Formal and semantic properties of the Gújjolaay Eegimaa

(A.k.a Banjal) nominal classification system

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Thesis abstract

Gújjolaay Eegimaa (G.E.), an Atlantic language of the Niger-Congo phylum spoken in the Basse-Casamance area in Senegal, exhibits a system of nominal classification known as a "gender/ noun class system". In this type of nominal classification system which is prevalent in Niger-Congo languages, there is controversy as to whether the obligatory classification of all nouns into a finite number of classes has semantic motivations. In addition to the disputed issue of the semantic basis of the nominal classification, the formal criteria for assigning nouns into classes are also disputed in Jóola languages and in G.E.

In this PhD thesis, I propose an investigation of the formal and semantic properties of the nominal classification system of Gújjolaay Eegimaa (G.E). Based on cross-linguistic and language-specific research, I propose formal criteria whose application led to the discovery of fifteen noun classes in G.E. Here, I argue that the G.E. noun class system has semantic motivations. I show that some nouns in this language may be classified or categorized on the basis of shared properties as stipulated in the classical theory of categorization.

However, most of the classification of the G.E. nouns is based on prototypicality and extension of such prototypes by family resemblance, chaining process, metaphor and metonymy, as argued in the prototype theory from cognitive semantics. The parameters of categorization that fruitfully account for the semantic basis of the G.E. nominal classification system are both universal and cultural-specific.

Primary data constitutes the material used in this research and include lexical (including loanwords), textual as well as experimental data using picture stimuli. The collected data comprise different types of communicative events recorded in audio and video formats and also in written format through participant observation.

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Abbreviations used in Glosses

Ø	Zero
+ATR	Advanced tongue root
1	First person
2	Second person
3	Third person
ABSTR	Abstract
ADV	Adverbial
AGT	Agentive
AST	Associative plural
-ATR	Non-advanced (Neutral/ Retracted) tongue root
C	Consonant
CAUS	Causative
CD	Concord/ Agreement marker
COMPL	Complementizer
DEF	Definite
DEM	Demonstrative
DET	Determiner
DIR	Directional
DIRECT	Directive
DIST	Distal
DISTR	Distributive
VBLZ	Verbalizer
DO	Direct object
DUP	Reduplication
EMPH	Emphatic
EXCL	Exclusive
FOC	Focus
FUT	Future
FUT.NEG	Negative marker for future
G.E	Gújjolaay Eegimaa
HAB	Habitual
HAB.NEG	Habitual negative
IDEO	Ideophone
IMM.FUT	Immediate Future
IMP	Imperfective
INCL	Inclusive
INDEF	Indefinite
INFX	Infix
INSTR	Instrumental
INT	Interrogative
IO	Indirect object
IT	Iterative
LOC	Location marker

MAN	Manner
MED	Medial
MID	Middle voice
N	Noun
NC	Noun class marker/Nasal consonant compound
NEG	Negation
NP	Noun phrase
O	Object
PASS	Passive
PERM	Permissive
PFV	Perfective
PL	Plural
POSS	Possessive
PRES	Presentative
PRO	Pronoun
PROH	Prohibitive
PROX	Proximal
QUANT	Quantifier
QUANTF	Quantificational (suffix)
REC	Reciprocal
REFL	Reflexive
REL	Relative
RES	Result
SUBJ	Subject
SG	Singular
SUBORD	Subordination marker
TAM	Tense/ aspect/ Modality
V	Verb
V	Vowel (in phonology)

Symbols

*	Ungrammatical or reconstructed form
-	Morpheme boundary
→	Changes to
#	Word boundary
[...]	Phonetic representation
/.../	Phonemic representation
/	Alternative
? (before gloss)	Possible in certain contexts
?? (before gloss)	Odd
:	Semantically segmentable

Abbreviations for Language names			
Language name	Abbreviation	Language name	Abbreviation
Bambara	BB	English	EN
French	FR	Gújjolaay Eegimaa	G.E
Jóola Fógny	JF	Jóola Kaasa	JK
Kwatay	KT	Mandinka	MDK
Mankañ	MK	Portuguese Creole	PC
Portuguese	PT	Pulaar/ Fulfulde	FUL
Wolof	WF	Spanish	SP

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1 THESIS INTRODUCTION

1.1 The motivations of this research

The goal of this PhD thesis is to provide a comprehensive analysis of the formal and semantic properties of the noun class system of Gújjolaay Eegimaa (G.E.), an Atlantic language of the Niger-Congo Phylum, spoken in southern Senegal.

The bulk of nouns in Gújjolaay Eegimaa are distributed into fifteen noun classes (including locatives) on the basis of agreement classes. G.E. is an agglutinating language which makes use of prefixes to mark the class membership of a noun as illustrated in (1)-(2) below, where the noun class prefixes are highlighted in boldface.

(1).　　*a-rafuxow*
　　　　NC1-human being
　　　　'Human being'

(2).　　*é-furax*
　　　　NC3-bachelor
　　　　'Bachelor'

The class assignment of a noun is formally revealed by the agreement it triggers on dependent elements in the noun phrase e.g. definite determiner, demonstratives, relative clauses and on the verb. This can be observed in (3) below where the prefix, the noun class marker (NC), and the agreement markers (CD) on the numeral and verb are in boldface.

(3).　　*e-ol*　　　*y-anur*　　*naxi*　*e-galen*　　　　　*bu-ppaŋ*
　　　　NC3-fish　　CD3-one　　HAB　CD3.3SG-destroy　NC5a-fishing trap
　　　　'It takes one fish to destroy a whole fishing trap' (proverb: it takes a single person
　　　　to spoil the reputation of his people) (ss060508_fir-hono-ao)

Similar to other Jóola languages, Gújjolaay Eegimaa has a complex noun class system whereby the forms of the prefixes do not always match with the agreement markers. In (4) below the agreement marker on the definite determiner is similar to the

noun class marker attached to the noun, but formally different from the agreement marker on the verb.

(4). *bá-jur*   *babu*   *n-a-baj-e*   *gá-ffoñ*
      NC5b-young woman   NC5:DEF   LOC-CD1.3SG-have-PFV   NC9-song
      'The young woman has a song' (ss041013_baluten)

The fact that virtually no two previous grammars in Jóola languages agree on the number and the delimitation of the noun classes in those languages, reflects the complexity of such systems. Yet, the classification of nouns into a finite number of classes and the possibility for speakers to use noun class markers other than those where the noun is included by default, leads to the questions of whether there are semantic motivations underlying such a classification of nouns. Another relevant question is whether it is only nouns or entities they refer to that are classified.

The question of the semantic motivations of noun classes has raised much controversy within the linguistic literature. A discussion of this debate is introduced in chapter 5 where I expose disagreements between the proponents and the opponents of the semantic basis of the nominal classification systems, especially in Niger-Congo languages. The position I take in this thesis is that the noun class system of G.E. has semantic motivations.

The study of the semantics of the noun class systems of the hitherto studied Jóola languages has mostly been restricted to providing a list of the dominant semantic concepts in a class, with the conclusion that the noun class system is arbitrary. This thesis proposes a critical analysis of those previous studies as well as an analysis of the formal aspects of the noun class system based on cross-linguistic and language-specific criteria (Corbett, 1991, Creissels, 1999, 2001, De Wolf, 1971, Greenberg, 1978). I also propose an analysis of the semantic basis of the G.E. nominal classification system which goes beyond the search for a common denominator between all nouns in a class, largely inspired by prototype theory (Lakoff and Johnson, 1980, Lakoff, 1987, Rosch, 1978). I will also show that the semantic parameters used in the classification system of Gújjolaay Eegimaa include both "universal"

parameters such as physical properties of objects (Aikhenvald, 2000, 2006, Allan, 1977) and culture-specific criteria.

The theoretical approach used in the investigation of the nominal classification system of G.E. in this thesis is discussed in further details in 1.4.2 below. In the next sections I present the structure of the thesis.

1.2 Structure of the Dissertation

In this section I present the main topics discussed in the remaining chapters of the dissertation.

In the following chapter (chapter 2), I investigate the segmental phonology of Gújjolaay Eegimaa as well as morphophonological processes attested in the language. The chapter provides a phoneme inventory, discusses the phonemic status of geminate consonants and NC clusters and addresses the controversial issues of vowel length and the "disjunctive phoneme" introduced by Sambou (1989) and adopted in most works on Gújjolaay Eegimaa and also other Jóola languages. The study of this "disjunctive phoneme" is a prerequisite for an understanding of the discussion of another controversial topic in Jóola linguistics; that of the interpretation of the underlying forms of the noun class prefix vowels.

Chapter 3 provides a sketch grammar of the language. Two grammars of Gújjolaay Eegimaa have already been written (Bassène, 2006, Tendeng, 2000), even though authors use different names for the language as explained in 1.3.3.1 below. In this sketch grammar, I describe the essential features of the grammar of the language and discuss some semantically relevant aspects of the grammatical structure in more detail than the existing descriptions whenever possible.

Chapter 4 provides a discussion of the formal properties of the noun class system. Here, I provide a critical discussion of previous inventories of noun classes proposed for Jóola languages and G.E. noun classes before proposing a new one with few, but nonetheless important differences in the formal class inventory. I also investigate the agreement system of G.E., and give an account of head agreement dissimilarities between controllers and agreement targets.

Chapter 5 is devoted to the semantic study of the G.E. noun class system. It begins with a typological overview of the cross-linguistic semantic parameters that motivate noun classification of the types discussed in 1.4.1 below. In that chapter, I give an account of the semantic motivations of the individual 15 noun classes that have been identified for G.E. in chapter 4, discuss class shift and the results of experiments on the shape encoding in the G.E. noun class system.

Chapter 6 concludes the dissertation, by reviewing the topics dealt with in this research. It discusses the contributions of this thesis to Jóola, Atlantic and linguistics in general, and points at issues to be addressed further in future research.

In the remainder of this chapter, I present the language and the way of life of the speech community studied in this thesis (1.3), the research questions and the theoretical framework used to investigate the nominal classification system of G.E. (1.4) and finally, I discuss the data collection undertaken for this research in 1.5.

1.3 The language and the people

This section introduces Gújjolaay Eegimaa speakers and their linguistic, geographical and historical contexts. Also included here, is a discussion of their culture, religion and social organization which help to understand many culture-specific motivations for the nominal classification system. This section also includes a discussion of the contact situation of G.E. and an examination of the language endangerment as well as proposals to counter this phenomenon.

1.3.1 Gújjolaay Eegimaa and Jóola[1] people

The number of people known as Jóola range from 400,000 (Williamson and Blench, 2000, Wilson, 1989) to 750,000 (Diatta, 1998), constituting around 9% of the Senegalese population. Different hypotheses have been put forward as to where the term Jóola comes from. Some of these have been considered, but lack a precise indication of

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[1] Other spellings include Dyola (De Lavergne, 1953, Wintz, 1909), Diola (Sapir, 1965, Sapir, 1971) and Jola (Diatta, 1998). The spelling used here (Jóola) is the most common in modern Jóola linguistics (Bassène, 2006, Sambou, 1989, Tendeng, 2000). However, use of the spelling 'Diola' is also common (Hopkins, 1990, Hopkins, 1995).

their origin. For example, in Polyglotta Africana (Koelle et al., 1963: 1), it was suggested that the term Jóola was used by the Mandinka (called Kabunga) (Sapir, 1971a) to designate the "Fi:lham" or "Fógny Jóola", the meaning of which Koelle states as "perhaps Foreigner, Barbarian". The term Jóola appears in Koelle's work, but it is not used as a cover term as it is for all Jóola people today.

Jóola according to Linares (1992: xviii) "may come from Wolof". Linares' hypothesis, which does not specify the exact Wolof origin of the term Jóola, is not supported by historical evidence, since the term "Jóola" existed before the recent contact between the Jóola people and the Wolof people which dates back to French imperialism as discussed in 1.3.6 below.

Thomas (1959) quoted by Barry (1987: 13), and also Sapir (1971a: 192), suggests that the term Jóola may originate from Mandinka and may be broken down into *joo* "revenge" and the suffix *-lá* meaning "people who will always get their revenge when attacked" (Barry, 1987) or "one who pays back, avenges himself" (Sapir, 1971a). In a subsequent publication, Thomas (1982: 9) breaks the word "Diola" up into *di-ola* (literally 'among us') with the following gloss 'vivants, visibles (living beings, visible referents)'. Thomas' morphological break suggests that the term Jóola has a Jóola origin and is a blend of *di-* 'in/ among' and *(w) ola (l)* 'us'[2].

That the term Jóola may have originated from a self-definition term distinguishing them from other neighboring people seems plausible, since not all people who call themselves Jóola have been in contact with the Mandinka people. Thus, it is unlikely that all Jóola people have adopted the term used by Mandinka people to name them. In addition Jóola people from different communities have a strong sense of belonging to the same larger group. During their initiation ceremonies, people who are not considered 'among them' i.e. members of the larger Jóola community are prohibited from entering the sacred forest. Therefore, in accordance with Thomas (1982), I consider that the term Jóola has a Jóola origin.

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[2] Consonants that are put between brackets are those dropped in certain varieties of Jóola. Probably not all varieties have this exact form after morphological division. In the language under study, we would have *ni wolal* instead of *di ola* 'among us'

The absence of written records makes it difficult to give an exact account of the historical relations between the different Jóola groups and their origin. However, it can be stated following Thomas (1982) that Jóola people have occupied their present day territory for at least a millennium[3]. Despite the present-day division between the "mandinguized" Jóola[4] (those who underwent Islamization and adopted aspects of Mandinka linguistic and cultural practices) and the "non-mandinguized", so-called "pure" Jóola, the apparent drastic cultural, social, and religious differences between the diverse Jóola communities have not obliterated the fundamental characteristics of the Jóola in those communities, or affected their sense of belonging to the larger Jóola group of people.

Jóola people are wet rice cultivators who developed a sophisticated agricultural system of rice cultivation and efficient irrigation techniques[5] which they proudly transmit from one generation to the other. Also central to their life, are cattle breeding, fishing and palm wine tapping. They are fundamentally acephalous, i.e. their societies have no centralized political power. Other shared important cultural practices among people who define themselves as Jóola people include the practice of initiation as an essential part of their life. There seems to be a sequenced order between the different Jóola communities in the organization of the initiation ceremonies where, as pointed out above, only those recognized as Jóola are allowed in the sacred forest. The criteria by which Jóola people define themselves include, to some degree linguistic ones, but also the cultural criteria briefly outlined above. However, those criteria are far from being sufficient since there is a lot of linguistic and cultural diversity between the different groups. Given the difficulty to

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[3] Recall that the three countries (Guinea Bissau, Senegal and the Gambia) where Jóola people are found today are recent creations resulting from the Berlin 1885 Conference.

[4] The Mandinka people converted a few Jóola communities from the northern Bank of the Casamance River to Islam after a Jihad undertaken by Fode Kaba, hence the term "Mandinguized".

[5] Rice growing is one of the most central defining features of 'Jóolahood'. The centrality of rice in the life of Jóola people is reflected in language by the existence of up to a minimum of six words referring to rice in languages such as Gújjolaay Eegimaa. Among these words are: *emmano* 'rice plants; grains of non-crushed rice'; *eugen* 'seeds of rice not yet transferred into the plots of rice fields', *jaacer* 'grains of crushed rice'; *sinnaŋ* 'well cooked rice'; *bannexeteŋ* 'pasty rice (overcooked)'; *baraj* 'rice gruel' etc. In addition to these words, there are other names for different varieties of rice which are grown in the rice fields, taking the type of soil into account.

find all the features that distinguish Jóola from non-Jóola people, I will use the term Jóola in this work to refer primarily to every community of people that recognize themselves as Jóola[6] and secondarily are referred to by other Jóola people as closely or remotely related to them.

The Jóola people whose language is studied here refer to themselves as *éjjola gammoen* 'Jóola people that practice *gammoen*' (see 1.3.9 below for an explanation of this concept) when reference is made on the culture or *éjjola Eegimaa* 'the Jóola people who say *Eegimaa*'[7] when the language is used as a reference point to distinguish themselves with other Jóola people. Their population is estimated to count between 7,000 (Bassène, 2006) and 10,000 members (Gordon, 2005). There is no available assessment of the different types of G.E. users, but a good knowledge of the environment where the language is spoken shows that most users of the language are first language speakers.

1.3.2 Language variation and genetic classification

1.3.2.1 Language variation and genetic classification of Jóola languages

1.3.2.1.1 Language variation among Jóola languages

In addition to referring to the Jóola people, the term Jóola is also used to name the languages and dialectal varieties spoken by them. It does not refer to a single language as it is often assumed, especially by non-specialists, but to a group of languages and varieties that form a dialect continuum. Jóola thus designates both heterogeneous communities and their languages. Names used by speakers and sometimes in scholarly works to refer to languages known under the generic term "Jóola" tend to refer more to geographical areas rather than reflecting linguistic boundaries. For example, Jóola "Fógny", as pointed out by Barry (1987), is the name of an area that runs from the northern bank of the Casamance

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[6] Cases of Bainouk people defining themselves as Jóola are often reported, following their legendary curse by their King. However, most Bainouk people define themselves as distinct from the Jóola people who also consider them a different people. Consequently they are not referred to as Jóola people in this study.

[7] As pointed out in a previous study (Sambou, 1989), the term *eegimaa* 'here is what I am saying to you' is only attested in the language of these people and is used to distinguish themselves from other groups that have different expressions than *Eegimaa*.

River in the administrative department of Bignona to The Gambia and includes a number of language varieties (cf. Figure 1). The northern bank of the Casamance River is home to the majority of the so-called mandinguized Jóola. Another example is "Kaasa" which is generally used as a language name for varieties spoken on the southern Bank of the river Casamance, in the administrative department of Oussouye. "Jóola Kaasa" is used as a cover term for languages and dialects among which Huluf, Eyun, Seelek, Esuulaalu?, Her, Ejamat and Kwaatay (Diatta, 1998). Another example is Banjal which is the name of a village, also used by outsiders to refer to the language variety spoken by people of that village. This name is also extended to language varieties spoken in other villages of the Kingdom of Mof-Ávvi, where G.E. is spoken.

1.3.2.1.2 Linguistic classification of Jóola languages

Today it is generally accepted, following Sapir (1971), that Jóola languages belong to the *Bak*[8] group of the Northern branch of the Atlantic group within the Niger-Congo phylum of languages. There is, however, a need for more internal linguistic classification of Jóola languages, which is made difficult by the fact that the majority of these languages lack linguistic descriptions.

In Koelle et al.'s (1963) tentative classification, Jóola languages are divided into the "Fulup" and "Fi:lham" or "Fógny Jóola" dialects. This classification leaves out many other languages and dialects of the Jóola group. In the same way, Kennedy's (1964) survey talks about dialect variation but not about separate languages. Sapir (1971) divides the Jóola linguistic group into five languages where he defines a subgroup called "Diola" and four others which are Gusilay, Karon, Kwaatay and Bayot. Barry (1987) proposes an alternative classification of the languages known under the cover term Jóola. His subdivision suggests a total of nine languages grouped into the Central, Southern and Western Jóola sets with *Kujamutaay, Endungo, Kaasa* and *Fulup* ('Central Jóola'), *Gubaare* and *Esing* (Southern Branch) *Kuwaataay, Gulompay* and *Karon* (Western Group). Barry's Kujamutaay-Fógny variety is the lingua Franca on the northern bank whereas Kaasa-Huluf is the main lingua franca on the southern bank. Fógny, the standardized Jóola variety is the most used across

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[8] "The term Bak is derived from the dependent plural personal marker common to the group" formed by certain languages of the northern branch of Atlantic languages (Sapir, 1971)

different Jóola groups as a lingua franca in the media and the literacy campaigns. The classification used here comes from Barry (1987: 95)

1.3.2.2 Language variation and genetic affiliation of Gújjolaay Eegimaa

Despite the difficulty to find the exact geographical location of Koelle's "Fulup" Jóola variety, a comparison between the data he collected for that variety and other Jóola languages (Sapir, 1971a) showed that Gújjolaay Eegimaa has the highest percentage of similarity with "Fulup" (87% as opposed to 71% for Huluf). G.E. is classified as one of the Jóola dialects in Sapir's (1971) West Atlantic inventory. In Barry (1987), Gújjolaay Eegimaa is classified as a member of the Endungo language group among Central Jóola languages. There is mutual intelligibility between the Gújjolaay Eegimaa and the Jóola varieties spoken in villages such as Brin (Barry's Kulluunaay), Jilapaor, Bútam, Affiniam and Tionk Essil (Gusiilaay) which Barry also classifies as part of the Endungo language group. Even though people who speak those varieties are not part of the former Kingdom of Mof-Ávvi where Gújjolaay Eegimaa is spoken, oral tradition wants it that they originate from, or have a more direct historical link with that kingdom than other Jóola groups.

1.3.3 Gújjolaay Eegimaa[9]

1.3.3.1 One language with several names

Gújjolaay Eegimaa is also known by several names most of which refer to village names. The language is referred to by the Jóola from the northern bank of the Casamance River and also by a number of scholars (Bassène, 2006, Sapir, 1971, Thomas, 1982) as Banjal (also spelt Bandial). Banjal, one of the villages of Mof-Ávvi, is an island that is located halfway between the Búluf and the Kaasa areas. The commercial activities of fishermen from that village favored long-term contact with Jóola from other communities as well as non-Jóola peoples. This accounts for the fact that most outsiders refer to people from Mof-Ávvi as Banjal. In the Kaasa area, however, the language of the people from

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[9] Many speakers pronounce Gújjoloay Eegimaa or Gújjolay Eegima. However the orthography used here for the language reflects the following morphological break: *gu-jjóla-ay* 'NC8- jóola -ABSTR' and *i-ex-i maa* '1SG- say -2SG.DO like this' 'this is what I am telling you'

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Mof-Ávvi (the area where G.E. is spoken) is mostly known as *Kúlaakiay* 'the language of the people from *Sálaaki*' (Sállagi). Another term used by outsiders and in the literature (Barry, 1987) is *Endungo* which is the name used by the Ésiŋ (Bayot people) who live on the other side of the tributary of the Kamobeul Bolon (see map in Figure 2). Finally, the term *Gusiilay* used by Tendeng (2000) is the name used by the neighboring *Ellun* from the area of Brin to refer to the Jóola of Mof-Ávvi.

All consultants, including those from the village of Banjal, suggest that the language of the people from Mof-Ávvi is called Gújjolaay/ Gújjoloay Eegimaa. Sambou (1989) was the first to introduce the term (Jóola) Eegimaa in naming this language, following the name used by native speakers. The problem in using the term 'Banjal' for Gújjolaay Eegimaa is that the variety spoken in the village of Banjal stands out with more phonological and lexical differences compared to other villages where the language is spoken. Because of these differences, native speakers of G.E. from other villages of Mof-Ávvi restrict the term Banjal (*Gubaɲjalay*) to the dialect that is peculiar to the village of Banjal. Further research is required to determine the dialectal variation within Mof-Ávvi. In this thesis however, the name Gújjolaay Eegimaa will be preferred because of dialectal variations pointed out above and discussed in further details in the next chapter. The choice of this name also follows native speakers' and Sambou's (1989) choices.

1.3.4 Previous studies on Jóola languages and Gújjolaay Eegimaa

As stated above, the majority of languages that are referred to by the generic term Jóola are still undescribed. The first available linguistic work on Jóola is Koelle's (1854) Polyglotta Africana, where the author attempts a classification of those languages which he divides into the 'Fulup' and "Fi:lham" dialects. Other general studies about Jóola languages and surveys of Atlantic languages including the Jóola group, comprise Kennedy's (1964) Jóola dialect survey, a study of Jóola in Koelle's Polyglotta Africana and a survey of Atlantic languages (Sapir, 1971a, Sapir, 1971b), Doneux's (1975) study of the 'augment' in Atlantic languages, and Barry's (1987) subgrouping and reconstruction of Jóola languages. There are also descriptions of individual languages such as Wintz's (1909) grammar and dictionary of Huluf, Weiss' (1940) Jóola Fógny grammar and lexicon

and Sapir's (1965) grammar of Jóola Fógny, Sambou's phonology and morphophonology of Jóola Kaasa Esuulaalu? (Sambou, 1979) and Hopkins's (1995) syntax of Jóola Fógny.

For Gújjolaay Eegimaa, there are two available PhD theses on the grammatical structure of the language by Tendeng (2000) and Bassène (2006)[10]. More research is required on Gújjolaay Eegimaa and the many other language varieties that are still not studied, to give an exhaustive account of the linguistic situation of the "Jóola" languages in Guinea Bissau, Senegal and the Gambia where they are spoken.

1.3.5 Geographical location

1.3.5.1 Geographical location of Jóola languages

Along with the Mankagn, Manjak, Bainouk, Manding, Balanta and Peul (Fula), Jóola people are one of the many peoples that inhabit the ex-southern administrative region of Senegal known as Casamance. Jóola people and languages are distributed over three West-African countries: Guinea-Bissau, Senegal and The Gambia. The Jóola of Senegal are found in the former Casamance region, mainly in the Basse-Casamance (Lower Casamance), the present-day region of Ziguinchor. Jóola people are distributed between the northern and southern banks of the Fleuve-Casamance (Casamance River). Figure 1 below shows the geographical distribution of Jóola people of the Gambia, Senegal and Guinea-Bissau[11].

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[10] Gújjolaay Eegimaa is called Gusiilay (Tendeng, 2000) and Banjal (Bassène, 2006) in those works.

[11] The boundaries between these countries are represented by dashed lines on the map.

