the diphthong [uə] is attested as a free variant of [wə], e.g., [t^huə̌r] ~ [t^hwə̌r] ‘fig tree’, [k^huə̌t] ~ [k^hwə̌t] ‘adze’. Since the short vowel [u] only ever occurs as the first part of a diphthong in the environments above, I analyze it as a phonetic variant of labialization, not as a phoneme (see section 1.3 for diphthongs). It is, however, written without a tone mark to reflect its diachronic origin (and the tone is written on the second member of this diphthong instead).

Table 9. (Near) minimal pairs: Secondary articulation

Plain		Labialized		Palatalized		Prenasalized	
p ^h ér	lynx	p ^h uér	fish	p ^h êr	stone	ˈ ⁿ p ^h uə̌	in mouth
párŋ	stone	puán	remove	p ^h án	break	ˈ ⁿ párŋ	north
bót	belly	búét	lay	b ^h èt	weak	ˈ ⁿ bót	in belly
t ^h ó	okay	t ^h wò	kill	t ^h ó:p	health	ˈ ⁿ t ^h wò	killed
tá	fall	ˈ ⁿ t ^h wá.lán	ant type	t ^h ák.lán	life	ˈ ⁿ t ^h wá.lán	ant type
dən	prevent	d ^h wən	PL.LOG	d ^h én	past	ˈ ⁿ də̌	CONJ
dām	fever	d ^h wám	crave	d ^h ám	stand	ˈ ⁿ dārŋ	how
k ^h àt	find	k ^h wàt	hunt	ˈ ⁿ k ^h jàt	straight	ˈ ⁿ k ^h jàt	straight
kóŋ	snake	k ^h wò	dialect	k ^h òŋ	meal	ˈ ⁿ kóŋ	back
bə̌.gá	well	g ^h wá	SG.LOG	g ^h à	dance	ˈ ⁿ g ^h á.rá	kite
ʔát	bite	ʔuás	grind	–		ˈ ⁿ ʔát	bitten
fér	four	fúəl	yeast	f ^h ál	light	ˈ ⁿ f ^h ál	quick
vá.rám	grass	vúárŋ	wash	v ^h árŋ	termite	ˈ ⁿ vúárŋ	washed
shát	her body	shwát	pull out	–		ˈ ⁿ shát	at body
sá	hand	s ^h wà	drink	–		ˈ ⁿ sá	at hand
zàŋ	barren	z ^h wám	viper	–		ˈ ⁿ zàŋ	fish type
ʃ ^h i	thigh	–		–		ˈ ⁿ ʃ ^h i	bee
ʃá.ráp	fish	–		–		ˈ ⁿ ʃá.ráp	ant type
zà:n	twin	–		–		ˈ ⁿ zà	ant type
hà:s	egg	huàs	pierce	–		ˈ ⁿ huàs	pierced
mà	surpass	muà	liquid	m ^h à	related	ˈ ⁿ mà:n	mine
nă	see	n ^h wá	PL.LOG	n ^h à:l	slender	ˈ ⁿ nà	granny
lát	finish	l ^h wát	afraid	l ^h àk	throw	ˈ ⁿ l ^h àk	thrown
răŋ	think	r ^h wárŋ	mad	r ^h è	lie	ˈ ⁿ rà	weaving
wám	wet	–		–		ˈ ⁿ wám	fish type
jít	eye/face	–		–		ˈ ⁿ jít	worm

Despite the existence of minimal pairs, consonants modified by secondary features are not analyzed as separate phonemes, but as a coalescence of two consonants. This analysis is supported by several observations, outlined below.

In the case of labialization and palatalization, the modified consonants [C^w] and [C^j] are realized as [Cu.w] and [Ci.j] in slow speech; although a [Cɰ] sequence is never broken up (illustrated in 10a). This variation suggests that the modification results from the loss of a syllable, which still surfaces in some contexts.¹¹ Another indication of their non-phonemic status is that they are not subject to partial reduplication. In partial reduplication (see section 2.1; see also chapter 5, section 2.3), the initial consonant is repeated to the left and the vowel [ə] is inserted. In the case of labialized and palatalized consonants, only the plain consonant is repeated (illustrated in 10b) – this pattern occurs regardless of whether labialization is realized as [w] or [ɰ]. As an aside, notice that (non-) aspiration is part of the repeated consonant (in 10b), thus indicating that it has to be analyzed differently from labialization and palatalization.

Table 10. Analyzing [C^w] and [C^j]

(10a)	t ^h wá:m ~ t ^h ú.wá:m	cause standing			
	muà:n	go			
	k'əŋ ~ k'ì.jàŋ	hoe			
(10b)	k ^h wàk	smooth (v.)	=>	k ^h ə.k ^h wàk	smooth (adv.)
	s ^h uè	long (v.)	=>	s ^h ə.s ^h uè	long (adv.)
	fə́ər	big (v.)	=>	fə́.fə́ər	big (adv.)