Figure 1: Jóola speaking areas (adapted from Barry (1987))
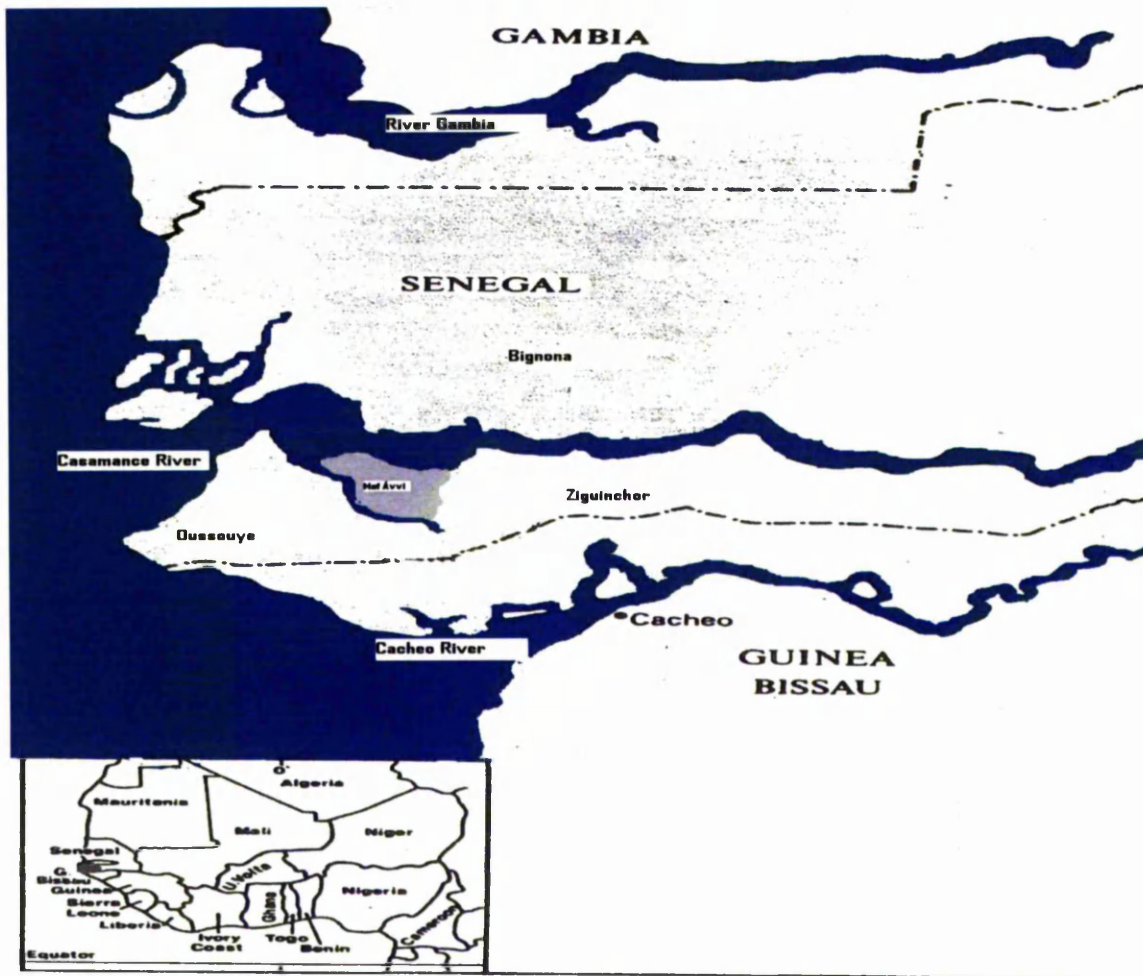
1.3.5.2 Geographical location of Gújjolaay Eegimaa speakers

Gújjolaay Eegimaa speakers live in a former small Kingdom of ten villages known as Mof-Ávvi 'the king's land', located eighteen kilometers southwest of the city of Ziguinchor, the main city of the southern region of Senegal in Lower Casamance. Mof-Ávvi is a peninsula composed of the following ten villages: *Bajjat, Essil, Bátiŋer-yal-Essil, Gáabal, Enappor, Sállagi, Bátiŋer-Bulan, Elubalir, Ettama* and *Banjal*. These villages are usually divided by the inhabitants of Mof-Ávvi between *Fásuga* which includes villages located in the mainland (*Bajjat, Essil, Gáabal, Enappor*) and *Gállux* 'mud' which comprises islands (*Bátiŋer-yal-Essil, Sállagi, Bátiŋer-Bulan, Elubalir, Ettama, Banjal.*)

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Another subdivision of the villages is the one that includes villages of *Gassilay* 'the area of Essil' which comprises *Bátiɲer-yal-Essil*, *Bajjat*, *Essil*, *Gáabal* and *Enappor*. Mof-Ávvi is delimited in its northern part by the Casamance river which separates it from the Jóola Búluf area; in the West by a tributary of the Casamance river known as Kamobeul Bolon, which separates it from the Jóola Kaasa area; in the South by the extension of the tributary of the Kamobeul Bolon, which separates it from the Jóola Bayot area. In its eastern part Mof-Ávvi is separated from Mamatoro, Brin and Jibonker villages by a forest through which the only road that leads to Mof-Ávvi is built. The map in Figure 2 below shows the location of Mof-Ávvi (in white) in relation to other Jóola araes.

Figure 2 : The map of Mof-Ávvi (adapted from Palmeri and Gazio (1995))
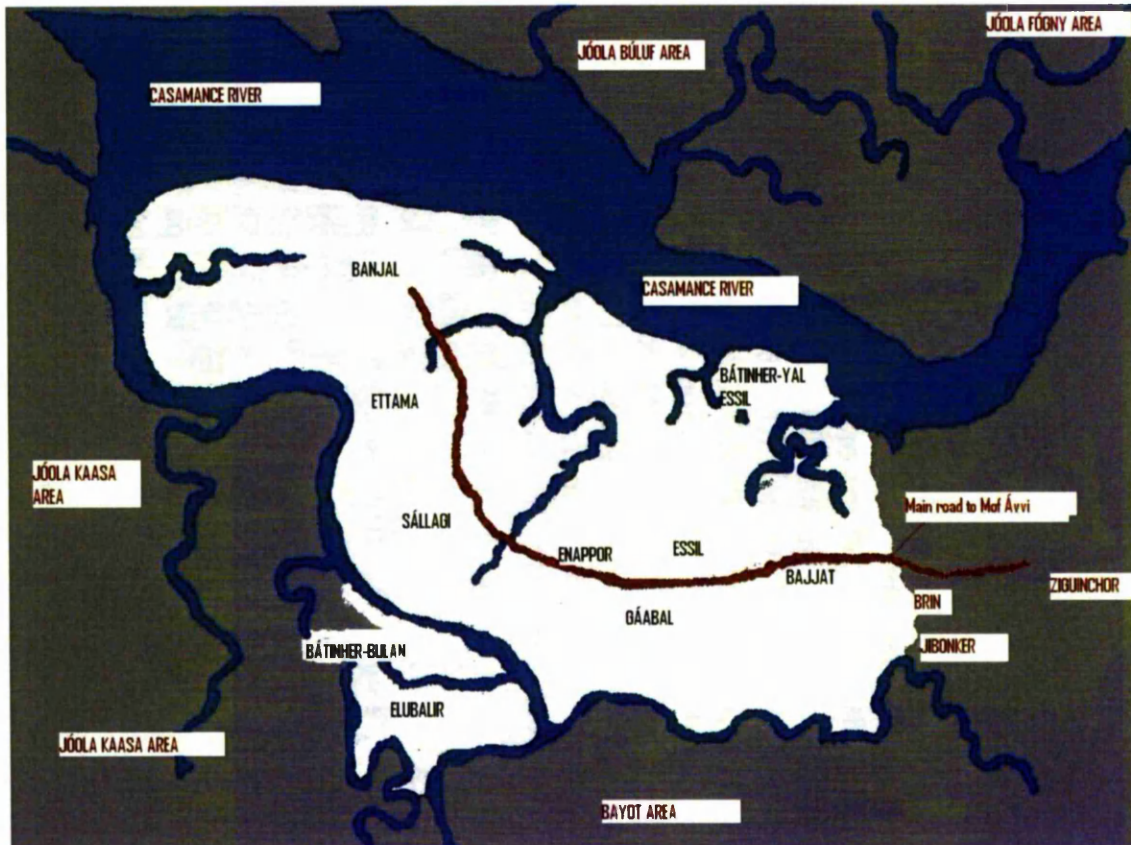
1.3.6 History

According to oral tradition (see also Palmeri and Gazio, 1995), the ancestors of the inhabitants of Mof-Ávvi migrated from an area located in present-day Guinea Bissau in search for arable land[12]. They stopped around the present-day village of Burofay before continuing their journey, which lead them to a place where they stopped to cook and rest. They eventually called the place Essil. The name Essil comes from *éssil* 'to cook' according to this source. Thus, Essil was the first village to be formed in what is known today as the territory of Mof-Ávvi.

The group of migrants discovered arable land in the surroundings of Essil and eventually created the villages of *Gáabal*[13], *Enappor* and *Sállagi*. Virtually, all villages of *Gállux*, 'the islands' of Mof-Ávvi, were created by people who left *Sállagi*. People from the village of *Bátiɲer Bulan* left *Batendeŋ*, the district of *Sállagi* that hosts the lineage of the same name, to move to the island where that village is located today. *Bátiɲer-yal-Essil* is said to be another sub-lineage of *Batendeŋ* which moved to the area of Essil (*gassilay*), while *Elubalir*, *Ettama* and *Baɲjal* were formed by people who left *Baimban*, the other main district

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[12] It was the case that when a family expands, the eldest among the bothers of the family leaves his home, usually with members of his generation in search for an arable place where they build new rice fields and villages.

[13] A few consultants have suggested etymological sources of the names of the villages of Mof-Ávvi. Apart from *Essil* (to cook), *Gáabal* from *égabal* 'water lily' (until today one can find many water lily plants in the rice fields of *Gáabal.*), and *Enappor* from *enappor* 'to gather' (the place where inhabitants of Mof-Ávvi gather to make decisions related to their political life), the etymology of most village names is not always obvious and will be investigated further in future research. For example I have not been able to find the etymological origin of *Sállagi*. *Ettama* is said to come from *Ettam ay?* 'whose land?', a question that was apparently asked by the ancestors of the present inhabitants before building that village. There are different hypotheses for the etymology of *Baɲjal*: (1) *ubaŋ jal (jaju jon mal millet)* 'put the water down' (carefully because there is not enough') because of the difficulties of the inhabitants of that island to access drinkable water; (2) *mbaa jal* 'towards water' and *banujaal* 'we are going' (which meant that their stay in their present day village was supposed to be temporary). As for *Elubalir* it is said to originate from (1) 'the descent of *Abalir*' (2) *ellu balliray* 'whales's meat' (a place where whales used to be hunted). *Bátiɲer* apparently means the 'descent of *Aliniere*' (it is not clear who Aliniere is if the etymology is correct) and *Bajjat* 'the descent of *Ajjata*' may be one of the first inhabitants of the area. Despite the difficulties to find out the exact origins of the names of all villages, patterns emerge from the suggestion of consultants from different villages.

of the village of *Sállagi*. As for *Bajjat*, the last to be created among the villages of Mof-Ávvi, it used to be a district of Essil until it was occupied by early Christians who fled persecution from other villages of Mof-Ávvi. Eventually Jóola people from the *Búluf* area, which is located on the northern bank of the Casamance river, and a few Manjak families also settled in the village of Bajjat. Apart from the contact with other Jóola people and the Bainounk people from the village of Jibonker, the inhabitants of Mof-Ávvi remained quite isolated from the outside world until the French imperialism.

Unlike other peoples like the Fula with leaders like Alpha Molo Baldé, resistance to colonial rule was not undertaken under the leadership of a king and war leader. Resistances to the colonial armies by individual villages or the whole kingdom were always the result of common decisions. It is suggested (Roche, 1976) that *Jíñabo* Bassène, who according to one of my consultants was locally known as *Jágaba* Bassène, was the leader of the anti-colonial movement against the French. However, oral tradition wants it that *Jíñabo* never fought the French colonial army. Rather, he was a priest of an initiation shrine *búxut* who came from *Elubalir* to *Sállagi* for a libation and was shot down after coming too close to the French quarters in the nighttime (see also Diatta, 1998). Mof-*Ávvi* eventually lost the war against the French colonial army, but spontaneous attacks continued and culminated in the killing of Lieutenant Truche in 1886 (Diatta, 1998), at a time when the colonial administration introduced forced tax payment in the form of money and rice. As a result of their continuous lack of submission, villages of Mof-Ávvi were bombed using canons and burnt down several times. For example, according to historical records, Sállagi was burnt in 1859 and 1887 (Palmeri and Gazio, 1995). The Jóola were eventually compelled to pay taxes and participate in the forced labor of growing groundnuts and building the road that leads to Mof-Ávvi as well as other roads in the area of Ziguinchor. Later, soldiers were taken by force to fight alongside the French army in the first and second world wars. Decolonization of Mof-Ávvi happened at the same time as the whole area of Casamance and Senegal, when the country gained independence in 1960.

1.3.7 Social organization

The kingdom of Mof-Ávvi is also referred to as *Jávvi jal Émit* 'the kingdom of rain'[14]. The king always comes from the Manga or Saña royal Families from the villages of Enappor and Essil respectively.

These two villages take turns in providing a king for the whole of Mof-Ávvi. The king of Mof-Ávvi was famous among the Jóola communities for his ability to make rain fall with his sacred broom. The king himself is not a political leader, but a religious sacred person whose function is that of a conciliator between humans and the Supreme Being (God) and taking care of the interdicts (*mañao*). The king works as the main intermediary between the people and God (*Ala-émit* 'the owner of the sky') when it comes to asking for rain, which is essential for rice growing (see 1.3.8 below). This makes the king an essential figure for his people's life since the survival of the Jóola people is dependent on wet rice growing. Whenever there is no king, temporary replacements from the two royal families must fulfill the necessary rituals, e.g. the prayer for rain falls, as it is the case today. Other functions of the king are to enforce peace and harmony among the people of Mof-Ávvi and because of this he can never go to war. The sacred status of the king makes that he has his own roads to move around the village where he resides and from one village of the kingdom to the other, carrying with him his sacred bench (*efenjeŋ ávvi*). The king is always dressed in a red tunic and never goes to work in the rice fields. No other 'ordinary' person is allowed to dress in red to go the rice fields. Also no 'ordinary' person should see the king eat or drink. The infringement of these and the many other interdicts related to the kingdom and also those related to incest are punished by the royal shrine (*fínnir*) with death from headaches, if the offender does not confess at that shrine. The king and his family members have a private cemetery and the mourning ceremony for a king is unique since it is announced and takes place long after his secret burial by the family of the main

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[14] The last king, *Áfilejo Manga* (from Enappor) died in 1968 (Girard, 1969). The previous one, *Síbesondo Saña* (from Essil) was deported by the French colonial administration and reportedly died of starvation, since there is an interdict that forbids the king to eat in front of other people, the detainees in this case. Since 1968 people from Mof-Ávvi did not have any other king. Today, the king's essential roles in the community are fulfilled by temporary replacements. However, with the abandonment of the traditional way of life, everything leads to believe that the Kingdom of Mof-Ávvi is doomed to vanish for ever.

undertakers of Mof-Ávvi. A one week holiday (*gájimandiŋ*) is always observed every time a member of the royal family 'disappears'[15].

As it is also the case for other Jóola communities, Mof-Ávvi is an egalitarian society with no centralized political power. Depending on the issue, political decisions are made by men and women, separately or together. Decisions concerning the whole of Moff-Ávvi are made during meetings where only initiated and married people attend. This practice of consultation between people of different villages has survived until today. The association of all the women of Mof-Ávvi, *bállega* which is related to the kingdom, is very influential in political activities and decision making on issues regarding the community. This association is also in charge of the initiation of women[16], where only married women take part. Every village and district of a village has an association of women that acts at a local level in the life of the community and deals with issues that are specific to women in that area, for instance maternity. Men are mostly involved in making decisions regarding initiation of men, the security of the villages, and most aspects of the political life in Mof-Ávvi.

At the family level, labor is divided between men and women with certain tasks assigned to children as they grow up. Men are in charge of plowing the rice fields during the rainy season but also build houses, fish, tap palm wine, make fences, etc. during the dry season. As for women, they are in charge of planting the rice in the field during the rainy season, and harvesting it in the dry season, often alongside men, collecting fire wood and doing the house work. Before they are old enough to participate in the work in the rice fields, girls have the responsibility of nursing younger children, but also of doing house work, whereas boys are in charge of tending the cattle. As they grow and learn to work in the rice fields, both male and female children form mixed age-groups which are involved in community work and ensure their socialization before they are old enough to join the village youth association (*búpuret*).

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[15] A few lexical items are proper to the king. The word for 'eating' is *fitiñ* but for the king the word *gafendor* is used. When the king passes away the word *ennemo* 'disappear' is used instead of *ecet* 'die'.

[16] *Bállega*, which is also referred to as initiation of women, is not accessible to men. It should not be confounded with excision, which is a practice unknown to the Jóola in general.

Sport activities include wrestling and a type of game which is now extinct called *jaŋor* described by some older people as resembling football and by others as resembling cricket. Since this game is not practiced anymore, it is difficult to provide an exact description.

1.3.8 Religion

Religion is involved in every aspect of the life of the G.E people (see also Palmeri and Gazio, 1995). The Jóola people of Mof-Ávvi believe in one Supreme Being; *Ala-émit* literally 'the owner of the sky' also referred to as *Áttula* 'creator', of no easy reach to humans. Only on rare occasions are prayers directly addressed to *Ala-émit*. Among those occasions is *gaxul émit,* 'lit: mourning God' a yearly prayer made by women of the kingdom dressed in black in collaboration with the king to request rain. This is the only time prayers are directly addressed to *Ala-émit* (God) and not to ancestors who act as intermediaries.

At the second level of the hierarchy after *Ala-émit* are *ufuga* 'ancestors' also referred to as *bugal ettam* 'the owners of the earth' where they have been buried. They are believed to be reincarnated in the beyond and live a life quite similar to that of living humans. They are, however, endowed with power received from *Ala-émit* 'God', which enables them to guarantee cohesion of their lineage and the larger community. An ancestor may be reborn inside the lineage or come back once in case of necessity as *afuga,* a form of a messenger spirit that possesses the mind of a woman and makes her reveal secrets that are inaccessible to humans e.g. about the death of a person or successive deaths in a family. In the meantime, *afuga* cleanse the territory of invisible supernatural evil spirits, and heals victims of witchcraft. Because of the privileges they receive from *Ala-émit*, ancestors can act by themselves to improve humans' life or intercede on behalf of them with *Ala-émit*.

At a third level are spirits. These are of different kinds and may be of human or other undetermined type and can be good or bad. Only people endowed with a 'sixth sense' (*múu*) are capable of seeing those supernatural powers. Good spirits may work with individuals such as 'medicine men' or groups of humans to help them ameliorate their lives

or protect them. Bad spirits are usually those that are said to collaborate with witches to haunt and eat[17] individuals' souls, bring epidemics to the territory and cause death.

At the last level of the supernatural world are *sipaŋ*, the shrines. Shrines are places chosen by humans to communicate with supernatural entities. A stone is always placed under the earth to help find the exact place where the libation[18] needs to take place. But this stone has no religious function. There is always a supernatural entity behind a shrine. The male and female ancestors of the lineage constitute the *ufuluŋ*[19] the 'lineage shrine'. Similarly royal shrines, *ufuluŋ jávvi*, are composed of all previous kings and their kin. The royal *ufuluŋ* and the shrine of all women of Mof-Ávvi, *bállega,* and other shrines related to the kingdom such as *búxut* 'the initiation' are the most powerful and most feared because of their ability to punish those who infringe the laws of the kingdom or other social taboos.

Every village has a *baccin* 'community shrine', which is in charge of the protection of the 'settlement' (*bicin*[20]) and where male children who get their first milk teeth undergo a type of christening ritual (*gaccinnen*) as a preparation for their initiation (*búxut*). Some of the village shrines, especially those of *Bátiŋer Bulan* and *Elubalir* are said to have been imported from the Jóola Kaasa area. Along with shrines related to the kingdom, village shrines can never be abandoned. This means that members of the community who move away to form other villages take them or part of them along[21].

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[17] The people of Mof-Ávvi believe that witches eat people's souls. This is why any individual who dies as a victim of witchcraft is said to have been "eaten". Lack of understanding of such aspect of the life of the people of Mof-Ávvi has fed the accusation of cannibalism in the literature in the History of Casamance (Roche, 1985).

[18] Libation is a form of prayer that consists of pouring wine (it can also be water when no wine is available at all) to a shrine which hosts the supernatural entity (ancestors or some other supernatural spirit) to which such a prayer is addressed.

[19] From *e-fuluŋ (su-)* 'corpse (s)', the term for 'lineage shrine' is derived by use of a different prefix giving *ga-fuluŋ (u-)* 'lineage shrine (s)'. The word *u-fuluŋ* 'funeral songs' also refers to songs of ancestors that are sung during funerals.

[20] One of my consultants, Abass Bassène, insisted on the close relation between the words *baccin* 'village shrine' and *bicin* 'settlement'. This is an interesting observation that will be researched further.

[21] Moving shrines generally involves taking stones that locate them or sand or some other objects from the place where libation takes place.

There are several other kinds of shrines that have different functions in the lives of the Jóola. *Gataf* for instance, is a shrine that is consulted for war, whereas individual shrines are usually spirits that can help people to improve their production and ensure their protection. Every aspect of the Jóola life is linked to a certain shrine. The kingdom shrine *ufuluŋjávvi* 'royal lineage shrines' for instance, is the one consulted for rain and for a better agricultural season as mentioned earlier.

The traditional religion is still alive, although less and less practiced in Mof-Ávvi. Many mourning ceremonies, especially those of the oldest people, follow the rituals of the traditional religion. However, with the introduction of Christianity first (in the 1920's according Delcourt (1976) quoted in (Bassène, 2006)) followed by the conversion of a few members of the community into Islam (end 1950's), less and less people follow the precepts of the traditional religion, especially because it is constantly described as a kind of paganism whose adepts are doomed to burn in hell by the followers of other religions. Christianity was introduced by the colonial regime, and most conversions to Christianity happened from the 1940's onwards, whereas conversion to Islam, started with some of the migrants to cities (Bassène, 2006).

1.3.9 Habitation and kin

The whole population of Mof-Ávvi originates from the three main clans (Palmeri and Gazio, 1995: p.289) *Jíban*, *Basen* and *Batendeŋ*. The *Jíban* clan encompasses the *Jata (ággen)*, *Manga* and *Saña/ Sámbu* lineages. The Basen clan comprises the *Átom juuŋ gannu*, *Efal* and *Elugassaon* lineages. The third clan is the *Batendeŋ* whose lineages are *Batendeŋ ávvi* and *Elugammañen*.

Traditionally, members of a lineage *fiil* 'lit: breast', share the same *fúlumet* 'front yard/ courtyard'. This means that houses are set in a circle with a common yard. Individual houses *s-aŋ* 'houses/ families' are impluvium round houses (*yaŋ gasurummal*) with several flats that are occupied by brothers descending from the same father or grand father. Marriage is not permissible within the same lineage, and carnal relations between members of the same lineage are taboos whose violation must be confessed at the royal shrine.

Men are only allowed to marry after they have undergone their initiation in the sacred forest. Women do not have such restrictions. Other social restrictions for the non-

initiated comprise their exclusion from taking part in decision making at the family and public level and from land possession, among other things. Marriage for men and women occurs after adolescence when the individual has joined *búpuret* 'the village youth association'.

Land is property of the lineage. It is distributed to married men and women of the family. The marriage settlement is that of separation of property. This means that after marriage, the spouses do not share their belongings. For example, the plots of rice fields they inherit from their respective families do not belong to the couple. Also the spouses have different lofts. The care of children is shared between the two spouses. The wife is in charge of the children from harvest time to shortly before the rainy season when the *garumo* feast is celebrated. This corresponds roughly to the time between end of December to end of May. After that celebration children are under their father's responsibility for the rainy season until after harvest.

The society of Mof-Ávvi is a patrilineal society where children always inherit land from their father's lineage. They also have the right to exploit their mother's land for the whole duration of their life. However, this land is required to return to their mother's lineage when these children are no longer alive. When a women's adult offspring passes away, her siblings are required to give a bovine or a plot of rice field to her family lineage as compensation for the use of their land for their nurture during all their life. The mother's land thus appears as if it were lent whereas the father's is the one that is truly inherited. This practice referred to as *gammoen*, seems to be peculiar to the Jóola of Mof-Ávvi and accounts for the fact that among other names, people from Mof-Ávvi call themselves *Éjjola gammoen* 'Jóola of *gammoen*'.

1.3.10   Contact situation

For a long time the contact of Gújjolaay Eegimaa with other linguistic communities was mainly restricted to neighboring Jóola such as the Bayot, the Fógny, the Kaasa, the

Búluf amongst others, and also the neighboring Bainouk people and the few Manjak people who settle in the village of Bajjat[22].

G.E. people have never been into direct contact with the Mandinka people who converted other Jóola communities in the northern bank of the Casamance river to Islam. However, some G.E. speakers who converted to Islam (1.3.8 above) and other speakers who lived temporarily in Mandinka speaking areas, speak the Mandinka language. It is also not rare to find G.E. speakers who speak Portuguese Creole which used to be the Lingua Franca of Ziguinchor (the closest city to the G.E. people)[23] before the spread of Wolof in the region. Today, it is also possible to find speakers of G.E. who are fluent in Fula, especially among migrants to the "Haute-Casamance", in the City of Kolda.