There is furthermore evidence that prenasalization also resulted from a sequence of two consonants. Phonetically, prenasalization is realized either as a modification of the consonant or as a syllabic nasal, bearing its own tone (being in free variation) (see also Ladefoged and Maddieson 1996: 118–131 on the phonetic continuum between prenasalization and syllabic nasals). Furthermore, a nasal prefix *N-* (realized as [m], [n], [ɲ] or [ŋ], assimilating to the place of articulation of the following consonant) can be posited in many cases of prenasalization. First, a prefix *N-* derives adverbs (from verbs) and locations (from nouns) (see chapter 5, sections 2.3 and 4). Many of the prenasalized examples in table (9) result from this productive process. Second, there are synchronic-

11. The diachronic status of such disyllabic words is not clear. The middle consonant (i.e., the glide) could either reflect a lost Proto-Angas-Goemai consonant, or it could have been inserted at a later stage to break up a sequence of two vowels (see chapter 2, section 1.3).

ally non-analyzable prenasalized consonants in many locative nouns (e.g., /ⁿdù:n/ ‘inside’) and adverbs (e.g., /ⁿp^huá/ ‘always’) – given that they occur in the same contexts as the analyzable forms, it is possible to assume that they also originated by the same processes. Third, prenasalization is found with many nouns denoting insects, birds and fish. In this case, the prenasalized form often occurs in free variation with a non-prenasalized form (e.g., /ⁿbál/ ~ /bál/ ‘pigeon’). A number of authors have convincingly argued that some Chadic languages have borrowed a nasal noun class prefix (for a class of small animals) from their Benue-Congo neighbors (Frajzyngier and Koops 1989; Mieke 1991: 175–263; E. Wolff and Gerhardt 1977) (see also chapter 3, section 2.2).¹²

On the basis of the above discussion, labialized, palatalized and prenasalized consonants are not analyzed as phonemes but as resulting from a sequence of two consonants.

1.3. Vowels

The full inventory of short and long vowels, as summarized in table (2) above, only occurs in syllable-medial position. There are no vowel-initial syllables (see section 1.1), and the distinction between long and short vowels is neutralized in syllable-final position (see section 2.1). Some minimal pairs are shown below, illustrating the phonemic contrasts among short vowels in medial position (in 11.1), long vowels in medial position (in 11.2) and vowels in final position (in 11.3). Examples contrasting short and long vowels in medial position are discussed later in this section (see tables 12 and 13). It was not always possible to give minimal pairs involving all vowels, but care was taken to exemplify as many contrasts as possible. If a form was not found, the corresponding cell is left empty (and considered an accidental gap in the data); if a form is not possible, the cell is marked “–”. Notice that table (11) does not exemplify the

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12. In any case, it is unlikely that prenasalized consonants of Goemai are retentions from Proto-Chadic. P. Newman and Ma Newman (1966: 223–225) and P. Newman (1977a: 11) do not reconstruct prenasalized consonants. Greenberg (1958) argues for the existence of prenasalized stops for Proto-Chadic, but assumes that these developed into voiced stops in the Angas-Goemai group. Jungraithmayr and Ibriszimow (1994: xix–xxx) reconstruct *b², *d², and *g², which may have been prenasalized, but they also assume that most synchronic prenasalized consonants have developed independently. Given that prenasalization in Goemai is found with all consonants, not just stops, it cannot be analyzed as a retention from the proto-language. Furthermore, some words that have a prenasalized consonant in Goemai were reconstructed for Proto-Chadic without this nasal element, e.g., /ⁿp^hàt/ ‘mosquito’ (< *brt) (Jungraithmayr and Ibriszimow 1994: 121).

phonetic variants [ɰ], [e], [o] and [ɔ]. The close central vowel [ɰ] is considered a variant of labialization (see section 1.2). And the short vowels [e], [o] and [ɔ] are considered variants of their long counterparts, occurring in specific environments only (see the discussion below). In fact, the Goemai vowel inventory is typologically unusual in that it contains more long vowels than short vowels. However, the phonemic status and the diachronic development of long vowels are not always clear, and further investigation is needed.

The realization of vowels shows considerable dialectal variation, but there is not always sufficient data to verify whether these variants are different realizations of one phoneme or representatives of separate phonemes. The discussion in this section is based on the K'wo dialect of Goemai, but data from the Duut and Dorok dialects are taken into account whenever possible.¹³

Table 11. (Near) minimal pairs: Vowels

(1) Medial position (short vowel)

/i/		/u/		/ə/		/a/	
tʰɪl	worthless	tʰùl	limpet	tʰəl	deep	tʰàl	ask
tɪŋ.gɪ.lít	hornbill	túrŋ	fry	térŋ	tree	tárŋ	bat
		dùm	bend	dém	overthrow	dám	spoil
dɪk	build	díuk	pulsate	dək	up/down	dək	care
ʃɪŋ	mix					ʃárŋ	hunt
ʃʰín	do			ʃʰən	beniseed	ʃʰán	enlarge
zír	jealous			zəl	surround	zár	straight
nɪk	effort	ʰnùk	whip	nək	thick	nək	fetch
ví.líŋ	circle	kʰú.lúŋ	vine	lérŋ	hang (PL)	lárŋ	hang (SG)
jìn	SAY	–		jén	plenty		