In addition to the contact with neighboring languages, most G.E. speakers speak French and Wolof to varying degrees of fluency. The ways these languages have been introduced, their functions in the country, the prestige they enjoy, but most importantly the attitude of many G.E. speakers towards these languages and their own language, help to understand G.E.'s present situation as one of the many languages of the area threatened with extinction.

1.3.10.1 Language endangerment

The issue of language endangerment is a worldwide phenomenon (Batibo, 2005, Crystal, 2000, Dalby, 2003, Hagège, 2002, Nettle and Romaine, 2000), and language documentation and revitalization efforts are a response to it (Austin, 2003, 2004, 2005, 2007, Fishman, 1991, 2001, Grenoble and Whaley, 1998, 2006). There is a common agreement following Krauss (1992: 7) that, "the coming century will see either the death or the doom of 90% of mankind's languages" estimated at 6000 in number.

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[22] There are very few G.E. speakers who are fluent in Bainouk or Manjack. G.E. people have also had a long and close contact history with the Bayot people, one of the groups, along with the Jóola Kaasa people, with whom they inter-marry the most. However it is much more common to find G.E. people speaking Jóola Kaasa than Bayot.

[23] These are generally older people but also younger G.E. speakers who were born and bred in areas of Ziguinchor where Portuguese Creole is used as a dominant language.

Following the loss of the political sovereignty of Mof-Ávvi, most of the education of children here, and elsewhere in Senegal, was progressively taken over by the French schooling system whose policy was one of "total assimilation" (Calvet, 1974, Noriyuki, 2005, Yukitoshi, 2005). French was, and still is, the only language allowed in the classroom in schools. Not only is Gújjolaay Eegimaa banned from the school, but it is also represented negatively to its young speakers. In the meantime the students' heritage was represented in ways that can be summarized following Calvet (1974) with the dichotomy between "nation" versus "tribe", "civilized" versus "savage", "language" versus "dialect" or "patois" etc.

Still today, in 2007, children who infringe the ban to use G.E. in the school environment, are made to wear "le symbole", a rope to which a bone is tied as a punishment. There are humiliating songs made for schoolchildren who wear the "symbole". This way of transmitting French breaks the harmony previously existing between the learners and their heritage, by teaching them to detach themselves from their religion, culture and language while presenting the colonial world and language as the one to aspire to (Wa Thiong'o, 1986). As a consequence it can be argued that formal school was, and still is, one of the first environments where children start to develop a negative attitude towards their language.

Today, mastering the French language and culture determines access to further education, more prestigious jobs, higher political positions and facilitates economic wellbeing and social status. Failure to do so dooms the G.E. child to be excluded from most spheres of the country's life; a phenomenon which seems to be widespread in the African continent (Bamgbose, 2000). Note that fluency in Wolof also provides access to certain jobs, generally those that do not necessarily require French.

Because of its official status, but mainly because of the advantages it provides, French has gained much prestige in the country, and among the G.E. people. Many G.E. native speakers have as result developed a negative attitude towards the language and have shifted to French. Some teach it to their offspring and abandon G.E., while others extensively code-switch to French for reasons of prestige. The status of French is further emphasized through its use as the main language in churches.

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Wolof is the other major language of communication in Senegal and the Wolofization of the country (the expansion of Wolof language) also has an impact on minority languages. The penetration of the Wolof language in Mof-Ávvi and elsewhere in the country started with the use of Wolof speakers as adjunct officers for the French administrators (Barry, 1987). From a restricted influence to a few villages in Casamance, e.g. Carabane and Loudia, the Wolof language gained more and more prestige and expanded progressively after the independence of Senegal in 1960, when its speakers took over most of the administration of the country (Juillard, 1991). Already, in 1967 research undertaken by Calvet (1967) suggested that in Ziguinchor, 80% of the population spoke Wolof as opposed to 17.33% in the rural areas.

Today the number of speakers in Senegal ranges between 80% and 90% of the population (Prinz, 1996, Yukitoshi, 2005). Of the 34 reported languages of Senegal (Batibo, 2005) only six (Peul (Fula), Seereer, Jóola (Jóola Fógny), Mandinka, Soninké and Wolof) have gained the official status of "national languages" since 1968. Wolof is the most visible of all these national languages. For the other languages the label "national language" is as Calvet (2005) puts it, a mere honorific title rather than a description of the function they have in the life of the country.

Wolof is the main language of trade throughout the country, and the most promoted among national languages in the public and private audio-visual media, while French, the official language of the country is virtually the only language of the written press. Moreover, the promotion of Wolof culture through Mbalax music, plays, debates, news broadcasting but also fashion (e.g. clothing) and hip hop music are other factors that contribute to the Wolofization of the country. Wolof is progressively replacing local linguae francae like Portuguese Creole in Ziguinchor and Jóola Fógny in certain areas of the city and the greater region.

Massive rural exodus has occurred over the past decades and the majority of G.E. speakers now live in the Diaspora. Among the G.E. migrants to cities, one can distinguish permanent and temporary migrants who come back occasionally to take part in agricultural activities in the rainy season. Returning migrants predominantly come back speaking Wolof and French for reasons of prestige. G.E. has become more and more related to an ancestral (generally looked at as backwards) mode of life from which many speakers try to

distance themselves. For example, most of the communication among the youth in Mof-Ávvi today is dominated by Wolof seen as more fashionable.

G.E. is still transmitted to children in villages, but its transmission to new generations in the G.E. Diaspora, where most of its native population lives, has fallen drastically in favor of French and Wolof. This is because compared to Wolof and French, G.E. lacks visibility in that it is totally absent from all public spheres. If no alternative is proposed to this heavy shift to French and Wolof combined with the abandonment of G.E., the language is likely to be replaced entirely by these languages in the next two generations.

In addition to the language, many aspects of the G.E. people's way of life are also heavily threatened. The practice of wet rice cultivation, which used to be the main means of survival of the G.E. people, has decreased dramatically especially in the last two decades, partly because of the weak rainfalls, but mainly because jobs proposed in the cities provide a better income. The kingdom has vanished and the traditional religion discussed in 1.3.8 above has been losing grounds in favor of Christianity and Islam. The traditional architecture mentioned in 1.3.9 above has also been abandoned. Today less than five traditional houses which used to be of impluvium type, have survived in the whole of the ten villages of Mof-Ávvi where they used to be the most common types of houses.

In short, the new life reality of the G.E. speakers requires them to master the main languages of Senegal in order to participate in the economic, social, and political life of the country. This new life constitutes a major attraction which has favored massive rural exodus to cities. Today, most G.E. speakers including those living in Mof-Ávvi are multilingual speakers. Use of different languages in their daily interactions, especially for those in the Diaspora, is more of a norm than an exception. The situation of endangerment is mainly based on the increasing negative attitude among speakers. Countering this phenomenon will require taking into account the new life realities of the G.E. people in order to ensure a close collaboration with speakers to save the language from extinction.

1.3.10.2 Proposal for revitalization of Gújjolaay Eegimaa

Actions can be taken to counter the extinction of G.E. Ideally, saving the language would include using G.E. in kindergarten, bilingual primary education, radio programs,

road signs etc. as proposed in the literature (Crystal, 2002). This would result in a diaglossic situation between G.E. and French in the primary education sector, allowing school children to learn to read and write in their native language first. "When diglossia is stable, each language has its own set of functions and space without threatening the other" (Nettle and Romaine, 2000). An example of such a diglossic situation is Swedish (in Sweden) which, as discussed in Nettle and Romaine (2000), exists alongside English from early primary school education without threatening its transmission to children. In theory, such a situation is possible for G.E. in Mof-Ávvi but only with available reference books, trained teachers, salaries, and motivated participants. However, given the number of languages in Senegal, and more importantly the availability of funding, a bottom-up approach, which focuses on initiatives from community members, may be more suitable as a reaction to the extinction of G.E.

Despite the increasing negative attitude among speakers towards their native language, many G.E. speakers have expressed concern about the threat of extinction of the language. Resulting from this, several native G.E. speakers working in academia have started projects researching different aspects of G.E. civilization (e.g. Diatta, to appear). These projects provide promising potential for future collaborative work on the G.E. language and culture,[24] and may help to enhance future programs of language revitalization.

There is an ongoing literacy program, conducted by members of the Summer Institute of Linguistics (SIL). So far the literacy program has focused on teaching reading and writing, especially to people in Mof-Ávvi. The manuals used for the learners in this literacy program (Basen and Basen, 2005) mainly consist of texts material (generally tales) and vocabulary illustrations with pictures. Despite the positive impacts of the literacy program, a number of weaknesses need to be addressed in order to ensure a larger participation from the community.

Firstly, the orthographical notation proposed for this literacy program has been criticized by a number of participants, because in many cases it does not distinguish

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[24]Aspects of the research I present here have been conducted in collaboration with Dr William Diatta, native G.E. speaker carrying out research on Botany (with G.E. medical knowledge as part of his focus) at the University of Dakar.

geminate consonants and their short counterparts, which occur as minimal pairs in the language, thus reducing the flow in reading. The orthography proposed in the next chapter is an attempt to address this issue by proposing an orthographical system with a systematic distinction of these consonant types.

The second weakness of the ongoing literacy program is related to the content of the syllabus. As pointed out above, the available syllabus consists of text material and vocabulary and the lessons included are more appropriate for learning how to read and write. However, an important number of speakers are literate in French and generally know the tales included in the learners' book. Moreover, the content of the syllabus seems to be more suitable for outsiders or non-fluent G.E. speakers rather than native G.E. speakers.

Beyond these early stages, the literacy program should relate as much as possible to the life and preoccupations of the G.E. people. The focus should be not only on reading and writing, but also on developing critical independent thinking which will allow the learner to reflect on their socio-economic and political realities. This includes training them to write about their traditions, religion and history, but also the language situation and the importance of maintaining their language of identity in addition to languages of wider communication. Using G.E. to produce material on issues such as preventative health and socio-economic and political debates, allows the part of the G.E. population that is not literate in French to be included in developing this social-political consciousness.

The resurgence of interest on the language and the G.E. people's civilization is an asset that can also be exploited to counter the language extinction. Dissemination of these productions can be done though new technology e.g. internet, and simple printouts in case of limited or non-existent access to funding. Internet is accessible to the younger generation of literate G.E. speakers making this an appropriate means of transferring the orthography and sharing productions in G.E.

The response proposed here thus suggests the enhancement of the ongoing literacy program through focus on production, in close collaboration with community members both in the villages of Mof-Ávvi and the cities. This way not only the content of the syllabus reflects the speakers' lives, but continuous production from speakers ensures availability of reading material to follow up the early stages of the literacy program. Through a literacy program that takes the G.E. people's lives into account, it is thus

possible to raise awareness on the negative attitudes towards the language, encouraging parents to teach their native language to their children, along with other languages. Further, the involvement of G.E. speakers in the highest public and prestigious spheres may also motivate parents in rural areas to participate in the program.

In Summary, the life of the G.E. people straddles a traditional and a new way of life. The proposal made here involves bridging these two worlds with an inclusive literacy program that incorporates knowledge from both sides. This way, members of the G.E. community engaged in the official sector of society can make essential information (e.g. preventative health) accessible to the wider community, especially to those that are not proficient in French. On the other hand G.E. speakers living in a more traditional environment can share their knowledge on linguistic, cultural and traditional aspects of G.E. life with the former.

1.4 Research questions and theoretical framework

The goal of this thesis is as pointed out earlier, to research the formal and semantic properties of the G.E. nominal classification system.

1.4.1 Overview of nominal classification systems

Nominal classification systems may be defined, following Allan (1977: 285), as systems in which nouns have "(a) morphemes in surface structures under specifiable conditions; (b) they have meaning in the sense that a classifier denote some salient perceived or imputed characteristic of the entity to which an associated noun refers (or may refer)".

Different grammatical systems around the world are subsumed under what is described as nominal classification systems. These types of noun categorization systems are reviewed here based on typological characteristics (Aikhenvald, 2000, Grinevald, 2000).

This section discusses the main morphosyntactic properties of noun categorization devices and some of their geographical distributions. The cross-linguistically preferred semantic parameters used in noun categorization devices are outlined in chapter 5. The discussion below aims at justifying the definition of Gújjolaay Eegimaa as a language with

a nominal classification system and showing the type of system it exhibits within the larger context of noun classification systems.

The classifiers systems outlined below occur in a continuum "arranged along a lexical-to-grammatical axis" (Grinevald, 2000: 61). On the one end are gender/ noun class systems which are the most grammaticalized systems, and on the other end of the continuum, the lexical systems with classifier systems.

1.4.1.1 Noun classifiers

Noun classifiers are non-agreeing free morphemes that occur in a noun phrase (Aikhenvald, 2000, Grinevald, 2000). They may function as determiners or independent pronouns, as in Jakaltek (Grinevald, 2000). Noun classifiers may in some cases be cliticized to a noun or occur as a subclass of nouns (Aikhenvald, 2000: 91). Similar to numeral classifiers one of the characteristics that differentiates them with noun class/ gender systems for instance (cf. 1.4.1.7 below), is that not all nouns take a classifier in noun classifier languages. However, it is possible for different noun classifiers to occur with the same noun to express semantic differences.

Noun classifier systems may comprise a "small closed set or fairly large open set" (Aikhenvald, 2000: 81). But the choice of the classifier in such systems is semantically based. Noun classifier systems have been reported in some Mesoamerican languages (Grinevald, 2000), a number of Australian languages where they are referred to as "generics or generic classifiers" (Aikhenvald, 2000, Dixon, 1982, Wilkins, 2000), Amazonian languages, East and South East Asian languages (Aikhenvald, 2000) amongst others. Example (5) below taken from Grinevald (2000: 65) (originally from Craig (1986: 264) illustrates noun classifiers from Jakaltek, where the noun classifiers occur as determiners of the noun.

(5).   *xil*   *naj*   *xuwan*   *no7*   *lab'a*
        saw   CL (man)   John   CL (animal)   Snake
        '(man) John saw the (animal) snake'

1.4.1.2 Numeral classifiers

Like noun classifiers, numeral classifiers occur in the noun phrase, more precisely in the numeral NP, but are also not involved in agreement. Numeral classifiers commonly occur as independent lexemes, but they may also be affixed to numerals (Aikhenvald, 2000). The choice of a numeral classifier is, similar to noun classifiers, semantically motivated. However with numeral classifiers, the choice of the classifier often shows speaker variation (Aikhenvald, 2006: 466). Moreover, not all nouns in a numeral classifier system take a classifier (Aikhenvald, 2000, Grinevald, 2000). It is also possible to alternate different classifiers with the same noun to express semantic distinctions.

Numeral classifier constructions differ from noun classifier constructions in that they express quantity whereas noun classifiers do not. Two basic subcategories of numeral classifiers can be noted; "mensural" classifiers used for the quantification of entities and those that do not express quantity, "sortal" classifiers, used to refer to the kind of entity referred to. Geographically, numeral classifiers can be found in Southeastern Asia, East Asian languages, and also in the Americas and Oceania (Grinevald, 2000). Even though they are very rare among Niger-Congo languages, numeral classifiers have been reported in languages such as Kana, a Kegboid language, and Ejagham a Southern Bantoid language, which also has a noun class system (Ikoro, 1994). Examples (6) and (7) below taken from Grinevald (2000: 63) (originally from Li and Thompson (1981: 105)) shows the occurrence of numeral classifiers in Chinese.

(6). *san-ge*   *ren*
      three-CL   person
      'Three people'

(7). *nei-liu-ben* *shu*
      that-six-CL   book
      'Those six books'

1.4.1.3 Verbal classifiers

As suggested by their name, verbal classifiers occur inside the verb, but not in the NP to classify the referent of the noun (Aikhenvald, 2000, Axelrod, 2000, Grinevald, 2000).

Three types of verbal classifiers can be distinguished: verbal classifier affixes, classificatory noun incorporation where the noun is incorporated into the verb to characterize its external argument, and classificatory verbs, a lexical means of nominal classification (Aikhenvald, 2000, Grinevald, 2000). The choice of verbal classifiers is generally semantically based. As pointed out by Aikhenvald (2000), not all nouns take a verbal classifier. However, it is possible for one noun to take more than one verbal classifier. Verbal classifiers do not show agreement with nouns. Geographically, verbal classifiers are found in North American languages, Northern Australian languages, and Papuan languages, among other languages (Aikhenvald, 2000). Consider the examples (8) and (9) below which illustrate a classificatory verbs from Ika (taken from Aikhenvald (2000: 157) originally from Frank (1990: 55).)

(8).   *kʌn*   ***gakó***   *ú*
        stick   put.down:LONG.OBJECT   AUX
        'Put down the stick!'

(9).   *ríbru*   *pa*   *ú*
        book   put.down:FLAT.OBJECT   AUX
        'Put down the book'

1.4.1.4 Possessive classifiers

Possessive classifiers occur in possessive constructions, where a limited number of nouns are selected for classification (Aikhenvald, 2000, Grinevald, 2000). These are non-agreeing classification systems in which nouns do not obligatorily occur with classifiers. Possessive classifiers may occur as independent words or affixed to possessed nouns or possessive markers (Aikhenvald, 2000). Aikhenvald (2000) distinguishes three types of categorization devices in possessive constructions. In the first case ("possessed classifiers"), a noun is categorized based on the nature of the referent of the possessed noun e.g. its physical properties. In the second case ("relational classifiers"), the choice of the possessive classifier is motivated by the relationship between the possessor and the possessed item. Finally in the third case of "possessor classifiers", it is the possessor that is categorized, based on its properties.

The first type of possessive classifiers found in North but also South American Indian languages as well as in multiple classifier systems (1.4.1.8 below). The second type of possessive classifier system is found among other languages, in Oceanic languages and also South American languages. As for languages of the third type, which are said to be cross-linguistically rare, (Aikhenvald, 2000), they are found in Northwest Amazonia. The examples used here as illustrations are taken from Aikhenvald (2000: 127) (but originally from Carlson and Payne (1989).) They illustrate the occurrence of a possessed classifier for pet in Yavapai in (10) and a generic possessed classifier in Hualapai (11) below.

(10).   *qoleyaw*   *ʔ-ñ-hat*
           chicken   1SG-GENITIVE-CL:PET
           'My chicken (chicken my pet)'

(11).   *mad̰*   *ma*   *m-winych*
           land   your   2SG-CL:GENERAL
           'Your land'

1.4.1.5 Locative and deictic classifiers

Locative classifiers occur in prepositional phrases (Aikhenvald, 2000, 2006, Allan, 1977). Their choice is semantically determined by physical properties e.g. shape, dimensionality etc of the referent of the argument of the locative adposition (Aikhenvald, 2000: 172-173). Locative classifiers should not be confused with locative classes found in Niger-Congo noun class languages which typically indicate "specific", "general" and location "inside" (Welmers, 1973). Locative classifiers are found in languages such as Dâw in North West Amazonia. The Dâw examples used here ((12)(13) below) to illustrate locative classifiers come from Aikhenvald (2000: 175) (originally from Martins (1994: 53)).

(12).   *xoo-kɛd*
           canoe-IN:HOLLOW
           'In a canoe'

(13).   *nââx-pis-mĩʔ*
           Water-small-IN:LIQUID
           'In a small river'

1.4.1.6 Deictic classifiers

Deictic classifiers have as their scope the noun phrase, where they occur on articles and/ or demonstratives (Aikhenvald, 2000, 2006). Similar to locative classifiers, the choice of the deictic classifiers is semantically based in that nouns are categorized on the basis of the physical properties e.g. shape, animacy and position in space. Deictic classifiers are found in North American and also South American languages. They have also been identified in Chadic languages like Goemai as illustrated in example (14) below (Hellwig, 2003: 194).

(14).   *Goe-k'oon*   *n-k'oon-hoe*
         NOMZ(sg)-face_down(sg)   ADVZ-face_down(sg)-exactly
         'The facing down one.' [DIS_4.6A/N]

1.4.1.7 Noun class and gender classifiers

Systems of nominal classification referred to as noun class and gender are subtypes of one bigger category of noun categorization devices whose main definitional criterion is the presence of agreement (Aikhenvald, 2000, Corbett, 1991, Creissels, 1994, 1999, Dixon, 1982, 1986, Greenberg, 1978, Grinevald, 2000, Heine, 1982). The term gender is often used as a cover term for these two subsystems of nominal classification (Corbett, 1991, Creissels, 1999). However, the use of this term is generally restricted to languages that make a sex based differentiation like masculine versus feminine and/ or neuter as in Afro-Asiatic languages such as Hausa (Jaggar, 2001) and Indo-European like French and German. On the other hand, the term noun class which is used here, mainly refers to systems that do not make a distinction based on the biological sex of the referent such as Niger-Congo Bantu and Atlantic languages, but also Amazonian languages (Seifart, 2005) amongst others.

Noun class and gender are the most grammaticalized types of nominal classification systems. In both gender and noun class subsystems, all nouns are assigned to a class which is usually signaled in noun class systems by the combination of an affix with a noun stem and agreement on dependent elements (e.g. the definite article and the demonstrative) and the verb. Consider the Gújjolaay Eegimaa example in (15) and (16) below where the

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agreement markers are highlighted in boldface. In the example below, the noun class prefixes agree with the definite determiner and the pronominal verbal prefix[25]. Note that there are cases of phonological dissimilarities between noun class markers and agreement markers which have semantic motivations as will be discussed in detail in chapter 4 (cf. 4.1.2 below).

(15).   *e-xondor*   *yayu*   *e-xuli-e*
         NC3-neck   NC3:DEF   CD3.3SG-long-PFV
         'It is the neck that is long' (ss041015_clarice)

(16).   *e-kkar*   *yayu*   *e-roŋ-ulo*
         NC3-bus   NC3:DEF   CD3.3SG- remain-DIR.PFV
         'The bus has not arrived yet' (part-obsv)

Gújjolaay Eegimaa, as shown in the examples above, exhibits formal properties of a noun class language. A detailed study of the formal and semantic characteristics of the noun class system is provided in chapters 4 and 5.

1.4.1.8 Multiple classifiers

In addition to the major types of nominal classification systems outlined above, multiple classification systems are also attested in some languages. In these types of classification, a set of classifiers is attested in up to six different classifier environments among which demonstratives, numerals, adjectival modifiers etc., and may have a derivational function and functions as nominalizers (Aikhenvald, 2000). Multiple classifier systems are found in a number of South American languages, in some Papuan and Austronesian languages and several East and Southeastern Asian languages (Aikhenvald, 2000). Example (17) and (18) below illustrate the occurrence of a classifier with a numeral and a demonstrative in Thai taken from Aikhenvald (2000: 213) (Originally from Hundius and Kölver (1983).

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[25] The alternation between noun class markers and semivowels in agreement markers is discussed in the next chapter (cf. section 2.5.5)

(17).   *rôm*   *săam*   *khan*
          umbrella   three   CL:LONG.HANDLED
          'Three umbrellas'

(18).   *rôm*   *khan*   *nii*
          umbrella   CL:LONG.HANDLED   this
          'This umbrella'

1.4.2 Main research questions and theoretical background

This study addresses several of the following ongoing theoretical questions raised in typological research on nominal classification systems (Craig, 1986, Senft, 2000):

- How is the number of noun classes defined (cf. Chapter 4)?
- What kind of agreement system is displayed by G.E. (cf. Chapter 4)?
- Is the noun class system semantically based (cf. Chapter 5)?
- What are the parameters of semantic classification employed in the language (cf. Chapter 5)?
- What is really classified? Nouns or extra-linguistics entities (cf. Chapter 5)?
- Do noun class markers have meaning (cf. Chapter 5)?

1.4.2.1 Theoretical framework

1.4.2.1.1 Categorization

The investigation of the semantic motivations of the G.E. noun classification system is based on the assumption that the nominal classification of Gújjolaay Eegimaa is a system of categorization of nouns and entities which is formally manifested by agreement. The term categorization as used here is borrowed from cognitive linguistics and designates the mental process of grouping and distinguishing kinds of situations and entities (Lakoff and Johnson, 1980, Lakoff, 1987, Löbner, 1999, Taylor, 2003).

Categorization comes from the need to classify the load of information that humans receive in order to reduce the complexity of the environment. As argued by Taylor (2003: xi) , "in order to survive, a creature has to be able, at the very least to distinguish what is edible to what is inedible, what is benign from what is harmful." Whenever we name or perceive something as kind of another thing, we are categorizing (Lakoff, 1987: 5).

Categorization is thus the mental (i.e. cognitive) process of classifying experience and is sometimes reflected in language as in nominal classification systems.

There are different categorization theories which attempt to show not only how categorization operates, but also what the structure of categories is. In this section I give an overview of the "classical" view of categorization based on accounts provided in the literature (Kleiber, 1990, Lakoff, 1986, 1987, Taylor, 2003) and contrast it with "prototype" theory, used in this study, before discussing its relevance to the nominal classification system of Gújjolaay Eegimaa.

1.4.2.1.1.1   The classical view of categorization

The theory of categorization referred to as the "classical view" is usually attributed to Aristotle and is the most established in anthropology, psychology, philosophy, linguistics amongst other disciplines (Lakoff, 1987). According to this approach, a category is a set of entities that have a common denominator. For an entity to be a member or exemplar of a category it has to possess a set of Necessary and Sufficient Conditions (NSC) which constitute the definitional criteria for class membership. Suppose we define the concept 'dog' as a category. Features such as [+four legs] and [+bark] can be used as definitional criteria for that concept. Using these criteria, we can distinguish dogs from other animals which may have four legs but do not bark, for example pigs.