13. The K'wo data is taken from my own fieldwork; the Duut data from discussions with Ohikere, and from Ohikere and Tiemsan (1998, 1999) and Tiemsan (1999); and the Dorok data from Kraft (1981). Notice that my own Dorok data differs from the data reported in Kraft. It is possible that my data reflects influence from other dialects (as I have collected it from speakers who live in an urban environment and who interact on a daily basis with speakers of other dialects). Alternatively, Kraft's data may represent not Dorok, but a closely-related Southern Angas-Goemai language. I have decided to base the discussion of Dorok on Kraft, as his data shows the most differences. If future studies find that his data represents a different language, it will be easy to accommodate this finding within the presented analysis.

(2) Medial position (long vowel)

/i:/	/ɛ:/	/u:/	/e:/	/o:/	/ɔ:/	/a:/
	bû:r weed type	bû:r wealth	bê:r scrape	gə.bó:r hedgehog	6ó:t able	6ó:t tie
	gə.tú:n shore	tú:n hole				tá:n fall
			kʰé:m tree type		kʰɔ:m season	kʰà:m festival
	`ndɔ:l.ká:n gecko		`nké:n thorn	kó:n face down	kò:n snake type	
fɪ:t perch fish		fú:t vomit			fó:t listen	
				ʃó:n nail		ʃán hoe
				ʃɔ:r duck	ʃɔ:r ashamed	
			hé:s sand		hò:s tooth	hà:s egg
			hè:t move	hó:t grinding stone		
	mú:r steal			mò:r oily	mó:r patient	mà:r farm
lí:t lion		lú:t afraid				
	rú:n shade	rú:n insert				

(3) Final position¹⁴

/i, i:/	/u, u:/	/e:/	/ə/	/o:/	/a, a:/
tʰí.nì palm	tʰù kill	gʷà.tʰé yam dish	tʰə́ EMPH	tʰó okay	tʰá.ráp snap
ʰntí rabbit's son	tú bottle		té.rəp lie (PL)	tó lie (SG)	tá fall
bú.lú.dí fish type	dǔ PL.LOG.SP	dé DIR	də́ come	dò very	dà.bàk stomach
dí LOC.ANAPH	dú cause sitting	(')dǎ exist	də̌.dóŋ beautifully		dá FUT.CL
fʰí dry		fʰè owner	fʰə́.rəm knee(s)		fʰà.làk liver
ǰí deny		ǰé foot/leg	ǰə́.ǰáŋ pleasant		ǰá desire
mì be related	mú INTERR	mè barn	mǎ 1PL		mà surpass
ǰì.rì antelope	rú enter	kʰə̌.rè crow	rə̌.rək sweetly	bó.ró Fulani	rà weave
jí year	–		jǎ 2SGF	jó rise	jà catch

The distribution of close vowels is very restricted (see sections 1.1 and 1.2): the close front vowels /i/ and /i:/ cannot follow an alveolar fricative, a velar stop, a labial glide or a glottal; and the close back vowels /u/ and /u:/ cannot follow a palatal glide or a glottal. Furthermore, no close vowels are attested following labialized or palatalized consonants – making it likely that at least some of the long vowels /i:/, /u:/ and /u:/ have developed diachronically from sequences of labialized or palatalized consonants plus close vowels. The front and back vowels /i/, /i:/, /u/ and /u:/ are realized the same across the dialects; the central vowel /u:/ is realized as [u:]¹⁵ in K'wo and Duut, but as [i] in Dorok.

14. No examples were found for /ɔ(:)/in final position; and /u(:)/was only found in /nàkʰú/ 'grandparent', /nàkúʰm/ 'chameleon', and /ŋá/ 'goat'.

15. The long vowel [u:] has to be distinguished from the diphthong [uə] (a variant of [wə]), as shown by the following (near) minimal pairs: /pʰú:r/ 'boil leaves' vs. /pʰú:r/ 'fish'; /tú:r/ 'anthill' vs. /tʰuêr/ 'fig tree'.

Generally, Dorok seems to have collapsed the distinction between long and short vowels: the three long close vowels of other dialects correspond here to the short vowels [i], [u] and [ɨ] or to the sequences [iC_{VELAR}i], [uC_{VELAR}u] and [ɨC_{VELAR}ɨ]. A similar pattern is observed with the mid back vowels /o:/ and /ɔ:/, which are realized as long vowels in K'wo and Duut, but as [o] and [ɔ] or [oCo] and [ɔCo] in Dorok (see also the Dorok examples in 12.3 below).