For the classical view of categorization, definitional features of categories are binary. Thus, entities are unambiguously assigned to categories on the basis of the presence or absence of those definitional features. It follows from this that categories have clear boundaries. An entity is either a member of a category or it is not, because it either possesses the definitional criteria or does not possess them. Within a category X, all members have equal status i.e., no member of a category is a better example of that category than others. Thus categories, according to the classical view, do not have an internal structure. The diagram in Figure 3 below taken from Givón (1986: 77) illustrates category membership according to the classical view of categorization. The set B (in light green) is a member of category A (in bright green) because it possesses the necessary classificatory features of that category. By contrast, the set C (in sky blue) which does not have the required properties to be included in category A, exists as a different entity.

Figure 3: Diagrams of classical category types
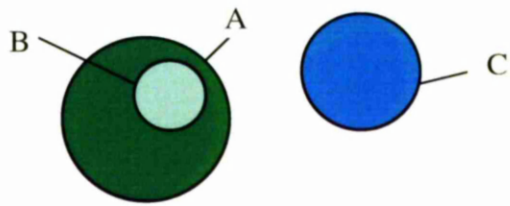
Applied to the nominal classification system investigated in this thesis, we can propose that class 1*a*- labeled "the class of humans" can be taken as a category in the classical sense, because all noun referents in this class have as a common denominator, the feature [+human] (cf. 5.3.1.1).

The limitations of the classical view of categorization have been shown especially within the prototype theory developed in cognitive linguistics.

1.4.2.1.1.2   *Prototype theory*

The account of the nature of categories proposed by the prototype theory stands in radical opposition to that of the classical view of categorization. Prototype theory, which developed mainly from research in cognitive psychology (Rosch, 1975, 1973) states that categories are not rigid as argued by the proponents of the classical view. In the early days of its development, it was argued that categories have best exemplars, i.e. more representative members, and that membership in a category is a matter of degree of similarity to the most central example (the prototype). It follows from this that members of a category do not have equal status. The least good members of a category need to share at least one property with the best example in order to be included in that category. As a consequence, categories were defined as having fuzzy rather than clearly defined boundaries. Figure 4 (from Givón, 1986: 79) represents category structure as proposed by the early version of prototype theory. The four characteristics shared by A, B, C and D represented by the intersection between these sets constitute the prototype i.e., the most representative members, which regulates category membership. On the other hand, less prototypical members of the category which vary in degree in relation to the prototype e.g.

members of the intersection between B, C and D, possess less than four classificatory characteristic features.

Figure 4: Diagrams of prototype as most central exemplar[26]
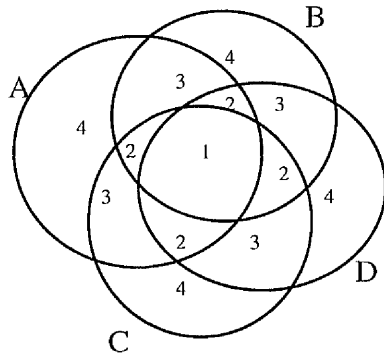
With Rosch's later research (1978), phase 3 according to Lakoff (1987), a new version of prototype theory developed, resulting in a different interpretation of the notion of prototype. Kleiber (1990) talks about the standard as opposed to the extended version of the prototype theory. He argues that the extended version of the prototype theory, builds on the notion of family resemblance, but is not necessarily a continuation of the standard theory of categorization. This approach, which is largely based on Lakoff's (1987) work, does not use prototypes as a reference point for the classification of other members of a category. Rather, the prototype model as the best exemplar has been abandoned in favor of a representation in terms of family resemblance translated by the term "prototype effects" (Lakoff, 1987).

According to this later development of categorization, prototypes are interpreted as by-products of structures called Idealized Cognitive Models which are said to structure our knowledge (Lakoff, 1987). A prototype in this sense may be understood, following Taylor (1995: 59), as a "schematic representation of the conceptual core of a category. On this approach, we would say, not that a particular entity is a prototype, but that it *instantiates*

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[26] The figures inside the diagram show a gradation in category membership from the most representative i.e., "1" to the least which is "4". It shows that elements in 4 are exclusisvely members A, B, C, or D.

the prototype". According to this new development, categories are no more organized on the basis of the degree of similarity of the less good exemplars with the most representative member of the category (the prototype). Categories in this sense have complex structures comparable to family resemblance. They are linked by a process of chaining where members located at the two ends of the continuum may or may not have something in common. This type of categorization through chaining may have culture-specific motivations e.g. domains of experience which may be the sources of the link between members of the category. By and large, assuming that A, B, C, D are members of a category "radially" structured by a process of chaining, a representation of such a chaining process that links them would be of the type AB, BC, CD (Givón, 1986: 78) as shown in Figure 5.

Figure 5 : Categories structured in a chaining process
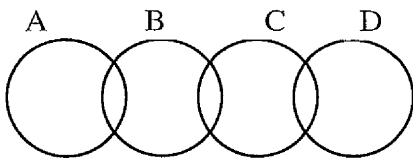
Categories can be extended through metaphor and metonymy (Lakoff and Johnson, 1980, Lakoff, 1987, Taylor, 1995). The difference between these two processes can be pointed out paraphrasing Cruse (2000: 209) as follows: whereas metaphor is a process of structuring one domain in terms of another one, metonymy is an association of two components within the same domain. Metaphor and metonymy in this sense are conceptual i.e., they are not mere linguistic artifacts, but means whereby abstract areas of our experience are understood in terms of the more familiar and concrete ones (Lakoff, 1987). For instance, the English expression *time is money* is, according to Lakoff and Johnson (1980) metaphorical since time is understood as a commodity. Thus, similar to money, time can be spent, wasted, budgeted etc. Metonymy on the other hand may consist of understanding one thing by focusing on its parts or what it stands for. For example *the pork chop left without paying* (Taylor, 1995: 123) refers to the customer rather than the dish itself.

1.4.2.1.1.3   Reviews of the prototype theory of categorization

One of the examples used to explain the relevance of prototype theory in categorization is the Dyirbal noun classification system (Lakoff, 1986, 1987) initially studied by Dixon (1982). With Dyirbal, Lakoff (1987: 92-96) argues that the four words, *bayi, balan, balam,* and *bala* "classify all objects" in the speakers' universe and using the correct classifier is essential to speaking Dyirbal correctly.

The Dixon-Lakoff hypothesis, a term I borrow from Amidu (1997: 213), suggests that "there is a basic, productive, and fairly simple general shema that operates unless some specialized principle" e.g. the "domain of experience principle", the "myth-and-belief-principle" or "the important-property-principle" takes precedence (Lakoff, 1987: 93-94). For example, birds are said to be incorporated in Dyirbal class II on the basis of the "myth-and-belief principle" because they are "believed to be the spirits of dead human females" (Lakoff, 1987: 94). Another example is the incorporation of fire in the same class as women based on the domain of experience principle (Lakoff, 1986: 22). The Dyirbal system of classification, is according to Lakoff, a case which illustrates general principles of human categorization which include "centrality", "chaining", "Experiential domains", "Idealized models" and "specific knowledge" (Lakoff, 1987).

Amidu (1997: 213-215) criticizes what he calls the Dixon-Lakoff hypothesis, stating that "one man's cognitive class often turns out to be implausible or without merit as far as his neighbor is concerned". He proposes a possible alternative semantic explanation for some aspects of Lakoff's conceptual analysis of the Dyirbal noun classification system. For example, he states that "hawks are in class (I) because like most animates, they are warrior-like and hunt for prey like human hunters do and so they are symbolically identified with men rather than with women. On the other hand also, many hawks are flesh eating cadavers or birds of prey which violate the sacredness of the dead body and so cannot be classified in class II where the spirits of dead females are found" (Amidu, 1997: 214). Note however, as he states, this does not imply a complete denial of the domain of experience principle. The criticism is that "conceptual speculation" such as the one proposed by Lakoff "can be endless".

In Niger-Congo languages, Moxley (1998) uses the Dixon-Lakoff hypothesis to account for the semantic basis of the Swahili nominal classification. He argues that

"following the publication of Lakoff (1987), we are now able to show the validity of semantic networks structured by motivated extensions" (Moxley, 1998: 67). Maho (1999: 66) disagrees with such a claim on the grounds that the main usefulness of the semantic networks is "the interrelationship between language and culture rather than language and cognition".

1.4.2.1.1.4   Relevance of categorization theory to the G.E. nominal classification

The different theories of categorization outlined above vary in their success in trying to account for the semantic motivations of the noun classification system of Gújjolaay Eegimaa. The classical theory of categorization may, on the basis of the criteria [+human] account for the inclusion of most nouns of human denotation in class $1a$-[27]. However it does not explain why other humans are included in other classes, such as the default class pair 3 e-/ 4 su- (cf. 5.3.1.2), the class of assemblages class 5 bu- (cf. 5.3.1.3), and the class of flat, wide, augmentative and derogative meaning class 9 ga- (cf. 5.3.1.5), or why within the class termed the class of humans, the plural nouns denoting humans are distributed in different subcategories.

The discussion of the semantic categorization underlying the use of noun classes in G.E. (cf. Chapter 5) will show that these are mere apparent anomalies that can be accounted for by an analysis based on prototype theory. Despite the criticism addressed to such a theory, the application of many of its proposals has been essential for an explanation of the semantic basis of noun classification in G.E.

A discussion of the cross-linguistic semantic parameters of nominal classification is provided in section 5.2.1 below. There, I also outline the study of the semantic basis of noun classification in different language families and groups within the Niger-Congo phylum.

1.5 Fieldwork and data collection

The fieldwork for this thesis was undertaken during a total period of nine months divided into four months in 2004 (July-November) and a six-months period between 2005

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[27] The morpheme a- is used to designate noun class 1 in the rest of the thesis. It should not be confused with the vowel "a" which is used to indicate a subclass like 5a bu- or 7a fu-.

and 2006 (December-June). Most of the research took place in the village of Essil. Only a few recordings were made in four other villages of Mof-Ávvi; Gáabal, Enappor, Sállagi and Banjal (1.3.5.2 above). The majority of my recordings were done using Gújjolaay Eegimaa as a metalanguage, with frequent use of French, especially during elicitation sessions. The data were collected in audio and video format and in written form in notebooks.

1.5.1 Kinds of data

The different kinds of data collected during the fieldwork may be divided into the following types based on Himmelmann's (1998) types of communicative events:

1.5.1.1 Elicitations

Grammatical elicitation consisted of asking consultants to translate or evaluate the grammaticality of linguistic expressions I proposed or previously elicited. I undertook lexical elicitation using the French word lists compiled by Bouquiaux and Thomas (1976) and a questionnaire by the Centre de Linguistique Appliquée de Dakar (CLAD, 1979). Consultants were expected to translate words and comment on their possible uses. I also used "contextualizing elicitation" (Himmelmann, 1998) to collect a few proverbs based on the lexical elicitation, a list of plants and trees, their physical properties and their relations to the community, with the help of a native speaker botanist (Dr. William Gúippory Diatta), and many other terms related to a range of semantic domains e.g., proper nouns, place names, animals and insects etc.

1.5.1.2 Observed communicative events

This includes the type of data collected from spontaneous speech through participant observation, where my interference was as limited as possible. The type of collected data assigned to this category includes notes taken from daily interactions, recorded conversations, and ritual performances etc, which are labeled part-obsv in the examples of the main text. My participant observation often required active participation in events such as libations, funerary rituals etc. In most instances of data collection through participant observation, it was not possible, as a native speaker, to be a mere passive observer since I was generally expected to contribute to the event.

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1.5.1.3 Staged communicative events

Staged communicative events were performed on my request for the purpose of recording. These communicative events constitute most of the text genres I collected. They include narratives, personal stories, historical narratives, and songs. I also organized interviews on different topics on many vanishing cultural aspects of the Gújjolaay Eegimaa people, such as mourning practices, the kinship system, the naming of children, the kingdom and its function, among other topics. The objective in undertaking many of these interviews was not only text collection, but also a way of expanding my cultural knowledge which proved to be useful for my analysis of the semantic basis of the noun class system. Similar to observed communicative events, my participation may be partial (asking questions) or full depending on the frequency at which the main speaker requires my interference.

1.5.1.4 Experiments based on picture stimuli tasks

I conducted a number of experiments, whose aim was to investigate shape encoding in G.E. The experiments were carried out with the use of pictures of objects originally designed by the researchers at the Max Planck Institute for Psycholinguistics (MPI) in Nijmegen. The tasks used during my research were adapted from techniques used for field-based classification research (Hellwig, 2003, Seifart, 2005). These pictures were complemented with pictures of objects unfamiliar to speakers, taken by myself or compiled from the internet. The objects shown in these pictures have different shapes and sizes. The experiments included different tasks with the participation of a minimum of six consultants per task. The tasks are described in detail below.

1.5.1.4.1 The description task

As its name indicates, this task consisted of describing objects featuring in colored pictures. These pictures contained objects of various shapes, and a consultant was asked, to describe the different objects in the picture using the pro-form *nde* 'what do you call it/ so and so' to which they attach a prefix noun class marker. Four of the twenty pictures are presented in Figure 6 below for the sake of illustration. Recall that in the language, every word normally combines with a noun class marker. What was interesting to discover is

which noun class prefix was chosen, why and whether different speakers consistently chose the same noun class marker or different ones.

Figure 6: Pictures used in the description task experiment
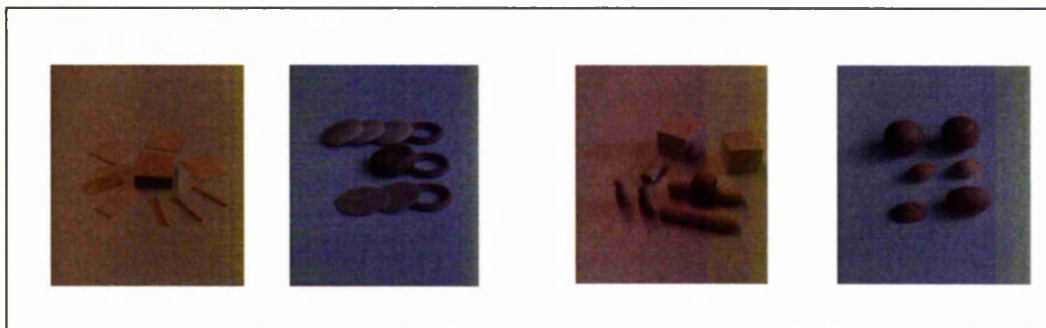
In the description of the pictures consultants are required to describe the location of every object in relation to others. For example, whether the object described is long and round and is inserted in another one having a round shape with a hollow. This of course, required the choice of a noun class marker. The aim of this task was to find out whether the use of different noun class markers correlates with certain shape types.

1.5.1.4.2 The matching task

The matching task is inspired by Hellwig (2006) and Seifart (2005). It uses the same pictures as the description task (cf. Figure 6) explained in the previous section. In this task two consultants use ten similar pictures each. One of them acts as a "director", picking randomly one of the ten pictures and describing the objects it contains to the "matcher" whose only guidance is the verbal description provided by the director. Consultants are placed at two ends of a table so that neither of them sees the pictures of the other. If the matcher fails to recognize the picture after three attempts, the director is required to move to another picture. The objective of this task was to find out based on the description of the configuration of objects whether there is an agreement between the speakers as to what shape coincides with the use of prefixes. After one turn the two consultants change roles.

1.5.1.4.3 The baptizing task

In the baptizing task, I used novel objects of different kinds, including fruits of different types and sizes and then asked consultants to name them. Some of those pictures were taken from the internet whereas others were taken by me on a pavement in London. Whenever the consultant was reluctant to invent a name for the objects, I proposed a noun stem and asked them to choose the appropriate noun class marker from the entire list of noun class prefixes. The aim of the task is to determine further motivations for the choice of a noun class marker. The use of different types of fruits and nuts in the tasks was motivated by a previous observation that nuts, either edible or not tend to be assigned to different classes than fruits. The pictures in Figure 7 below are illustrations of those used in the baptizing task.

Figure 7: Pictures used in the baptizing task
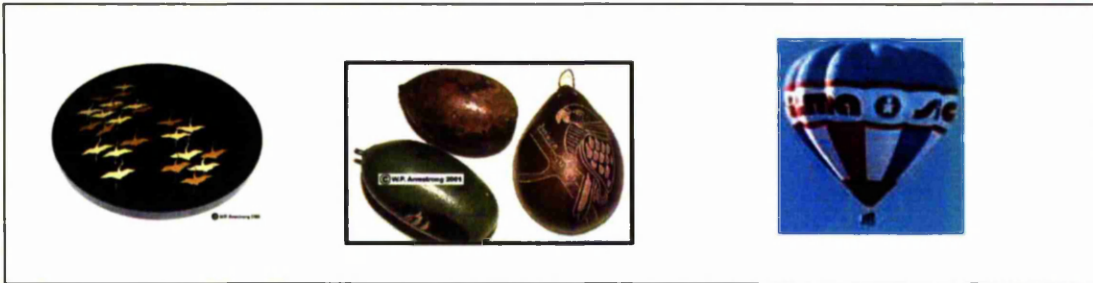
1.5.1.4.4 The map task

The map task also used the pictures of objects of the description and the matching tasks some of which are illustrated in Figure 6. The pictures of different objects are cut and then pasted onto two A3 papers. Similar to the matching task, the matcher uses a pencil to draw lines from one object to the other to try to match the lines drawn by the director. Here again, the director describes the object from which a line is drawn to another, and the matcher relies on the sole description of the former since neither is allowed to see the content of their partner's paper. At the end of each turn both change roles. The goal of the map task is to follow up the description and the matching tasks, to find out whether the director's description matches with the matcher's intuition. Figure 8 below shows an extract of the two A3 papers containing the pictures used in the map task.
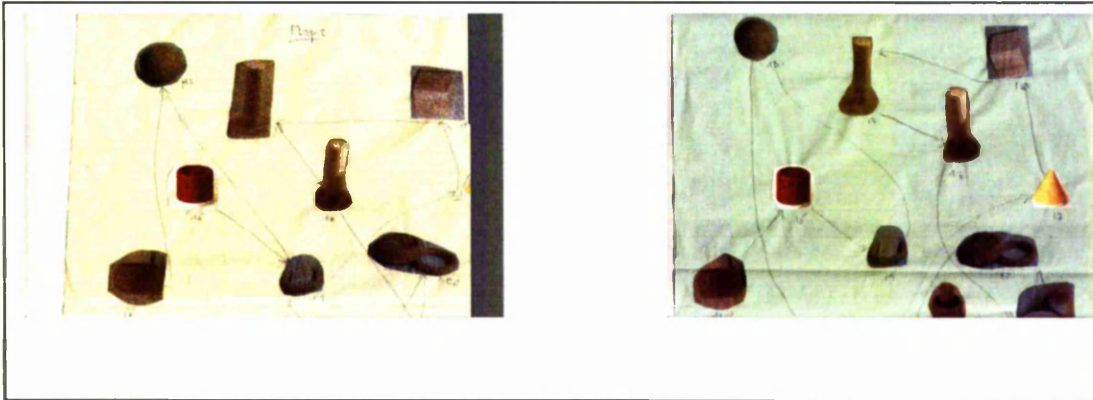
1.5.1.4.5 The power point picture task

The last picture stimulus technique consists of a slide show of a few drawings changing shape and size from the source (the smallest) to the target (the largest) in a power point presentation (Lüpke, 2005b). Consultants were expected to use the pro-form *-nde* 'what do you call it/ so and so' to describe the small objects whose length and or size was increasing during the slide show by attaching a prefix to them. This task also seeks to find out; (1) whether the shape of the object is reflected in the choice of the prefix; (2) what prefixes are used as the length or size of the objects increases and consequently, whether some prefixes express bigger size than others. Pictures used in the power point task are illustrated in Figure 9 below[28]. These pictures show the source and the target states of the objects included in the power point task.

Figure 9: Pictures used in the power point task

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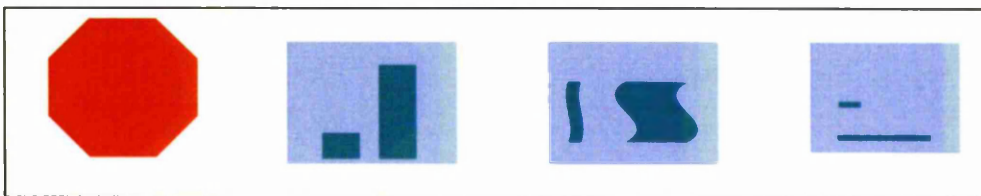
[28] Note the colour of the octagonal object was not in focus in this task. Only the shape of the object was taken into account in the description. Also the size of the octagonal object did not change during the task.

The results of the task undertaken here are discussed in chapter 5 (cf. 5.4.2.4.2 below).

1.5.1.5 Summary of the data

This section provides a description of the twelve hour sample that was selected from the recorded data obtained from the communicative events discussed above and used for the analysis proposed in this thesis. It does not include the experiments and the lexical and grammatical elicitations. The labels of these recording are put between brackets in the glosses throughout the text proposed here. Narratives used here are generally tales as well as a personal history, while interviews are monolingual discussions on specific cultural aspects of the G.E. people. Songs presented here are mainly those used during funerals. The cultural event explored for this thesis is a video recording of a funeral ceremony.

Table 1: Recorded data used to produce the text data

Label	Format (Audio/ Video)	Length of recording	Genre
ss041013_gnabai	A	40.18mns	Narrative
Ñuxul-dembo 2005	V	60:00mns	Cultural event
Jumuxulonjong_2004	A	30mns	Narrative
ss041013_tiop	A	23.64 mns	Narrative
ss060428_kup	A	52 mns	Interview
ss040817_abas	A	91:25mns	Interview
ss041013_matar	A+V	56.16mns	Interview
ss060426_dim	A	54mns	Interview
ss040908-fir	A	60:20 mns	Interview
ss040928-ñuxul	A	71 mns	Interview
Gammor-ñuxul-Dembo + uccigo	A	60mns	Songs
Ss041015_clarice	A	18.25mns	Songs
ss040828_01sidda	V	67:23mns	Personal history
ss040919_adt	A	25:51mns	Conversation
ss060426_fir-ao-hono	A	45mns	Conversation
Total		754.42 mns(12.57 hours)	

1.5.2 Contributors

Many native speakers have directly or indirectly contributed to the collection of the data used for the analysis presented here. Among these speakers are multilingual speakers

and some of the rare monolingual speakers of G.E., usually above sixty years old. The age of consultants which ranges from twenty to sixty is given whenever possible in the appendix where their sociolinguistic information is also provided.

Both male and female consultants contributed to this research, but the former were the most readily available and thus constitute the majority of contributors. Most consultants were born and bred in Essil or other villages of Mof-Ávvi where I undertook some research. Except for the oldest among them who have not been to school, the level of formal education of consultants ranges from primary school education to university education including one lecturer.

2 Phonology and morphophonology

2.1 Introduction

This chapter deals with the segmental phonology and the morphophonological processes in Gújjolaay Eegimaa. The most noteworthy phonological features of Gújjolaay Eegimaa are its [ATR] (Advanced Tongue Root) based vowel harmony, the existence of geminate phonemes and nasal consonant clusters (NC clusters). I first present the phoneme inventory (2.2) and discuss the syllable structure in 2.3, before going on to investigate the phonemic status of vowels and their morphophonological forms in section 2.4. Section 2.4 also includes a discussion of vowel length and the so-called "disjunctive phoneme" introduced in a previous analysis of the language (Sambou, 1989) as well as [+ATR] and height vowel harmony. In section 2.4.4, I describe the phonology of consonants and their morphophonological processes, which include NC cluster formation, consonant assimilation, gemination, prenasalization and consonant loss. An important observation is that there are varieties of Gújjolaay Eegimaa that show regular phonological distinctions such as the presence or absence of vowel length. I argue that such a distinction, which has been ignored in previous works on the language (Bassène, 2006, Sambou, 1989, Tendeng, 2000), needs to be taken into account in phonological analyses of this language.

2.2 Phoneme inventory

2.2.1 Consonants

Gújjolaay Eegimaa has seventeen simple consonant phonemes all of which have geminate counterparts. In the discussion of simple consonant phonemes (2.4.4 below), consonants are grouped according to their manner of articulation. Table 2 presents the consonant phonemes of G.E.

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Table 2: Consonant phonemes of G.E

	Bilabial	Labio-dental	Alveolar	Palatal	Velar
Plosives	p/b		t/d	c/ɟ	k/g
Nasal	m		n	ɲ	ŋ
Fricative		f	s		
Lateral			l		
Approximant				y	w

2.2.2 Vowels

G.E. has a ten vowel system composed of two sets which are distinguishable on the basis of the presence or absence of the [ATR] (Advanced Tongue Root) feature (Stewart, 1967). [+ATR] refers to vowels that are produced with advanced tongue root whereas [−ATR] vowels are produced with neutral tongue root position. Every vowel in the [−ATR] set in Table 3 below has a [+ATR] counterpart. The counterpart of the [−ATR] central low vowel /a/ is represented with the schwa /ə/[29]. It is possible to find minimal pairs between the two sets. For instance, ɛvvɔ 'clean' contrasts with evvu 'to fly' and gaɛl 'noise' contrasts with gəel 'to nurse/ nursing' on the basis of the [ATR] feature. [−ATR] and [+ATR] vowels constitute two harmonic sets that are by rule mutually exclusive and trigger a process of vowel harmony (2.4.2 below). Note that vowel length, as will be shown in 2.4.1 below, is not phonemic in the G.E. variety described here.