In all cases above, it is questionable whether vowel length is really distinctive in Goemai: there are no or only very few minimal pairs – table (12.1) is an exhaustive list of all attested pairs that involve close vowels and mid back vowels. In the case of /i:/ and /ɨ/ and of /u:/ and /u/, vowel length is nevertheless assumed to be phonemic. This tentative analysis is adopted because it was not possible to account for their distribution otherwise. But further research may show that length is predictable. In particular, it is possible that /i:/ is a variant of /ɨ:/: /i:/ occurs very rarely; it never contrasts with /ɨ:/; and some words alternate between [ɨ:], [i:] and [iCi] (e.g., /jɨ:l/ ~ /jɨ:l/ ~ /jígɨl/ ‘rise’). In the case of /ɨ:/, /o:/ and /ɔ:/, no corresponding short vowels are posited. In medial position, the close central vowel /ɨ:/ is always realized long (excepting [ɨ] as a variant of labialization). And the mid back vowels /o:/ and /ɔ:/ are realized as short [o] only when preceding a velar consonant (see 12.2 for an illustration; and see footnote 16 for an explanation of the form /ʃhðm/ ‘hyrax’ in 12.1). Generally, there are no long vowels attested preceding velars; and there are instances where a long vowel is shortened in this environment, e.g., /a:/ in /hà:m/ ‘water’ is shortened when it occurs as part of the compound /hàŋ.gè.dè/ ‘water (lit. water that exists)’.

Table 12. Vowel length I: /i:/, /ɨ:/, /u:/, /o:/ and /ɔ:/

(1) (Near) minimal pairs (K'wo and Duut dialects)

Short		Long	
f ^h ft	grass type	fɨ:t	perch fish
kúr	tortoise	kú:r	burn
ʃhðm	hyrax	ʃhó:m	guineafowl

(2) Complementary distribution (K'wo and Duut dialects)

Short (preceding velar)			Long (elsewhere)	
[o]	–	–	kó:n	bush cow
[ɔ]	kóŋ	snake type	kò:n	snake type

(3) Comparative perspective

	K'wo; Duut (Ohikere and Tiemsan 1999)		Dorok (Kraft 1981)	Mwaghavul (Hoffmann 1975)
/ɘ:/	kú:n	salt	ki.gin	kæən ~ kə.gən
	nú:n	mother	ni.ŋin	nə.gən
	ˈndū:n	inside	ˈdin	də.gən
	sú:r	old	sir	sə.ɣər
/u:/	sú:n	dream	su.wun	su.ɣun
/o:/	kó:n	bush cow	?	kə.bən ~ kə.gən
	ʃó:n	nail	?	ci.gin
	ʃò:r	duck	?	ˈcu.gur
/ɔ:/	só:m	horn	so.gom	so.ɣom
	ʒó:m	chin	ʒo.ŋom	ʒa.ɣam
	vò:m	blind	vəm	vu.ɣum

A long vowel in K'wo and Duut Goemai (and in the Angas subgroup) often (but not always) corresponds to a sequence [VC_{VELAR}V] in Dorok Goemai (and in the Mwaghavul and Mernyang subgroups) (Frajzyngier 1993: 3–32; Hoffmann 1975; Jungraithmayr 1963a: 18; Shimizu 1974; Takács 2004). Some such correspondences are illustrated in (12.3). It is possible to argue that long vowels resulted from the loss of an intervocalic velar consonant of the proto-language. Alternatively, Dolgopolsky (1982) analyzes this consonant as an epenthetic consonant that was inserted to break up a long vowel having a falling tone. That is, he assumes that the velar consonants are innovations, while the long vowels reflect the older pattern of Proto-Angas-Goemai. This debate has not been settled yet, but he seems to be right in arguing that there is a general West Chadic and Angas-Goemai group pattern that disprefers contour tones (see section 1.4).

While the phonemic status of vowel length is unclear in the above cases, length is (or was) clearly distinctive in the cases of reconstructed */E/ and */E:/, and */a/ and */a:/. Some minimal pairs are given in (13a) and (13b), and the realization of the phonemes is discussed below.

Diachronically, Goemai probably distinguished between */E/ and */E:/. In the present-day dialects, this contrast surfaces as a contrast in both vowel quality and vowel length (as illustrated in table 14). The short vowel */E/ is realized as [ə] (in K'wo) or [ɛ] (in Duut and Dorok); in final position, [ɔ] occurs as a free variant of [ə] (in K'wo). The long vowel */E:/ is realized as [e:] in medial position, and as [e:] or [e] in final position (in K'wo and Duut); in Dorok, it is always realized as short [e] (see section 2.1 for final vowels). Based on the

K'wo and Duut data, it is possible to explain the synchronic variation by assuming the existence of */E/ and */E:/. Taking the Dorok data into account, it may become necessary to posit an additional phoneme */i/ that merged with */E/ in K'wo and Duut. Since the Dorok data may not be entirely reliable (see footnote 13), a systematic dialectal study is needed to investigate this question further. In the meantime, I assume that the proto-language only contrasted */E/ and */E:/.

Table 13. Vowel length II: */E:/, */a:/

(13a)	*/E/		*/E:/	
	p ^h ó	give	p ^h è	place
	ból	pigeon	bè:l	fish type
	sót	bush	sét	buy/sell
	hǎn	1SG	wàŋ.hè:n	storage pot
	mǎn	1PL	mè:n	raw
	rép	itch	rè:p	mix
(13b)	*/a/		*/a:/	
	ǎl	hard	ǎ:l	stick
	k ^h àm	RESULT	k ^h à:m	wide
	hàm	carve	hà:m	water
	màn	know	` ⁿ mà:n	NOMZ. 1SG.POSS

Table 14. Comparing K'wo, Duut and Dorok: */E/, */E:/, */i/ (?)

		K'wo	Duut (Ohikere and Tiemsan 1999)	Dorok (Kraft 1981)
*/E/	black	t ^h óp	tép	tép
	assemble	təl	təl	təl
*/E:/	vein	vè:l	ve:l	vel
*/i/ (?)	wood	ǰép	ǰép	ǰip ~ ǰip
	two	vél	vel	vil

In medial position, K'wo and Duut distinguish between /a/ and /a:/ (see 13b above), but in final position this contrast is neutralized (see section 2.1). In

Dorok, this contrast surfaces as a contrast in vowel quality: the short vowel is realized as [ə], the long vowel as [a]. All realizations are summarized in table (15). Notice that they parallel the realizations of other vowels in that Dorok again reinterprets a distinction in vowel length as a distinction in vowel quality. Notice also that there is a tendency for speakers of all dialects to realize short [a] in loanwords as [ə], e.g., Hausa /tʰáǵà:/ ‘have ever/never done’ is often realized as /tʰəǵà/. This synchronic observation suggests that a similar development could account for the existence of [ə] in Dorok.

Table 15. Comparing K'wo, Duut and Dorok: */a/, */a:/

		K'wo	Duut (Ohikere and Tiemsan 1999)	Dorok (Kraft 1981)
*/a/	ear	kʷám	ƙʷam	ƙʷəm
	woman	màt	mat	mət
	beard	pʰàp	pap	pəp
*/a:/	duiker	pʰà:p	pa:p	pap

Summarizing the discussion so far, Goemai has four short (/i/, /u/, /ə/ and /a/) and seven long vowel phonemes (/i:/, /u:/, /e:/, /o:/, /ɔ:/ and /a:/). But although the language distinguishes vowel length, this distinction is not systematic. Taking K'wo Goemai as the point of reference, the distinction can be accompanied by a distinction in vowel quality (i.e., between short /ə/ and long /e:/). In some cases, the distribution is conditioned by the environment (i.e., /o:/ and /ɔ:/ are realized as short [ɔ] preceding velars; and /u:/ is realized long unless it is a variant of labialization). And in other cases, vowels are sometimes realized short and sometimes long, although there are neither minimal pairs nor apparent conditioning environments (i.e., /i/, /i:/, /u/ and /u:/). Only /a/ and /a:/ clearly contrast in vowel length. Moreover, this contrast is only attested in syllable-medial position. In syllable-final position, the realization of a vowel as long or short is conditioned by other factors (see section 2.1). The only partial exception here is the contrast between [ə] and [e] (in K'wo), which was analyzed as reflecting the diachronic contrast in length between */E/ and */E:/, and which is preserved in final position. Furthermore, vowel length interacts with labialization and palatalization: when following such a modified consonant, short and long vowels occur in free variation, e.g., [tʰwám] ~ [tʰwá:m] ‘cause standing’, [nʰák] ~ [nʰá:k] ‘breathe’. The same pattern is observed with the mid back vowels. Recall that these vowels are only realized short if they precede a velar consonant. However, following a labialized or palatalized consonant, both

short and long variants are attested, regardless of the nature of the final consonant, e.g., [tʷót] ~ [tʷót:t] ‘sit’, [kʰjóp] ~ [kʰjóp:p] ‘health’.¹⁶

Phonetically, a long vowel is realized at least twice – sometimes three times – as long as a short vowel, contrasting 200 milliseconds and above (for a long vowel) with 100 milliseconds and below (for a short vowel) (illustrated in figure 3). This realization is attested regardless of whether or not vowel length is contrastive. It was therefore decided to analyze vowels as long even in those cases where there is no phonemic contrast in length.

Finally, Goemai has a limited set of diphthongs. One group originated as a variant of labialization: [ʉa(a)] and [ʉə] (see section 1.2). Phonetically, however, they are realized as vowels, and are quite distinct from labialization. A second group, occurring only very rarely, consists of [au], [ou], [ai], [ei] and [o:i] (illustrated in table 16). I assume that this second group of diphthongs originated in a sequence of [V(V)_{C_{GLIDE}}], since the second member can only ever be [u] or [i] (i.e., corresponding to the two glides), and since this group of diphthongs cannot occur with a consonant coda (i.e., unlike long vowels). Notice that short [o] and [e] are not attested in medial position otherwise; their occurrence in diphthongs probably results from an assimilation in vowel height (of [ɔ] and [ə] to [u] and [i] respectively). The contrast between short [ou] and long [o:i] possibly mirrors the distribution of short and long mid back vowels discussed earlier in this section: short before a back consonant (i.e., a velar), but long elsewhere.