Table 3: Vowel phonemes of G.E

	[−ATR]				[+ATR]		
	Front	**Central**	**Back**		**Front**	**Central**	**Back**
High	ɪ		ʊ		i		u
Mid	ɛ		ɔ		e		o
Low		a				ə	

2.3 Syllable structure

Segments are organized into larger syllabic units, which in turn are organized into groupings of a "higher level of organization" such as phonological words and phrases (Clements, 2000). A syllable is considered here to be a phonological constituent. This

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[29] The exact nature of the vowel represented by the schwa symbol /ə/ needs further investigation.

theoretical claim follows Blevins' (1995) and Clements' (2000) amongst other accounts of the importance of the syllable in phonological theory. In accordance with this assumption, a syllable is seen as an essential component in phonological analysis in that it is the basis for the application of rules at the segmental and suprasegmental levels. These rules include stress assignment and phonotactic constraints.

A syllable contains an essential part referred to as a nucleus or peak. The nucleus, the only obligatory constituent, can be preceded or followed by a margin which, depending on its initial or final position, and is referred to as an onset or coda respectively. Only a vowel can occur as nucleus in G.E. The nucleus and the coda constitute the rhyme. All simple phonological consonants (or their allophones) can occur in coda position. Most geminates are not attested in word-final position. Only the voiceless plosive stops /pp/e.g. /ɛʈɔpp/ 'to deafen' /tt/ e.g. /ɛβɔtt/ 'to deceive' and /kk/ e.g. /ɛɸɔkk/ 'to make a handful' have been found in coda position. However, as shown in 2.5.6 below, they are always simplified in that context. The onset of a syllable can be a simple consonant, a geminate or an NC cluster. Both closed and open syllables are attested in the language. In terms of weight, only light syllables, i.e. open syllables with a short vowel as a nucleus and heavy syllables, composed of a closed syllable, occur in G.E. The second type of heavy syllable which may be composed of long vowels or diphthongs is prohibited since branching nuclei are not attested in G.E. (see 2.4.1 below).

G.E. has four permissible syllable types of which the light syllable having a CV shape e.g. bɔ 'there' is the most common. All other attested syllables have the following shapes: V, ɔ 'him'; VC, an 'person'; and CVC mal 'water'. Not all syllable combinations are permissible in the formation of polysyllabic words in G.E. Constraints on syllable combinations in the word are summarized in Table 4 below, showing the combination of syllables to yield disyllabic words.

Table 4: Syllable combinations

		2nd syllable			
		CVC	VC	CV	V
1st Syllable	CVC	-	-	-	-
	VC	-	-	-	-
	CV	+	+	+	+
	V	+	+	+	+

The syllable structure forms that are included in rows represent word-initial syllables with which any other syllable type is combined. Symbols + and - show whether a given combination is attested or not. The table shows for instance that an initial syllable of the shape CVC cannot be followed by CVC, VC, CV or V syllable. CVC is either an only syllable or a final syllable. Likewise VC can only be in syllable final position in a polyssilabic word because it is not attested as the initial or medial syllable. Table 4 above also shows that the initial syllable of a polysyllabic word is always light. Note that the table only includes words composed of simple consonants. Thus a CC combination in Table 4 refers to a sequence of identical or non-identical consonants rather than a geminate or an NC clusters. It occurs when an initial CVC or VC syllable is followed by a syllable with an initial consonant. These complex segments are introduced later in this section.

Arguments on which the syllable division of Table 4 is based include native speaker's intuition and linguistic games[30] (Clements, 2000) where the consultant is first asked to break words into syllables and then switch them to different positions. As pointed out by (Blevins, 1995) "In a number of languages, native speakers have clear intuition regarding the number of syllables in a word or utterance, and in some of these, generally clear intuitions as to where syllable breaks occur".

In G.E., heavy syllables are always resyllabified in suffixation by assigning a coda to the onset position of the following syllable as shown in (1) below. Resyllabification also occurs through the insertion of an epenthetic vowel, generally a high vowel, to split the cluster of loanwords such as the French borrowed proper names in example (2). In the examples below, dots represent syllable boundaries.

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[30] Note that linguistic games consisting of shifting syllable position are not commonly used within the G.E. community. They were taken from the literature (Clements, 2000) and proposed to consultants as an experiment to test the ability for consultants to consistently assign phonemes to syllable positions.

(1).	*an*	'person'	*a.nɔm*	'my person (relative)'
	ɛ.ɔl	'fish'	*ɛ.ɔ.lɔm*	'my fish'
	jaŋ	'house'	*ja.ŋɔm*	'my house'

(2).	*a.lɪ.βɛr*	'Albert'	*bɪ.lɛs*	'Blaise'
	kɪ.lɛ.mas	'Clemence'	*sɛ.rɔs*	'Serge'

The results of the syllable division applied by consultants to these words show that individual vowels and subsequent vowels as well as consonants are clearly assigned to onset or coda positions. However, syllabification is less clear for geminates and NC clusters. None of these complex segments can be split by vowel epenthesis into two syllables that have the preferred CV syllable shape. In the syllable division tasks, geminates and NC clusters may in some instances be assigned to margin positions. However, the assignment of these clusters to onset and coda positions is not consistently applied to all situations. In many instances, the vowel preceding a nasal cluster tends to be nasalized. In other cases the nasal consonant of the NC cluster is pronounced twice as if it were part of both a coda and the onset of the following syllable (cf. (4) below). The same has been observed for geminates which are either realized as onset or split into final and initial segments of subsequent syllables (cf. (3)). Examples (3) to (5) below illustrate a few inconsistencies in syllable assignment of complex segments within and across speakers during the syllable games. Thus, one and the same speaker may not consistently treat a given complex segment, e.g. an NC sequence, as the syllabic onset, for instance.

(3).	*e.ron.do.ppen*	*e.ro.ndop.pen*	*e.ron.dop.pen*	'to menace'
(4).	*e.ro.ppen.ndo*	*e. ndo.rop.pen*	(syllables moved around) 'to menace'	
(5).	*ɛ.lɔ.llɔ.βen*	*ɛ.lɔl.lɔ.βen*		'to monologue'

Another common characteristic of NC clusters and geminates is that both undergo a process of phonetic simplification in word-final position. This reveals that G.E. does not permit two consonant positions word-finally. The fact that geminates and NC clusters are not clearly assigned to the syllable margin by consultants when they occur word-medially and are simplified in word-final position shows that restrictions are imposed on complex segments. The recourse to native speakers' intuition does not seem to give a clear answer to

the way geminate consonants and NC sequences should be analyzed. It will be suggested, however, that a geminate consonant (2.5.6 below) is a unitary phoneme, not a sequence of two phonemes, whereas an NC sequence is analyzed as a combination of two phonemes, a nasal and the following voiced consonant to which it is homorganic (2.5.3 below). Because in G.E. a coda can only have one skeletal position, geminates and nasal clusters undergo stray erasure. Stray erasure according to Blevins (1995), is the process by which unsyllabified segments are deleted. In G.E., such a process applies by way of the phonetic simplification of geminates and NC clusters in word-final position. The geminates are phonetically realized as simple segments while the voiced plosive consonant of an NC sequence is deleted.

2.4 Vowels and vowel processes

2.4.1 Vowel length and the "disjunctive phoneme"

In previous analyses of G.E., vowel length has been presented as having phonemic status (Sambou, 1989, Tendeng, 2000)[31]. Given the existence of sequences of identical and non-identical vowels which in rapid speech can be perceived as long vowels and diphthongs, it is important to distinguish the phonetic and phonological levels of analysis. In the variety of G.E. spoken in Essil, adjacent vowels are always heterosyllabic. This is further evidence that branching nuclei are not permissible in G.E. as argued in 2.3 above. Adjacent vowels are illustrated in (6) below, where the dot represents a syllable boundary.

(6).	fɔ.ɔx	'pestle'	ɛ.ɛx	'cassava'
	fi.ɛɸ	'chin'	ɛ.ɔ.ɔm	'my oyster'
	bɔ.na.a	'sun'	ɛ.ɸɔ.a	'hippopotamus'

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[31] Sambou's "Jóola Eegima'a" language seems to cover varieties of all villages of Mof-Ávvi. As a result, he integrates varieties spoken in Essil and Banjal without pointing out dialectal differences between the two varieties. Similarly, "Gusiilay" is used in Tendeng (2000) also seems refers to the language spoken by the same people of Mof-Ávvi. The term "Banjal" used in Bassène (2006) and in Sapir (1971) is also a cover term for the language spoken in Mof-Ávvi without a distinction of the dialectal varieties. In this work, a difference is made between Banjal, the G.E. variety spoken in the village of Banjal, and the variety spoken in other villages such as Essil.

Sambou (1989) posits the existence of a phoneme (the "disjunctive phoneme"), which in his analysis is responsible for the separation of adjacent vowels into different syllables. He argues that the "disjunctive phoneme" is attested in G.E. as it is the case for other Jóola languages. In Sambou (1979), he states that the disjunctive phoneme, which originates from glides has the distributional properties of consonants. He further argues that it is essential to posit this "disjunctive phoneme" only at the phonological level (not the phonetic) because it is used to account for morphophonological rules of assimilation and vowel deletion.

In G.E., there is synchronic evidence that glides (see 2.5.7.6 below) can occur between two adjacent vowels and alternate with Ø especially in non-fluent speakers speech. This is interpreted as the "disjunctive phoneme" by Sambou. In a few cases, the velar fricative [x] is inserted between adjacent vowels in Banjal, whereas in Essil's G.E., no segment occurs in that environment. Furthermore in a few lexical items that are shared between Jóola Fógny and G.E., consonant phonemes /x/, /l/and the glides /j/and /w/occur in the contexts where in G.E. subsequent vowels are in hiatus. Tendeng (2000) also mentions the occurrence of a glottal stop between vowels in sequence in slow speech to signal a morphological boundary. Example (7) below illustrates these occurrences showing a list of words from Essil and Banjal varieties of Gújjolaay Eegimaa and also Jóola Fógny with a difference of prefix in some words. Consonants that occur where in G.E. there is a Ø, corresponding to Sambou's "disjunctive phoneme" are highlighted in boldface.

(7).	G.E. Essil	G.E. Banjal	Jóola Fógny	Gloss
	ε.al	ε.**x**al	εxaal	'to ripen'
	ε.a.βɔʈ	ε.**x**a.βɔʈ	N/A (ε-tafa)	'ant'
	fɔ.as	fɔ.as	fɔlas	'broom'
	ε.ɩ.βa	ε.ɩ.βa	εlɩba	'knife'
	ε.alɔ	ε.a.lɔ	kawalɔ	'to come down'
	ε.ɩlɔ	ε.ɩ.lɔ	kajɩtɔ	'to stand up'

Examples (6) and (7) show that adjacent vowels can be separated by consonants in Banjal and Jóola Fógny, whereas in the G.E. spoken in Essil vowels only occur in hiatus. What is remarkable here is that in the variety of G.E. spoken in Essil, subsequent vowels are consistently assigned to distinct syllables. Clearly, as shown by the results of the syllable division game illustrated in (3)-(5) above, the syllable structure of G.E. can account

for this division of vowels into syllables without the need of a phoneme which does not have any phonetic basis. Therefore the mere need to account for morphophonological rules is not a valid reason to adopt Sambou's "disjunctive phoneme". The morphophonological rules of vowel deletion that are explained on the basis of the presence or absence of the "disjunctive phoneme" are not attested synchronically in G.E. As a result, following Sagna (2005) and also Bassène (2006) I argue that, in contrast to languages like Jóola Kaasa Essuulaaluʔ (Sambou, 1979), the "disjunctive phoneme" is not attested in Gújjolaay Eegimaa.

The direct consequence of the assignment of every sequence of vowels into different syllables is the impossibility of having a branching nucleus. Consequently, there are no phonemic long vowels in the variety of G.E. spoken in Essil – further evidence of the difference between the Banjal and Essil dialects. Vowel length seems to be phonemic in the dialect of Banjal[32]. Another important difference between these varieties of Eegimaa is that in the dialect of Essil, a geminate consonant precedes a short vowel in every context where a long vowel follows a simple consonant in the variety of Banjal. Consider words from the G.E. of Essil and Banjal in example in (8).

(8).　G.E. Essil　　　　　　　　　　　G.E. Banjal
　　　ɛppaŋ　　'kind of fish trap'　　ɛpaaŋ　　'kind of fish trap'
　　　bɔssana　'dug out canoe'　　　bɔsaana　'dug out canoe'
　　　bɪmmɪlɔm　'ceiling'　　　　　bɔmʊlɔm　'ceiling'

In short, contrastive vowel length seems to be attested in Banjal but does not have any phonological status in G.E. The examples above illustrate the resulting phonological differences between the two varieties in question[33]. Basically, length is expressed by

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[32] The phonology of the variety of Banjal needs to be studied separately from other villages of the Eegimaa area. This is important since people from the Banjal village have a long history of contact with Jóola people of both the Búluf and Kaasa areas and have borrowed some linguistic as well as cultural aspects from those peoples.

[33] It should be emphasized that these are two varieties of the same language with minor linguistic variations. It is argued here that the two phonological systems are very similar for these two language varieties. Only, length is a feature expressed on different segments, i.e. on consonants in G.E. and on vowels in Banjal.

geminates in Essil where in Banjal it is expressed in vowel length. This further illustrates the avoidance of vowel length in the variety of Essil.

2.4.2 [ATR] Vowel Harmony

Vowel harmony is a pervasive phenomenon in Jóola languages, and many other Atlantic languages spoken in Senegal e.g. Wolof (Ka, 1994) and Noon (Soukka, 1999). Vowel harmony is also widespread in Niger-Congo languages in general. All available previous descriptions of Jóola languages present an analysis of this phenomenon (e.g. Barry, 1987, Bassène, 2006, Sambou and Lopis, 1981, Sapir, 1965, Tendeng, 2000). The study of vowel harmony proposed here assumes the word as a domain of harmony. As pointed out above (cf. 2.2.2 above), G.E. vowels appear in two harmonic sets. As in other Jóola languages, vowels of monosyllabic words and non-affixed polysyllabic words belong to either of the mutually exclusive [+ATR] and [−ATR] harmonic sets. Words in example (9) below illustrate straightforward cases of vowel harmony where vowels in a word belong to one of the two harmonic sets.

(9). Words with [-ATR] vowels   Words with [+ATR] vowels

tɔ	'precisely there'	do	'inside there'
ɛvvω	'to clean'	evvu	'fly'
ɛltyts	'summit'	eyuṭum	'vulture'
ɛccaccarωmba	'spinning top'	eβambaxule	'dragon'

Affixation triggers a process of harmonization whereby vowels having the [+ATR] feature influence those of the [−ATR] set, resulting in the replacement of [−ATR] vowels by their [+ATR] counterparts listed in section 2.2.2 above. The opposite direction is not normally attested. This means that vowel harmony is governed by the [+ATR] set. Although vowel harmonization is bidirectional, it is predominantly regressive i.e. it tends to occur mostly from right to left. Prefixes are influenced by roots which in turn are influenced by certain [+ATR] suffixes. However [−ATR] suffixes are also realized [+ATR] under the influence of the [+ATR] root vowel. In the discussion of vowel harmony I restrict myself to the investigation of [+ATR] spreading in affixation. In this section, I first look at vowel harmony between prefixes and roots and than between the base formed by the prefix and the root and the suffix that is attached to that base.

2.4.2.1 Vowel harmony between prefix and root

Prefixes have two possible realizations as [+ATR] or [−ATR]. Their vowel quality depends predominantly on the root vowels. Prefix vowels do not trigger vowel harmony. As pointed out by Bassène (2006), the [−ATR] set contains the unmarked vowels, that is, those vowels that are realized with a neutral position of the tongue root. Prefixes of the [−ATR] set are considered the underlying forms because first, they always have the same quality when they occur with [−ATR] root vowels. Second, they remain [−ATR] when they combine with those [+ATR] suffixes that do not generate obligatory vowel harmony. Finally, these vowels only change their quality to [+ATR] under the influence of [+ATR] suffixes that generally require vowel harmony. The only cases where [−ATR] prefix and root combinations produce a [+ATR] word is cases of derivation resulting in deverbal nouns or nonfinite verb formations[34].

2.4.2.1.1 [−ATR] prefixes and [+ATR] roots

Roots with [+ATR] vowels generally transform the vowel of all prefixes from [−ATR] to [+ATR] as illustrated in (10) where [+ATR] roots are highlighted in boldface.

(10). **[−ATR] + [+ATR]**   ⟶   **[+ATR]**
      a-ɸur   ⟶   *ə-ɸur*   'young man'
      fɔ-rus   ⟶   *fu-rus*   'wind'
      ɛ-ggoṭ   ⟶   *e-ggoṭ*   'surround'

2.4.2.2 Vowel harmony and suffixation

Unlike prefixes whose vowel quality can only be [−ATR] before they harmonize under the influence of root vowels, suffixes can contain [−ATR] vowels or [+ATR] vowels. [−ATR] suffixes are by rule harmonized under the influence of the root vowels as exemplified in (11). So if the root is [−ATR] the output of the suffixation process is normally a [−ATR] word. In the examples below, roots are highlighted in boldface. It is

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[34] The change of vowel quality combined with a change of noun class prefix is one of the derivational strategies used in the language. For example ɛ-βɔɲ 'send' which is composed of [-ATR] vowels becomes gu-βoɲ 'sending/message' with [+ATR] instead of *gɔ-βɔɲ 'sending/message' when it combines with noun class 8 *gu-*.

assumed here that in a case of suffixation, prefix vowels undergo the same process as the one discussed in 2.4.2.1 above.

(11). **[−ATR] + [−ATR]**   ⟶   **[−ATR]**

     an-ɔm   ⟶   *anɔm*   'my relative'

     ɛ-ʈɛβ-ɛn   ⟶   *ɛʈɛβɛn*   'lift'

     nɪ-ʃɪy-ɛ   ⟶   *nɪʃɪyɛ*   'I have arrived'

2.4.2.2.1   [+ATR] root and [−ATR] suffix

A [−ATR] suffix changes to [+ATR] under the influence of an [+ATR] root. This case of progressive vowel harmony is illustrated in (12) below where the root containing a [+ATR] vowel is boldfaced.

(12). **[+ATR] + [−ATR]**   ⟶   **[+ATR]**

     ɛ-ɸur-ɛn   ⟶   *eɸuren*   'to remove'

     ɪ-ggɔʈ-ɔʈ   ⟶   *iggɔluʈ*[35]   'I did not go past'

     na-ffɔɲ-ɔm   ⟶   *nəffɔɲom*   'he/she sang for me'

In a number of cases, the [−ATR] vowel /a/ when it occurs in word-final position, does not change to [+ATR] when the root vowels are [+ATR]. At first glance, this constitutes an exception to the rule exemplified in (12) above. However as argued in Bassène (2006), in word-final position, the central low [−ATR] vowel /a/ undergoes vowel harmony only when the preceding syllable contains its [+ATR] counterpart. In all other cases it behaves like a neutral opaque vowel (Van der Hulst and Van de Weijer, 1995) blocking vowel harmony without spreading its [−ATR] feature to the following vowels. This is exemplified in (13), where the vowel /a/ does not harmonize. Example (14) below further shows cases where the [+ATR] feature of the root is spread to the final central low vowel /a/. [−ATR] vowels are highlighted in boldface.

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[35] See section 2.5.7.5 for the rule of consonant alternation between /t/ and /l/.

(13). G.E.	Gloss	G.E.	Gloss
buulax	'Anthostema Senegalensis'	*miiʈa*	'palm oil'
gəssum-ay	'peace'	*gəssum-ay-oli*	'our peace'
fuñaggulaʈ	'millipede'	*ávvul-a-ɔl*	'his/ her assistant'

(14). *məbbəβə-əy*	'Ziguinchor's way'	*ebbəβə*	'Ziguinchor'
exələ	'marmot'	*eləxəy*	'kind of thorn'
eyəbəl	'water lily'	*ebbəfə*	'kind of bird'

2.4.2.2.2   [−ATR] root and [+ATR] suffix

Vowel harmony is by rule required with the 'directional' suffix *-ul* and the 'instrumental' *-um* (in boldface). It is optional with all other [+ATR] suffixes as exemplified in (15) below.

(15). *fɷ- ɔx -um*	⟶	*fuoyum*	'tool for digging'
ɷ- jɔw -ul	⟶	*ujoul*	'come! (2SG)'
ɷ- jɔx -eriʈ	⟶	*ɷjɔyeriʈ / ujoyeriʈ*	'you do not hold'
ɛ-rɛm -oli	⟶	*ɛrɛmoli/ eremoli*	'our drink'
tɔɔn -enum	⟶	*toonenum/ tɔɔnenum*	'the year after next year'

Vowel harmony can be more complex than suggested by the general rules outlined here. For example even with the directional suffix *-ul* and the instrumental *-um*, which normally trigger vowel harmony, there are cases where these [+ATR] suffixes do not influence the [−ATR] stem and prefix vowel. For instance, the words *ɛcɪg-ɷl* 'to arrive' and *fɪxɪc-ɷm* 'pen' contain both the directional and the instrumental suffixes realized with [−ATR] vowel instead of the most frequent [+ATR]. A more detailed study of these exceptions of the [ATR] vowel harmony rules discussed above is a fruitful topic for future research.

2.4.3 Height vowel harmony

In addition to [ATR] vowel harmony, there is another type of vowel harmony where the two harmonic sets differ in relation to frontness. This is termed height vowel harmony. The rule of height vowel harmony imposes the choice of the high front vowel /i/ or the

high back vowel /ɷ/ in some noun class prefixes of a CV shape[36]. What the rule shows is a complementary distribution between these vowels in CV noun class prefixes. My treatment of height vowel harmony is in line with the analysis proposed in Bassène (2006) where it was labeled "place of articulation harmony[37]". Note that the rules of height vowel harmony apply regardless of the [ATR] features of vowels.

2.4.3.1 Height vowel harmony after labial consonants:

After labial consonants, a prefix vowel becomes high front /i/ before an initial root syllable containing a [+ATR] or [–ATR] front vowel e.g. (/ɪ/or /ɛ/), but becomes high back /ɷ/ when the initial root syllable contains a central (/a/) or back vowel (/ɷ/or /ɔ/) as in (16) where the root vowels which govern the harmony are boldfaced.

(16). | bɪ-ɛƀ | 'hunger' | bɷ-ɷl | 'face' |
| fɪ-ɛɸ | 'chin' | fɷ-ar | 'root' |
| mi-i | 'milk' | bɷ-βax | 'baobab tree' |

2.4.3.2 Height vowel harmony after coronal consonants:

After coronal consonants, a prefix vowel becomes high front /i/ under the influence of the front (/i/or /ɛ/) or central vowel (/a/) of the following syllable and becomes back /u/ when that syllable contains a back vowel (/ɷ/or /ɔ/) as exemplified in (17) below.

(17). | si-iʈ | 'palm nuts' | sɷ-ɷʈ | 'stars' |
| ɟɪ-ɛɸ | 'a small beard' | ɟɷ-ɔl | 'fish' |
| ɟɪ-as | 'small broom' | ɟɷ-ʈɷxɷn | 'small tortoise' |

2.4.4 Vowel assimilation

Vowel assimilation within the word is by no means pervasive in G.E. In prefixes and suffixes, assimilation is blocked by the syllable structure constraints that keep the

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[36] In the variety of G.E. spoken in the Village of Banjal, this type of harmony is not attested. The high back vowel /ɷ/ is the only vowel used even in contexts where in Essil and other villages of Mof-Ávvi the high front vowel /ɪ/ is expected. For example fɪllim 'last year' in G.E. is realized fɷliim in Banjal.

[37] The original title is 'harmonie de lieu d'articulation'. The proposed translation is mine.

subsequent prefix and root vowels in distinct syllables. The only context where assimilation occurs is in prefixation of irregular verbs as illustrated in (18) below where the prefix vowel assimilates to the initial stem vowel which differs for persons in the singular and the plural.[38]

(18). /nɪɛɣɛnɛ/ → [nɛɛɣɛnɛ] 'I am holding'
     /nɯ-ɔm/ → [nɔɔm] 'you are'
     /nɪɛɣɛ/ → [nɛɛɣɛ] 'I just said'

2.4.5 Inter-word assimilation and deletion

Inter-word morphophonological processes include vowel assimilation and vowel deletion. Assimilation occurs for instance when the morpheme bɪ 'in order to, to, for' precedes a word having a vowel as an initial segment as in (19). Vowel deletion occurs in cases such as when negation particles jambɪ or maƭɪ or the preposition nɪ (20) below precede a word-initial vowel[39].

(19). bɪ ɛkkɛ → bɛ-ɛkkɛ 'in order to go'
     bɪ ɛƭɛy → bɛ-ɛƭɛy 'in order to run'

(20). jambɪ ɷƭɛy → jamb-ɷƭɛy 'don't run!'
     maƭɪ ɛƭɯ → maƭ-ɛƭɯ 'it will not eat'
     nɪ alɔɛ → n-alɔɛ 'he/ she fell down'
     nɪ ɷfɷya → n-ɷfɷya 'among ancestors'

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[38] This type of assimilation which is also attested in Jóola Fógny is termed "special prefix assimilation" (Sapir, 1965).

[39] In chapter 3 (section 3.1.6.1), I will argue that the inter-word vowel deletion process of the preposition nɪ 'LOC' is the origin of the full form of the bound subject pronoun n-V.