Table 16. Diphthongs

[au], [ou]		[ai], [ei], [o:i]	
gòu	small calabash	té.gái	middle-sized calabash
môu	NEG	gə.mâi	Goemai
bòu	arrow	ˈnɔ̃ai.zwám	jackal
		bô:i	cowrie shell
thàu	bow	téi	yet

16. The apparent counter-example /ʃʰəm/ ‘hyrax’ in table (12.1) possibly goes back to a form with a palatalized alveolar fricative */sʰjəm/ (see chapter 2, section 1.1 for the development of palatal fricatives). Such an origin would explain why [ɔ] is realized short, contrary to the expectation that a mid back vowel should be realized long preceding /m/.

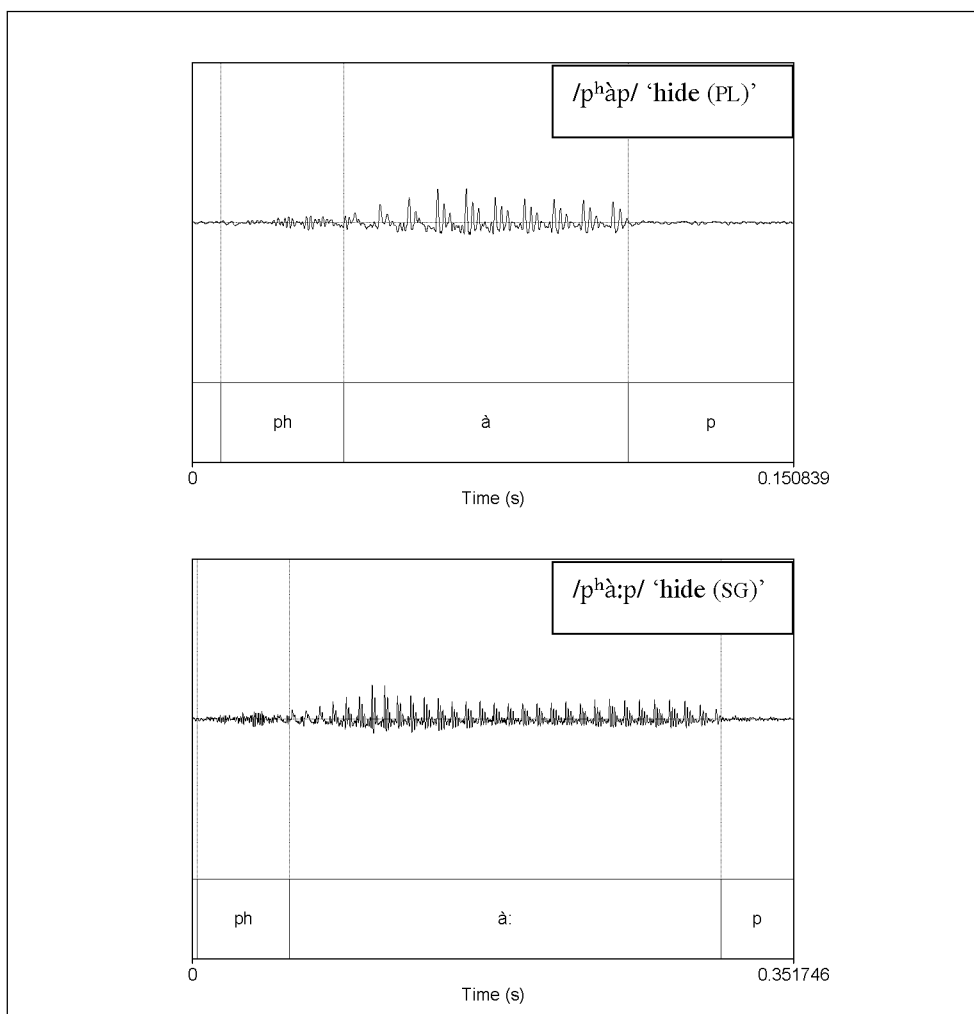


Figure 3. Vowel length

The two groups of diphthongs can co-occur. For example, the three vowels in the word */mʷàì/* ‘fellow’ result from labialization plus vowel plus final glide, i.e., **/mʷàj/*.