2.5 Consonants and consonant operations

2.5.1 Plosives

G.E. has four voiced/ voiceless plosive pairs: the bilabials /p/and /b/, the alveolar plosives /t/and /d/[40], the palatal plosives /c/and /ɟ/, and velar plosives /k/and /g/. By rule, plosive consonants, except the voiced alveolar stop [d] which alternates with the alveolar trill [r], fricativize in intervocalic position, and in word-final position for voiceless stops. Voiced plosives are devoiced in word-final position. For example /b/ occurs in word-initial position e.g. *bɔnɔx* 'palm wine', but fricativizes to [β] in medial position e.g. *εβɔx* 'kinship' and is devoiced in word-final position e.g. *εxɔp̪* 'crab'. Whether plosive consonants are realized as voiceless plosives word-finally needs further investigation. Plosive consonants are in complementary distribution with their fricativized counterparts, and thus, never produce minimal pairs. The following three phonological rules summarize these processes. These rules are repeated below in the analysis of the most controversial cases of lenition.

1. $$\begin{bmatrix} +stop \\ -Voice \end{bmatrix} \longrightarrow \begin{bmatrix} +Fricative \end{bmatrix} \Big/ \begin{matrix} \underline{\quad} \# \\ V \underline{\quad} V \end{matrix}$$

2. $$\begin{bmatrix} +stop \\ +Voice \end{bmatrix} \longrightarrow \begin{bmatrix} +Fricative \end{bmatrix} \Big/ \; V \underline{\quad} V$$

3. $$\begin{bmatrix} +stop \\ +Voice \end{bmatrix} \longrightarrow \begin{bmatrix} -Voice \end{bmatrix} \Big/ \underline{\quad} \#$$

To illustrate the application of these rules, I will discuss the lenition process of the phoneme /c/ on which all previous works in G.E. seem to agree (Bassène, 2006, Sambou,

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[40] The palatal fricative [ʝ] is used to represent the lenited form of the voiced palatal stop whereas [ɟ̥] (the palatal plosive with a devoicing symbol under it) is used to represent its devoiced form. As for [ɟ] it is used to represent the lenited form of the voiceless alveolar stop. Notice that the lenited forms of plosive consonants are not represented in the orthorgraphy proposed in 2.6 and used to transcribe G.E. words from chapter 2 onwards.

1989, Tendeng, 2000). Thereafter, I will examine the allophonic variations of *[d]* and *[r]* as well as that of *[k]* and *[x]* which are a matter of controversy.

$$/c/ \rightarrow [\int] / \left\{ \begin{array}{c} -\# \\ V-V \end{array} \right\}$$

The voiceless palatal plosive *[c]* and the voiceless palatal fricative *[∫]* are in complementary distribution. *[c]* is only attested in word-initial position in words such as the adverb *cab* 'quickly' and ideophones like *cɛm* 'emphasizing for keeping one's mouth shut', but not in word-medial or final positions where only the palatal fricative *[∫]* normally occurs.

In word-initial position, it is possible to find the voiceless palatal fricative *[∫]* with impersonal verbs such as *∫iyɛ* 'it is time (lit: it has arrived)'. Furthermore, in rapid speech, *[c]* alternates with *[∫]* when it occurs between two vowels as in *ɔssɪmɔ∫aƀ* 'dress up quickly' instead of *ɔssɪmɔ caƀ* 'dress up quickly' in slow speech. Such alternations show clear cases of complementary distribution between *[c]* and *[∫]* and instantiate rule 1 above. An additional argument that supports the treatment of the palatal plosive *[c]* and the palatal fricative *[∫]* as allophonic variants of /c/ comes from their treatment in languages related to G.E., such as the variety of Jóola Fógny spoken around the town of Bignona (Sapir, 1965). In that variety the voiceless palatal plosive *[c]* occurs in word-medial position, a context where in G.E., only the voiceless palatal fricative *[∫]* is attested as in *ɛ∫ɛt* 'to die' for G.E. and *ɛcɛt* 'to die' for that variety of Jóola Fógny. Note that this Jóola variety does not use the voiceless palatal fricative *[∫]*. My interpretation of the voiceless palatal plosive *[c]* and the voiceless palatal fricative *[∫]* as allophones of the same phoneme noted /c/ is in accordance with previous analyses of the phonology of G.E. (Bassène, 2006, Sambou, 1989, Tendeng, 2000).

Furthermore, the fact that the voiceless palatal fricative *[∫]* is turned into the voiceless palatal geminate plosive /cc/ in contexts where gemination rules apply (2.5.7.1 below) provides further evidence for the allophonic relation between these two sounds.

$$/d/ \rightarrow [r] \Big/ \left\{ \begin{array}{l} \underline{\quad}\# \\ V\underline{\quad}V \end{array} \right\}$$

In some previous analyses the phonetic sound [d] and [r] have been interpreted as allophones of one phoneme represented by /d/ in Sambou (1989) and /r/ in Tendeng (2000), but also as distinct phonemes (Bassène, 2006). I treat them as variants of one phoneme represented /d/ on the basis of their distributional properties and the lack of contrast they show.

The alveolar plosive [d] appears in word-initial position such as in words like do 'inside there', dol 'ideophone to describe a full stomach', but also in loanwords such as the proper names Dembo 'Dembo (From Jóola Fógny)' and Damas 'Damase (from French)'. [d] is not attested in word-medial position and only occurs in word-final position in older people's speech. As far as the alveolar trill [r] is concerned, the rare contexts where it occurs in word-initial position is with the impersonal verbs as in rəlirəli 'it is far' and rəliut 'it is not far'. Use of the voiced alveolar plosive [d] is very rare and odd, but not impossible with such words. [r] occurs in intervocalic position and in final position in the environment where older people use the alveolar plosive [d]. For example the word ɛɲar 'to take' is usually realized as ɛɲad 'to take' in older people's speech. In addition to this, in Jóola Fógny, [d] occurs in word-initial and word-medial positions as in dəəde 'inside here' whereas in G.E., the same word is realized dəre 'inside here' with an intervocalic alveolar trill [r]. Note that in rapid speech it is possible to alternate the initial [d] with [r] when dəre 'inside here' combines to the preceding word as in umurəre 'he is inside here' which can also be realized as umu dəre 'he is inside here' in slow speech. In the light of these distributional properties, it can be argued following Sambou (1989) and Tendeng (2000), that [d] and the [r] are best analyzed as allophones of the same phoneme represented /d/. In section 2.5.7.1 below, I will show that these phonetic sounds are related because in the process of gemination, the alveolar trill [r] turns to the geminate /dd/.

$$/k/ \rightarrow [x] \Big/ \left\{ \begin{array}{l} \underline{\quad}\# \\ V\underline{\quad}V \end{array} \right\}$$

Similar to the treatment of plosive [d] and [r] discussed above, the interpretation of the voiceless velar plosive [k] and the voiceless velar fricative [x] in G.E. is controversial. Sambou (1989) and Tendeng (2000) propose a treatment of these phonetic sounds as allophonic variants whereas Bassène (2006) interprets them as different phonemes.

As shown by the rule above, the allophonic variation between [k] and [x] follows the process of fricativization outlined above. [k] is more frequent than [x] in word-initial position and never contrasts with it. Moreover [k] never occurs in word-medial and word-final positions. It is found for example in word-initial position in words such as kɔnɔj 'kind of vulture', the adverbs kama 'so/ actually' and also in loanwords occurring with a null prefix such as kariṭe 'shea butter' and kaana 'kind of alcoholic drink', as well as in ideophone, e.g. kak 'noise of a breaking rigid object'.

The velar fricative [x], may be found in word-initial position as in the adverb xanɪ 'even if' and the noun xaṭɪ 'type of feline'[41], and also in impersonal verbs such as xɔjixɔji 'it is bad'. [x] appears mainly in word-medial and word-final positions in words such as fɔxɔw 'head' and ɛxɔx 'tie', a context where [k] is not attested in G.E. This complementary distribution between [k] and [x] does not seem to be attested in related languages such as Jóola Fógny. Here the G.E. words exemplified above are realized fúkow 'head' and ɛkɔk 'tie' with [k] as the only possible segment and with no complementary distribution with the velar fricative [x]. In the discussion of the gemination process in 2.5.7.1 below, I will show that in every context where gemination rules apply, [x] uses geminate [kk]. In the light of this discussion, I propose, in accordance with Tendeng (2000) and Sambou (1989), treating of [k] and [x] as allophones of one phoneme represented as /k/.

Example (21) below shows patterns of fricativization process discussed above.

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[41] xatɪ 'kind of wild feline' is transcribed katɪ 'kind of wild feline' in Bassène (2006). This difference might be a dialectal difference which, if that is the case, this suggests as argued here, that these sounds are related. Notice that apart from the impersonal verbs and the word xanɪ 'even if', possibly borrowed from Mandinka through Jóola Fógny, [k] replaces [x] in initial position. For example the proper name Xáresa is also realised káresa.

(21). pan   'future particle'   εφαφ   'to dust'   εταφ   'kind of container'
bay   'where'   εβaŋ   'to put down'   εxωɓ   'crab'
talε   'precisely here'   εʈεy   'to run'   εsɔʈ   'to leak'
dərε   'inside here'   erul   'to explode'   erur   'to put inside'
cωkkωlı   'proper name'   εʃan   'gourd'   εŋɔʃ   'hat'
ɟaŋgω   'church'   εɟɔβa   'dog'   εbaɟ⁴²   'to have'
garafa   'bottle'   εlıyıs   'summit'   εxɔg   'to be close'
kakkan   'It is'   εxɔʈ   'to stick'   εxɔx   'to tie'

2.5.1.1 The glottal stop

Sambou (1989) argues that G.E. has a glottal stop which occurs only after the vowel /i/ in word-final position, and contrasts with its absence to differentiate the passive from the active voice. According to Sambou's argument, examples (22) and (23) below can only be differentiated by the presence of a final glottal stop (cf. (23)).

(22). a-ññıl   Øaxω   pan   a-ɟωy-ı
NC1-child   NC1:DEF   FUT   CD1.3SG-see-2SG.DO
'The child will see you'

(23). a-ññıl   Øaxω   pan   a-ɟωy-ıʔ
NC1-child   NC1:DEF   FUT   CD1.3SG-see-PASS
'The child will be seen'

An acoustic phonetic test was carried out to account for the difference between these two structures using both elicited and spontaneously produced data. The results suggest that no glottal stop occurs in the context where it has been observed by Sambou. In fact, in a few instances it has even been observed where Sambou predicts its absence, without any distinctive function. As a consequence, I argue that the glottal stop does not have any phonemic function in G.E. As will be shown in chapter 3, the final vowels /i/ in the examples above are in fact different morphemes, one being the second person singular object suffix (cf. 3.2.6.1.2 below) whereas the other is the passive morpheme (cf. 3.2.6.1.5.1 below).

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[42] The devoicing symbol does not appear clearly with the palatal plosive or and velar plosive. In these cases rule 3 on page 85 applies.

2.5.2 Nasals

The four nasal consonants of G.E. occur in all positions. They are: the bilabial nasal /m/, the alveolar nasal /n/, the palatal nasal /ɲ/ and the velar nasal /ŋ/. All these nasal consonants are used in the production of NC clusters. However, it should be pointed out that nasal consonants are phonemically distinct from those NC clusters that in word-final position are phonetically simplified and realized as nasals see 2.5.3 below. Example (24) below illustrates the occurrence of the four nasal phonemes in all the contexts.

(24). mal   'water'   amalakka   'angel'   ɛxam   'to chase'
      nɔ   'then'   ɛnɔyɛn   'to enter'   fɪyɛn   'yesterday'
      ɲanɔr   'once'   ɛɲax   'to pull'   ɛaɲ   'to cultivate'
      ŋaɲŋɔŋaɲŋɔ   'it remains'   ɛŋar   'to take'   ɛβaŋ   'to put down'

2.5.3 NC clusters

Similar to the number of nasals, G.E. has the following four nasal clusters (NC clusters): the bilabial prenasal /mb/, the alveolar prenasal /nd/, the palatal prenasal /ɲɟ/, and the velar prenasal /ŋg/. An NC cluster is made of a combination of an initial simple nasal phoneme which is homorganic to the following voiced plosive consonant. Some of the arguments used in the treatment of NC clusters as non-unitary phonemes in Bemba, another Niger-Congo language i.e., assimilation and strengthening (Kula, 1999), can be applied to G.E. A first observation is that nasals in an NC cluster are undetermined for their place of articulation i.e., they are "placeless", since their place of articulation is determined by the following consonant. This can be seen in consonant assimilation processes where nasals change place of articulation depending on the following consonant. For example (25) shows NC clusters where the N and the following C share the same place of articulation within a root (in boldface), whereas (26) shows nasal assimilation in compound noun formation.

(25). *ambala*   'fisherman'
      ɛŋandɛn   'to catch sight of'
      inje   'I/ me'
      ɛŋgaŋ   'kind of wild fruit (with nuts)'

(26). *am-mal (from an mal)*   'lit: a person from water'
      am-bɔgan (from an bɔgan)   'lit: a man of people (proper name)'
      affambaccɪn (from affan baccɪn) 'a village shrine priest'

Nasal clusters occur in word-medial position in their full form. They undergo a process of simplification and are stray-erased in word-final position i.e., they lose their final voiced plosive consonant. This is because G.E. syllable structure allows only one skeletal position in the coda as discussed in 2.3 above. As a consequence, when an underlying NC cluster occurs in word-final position, it is stray erased. Not all words ending in a nasal consonant result from a simplification of an NC cluster. A useful test to distinguish between the two is suffixation where the erased voiced plosive segment of a prenasal is restored. Example (27) below illustrates the contexts of occurrence of NC clusters, highlighted in boldface while segments that are stray erased by the process of stray erasure are put between square brackets.

(27). *ɛfam[b]*   'to make noise'   *ɛfamb-ɛ*   'it has made noise'
      ɛjɔn[d]   'to be abandoned'   *ɛjɔnd-ɛ*   'it is abandoned'
      ɛfaɲ[ɟ]   'to scatter'   *sɪfaɲɲ- ɛ* 'they scattered'
      bɥɪŋ[g]   'to climb'   *nɟɪŋg-ɛ*   'I climbed'

The fact that nasal consonants in NC combinations are placeless can also be seen in their inconsistent assignment to the syllable margins in the tasks of syllable division discussed in 2.3 above, and also in the nasalization of vowels in certain environments.

Another environment where NC cluster are formed, is in the context of inter-word assimilation (also see 2.4.5 above) where the vowel of the preposition *nɪ* 'LOC' can be deleted in rapid speech followed by the assimilation of the nasal /n/ to the following consonant. Note the contact between the nasal and the following consonant resulting from the deletion of the vowel of the preposition strengthens the latter consonant, which is spirantized in intervocalic position in of rapid speech.

(28).	nɪ-βɔɾɔm	'on the mouth'	mbɔɾɔm	'on the mouth'
	nɪ-ɣaraɓ	'on the cheek'	ngaraɓ	'in church'
	nɪ-ɟaŋɔ	'in church'	ɲɟaŋɔ	'in church'

2.5.4 Fricatives

I have already dealt with the non-contrastive bilabials fricatives *[ɸ/ β]* and the velar fricatives *[x/ ɣ]* because of their allophonic relationship with their plosive counterparts, but also with the palato-alveolar fricative *[ʃ]* because of its allophonic relationship with the voiceless palatal plosive phoneme */c/* (2.5.1 above). I showed that these sounds occur as allophonic variants of their plosive counterparts. The remaining fricatives of G.E. are realized in two different places of articulation, to produce the labiodentals *[f]* and *[v]* and the voiceless alveolar *[s]*.

Fricatives that are produced as labiodentals can be distinguished on the basis of the presence or absence of voice. The phoneme */f/* is attested in all positions and contrasts with its geminate counterpart as in *efus* 'to interrogate' and *effus* 'to reach'. The voiced labiodental fricative *[v]* has been found only in initial position in an impersonal verb form (see (29) below) and is not attested in other contexts. Furthermore, in initial position there is an intergenerational difference between G.E. speakers who speak French and who produce it especially in words of French origin such as the adverb *voilà* 'here is...' , and those who in the same context, use the labio-velar semivowel *[w]* and produce the same word as *wala* 'here is...' *[v]* is thus not phonemic since it can be replaced by the labio-velar semivowel *[w]* in the context where it has been found. Notice however that replacing the labiodental fricative *[v]* with the labio-velar semivowel *[w]* in cases such example (30) below is not possible. As a consequence, the labiodental fricative *[v]* is considered a free variant of the semivowel *[w]*[43] i.e. the two can occur in the same context without having any contrastive function. The relation between these sounds is mirrored by their geminate counterparts, with which they form minimal pairs (2.5.6 below). The simple voiceless alveolar fricative phoneme */s/* which occurs in all contexts has no voiced counterpart. It

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[43] Because *[w]* can replace *[v]*, but the other way round is not necessarily attested, these two symbols are used in the orthography, hence their presence in Table 6 below among other graphemes. Note that <w> will be used in cases where it does not alternate with <v>. The latter will be preferred in all other cases.

contrasts with its geminate counterpart, e.g. *gasal* 'praise name' and *gassal* 'bud'. The distribution of fricatives is illustrated in (29) below and their geminate counterparts are discussed in (2.5.6 below).

(29). *far*   'stomach'   *ɛfɔr*   'to pick up'   *gassaf*   'surname'
     vɪlɪvvɪlɪ 'it is light'
     sɪrakkɛl   'cooked rice without sauce'   *esur*   'to burn'   *fɪɲɛs*   'to research'

2.5.5 Liquids and Glides

This section provides a discussion of liquids - the alveolar trill *[r]* and the alveolar lateral *[l]* - and glides - the palatal approximant *[j]* and the labio-velar approximant *[w]*. As stated in 2.5.1 above, the alveolar trill *[r]* is an allophone of /d/. /l/ and /j/ occur in all positions within the word and contrast with their geminate counterparts (2.5.6 below).

The labio-velar /w/ occurs in word-initial, medial and final positions and shows free variation with the voiced labiodental fricative *[v]* in word-initial position, but does not contrast with it. The examples in (30) below illustrate the distribution of liquids and glides.

(30). *lɛtɪ*   'it is not'   *ɛlɛʈ*   'it (NC3) is not'   *fuxul*   'sacred hut'
     janɔr 'one'   *eju*   'pour'   *ɛbbaj*   'spear'
     wal   'hair'   *ɔwɛ*   'here they are'   *ɛβaw*   'shinbone'

Note that in noun class prefixes and agreement, there is an alternation between the front vowel *e-* and the glide *y-* and between the back vowel *u-* and the glide *w-* as illustrated in (31) and (32) below[44]. Vowels occur before consonants whereas glides occur before vowels.

(31). *e-βe*   *yayɔ*   *y-ə-tuen*   *me*   *ɛ-cɛl-ɛ*
     NC3-cow   NC3:DEF   CD3-REL-white   SUBORD   CD3.3SG-die-PFV
     'lit: The cow that is white is dead'

(32). *ɔ-rɛm*   *wawɔ*   *w-a-xay*   *mɛ*   *ɔ-ɔy-ɪ-ɔx*
     NC6-drink   NC6:DEF   CD6-REL-dry   SUBORD   CD6.3PL-dig-PASS-DUP
     'lit: The springs that are dry have been dug'

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[44] Other vowels such as *a-* do not show this type of alternation.

2.5.6 Geminates

All seventeen simple consonant phonemes discussed in the sections above have geminate counterparts. All geminate consonants occur in medial position and contrast with the simple consonants of the same place of articulation. Similar to NC clusters, geminate consonants are phonetically simplified by the rule of stray erasure in word-final position. This is because geminates attach to two positions on the skeleton (where the skeleton represents a sequence of timing units that define duration). The geminate is hosted in an ambisyllabic structure so that it functions simultaneously as the coda and the onset of the subsequent syllables (Creissels, 1994: 32-34). However, this structure cannot be retained in word-final position since G.E. prohibits two positions in the coda. Consequently, the geminate undergoes degemination by stray erasure. The full geminate form can be restored in suffixation (cf. (33)). Only the phonemes /kk/, /tt/ and /pp/ occur in word-final position where they are degeminated. The phoneme /cc/ does not occur in final position and thus is not stray erased. Example (34) illustrates a few contrasts of short consonants and their geminate counterparts. Note that with geminates, there is a case of intergenerational difference where the labio-velar geminate [ww] is used by older speakers as in *ewwal* 'stone', and younger people who speak French use geminate [vv] word-medially, i.e. *evval* 'stone'. Both are considered variants of the phoneme /ww/[45] mirroring their simple form counterparts [w] and [v] discussed in (2.5.5 above).

(33).	εβɔp	'to bang'	nιβɔpp-ε	'I banged'
	εrɔk	'to work (bewitch)'	nιrɔkk-ε	'I worked'
	εβɔʈ	'to deceive'	nɔβɔʈʈ-ε	'you deceived'

(34).	εβɔɲ	'to send'	εbbɔɲ	'to fold'
	εsɔʈ	'to leak'	εssɔʈ	'to hurt'
	εlaʈ	'to refuse'	εllaʈ	'to hang'

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[45] Similar to their shortest counterparts, the phonetic symbols [vv] and [ww] will be used as graphemes. The voiced labiodental fricative geminate [vv] may be replaced by the labio-velar [ww] but the other way round is not necessarily attested. The orthography proposed in section 2.6 below is based on younger speakers' speech. The labio-velars [w] and [ww] are only used in words where the labiodental fricatives [vv] and [v] are not attested.

2.5.7 Phonological processes

Morphological operations such as affixation and reduplication trigger appropriate contexts for the application of the morphophonological processes such as gemination, degemination, consonant loss, prenasalization and consonant assimilation. These processes which are also discussed in previous works (Bassène, 2006, Sambou, 1989, Tendeng, 2000) are examined in the sections below. Because the coverage of this phonological analysis is not intended to be exhaustive, I restrict myself to the analysis of the application of these rules in affixation and reduplication. It is nonetheless important to remember that these rules apply whenever the context is appropriate e.g. within the root between independent words as in compounding (see (25) and (26) above).

2.5.7.1 Gemination

The rule of gemination applies as follows: in reduplication, if a base has a final voiced consonant, it assimilates to the initial consonant of the reduplicant to produce a geminate. G.E. has suffixing reduplication where the reduplicated part (in boldface on the left hand side of the example below) is copied to the right of the base. This rule is illustrated in example (35) below. The segments that appear between square brackets are those that undergo stray erasure because they do not attach to any syllable.

(35).	*nəɸur-ɸur*	→	*nəɸuppur*	'he/ she went out'
	naβɛr-βɛr	→	*naβɛbbɛr*	'he/ she laughed'
	naral-ral	→	*naraddal*	'he/ she threw'
	nafam[b]-fam[b]	→	*nafaffam[b]*	'he/ she made noise'
	naʃɛb-ʃɛb	→	*naʃɛccɛb*	'he/ she slightly cut with a knife'
	naxam-xam	→	*naxakkam*	'he/ she chased'

Note as discussed in above 2.5.1 above, the rule geminates the underlying phoneme but not its allophones. For example, the voiceless palatal fricative *[ʃ]* geminates into *[cc]* as in *naʃɛccɛb* 'he/ she cut slightly with a knife' instead of *[ʃʃ]*, the voiceless velar fricative *[x]* geminates in *[kk]* as in *naxakkam* 'he/ she chased' instead of *[xx]* and finally the alveolar trill *[r]* forms its geminate counterpart in *[dd]* as in *naraddal* 'he/ she threw' instead of *[rr]*.

2.5.7.2 Degemination

If a base has an initial geminate e.g. -nnax 'wait' and a final voiceless consonant, the geminate consonant undergoes degemination in reduplication while the final voiceless consonant is deleted. This process of degemination is illustrated in (36) below.

(36). *nannax-nnax*   →   *nannanax*   'he/ she waited'
      nassɔt-ssɔt   →   *nassɔsɔt*   'he/ she hurt'
      nallat-llat   →   *nallalat*   'he/ she hang'
      nabbat-bbat   →   *nabbaβat*   'he/ she swore'

Recall that degemination does not apply when the final root consonant is voiced, rather, the latter consonant is deleted as in (37).

(37). *nəssiɓ-ssiɓ*   →   *nəssissiɓ*   'he/ she refused to share'
      nammay-mmay   →   *nammammay*   'he/ she borrowed'

2.5.7.3 Consonant loss

The rule of consonant loss that applies in reduplication deletes a voiceless simple consonant and a semivowel before another consonant as shown in (38).

(38). *naɸaɸ-ɸaɸ*   →   *naɸaɸaɸ*   'he/ she dusted'
      nωlat-laʈ   →   *nωlalaʈ*   'you refused'
      naxɔx-xɔx   →   *naxɔxɔx*   'he/ she tied'
      naβɔy-βɔy   →   *naβɔβɔy*   'he/ she defecated'

Examples (36)-(38) above also portray a barring of CC consonant clusters resulting from reduplication. Consonant clusters are not permitted in G.E. unless they result in NC homorganic clusters as in 2.5.7.4 below.

2.5.7.4 Prenasalization

If a root ends in a nasal consonant, the latter becomes homorganic with a following voiced plosive consonant and strengthens the following spirantized consonant (cf. (39)). If the nasal is followed by a voiceless plosive, the rule of gemination applies (40).