It is not clear how the Goemai vowel inventory compares to that of Proto-Chadic and of other Chadic languages. Chadic languages are known to distinguish vowel length (P. Newman 1977a: 12; Takács 2004: xxi), but the Goemai pattern may not be inherited. One difficulty in relating Goemai to the proto-language is that reconstructions usually only take consonants into account, not vowels. But there are additional reservations that could argue against the long

vowels being inherited. As shown, vowel length is only clearly distinctive with very few vowels in restricted environments – other Chadic languages, by contrast, generally do not have such restrictions. Furthermore, some closely related languages of the Northern Angas-Goemai group do not seem to distinguish vowel length at all (see Burquest 1971: 12, 39–40, 48; Hoffmann 1975), and there is some evidence for the recent development of long vowels in Goemai through the loss of intervocalic consonants (see the discussion of table 12.3 above) and through the reanalysis of some instances of labialization and palatalization (see the discussion of table 11 above). Interestingly, Pawlak (2002: 55) remarks that the Hausa variety spoken on and around the Jos Plateau is characterized by the loss of vowel length as a distinctive feature – possibly reflecting the phonological systems of the various indigenous Jos Plateau languages. A similar pattern is observed with Hausa loanwords that have entered Goemai.

The reconstruction of vowel quality also poses problems, both for Chadic as a whole and for the Angas-Goemai group. A number of studies attribute this difficulty to the existence of only few vowel phonemes in Proto-Chadic, and the subsequent development of new phonemes in individual languages due to (i) the influence of affixes containing palatal or labial consonants (and the eventual loss of such affixes) (see Barreteau 1993; Mirt 1969; P. Newman and Schuh 1974; P. Newman 1975; Schuh 1984; E. Wolff 1983) and (ii) the development of mid vowels from diphthongs (P. Newman 1979, 1990b).¹⁷ Within the Angas-Goemai group, the vowels show considerable variation across the different languages (Hoffmann 1975; Takács 2004). Similarly, there is huge variation in the realization of vowels within individual languages: most authors explicitly comment on the fact that many vowels seem to occur in free variation, and others discuss the impossibility of determining which realization is to be considered an allophone of which phoneme (e.g., Frajzyngier 1993: 9–15 who discusses the status of schwa in Mupun; see also Burquest 1971: 39–40 for Angas).

17. But see also Jungraithmayr (1966, 1968a, 1968b, 1968c, 1974, 1975, 1979, 1980, 1989, 1992) who argues that Proto-Chadic had a number of stable vowels, which carried aspectual distinctions (similar to the consonantal roots and vowel patterns found in other Afroasiatic languages). Their variability only became possible when Chadic languages developed tone (due to language contact), and tones then took over aspectual functions, thereby taking the burden off the vowels. This assumption has been criticized by various authors, who argue that Proto-Chadic marked aspectual distinctions by separate affixes (Frajzyngier 1981; P. Newman 1977c; Schuh 1976, 1977; E. Wolff 1979, 1982).

1.4. Tones

Goemai is a tonal language, and all lexical items and almost all affixes and clitics have an inherent tonal pattern. There are two level tones (high H and low L) and one falling contour tone (high-low HL) that can surface on single syllables. Phonetically, a mid tone (M) is also present, which arises through assimilatory processes (see section 2.2), downdrift (see section 3) or downstep (see below). An underlying rising tone (low-high LH) is posited for some words, although it never surfaces on a single syllable (see below). Previous work on Goemai notes either two (H. Wolff 1959; Kraft 1981; Sirlinger 1937, 1942, 1946) or three level tones (Ohikere and Tiemsan 1999), plus one or more falling contour tones.

Tone serves both lexical and grammatical functions. Lexically, there are many tonal minimal pairs (as illustrated in table 17). Notice that most attested pairs belong to different parts of speech, i.e., the functional load of tone to disambiguate between lexical items is low. Table (17) only illustrates contrasts between level high and low tones, since the vast majority of lexical items have level tones. But there are also a handful of minimal pairs involving contour tones, e.g., /kǎt/ ‘measure’ vs. /kát/ ‘help’ or /ʃâk/ ‘tell folktale (PL)’ vs. /ʃák/ ‘soak (PL)’.

The falling contour tone can be analyzed as two level tones combining on a single syllable. This analysis is supported by the following two observations:

First, the presence of some low-tone morphemes triggers falling tones. For example, whenever the clause-final question tag /=à/ cliticizes to a word ending in a high-tone vowel, a falling tone results (as in 1). Similarly, a clause-final low tone triggers a falling tone in those words that end in a high tone (see section 3).

- (1) pú:s lá tʰjó:p=?à ʰdâ: (<ʰdâ=?à)?
 sun pain health=INTERR father:INTERR (< father=INTERR)
 ‘(Is) the hot sun (treating you) well, father?’ (004ANTALDAAS2)

Second, falling tones are predominantly found on long vowels – and long vowels often correspond to [V.CV] sequences in other Angas-Goemai group languages. This distribution could suggest that at least some falling tones arose through the loss of a syllable (see section 1.3).