(39).	nιβɔɲ-βɔɲ	→	nιβɔmbɔɲ	'I sent'
	narɛm-rɛm	→	narɛndɛm	'he/ she drunk'
	nɔyan-yan	→	nɔyaŋgan	'you lost weight'
	naɟιŋ-ɟιŋ	→	naɟιŋɟιŋ	'he/ she climbed'

| (40). | nisim-sim | → | nisissim | 'I bled' |

2.5.7.5 Intervocalic voicing in suffixation

The intervocalic voicing processes that have been observed in suffixation are illustrated by the data in (41). The first example in (41) is a rule of voicing whereby the final voiceless /t/ changes to /l/ in intervocalic position. The rule normally applies to all cases except when the final [t] is the result of degemination from /tt/ (cf. (42)). This can be tested by suffixation where the geminate is restored. In such a context, the final consonant /t/ is a simplified realization of the voiceless geminate /tt/. Example (43) illustrates alternations of the velar fricative [x] with the voiced velar fricative [ɣ] in intervocalic position.

| (41). | ɛlaʈ | 'to refuse' | → | nιlal-ɛ | 'I refused' |
| | gafaʈ | 'fence' | → | gafal-ɔm | 'my fence' |

| (42). | ɛbɔʈ | 'to deceive' | → | nabɔttɔm | 'he/ she deceived me' |

| (43). | ɛxax | 'to step on' | → | nιxaɣ-ɛ | 'I stepped on' |
| | ɛɲax | 'to pull' | → | nιɲaɣ-ɛ | 'I pulled' |

2.5.7.6 y / w and Ø alternation

Semivowels can be optionally deleted in intervocalic position in suffixation as shown in (44) below. Optional semivowels are put between brackets in the examples below. When optional semivowels are deleted, the output is a sequence of two vowels. These are cases where Sambou (1989) identifies a disjunctive phoneme. However, as discussed in 2.4.1 above, not all words with a sequence of vowels result from semivowel deletion. Reduplication provides a good environment to test the distinction between sequences of vowels that result from semivowel deletion and those that do not. If a base with initial optional semivowel and a final voiced consonant is reduplicated, it provides a

gemination context where the semivowel in restored and then geminated (cf. (45)). If the sequence of vowels is not the result semivowel deletion, the rule of reduplication does not apply (cf. (46)).

(44). *ɛxɔɉ⁴⁶*   'to be cured'   *nɩxɔ(ɉ)ɛ*   'I am cured'
       gappɔɉ   'to look after'   *nɩppɔ(ɉ)ɛ*   'I looked after'
       fɶxɔw   'head'   *fɶ-xɔ(w)-ɔm*   'my head'

(45). *aaɲɛrɶʈ*   'he/ she has not cultivated'   *naawwaɲ*   'he/ she cultivated'
       ə(w)ujut   'he/ she did not go into exile'   *nə(w)uwwuj*   'he/ she went into exile'

(46). *ɛ-ɛs*   'to slice'   *nɩɛ-ɛs*   'I sliced'
       ɛ-ɔx   'to dig'   *nɩ-ɔɔx*   'I dug'

2.6 Orthographical representation

The practical orthography used in the rest of the thesis constitutes a phonographic alphabetical system in which graphemes are mostly based on the phonological structure of G.E. There is not always however, a one-to-one match between phonemes and graphemes. The orthography proposed here is a compromise between the use of phonetic and phonological representation using IPA phonetic symbols and other symbols based on the Roman alphabet. An example of the use of the IPA phonetic symbols is the velar nasal <ŋ> which shows a one-to-one match with the corresponding phoneme. In other cases I used allophones of one phoneme such as <d> and <r>. This choice is based on native speakers' comments on a purely phonological orthography previously proposed.

In most cases however the graphemes match on a one-to-one basis with phonemes. The orthographical representation is based on the Roman alphabet which is used for most languages in Senegal[47].

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[46] The symbol [j] is only used in this chapter for the phonetic transcription of the palatal approximant. In the orthography proposed here, the palatal approximant is replaced with the grapheme <y>. The grapheme <j> on the other hand, stands for the voiced palatal plosive in the orthography.

[47] Languages like Wolof and Pulaar are also written with the Ajami script (referred to as Wolofal for Wolof) which is based on Arabic scripts. G.E. speakers do not use such orthography because they have not been Islamized. Only a few members of the community have converted to Islam.

2.6.1 Vowels

Vowels of the [+ATR] harmonic set are represented with an acute accent. When a word contains [+ATR] vowels it is written with an acute accent on the first vowel of the word and the remaining [+ATR] vowels are not marked. Table 5 gives the orthographic representation of vowels. The realization of vowels in words is presented in (47) which is a repetition of example (9) above, using the practical orthography.

Table 5: Orthographic representation of vowels of G.E

	[–ATR]				[+ATR]		
	Front	**Central**	**Back**		**Front**	**Central**	**Back**
High	i		u		í		ú
Mid	e		o		é		ó
Low		a				á	

(47).

[–ATR]			[+ATR]		
Phonetic representation	Orthographical representation	Gloss	Phonetic representation	Orthographical representation	Gloss
tɔ	to	'precisely there'	do	dó	'inside there'
ɛwwɔ/ɛvvɔ	evvu	'clean'	ewwu/ evvu	évvu	'fly'
ɛlɩyɩs	eligis	'summit'	eyuʈum	égutum	'vulture'
ɛccaccarɔmba	eccaccarumba	'spinning top'	eβambaxule	ébambaxule	'dragon'

2.6.2 Consonants

Geminates are represented in the orthography by double consonants. However, segments deleted by stray erasure are not restored in the orthography since deleting them does not create ambiguity with the final nasals. As stated above some allophones such as [k] and [x] are represented in the orthography. The reason being that using the phoneme /k/ as the grapheme may create confusion with words comprising a final degeminated voiceless velar geminate stop /kk/. For example, if [ɛax] 'feather' is represented as <ɛak> 'feather' in the orthography, it may be confused with [ɛakk] 'to be hard' which in the orthography is represented as <ɛak> 'to be hard' because simplified consonants are not orthographically

represented as geminates[48]. On the other hand, the sounds [c] and [ʃ] which are allophones of the same phoneme /c/ are represented by the same grapheme <c> because their geminate counterpart does not occur in word-final position. Confusion with another grapheme is therefore less likely to occur. Table 6 presents the orthographic notation of consonants in G.E.

Table 6: Orthographic consonants in G.E

	bilabial		labio-dental		alveolar		palatal		velar	
stop	p/b	pp/bb			t/d	tt/dd	c/j	cc/jj	k/g	kk/gg
prenasal	mb				nd		nj		ng	
nasal	m	mm			n	nn	ñ	ññ	ŋ	ŋŋ
fricative			f/v	ff/vv	s	ss			x	
trill					r					
lateral					l	ll				
approximant							y	yy	w	ww

2.7 Conclusion

In this chapter, I have examined the segmental phonological system of G.E. I presented the syllable structure, examining the phonemic status of vowel length and the so-called "disjunctive phoneme". I argued that it is not necessary to posit such an abstract phoneme to account for the distribution of adjacent vowels into distinct syllables in G.E. since this can be accounted for by the syllable structure. I further investigated both [+ATR] and height vowel harmony- the two main morphophonological processes for vowels. In my analysis geminates have been analyzed as unitary phonemes whereas NC clusters have been analyzed as sequences of distinct phonemes. Both are attached to two positions hence the deletion of that second position in the coda by the rule stray erasure. Morphophonological processes affecting consonants include gemination and prenasalization. This chapter ends

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[48] Notice that even though the phonological process between [k] and [x] is the same as that of bilabials, the lenited bilabials are not represented in the orthography. This is because most speakers have rejected the use of the phoneme /k/ to represent the sounds [k] and [x] in the orthography, but not the use of bilabials such as /b/ to represent the lenited and non-lenited forms of those bilabials.

with a proposed orthographic representation for the transcription of the G.E. words, which will be used throughout this thesis.

3 GRAMMAR SKETCH

3.1 Introduction

This chapter studies the basic grammatical features of G.E., focusing on essential aspects of morphology and syntax. It provides the prerequisites for the study of the formal and semantic bases of the G.E. noun class system and for the discussions in the following chapters. In this sense it makes no pretence of exhaustiveness. There are two more detailed grammatical descriptions of G.E. (Bassène, 2006, Tendeng, 2000) which may be consulted for reference to grammatical aspects that are not or only partially addressed in this work.

In this chapter, I introduce word classes (3.2 below), including aspects of inflectional and derivational nominal and verbal morphology, and simple and complex sentence types (3.3.1 below and 3.3.3 below). Before looking at these issues, the following bullet points summarize typological features of G.E., some of which have been discussed in the previous chapter:

- Presence of ATR vowel harmony, nasal consonant clusters (NC clusters) and phonological geminates.
- Agglutinative morphology and a noun class/ gender system with prefixes as noun class markers.
- SVO basic word order with prepositions.
- Inclusive and exclusive distinctions in the first person plural.

3.2 Word classes

3.2.1 Nominals

The term 'nominal' refers to a class of words that have noun-like characteristics because of their ability to head nouns phrases, appear in argument positions in verbal clauses and function as predicates in verbless clauses.

3.2.1.1 Nouns

The class of words labeled 'noun' functions as the minimal NP constituent and occurs as the subject or object in a clause. Nouns can also be distinguished syntactically by their ability to combine with nominal modifiers (3.2.2 below). They may be further divided into proper names and common nouns. Proper names are used to designate individuals, certain domestic animals (pets and cattle), places and initiation ceremonies etc., whereas common nouns refer to classes or collections of entities. The subclass of G.E. common nouns may in turn be divided into count (those that can be counted and thus make singular and plural distinctions) and mass nouns (those that do not make a singular/ plural distinction and are incompatible with numerals). Proper names as exemplified in (1), or common nouns in (2), which denote concrete entities, have in common that they refer to the most time-stable entities, hence instantiate prototypical nouns (Creissels, 1995, Givón, 2001). Thus, their distributional properties can serve as the basis for the examination of noun phrases. The examples below show a proper noun in subject position in example (1), and a common noun in object position in (2).

(1). *Sirinjooge* *n-a-baj-e*   *a-ññil* *Elubalir*
  Sirinjooge LOC-CD1.3SG-have-PFV NC1-child Elubalir
  'Sirinjooge has a child in Elubalir' (ss040908_fir)

(2). *i-cix* *n-i-jux*   *ji-ttaja*
  1SG-arrive LOC-1SG-see   NC11a-sparrow
  'When I arrived, I saw a sparrow' (ss040919_adt)

Morphologically both proper nouns and common nouns can combine with noun class markers (some combine with a zero noun class marker). However, as shown in section 3.2.6 below, verbs also combine with noun class markers. But, only common nouns combine with the verbalizer -*et* (3.2.1.2.3.4.2 below).

As indicated in examples (3)-(5) below, proper nouns combine with distinct noun class markers, just like common nouns. In many cases proper nouns are compound or simple nouns which may appear with a zero prefix (e.g. *Xáresa* (proper name); *Waf-ulebo*

(proper name. lit: there is nothing there')[49]. Unlike common nouns whose prefix generally indicates class membership, the prefix attached to proper names does not indicate class membership (see chapter 4 for a detailed discussion of the criteria for class membership). In the examples below, I illustrate the combination of noun class markers (in boldface) with human, domestic animal and place names.

(3).	*a-bibuli*	'human proper name'	*é-buruay*	'place name'
	bú-tuay	'human proper name'	*gá-jjigay*	'place name'
	Ø-Xáresa	'human proper name'	*ji-xirul*	'name of a bull'
(4).	*jouti-bo*	'human proper name'	*é-jumbembe*	'name of a bull'
(5).	*waf-ulebo*	'human proper name'	*ba-ccakkual*	'name of initiation' (held in 1948)
	bá-llega	'name of the association of the women of Mof-Ávvi'	*ba-tingilit*	'name of initiation' (held end of 19th c)

Note that a difference between proper names and common nouns commonly pointed out is that the former are inherently definite and thus do not normally take determiners, whereas the latter are not and thus appear with them. However in G.E., but also in languages such as Hausa (Jaggar, 2001), it is possible for a proper name to take the definite determiner for emphasis as in *Bútuay axu* 'the Bútuay in question/ we are talking about'.

3.2.1.2 Nominal morphology

3.2.1.2.1 The nominal base

Nouns have a morphological structure of the shape NC-base-(SUFF), e.g. *e-sug-om* 'my village/ my country', where NC stands for the obligatory noun class prefix attached to a noun stem (except in the few cases of zero prefixation), and 'SUFF' for any suffix that may be attached. The base can be either a root, i.e., a word form that cannot be divided

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[49] Note that G.E. proper names usually have meaning. Some of these names reflect the context of birth of the individual or certain aspects of their personality. To date, my research has not uncovered any semantic motivations for the use of noun class markers with proper names. However, the semantics of proper names will be investigated in future research.

further and which may or may not have a specific meaning, or a stem which may consist either of the root alone, or a root to which a derivational suffix is attached. Aside from the obligatory simple root/ stem, the noun class marker and the optional suffix, a limited number of nouns consist of a prefix and a root composed of reduplicated syllables which cannot be divided further because they do not have corresponding simplex counterparts. These frozen expressions may be termed "lexical reduplications". Lexical reduplications are exemplified in (6) below.

(6). *bi-titix*   'Elaeis guineensis'[50]   *e-pappaŋ*   'rice grown in the forest'
      ga-rarax   'Ipomea asarifolia'   *e-ŋiŋinna* 'Parkinson's disease'
      á-lullum   'white person/ European' *ga-babar*   'plank'

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[50] The scientific names of plants used here come from elicitation sessions carried out with Dr William Gúippory Diatta, a lecturer in Botany at Cheikh Anta Diop University of Dakar. He is also a native speaker of G.E. who made his unpublished data on G.E. ethnobotanics available for this research (Diatta, to appear).

3.2.1.2.2 Prefixation

The prefix in a noun is an overt morphological marker that, in most cases, indicates the class membership of nouns and is thus referred to as a "noun class marker". Noun class markers function as inflectional markers to express the grammatical category of number by coding singular, plural and also collective as in example (7). They also have derivational functions as illustrated by the semantic variations resulting from the combination of different noun class markers with the same root in (8) below[51]. Such a function of noun class markers is widespread across Niger-Congo languages (Grinevald and Seifart, 2004, Mufwene, 1980).

(7). *a-ssanum/ u-ssanum*   'rich person/ rich people'
       e-vven/ si-vven   'oar/ oars'
       ju-ppu/ mu-ppu/ ba-ppu 'bird/ birds/ collection of small birds'

(8). *e-rem*   'a drink'
       ga-rem 'spring (of water)'
       fi-rem 'deep plot of rice field' (usually flooded)
       ji-rem 'small spring (of water)/ small deep plot of rice field'

3.2.1.2.3 Suffixation

Five main types of suffixes are attached to nouns. These suffixes include the possessive clitics (3.2.1.2.3.1), the inactualis suffix -*en* (3.2.1.2.3.2), the human associative plural suffix -*i* (3.2.1.2.3.3), the abstract suffix -*ay* (3.2.1.2.3.4.1.), and the verbalizer -*et* (3.2.1.2.3.4.2 below).

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[51] The issue of the semantic basis of the derivational use of noun class markers is pursued further in chapters 5.

3.2.1.2.3.1   Possessive pronominal clitics

Possessive pronominal clitics do not occur in isolation. In isolation, only the independent possessive pronoun like those discussed in 3.2.1.3.6 below can be used. Possessive clitics substitute NP (cf. (9)-(11)) and have to be hosted by the possessee as exemplified in (10) and (12).

(9).   *a-tti   Átom*
          NC1-brother   Átom
          'Átom's brother'

(10).   *a-tti-ol*
          NC1-brother-3SG.POSS
          'Her brother'

(11).   *gu-tti   Omar-i*
          NC8-brother   Omar-AST
          'Omar's and Co's brothers'

(12).   *gu-tti-il*
          NC8-brother-3PL.POSS
          'Their brothers'

The possessive pronominal clitics show an inclusive (including the addressee) and exclusive (excluding the addressee) distinction in the first person plural. There are human versus non-human distinctions in the third persons. Table 7 presents the paradigm of possessive clitics for humans using the root *ra* 'bed' for illustration.

Table 7: The paradigm of human possessive clitics.

Number	Person	Prefix	Root	Possessive clitics	Gloss
Singular	1	*bu-*	*ra*	*-om*	'my bed'
	2	*bu-*	*ra*	*-i*	'your bed'
	3	*bu-*	*ra*	*-ol*	'his/ her bed'
Plural	1.INCL	*bu-*	*ra*	*-olal*	'our bed'
	1.EXCL	*bu-*	*ra*	*-óli*	'our bed'
	2	*bu-*	*ra*	*-ul*	'your bed'
	3	*bu-*	*ra*	*-il*	'their bed'

With non-human entities, possessive clitics are composed of an agreement marker which cross-references to the antecedent noun, and the personal pronoun *o*. In examples

(14) and (16) below, the possessive pronoun of the *CD-o* form replaces the NPs of examples (13) and (15) while keeping the agreement marker highlighted in boldface[52].

(13).   *ga-at*   ***é-be***   *yayu*
             NC9-foot   NC3-cow   NC3:DEF
             'The cow's foot'

(14).   *ga-at*   ***y-o***
             NC9-foot   CD3-PRO
             'Its foot'

(15).   *ga-at*   ***fu-row***   *fafu*
             NC9-foot   NC7a-pig   NC7:DEF
             'The pig's foot'

(16).   *ga-at*   ***f-o***
             NC9-foot   CD7-PRO
             'Its foot'

3.2.1.2.3.2   The inactualis = non-factual suffix -en

The inactualis suffix *-en* is a TAM suffix which combines with nouns and pronouns to express past possession (a situation that is no longer true), and with verbs to describe a past event or counterfactuals (cf. 3.2.6 below). With the preposition *bi* 'to/ for', it expresses a goal that is not reached e.g. a transfer of possession that failed.

Within a noun, the inactualis suffix *-en* combines with alienable nouns and always precedes the possessive clitic to describe 'past possession' e.g. ex-/ former roommate. Alienable nouns are those that indicate that the relation between the possessor and the possessee can be terminated, whereas inalienable possession refers to a kind of possession that is inherent and cannot be terminated. In G.E., the inactualis suffix only combines with nouns denoting entities that can be alienably possessed, e.g. houses and tools etc., but not

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[52] The forms of agreement markers are discussed in the next chapter. Note that non-human possessive pronouns are suffixes since they attach to nouns having final vowels. Recall however that consonant clusters are not attested in G.E. So when a noun stem ends in a consonant and is followed by a possessive clitic with an initial consonant as an agreement marker, e.g. *gaat-fo* 'its foot' in example (16), the contact between the two consonants is delayed by a slight pause. In some idiolects a slightly audible epenthetic vowel /u/ is inserted between the two consonants e.g. *gaat(u-) fo*. In the orthography, non-human possessive pronouns are written as separate words.

with inalienably possessed nouns like kinship terms and body parts, etc. For instance *wal* 'hair' and *gaurux* 'nail' cannot combine with the inactualis suffix even when cut. It should be pointed out here, that the expression of clausal TAM information on NPs is a reported cross-linguistic phenomenon (Nordlinger and Sadler., 2000). Example (17) below illustrates the use of the inactualis suffix *-en* on alienably possessed nouns and its incompatibility with inalienably possessed nouns.

(17). *á-muse-en-om*   'my former teacher'   *??é-sug-en-ul*   'your (Pl) former village'[53]
       Ø-aar-en-i   'your ex-wife'   **ga-urux-en-i*   *'your former nail'
       e-llame-en-ol   'his former machete'   **jaw-en-il*   *'their former mother'

3.2.1.2.3.3   The associative human plural *–i* 'and co'

The associative plural suffix *-i* combines with human proper names (but not animal proper names or common nouns), proforms referring to humans (*-nde*), and personalized non-human entities as in (18) and (19) below, indicating a group of people of which one is named as a representative of the whole group.

(18). *Ámbulat-i*   *gu-ol-e*
       Ámbulat-AST   CD2.3PL-go home-PFV
       'Ámbulat and others (those who were with him) have gone home'

(19). *já-nuxureŋ-i*   *gu-og-e*   *ban*   *gu-kkan*   *bu-ffutor*
       NC11b-animal-AST   CD2.3PL-say-PFV   IMM.FUT   CD2.3PL-make   NC5a-association
       'Animal and his kind (other animals) said they wanted to create an association'
       (Jumuxulonjoŋ_2004)

3.2.1.2.3.4   Nominal derivation by suffixation

It is possible to derive nouns from other nouns or verbs by combining them with derivational suffixes.

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[53] Only possible when the village in question is not the village of origin of the speaker, but a place where he or she used to live.

3.2.1.2.3.4.1   The abstract suffix -ay

With a nominal stem, and depending on the prefix the stem combines with, the abstract suffix marker *-ay* indicates a home area (cf. (20)), the language spoken by a people as in (21), or their way of doing things (cf. (22)). The abstract suffix *-ay* is also used in the formation of a sub-category of adjectives (cf. (3.2.2.1.3 below)).

(20).   *pan*   *gu-cix*   *ga-ssil-ay*
        FUT   CD2.3PL-arrive   NC9-Essil-ABSTR
        'They will arrive in the territory of Essil'

(21).   *Michael*   *n-a-un-e*   *gu-ssil-ay*
        Michael   LOC-CD1.3SG-hear-PFV   NC8-Essil-ABSTR
        'Michael understands the language of Essil'

(22).   *pan*   *gu-xul*   *ma-ssil-ay*
        FUT   CD2.3PL-mourn   NC10b-Essil-ABSTR
        'They will do the funerals the way people from Essil do' (Part.obsv)

3.2.1.2.3.4.2   The verbalizer –et

The verbalizer *-et* is a productive suffix that is used in the process of deriving verbs from nouns. In G.E., verbs derived from nouns can be glossed 'to be/ do/ look for or collect etc. 'noun''. Example (23) below illustrates cases of verbalization of nouns. Note that there is a change of noun class marker between a noun and its verbalized counterpart.

(23).   *s-uu*   'oysters'   ⟶   *bu-ssu-et*   'to collect oysters'
        ñu-xon   'filth'   ⟶   *ba-xon-et*   'to be filthy'
        fa-kkor   'smoke'   ⟶   *e-kkor-et*   'to be smoky'
        fu-mangu   'mango'   ⟶   *ga-mangu-et*   'to pick up mangos'

3.2.1.2.4   Compounding

Compounding is an unproductive process in G.E. (i.e., it is very seldom used to create new lexical items), whereby a lexical unit is created generally from the combination of two independent lexical items. Two types of compounds are identified and discussed here: endocentric and exocentric compounds. Endocentric compounds are those whose output

word class is determined by the lexical category of their definable head, whereas exocentric compounds do not have a definable head (Dimmendaal, 2000).

In G.E., the head in a compound is the leftmost element of the combination. A further difference between endocentric and exocentric compounds is that endocentric compounds have compositional meaning (cf. (24) and (25) below) whereas the meaning of exocentric compounds is not compositional as shown by the literal translation and the glosses in (26)-(27) below.

Endocentric
(24). *a-ffan-bú-xut*
NC1-old-NC5a-initiation
'lit: head initiation'(head of initiation ceremony)

(25). *é-be-ba-xa*
NC3-cow-NC5b-forest
'lit: Cow forest' (buffalo)

Exocentric
(26). *ga-jjamen-é-mit*
NC9-goat-NC3-sky
'lit: Sky's goat' (kind of locust)

(27). *bú-jju-si-jjamen*
NC5a-mucus-NC4-goat
'lit: Goat's mucus' (Macrosphyra longistyla plant)

In the singular, compounds have a structure identical to that of NPs, a structural identity that may lead to confusion between the two. The main criteria used to distinguish the two are plural formation, where the head (in boldface in (28)) is the only element to take a plural marker in a compound, whereas both the NP constituents take a plural marker, as can be seen in the use of the singular noun class prefixes in (29) below and the plural noun class prefixes in (30).

(28).   *u-jjamen-é-mit*
        NC6-goat-NC3-sky
        'lit: sky's goats' (kind of locusts)

(29).   *gá-ssit*   *(g-al)*   *e-xulol*
        NC9-feather   (CD9-of)   NC3-chicken
        'Chicken's feather'

(30).   *ú-ssit*   *(w-aa)*   *su-xulol*
        CD6-feather   (CD6-of)   NC4-chicken
        'Chickens' feathers'

Note that a number of compounds are made of a singular head and a plural modifier (cf. (27) above). To form the plural of such a compound, only the singular noun class marker of the head changes to take a plural noun class marker.

Another criterion used to distinguish NPs from compounds is the impossibility to insert a determiner, e.g. the genitive morpheme *-ala*, or the definite determiner *CD-a-CD-u* between the two components of the compound. The genitive morpheme for instance, cannot be inserted in a compound as in the one exemplified in (28) above, but can be optionally inserted between the two terms of an NP as in (29) and (30) above where it is put between brackets. A third criterion that distinguishes NPs and compounds is predictability of meaning. It is easier to predict the meaning of a nominal constituent than that of an endocentric compound. But it is in turn even more difficult to predict the meaning of the exocentric compounds. For example, it is not clear how one can predict the meaning of the exocentric compounds exemplified in (26)-(27) above[54].

3.2.1.3   Free pronouns

Pronouns are identified by their ability to commute with nouns in argument positions in clauses. Similarly, a number of pronouns can also occur as determiners in NPs e.g. the independent possessive pronouns.

3.2.1.3.1   Subject and object free pronouns

The subject and object pronouns are free morphemes that can appear in isolation in subject and object positions as exemplified in (31) below.

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[54] These compounds may have metaphorical origins, but further research is required to account for the exact sources of such metaphors.

(31). *ínje*   *i-lob*   *y-o*
      1SG.SUBJ   1SG-say   CD3-3SG.DO
      'I said it'

As can be seen in the paradigm of the subject and object pronouns in Table 8, there are inclusive versus exclusive distinctions in the first person plural.

Table 8: The subject and object free pronouns.