Unlike falling tones, rising tones never surface on a single syllable – instead, they are distributed over several syllables. For example, the rising tone verb /nǎ/ ‘see’ in (2a) below is realized with a low tone, and its high tone spreads to the following noun /mà:r/ ‘farm’ (whose underlying low tone, in turn, surfaces on the toneless enclitic /=hək/ ‘DEF’). In environments where a rising tone can-

not spread, it is simplified to a level high tone. This is the case in (2b): the speaker first utters the pronoun /hǎn/ ‘1SG’ in its own intonation unit (realizing it high); following that, she realizes it low, and its high tone settles on the low-tone noun /bì/ ‘thing’ (see below for tone spreading in verbal clauses). On the basis of such behavior, underlying rising tones are posited for a small number of words.

Table 17. (Near) minimal pairs: Tone¹⁸

H		L	
ǎák	here (adv.)	ǎák	disregard (v.)
k ^h úm	foolish (v.)	k ^h ùm	masquerade (n.)
k ^w át	pay (v.)	k ^w át	coil (v.)
ʃ ^h ím	skin (n.)	ʃ ^h ím	yam (n.)
ǰé	foot/leg (n.)	ǰè	learn/teach (v.)
ǰík	come from (v.)	ǰík	tree type (n.)
há:s	flour (n.)	hà:s	egg (n.)
mán	PROH (part.)	màn	know (v.)
rè:p	girl (n.)	rè:p	mix (v.)
jí	year (n.)	jì	CONS (part.)
wún	sweat (v.)	wùm	bury (v.)
díp	all (adv.)	díp	hair (n.)
dú:t	spear (n.)	dù:t	support (v.)
dúnj	whisper (v.)	dúnj	ridge (n.)
dəp	raise ridge (v.)	dəp	penis (n.)
dó:r	gift (n.)	dò:r	limp (v.)

- (2) a. *dé-gà* *nà* / *má:r=hòk (...)*.
 PUR see farm(SG)=DEF
 ‘to see the farm (...)’ (F99DSHOOM)

18. This table exemplifies monosyllabic morphemes only. Polysyllabic morphemes are rare (see chapter 2, section 2), and tonal minimal pairs even rarer. The only attested pairs are /ǰáráp/ ‘bite (v.)’ vs. /ǰàràp/ ‘ironwood (n.)’, and /háǰák/ ‘pregnancy (n.)’ vs. /háǰàk/ ‘squirrel (n.)’. Despite the scarcity of minimal pairs, no restrictions on tonal patterns were observed: HH, LL, HL, and LH are all common; falling tones are not attested, but they are rare even in monosyllabic morphemes.

- b. *hán* / *hàn*=zàm *bí* wà:p (...).
 1SG.I 1SG.S=like thing borrow/lend
 ‘I, I want a loan.’ (F00CGOEBETLA)

Overall, the Goemai tonal inventory of two level tones is similar to that of more distantly related West Chadic languages such as Hausa (P. Newman 2000: 597–599; Jagger 2001: 12–15; E. Wolff 1993: 55–65), but differs from that of the more closely related Northern Angas-Goemai group languages, which have three level tones (high, mid, low) (Frajzyngier 1993: 32–42; Jungraithmayr 1963a: 19–22; Burquest 1971: 17–19, 1974). Despite this difference, at least one author comments explicitly on the restricted functional load of lexical tone (Burquest 1974). The limited distribution of contour tones is also common within West Chadic as a whole (Burquest 1971: 17–19, 1974; Jungraithmayr 1963a: 19–22): contour tones usually arise through the loss of syllables or through the addition of tone-bearing grammatical morphemes; and their occurrence is often restricted to heavy syllables. Similarly, the simplification of rising tones to high tones is well-attested in Hausa (Jagger 2001: 12–15; Leben 1971; P. Newman 2000: 597–599; E. Wolff 1993: 79–81).

Although tone serves to distinguish lexical items, lexical tone does not necessarily settle on the lexical item itself. This is largely due to a high-tone spreading rule originating in some subject pronouns and nouns. This section outlines the general phenomenon, while the full set of paradigms is given in chapter 7.

Unlike many West Chadic languages (Schuh 1976), including closely-related languages such as Angas (Burquest 1973, 1974; Jungraithmayr 1964b), Goemai does not mark TAM categories tonally on the subject pronoun. While the segmental shapes of most pronouns are cognate in Goemai and Angas, Goemai pronouns always have an invariant tone: high-tone /ní/ ‘3SG’, and rising tone on all other pronouns. In verbal clauses, the high tone of both high-tone and rising-tone subject pronouns (as well as nouns) spreads to the right, settling on the first syllable of the next word, and interacting with the lexical tones of TAM particles, verbs and nouns. As a result of this high-tone spreading, tonally distinct lexical items frequently occur with an identical pitch contour. Figure (4) illustrates this phenomenon with the help of the tonally distinct verbs /kʷál/ ‘talk’ and /kʰùt/ ‘talk’. In figure (4a), both verbs are realized with a low tone, while their cognate nouns are realized with a high tone (in the first person plural unmarked TAM paradigm). In figure (4b), the two verbs again receive identical tones, but this time the cognate nouns retain their lexical tones (in the first person singular irrealis paradigm). In fact, the lexical tone of a verb only rarely settles on the verb – one such instance is illustrated in figure (4c),