	Singular	**Gloss**	**Plural**		**Gloss**
1	*ínje*	'I/ me'	INCL	*wolal*	'we/ us' (including addressee)
			EXCL	*wóli*	'we/ us' (excluding addressee)
2	*aw*	'you'		*buru*	'you'
3	*(CD)-o/ (CD)V-cila*	'he/ she; him/ her'		*(CD)-o / bug-o/ (CD)V-cila*	'they/ them'

There are two forms of the third person singular and plural; *(CD)-o* and *(CD)V-cila*[55] for the singular, and *(CD)-o/ bug-o* and *(CD)V-cila* in the plural. They have anaphoric functions and show agreement with the noun they substitute. These different forms of third person subject and object pronouns do not co-occur in the same NP, but either can replace the same NP in argument position with identical meanings. Consider the examples from (32) to (34) below where the third person subject and object pronouns and the noun they substitute are highlighted in boldface.

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[55] Consonants in brackets do not appear when the noun that triggers the agreement belongs to class 1*a*-, the class of humans. They alternate in other cases depending on the class of that head noun. In the third person plural, the agreement prefix *bug-* is the only one used with the pronoun *o* for humans.

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(32). *Jirimma*   *a-lob*   *y-o*
       Jirimma   CD1.3SG-say   CD3-PRO
       'It is Jirimma who said it'

(33). *a-cila*   *a-lob*   *y-o*
       CD1-PRO   CD1.3SG-say   CD3-PRO
       'It is she who said it'

(34). *Ø-o*   *a-lob*   *y-o*
       CD1-PRO   CD1.3SG-say   CD3-PRO
       'It is she who said it'

Despite the similarities in glosses between the two variants of the third person singular and plural pronouns in the example above, they differ in that *(CD)V-cila* can function as a modifier following the definite determiner (cf. (35) below), whereas the *(CD)-o* cannot (see (36)).

In addition, in object position, the direct object clitics discussed in 3.2.6.1.2 below are preferred to the pronoun *(CD)-o* as a substitute for a human referent as shown by the ungrammaticality of example (39) above, whereas *(CD)V-cila* is accepted in the same context (see (37) to (40)). Notice that in the third person plural for humans only the form *bug-o* is attested.

(35). *ga-jow*   **gagu**   **ga-cila**   *gu-kkan-om*
       NC9-name   NC9:DEF   CD9-PRO   CD2.3PL-make-1SG.DO
       'It is that name that they gave me' (ss060426_fir-hono-ao)

(36). *??ga-jow*   **gagu**   **g-o**   *gu-kkan-om*
       NC9-name   NC9:DEF   CD9-PRO   CD2.3PL-make-1SG.DO

(37). *u-teb*   *Kumati*
       2SG-carry   Kumati
       'Carry Kumati'

(38). *u-teb*   *a-cila*
       2SG-carry   CD1-PRO
       'Carry her' (It is her that you should carry)

(39). **u-teb*   *Ø-o*
       2SG-carry   NC1-PRO

(40). *u-teb-ol*
       2SG-carry-3SG.DO
       'Carry her'

(41). *u-teb*   *bug-o*
       2SG-carry   CD2-PRO
       'Carry them' (not others)

3.2.1.3.2 Demonstrative pronouns

Three types of demonstrative pronouns have been identified. One that does not participate in agreement and in this sense, may be referred to as 'neutral' (*dáur-e/ -u/ -ua*) 'this/ that' and two others: the presentative demonstrative *u-CD-PROX/ -MED/ -DIST* 'here/ there, be here/ be there' and the demonstrative determiner/ pronoun of the form *CD-a-u-CD-e/ -u/ -ua/ -a*, 'this/ that/ here/ there'.

Note that there is speaker variation regarding the realization of the diphthong in the neutral demonstrative and the demonstrative determiner/ pronoun of the form *CD-a-u-CD-e/ -u/ -ua*. As consequence, *dáur-e* is realized *dóur-e* 'this' by certain speakers and *CD-a-u-CD-e* is realized *CD-o-u-CD-e* '(inside) here/ there'. The three types of demonstratives are discussed in 3.2.1.3.2.1 and 3.2.1.3.2.2 below.

G.E. has proximal *-e*, medial *-u* and distal *-ua/ -a* demonstrative suffixes which combine with the three types of demonstratives to indicate the location of an entity relative to the speaker or addressee.

3.2.1.3.2.1   The 'neutral' demonstrative

The 'neutral' demonstrative *dáur-e/ -u/ -ua* 'this/ that' is homonymous to the demonstrative determiner/ pronoun *CD-a-u-CD-e/ -u/ -ua/ -a* of class 15 (*d-á-u-r-e/ -u/ -ua/ -a* 'inside here/ there'), which corresponds to the locative demonstrative. The internal structure of these homonymous forms can be represented as follows: *NC15:DEF.DET/ PRO-PRES-CD15-PROX/ -MED/ -DIST*. However, the two differ in meaning in that the demonstrative determiner/ pronoun of class 15 refers to a 'place inside', whereas the neutral demonstrative does not indicate any location inside as indicated by their gloss.

Another difference between the two is that the agreement marker of the demonstrative determiner/ pronoun class 15 *d-/ r-*[56] can be replaced by that of another locative such as class 13 *t-* as in *t-a-u-t-e* 'precisely here', whereas with the neutral demonstrative, the *d-* and *r-* segments are not agreement markers.

It is the impossibility for the consonants *d-/ r-* of the 'neutral' demonstrative to alternate with agreement markers of other classes, the lack of crossreferencing to any antecedent noun, and its semantic specificity that motivate the use of the label 'neutral'. Furthermore, the neutral demonstrative cannot occur as a determiner in an NP. It is mainly used to introduce visible but also unfamiliar entities as shown in (42), to inquire about a situation or function as a discourse deictic marker as in illustrated in (43) below.

(42).   **dáur-e**[57]   *a-ññol*   *Ø-ay?*
        DEM-PROX   NC1-ofspring   CD1-INT
        'Whose child is this?' (part-obsv)

(43).   **dáur-u**   *leti*   *ma-agen*
        DEM-MED   not be   NC10b-truth
        'That is not true' (ss040817_abas)

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[56] Recall from the discussion in the previous chapter that these consonants are allophonic variants of the same phoneme.

[57] For the sake simplicity, the neutral and anaphoric demonstratives will be glossed DEM followed by the class on the antecedent noun where relevant, and by the proximal medial or distal demonstrative suffix is used.

3.2.1.3.2.2   The demonstratives determiners

3.2.1.3.2.2.1   The presentative demonstrative u-CD-PROX/ -MED/-DIST

The presentative demonstrative is so called beaused it is used to locate an entity in the here and now or functions as a discourse deictic marker. Morphologically, the presentative demonstrative *u-CD-PROX/ -MED/ -DIST* is composed of the presentative root morpheme *u-*, an agreement marker *CD-* and demonstrative suffix (proximal *-e*, medial *-u* or distal *-ua/ -a*). It functions in isolation as a pronoun as in (44) and within an NP as a determiner as illustrated in example (45).

(44) *u-y-u*   *n-u-og-e*   *me*   *Bulan?*
     PRES-CD3-MED   LOC-2SG-say-PFV   SUBORD   Bulan
     'Is it that one that you are calling Bulan?' (ss041013_matar)

(45) *Jialabil,*   *a-nde*   *u-m-u*   *a-kkan-om*   *g-o*
     Jialabil   CD1-so and so   PRES-CD1-MED   CD1.3SG-put-1SG.DO   CD9-PRO
     'lit: Jialabil, this so and so put it on me' (It was so and so who nicknamed me Jialabil)
     (ss060426_fir-ao-hono)

The presentative demonstrative also functions as a verb to express locative meaning as discussed in 3.2.6.1.3.1.1 below. It combines with the definite determiner to form the demonstrative determiner/ pronoun of the form *CD-DEF.DET/ PRO-PRES-CD-PROX/ -MED/ -DIST* discussed in the next section.

3.2.1.3.2.2.2   The demonstrative determiner/ pronoun CD-DEF.DET/ PRO-PRES-CD-PROX/ -MED/ -DIST

The demonstrative determiner/ pronoun *CD-DEF.DET/ PRO-PRES-CD-PROX/ -MED/-DIST* can be used to substitute an NP and thus functions as a pronoun with a speaker based deictic meaning as in example (46), or can occur with a noun in an NP and thus functions as determiner with a discourse deictic function (cf.(47)). In example (48) below, the demonstrative determiner/ pronoun functions as determiner with a speaker based deictic function. When the referent is present in the context, the noun is optional and the referent can be referred to by pointing (48).

(46). *Øa-x-u-m-e*   *a-ñ̃ol-om*
CD1:DEF.DET-CD1-PRES-CD1-PROX[58]   NC1-offspring-1SG.POSS
'This (person I am pointing at) is my offspring'

(47). *e-taŋ*   *y-a-u-y-u*   *é-otor*   *e-let*
NC3-time   CD3-DEF.DET-PRES-CD3-MED   NC3-car   CD3.3SG-not be
'In those days, there were no cars' (Jumuxuloŋ_2004)

(48). *á-pur*   *Øa-x-u-m-e*   *a-ñ̃ol-om*
NC1-young man   CD1:DEF.DET-CD1-PRES-CD1-PROX   NC1-offspring-1SG.POSS
'This young man (the one here) is my offspring'

The proposed origin of this demonstrative determiner/ pronoun is a result of an amalgamation of the definite determiner *CD-a-CD-u* and the presentative *u-CD-PROX/ -MED/ -DIST*. With such a combination, the last syllable of the definite determiner *(CD-u)* is elided. The first syllable of the definite determiner *(CD-a)* is then combined with the presentative determiner *(u-CD-PROX/ -MED/ -DIST)* to form the demonstrative pronoun whose morphological structure is represented above as follows: *CD-DEF.DET/ PRO-PRES-CD-PROX/ -MED/ -DIST*.

This structure is more apparent with noun class 1 *a-* where there is initial zero agreement marking on pronouns (cf. (49) and (50) below). The proposed hypothesis is that *Øaxume* in (50) originates form *axu+ume* and that, *yauyu* in (47) above comes from *yayu+uyu*. It is also proposed that the neutral demonstrative discussed in 3.2.1.3.2.1 above originates from such a combination.

(49). *a-ñ̃il*   *Øaxu*   *u-m-e*   *a-ñ̃ol-om*
NC1-child   NC1:DEF   PRES-CD1-MED   NC1-offspring-1SG.POSS
'The (you see) here child is my offspring'

(50). *Øaxum-e*   *a-ñ̃ol-om*
DEM.NC1-PROX   NC1-offspring-1SG.POSS
'This is my offspring'

The between-speaker variation mentioned above in the realization of demonstrative pronouns originates from an interpretation of the first syllable of the demonstrative pronoun

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[58] For the sake of simplicity, the demonstrative determiner/ pronoun of the form *CD-DEF.DET/ PRO-PRES-CD-PROX/ -MED/ -DIST* will be glossed DEM.NC-PROX/ -MED/ -DIST for demonstrative pronouns of noun class X combined with the proximal, medial or distal demonstrative.

by certain speakers as a combination of an agreement marker and the third person pronoun of the form *(CD)-o* discussed in 3.2.1.3.1 above. Consider the case of cross-speaker variation illustrated in (51) and (52) below.

(51).   *u-rem*   *bu-nux*   *b-a-u-b-u*
            2SG-drink   NC5a-palm wine   CD5-DEF.DET-PRES-CD5-MED
            'Drink this palm wine' (Gammor-gnuxul Dembo+úccigo)

(52).   *u-rem*   *bu-nux*   *b-o-u-b-u*
            2SG-drink   NC5a-palm wine   CD5-PRO-PRES-CD5-MED
            'Drink this palm wine'

3.2.1.3.3 Indefinite determiners/ pronouns

Three types of indefinite determiners/ pronouns have been identified: the indefinite pronoun *(CD)V-cce* 'somebody/ something/ somewhere/ another' which can also have an adverbial function when it combines with locative prefixes; the universal quantifier *(CD-)an-o-(CD-)an* 'each (one), everyone, none, any' and the non-specific pronoun *(CD)V-nde* 'what do you call it/ so and so'.

3.2.1.3.4 The indefinite determiner/ pronoun *(CD)V-cce*

The indefinite determiner/ pronoun of the form *(CD)V-cce* 'somebody/ something/ somewhere/ another/ a certain etc.' occurs in isolation as an argument (cf.(53)) or in an NP as a determiner in both prenominal and postnominal positions. It participates in agreement using the noun class marker of the antecedent head noun. Within the NP, it shows a semantic distinction depending on whether it occurs in preverbal or postverbal positions.

In its prenominal position it generally functions as a determiner and provides new information, not previously mentioned and may be translated 'one/ a certain ...' as in (54) below. In postverbal position, it has an incremental meaning in that it generally refers to an entity which is different from one previously mentioned, but from the same set, and may be translated as 'another/ an additional...' (cf. (55) below). Note that it is compatible with singular and plural noun class markers. Thus, *a-cce* 'somebody' is realized *gu-cce* 'some people' in the plural.

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(53).   *Didi,*   *a-cce*   *u-m-u!*
        Didi   CD1-INDEF   PRES-CD1-MED
        'Didi, there is somebody! (standing)' (ss040919_adt)

(54).   *u-s-u*   *ni*   *fi-cce*   *fu-moj*
        PRES-CD4-MED   LOC   CD7-INDEF   NC7a-well
        'They are in a certain well' (ss040908_fir)

(55).   *baj-ut*   *é-pur-en-il*   *e-kkaddar*   *e-cce*
        have-NEG   NC3-go out-CAUS-3PL.DO   NC3-room   NC3-INDEF
        'It is out of question to build another room for them' (ss041013_matar)

3.2.1.3.5   Quantifiers

3.2.1.3.5.1   The universal quantifier (CD)-án-o-(CD)-an *(determiner and pronoun)*

The universal quantifier *(CD)-án-o-(CD)-an* occurs in subject and object positions either as a determiner + NP or a self-standing pronoun. Morphologically, it consists of the reduplicated root *an* combined with the infix *-o-*[59]. It takes agreement marking before the base and the reduplicant for every noun class except noun class 1 which shows zero agreement (Ø) (see (56)). The basic gloss for the universal quantifier *(CD)-án-o-(CD)-an* is 'any-X' when it occurs alone as an NP. Note that with some noun classes such as locatives, it has an adverbial function as illustrated in (57) below.

(56).   *Ø-án-o-Ø-an*   'anybody'
        búg-an-o-bug-an   'any people'

(57).   *m-án-o-m-an*   'in any way'
        b-án-o-b-an   'every where' (general location)
        d-án-o-d-an   'every where' (location inside)
        t-án-o-t-an   'every where' (precise place)
        n-án-o-n-an   'always, all the time'

When it functions as a determiner within an NP, the universal quantifier can be translated 'every' (cf. (58) below). However, the antecedent noun may be optionally deleted and in this context the universal quantifier occurs as pronoun (see (59)). Furthermore, the universal quantifier in pronominalc function is semantically related to an NP composed of a reduplicated noun which refers to every entity of the class denoted by

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[59] The morpheme *an* will be glossed QUANT for quantifier, while *-o-* will be glossed INFX for infix.

the noun (see (60)). The difference between these NPs is that the universal distributive pronoun *(CD)-án-o-(CD)-an* refers to individual entities, but focusing on the group as a whole, and thus conveys a collective meaning that can be glossed 'every'. By contrast, the NP composed of a reduplicated noun refers to entities, picking one by one, and thus has a distributive meaning comparable to 'each' in English. In a negative clause, it has the meaning of 'nobody, nothing, nowhere etc' as in (61) and (62).

(58). *é-be*   *y-an-o-y-an,*   *ga-baŋ*   *y-o*
NC3-cow   CD3-QUANT-INFX-CD3-DUP   NC9-skin   CD3-PRO
'Every cow has its own skin' (Popular saying)

(59). *y-an-o-y-an*   *ga-baŋ*   *y-o*
CD3-QUANT-INFX-CD3-DUP   NC9-skin   CD3-PRO
'Every one has its own skin'

(60). *é-be*   *é-be*   *ga-baŋ*   *y-o*
NC3-cow   NC3-cow   NC9-skin   CD3-PRO
'Each cow has its own skin'[60]

(61). *i-jug-ut*   *(Ø)-an-o-(Ø)-an*
1SG-see-NEG   CD1-QUANT-INFX-CD1-DUP
'I did not see anyone'

(62). *Ø-an-o-Ø-an*   *a-jo-ul-at*
CD1-QUANT-INFX-CD1-DUP   CD3.3SG-go-DIR-NEG
'No one came'

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[60] This is a saying that can be interpreted as 'every person has their own problems/ properties etc.'

3.2.1.3.5.2   The quantifiers (CD)V-man 'a few/ such-and-such' and pe 'all'

Except for *(CD)V-man* 'a few/ such-and-such' and *pe* 'all', other quantifiers like English 'many', are realized as stative verbs. The quantifier *pe* 'all' functions as a determiner (63) or as a pronoun (64).

As for *(CD)V-man*, it only occurs as a determiner and has different meanings in the singular ('such-and-such') (65) and the plural ('few') as in (66).

(63).   *n-a-mux*   *u-ssixo-a-w*   *pe.*
        LOC-CD1.3SG-kill   NC6-cat-DEF.DET-CD6   all
        'She killed all the big (undesirable) cats' (ss041013_tiop)

(64).   *n-a-tiñ-e*   *pe*
        LOC-CD1.3SG-eat-PFV   all
        'He ate all' (of it)

(65).   *kamme   é-um-om*   *e-xaj*   *e-man*
        if   NC3-totem-1SG.POSS   NC3-domestic animal   CD3-such and such
        'If my totem is such-and-such domestic animal' (ss040908_fir)

(66).   *n-a-mux*   *u-ssixo*   *u-man*
        LOC-CD1.3SG-kill   NC6-cat   CD6-such and such
        'She killed a few of the big (undesirable) cats'

3.2.1.3.5.3   The non-specific pro-form (CD)V-nde 'What-do-you-call-him/ it/ so and so'

This is a pro-form that occurs as a noun in subject or object position to designate a referent whose name is not mentioned either because it is forgotten or because it is unknown to the speaker, or the speaker does not wish to mention it. It combines with all noun class markers to indicate the class to which the entity mentioned belongs to.

(67).   *fi-nde*   *bu*   *f-om*   *me?*
        NC7a- what do you call it   how   CD7-be   SUBORD
        'What kind of thing is it?' (ss060426_fir-ao-hono)

(68).   *ga-jow*   *fi-nde*   *fafu*   *n-i-jumor-e*
        NC9-name   NC7a-what do you call it   NC7:DEF   LOC-1SG-forget-PFV
        'It is the name of the thing that I forgot' (ss060426_fir-ao-hono)

When the name of the entity is unknown, semantic criteria are used for the choice of noun class markers to combine with the proform, resulting in default readings of the referents in a number of cases as exemplified in (69)[61].

(69) NC1   *a-nde*   'what do you call him/ so and so' (human reference)
     NC3   *e-nde*   'what do you call it/ so and so' (nature of reference not clear)
     NC5a   *bi-nde*   'what do you call it/ so and so' (enormous entity)
     NC5b   *ba-nde*   'what do you call them/ so and so' (collection of small entities)
     NC9   *ga-nde*   'what do you call it/ so and so' (flat, big or impaired entity)
     NC7   *fi-nde*   'what do you call it/ so and so' (round / big entity)

Note that, the non-specicfic pro-form *(CD)V-nde* 'what do you call it/ so and so' which functions as a noun and also as verb (cf. (72) below), takes all nominal determiners and modifiers. In examples (70) and (71) below, it occurs with the interrogative determiner and the definite determiner respectively.

(70). *ga-nde*   *g-ay*   *gú-ggal-e*
       NC9-what do you call it   CD9-INT   CD9.3SG-pass-PFV
       'Which dilapidated thing went past here' ((part-obsv) talking about a very old car)

(71). *ga-nde*   *gagu*   *g-al*   *Ándo*
       NC9-what do you call it   NC9:DEF   CD9-of   Ándo
       'Ándo's dilapidated thing'

When it functions as a verb, the non-specicfic pro-form takes reduplication, tense, aspect, modality and the negative suffix etc. Illustrations of such cases are given in (72) below where it combines with the negative suffix *-ut*.

(72). *i-nde-ut*   *ga-nde*   *gaug-u*
       1SG-What do you call it-NEG   NC9-What do you call it   DEM.NC9-MED
       ' Lit: I did not thing this thing' ('I did not do anything to this thing')

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[61] The possibility to combine *nde* 'what do you call it/ so and so' with noun class markers using semantic criteria is the reason why this proform has been used to investigate shape encoding during the experiments described in the introduction (cf. 1.4.1.4 above).

3.2.1.3.6 Independent possessive pronouns

The independent possessive pronoun functions as an NP and occurs with all noun classes except noun class 15 *n-*, which expresses temporal reference. It is composed of a base which is preceded by an agreement marker. The independent possessive pronoun shows inclusive versus exclusive distinction in the first person plural. With noun class 1 *a-*, it exhibits zero agreement marking. The paradigm of independent possessive pronouns is presented in Table 9 below.

Table 9: Paradigm of independent possessive pronouns for humans

Number	Person	possessive pronouns	Gloss
Singular	1	*(CD)-úmbam*	'mine'
	2	*(CD)-úyya*	'yours'
	3	*(CD)-ola*	'his/ hers'
Plural	1.INCL	*(CD)-ololal*	'ours'
	1.EXCL	*(CD)-óloli*	'ours'
	2	*(CD)- olul*	'yours'
	3	*(CD)-olil*	'theirs'

As illustrated in (74) below, the independent possessive pronoun can substitute a noun in subject and object positions. It also combines with the inactualis suffix *-en* (see 3.2.1.2.3.2 above) to indicate a relation of possession that is not relevant any longer or which did not take place as exemplified in (75).

(73).
ga-ndapa   gagu   g-ola...
NC9-climbing belt   NC9:DEF   CD9-his
'The climbing belt of his...'

(74).
g-úmbam   gu-lli-llim
CD9-mine   CD9-lose-DUP
'Mine is lost'

(75).
ga-ndapa   gagu   g-ola-en
NC9-climbing belt   NC9:DEF   CD9-his-INACT
'The climbing belt was for him/ was his'

As with the possessive pronominal clitic discussed in 3.2.1.2.3.1 above, there is a human versus non-human distinction in the third persons. With non-human entities, possession is marked by a combination of the possessive morpheme *CD-ala* with the third person pronoun *CD-o* (3.2.1.3.1 above).

(76).   *má-tali*   *mamu*   *m-ala*   *y-o*
           NC10b-bitter   NC10:DEF   CD10-of   CD3-PRO
           'Its (a nut) bitterness'

3.2.1.3.7 Question words

There are two types of question words; the interrogative determiner *CD-ay* which participates in agreement with the head noun, and the question particles (*wa?* 'what?' and *bu?* 'how?'), which do not show agreement. Their morphosyntactic properties will be discussed in 3.3.2.1.3 below (see also that section for a discussion of the equivalents of 'when?' and 'where?' and an exploration of yes/ no questions).

Question particles *bu?* 'how?' and *wa?* 'what?', are used to form other complex question words. *Bu?* 'how?' combines with *butum* 'mouth/ equivalent' to form *butumbu?* 'how many?'. It can also occur in isolation in sentence-final position to express measurement as in (78) below.

(77).   *e-ssam*   *yauy-u*   ***butumbu?***
           NC3-pile   DEM.NC3-MED   how much
           'How much is this pile?' (Part-obsv)

(78).   *ikki*   *a-re*   *bu?*
           until   CD1.3SG-be equal   how
           'Up to what age?' (ss060426_fir-ao-hono)

Wa 'what?', on the other hand combines with certain verbs like *e-kkan* 'to make', *e-tex* 'hit, cause' to form the equivalent of 'why' as illustrated in (79)-(80) below. The vowel put between brackets in examples (79) and (80) below is the agreement marker which can be optionally deleted resulting in the following forms: *wakkane* and *watege* 'why'.

(79).   ***wa(u)kkane***   *min*   *nogor*   *mee?*
           why   COMPL   resemble   like that
           'Why is it like that?' (ss040908_fir)

(80).   ***wa(u)tege***   *min*   *nogor*   *mee?*
           why   COMPL   resemble   like that
           'Why is it like that?'

3.2.2 The noun phrase

NPs can be identified by their syntactic subject and object functions but also complement and adjunct functions in verbal clauses and also their predicative functions in verbless clauses. A noun phrase in G.E. minimally consists of a noun or a pronoun that may be determined or modified by a variety of dependent elements among which the definite determiners (3.2.2.1.1 below), numerals (3.2.2.1.2 below), adjectives (3.2.2.1.3 below), pronouns functioning as determiners (3.2.1.3 above), and relative clauses (3.3.3.3.3 below), and quantifiers (3.2.1.3.5.2 above). The structure of the NP is represented as in (81) below. Elements in boldface represent the basic structure of the NP. G.E. determiners and modifiers (including numerals, adjectives, pronouns and quantifiers) generally follow the head noun. Modifiers that occur on the left of the noun (labeled Pnl.MODIFIER for prenominal), i.e. *(CD)V-cce* (3.2.1.3.4 above), but also the definite determiner in anaphoric function (3.2.2.1.1 below), are less frequent in the language. Elements included in brackets are not compulsory[62].

(81).   (Pnl.MODIFIER)   **N**   (DEF)   (MODIFIER)   (DEF)   (REL-CLAUSE)

In subject position, the noun which heads the NP triggers agreement on dependent elements listed above and on the verb. Object NPs do not show agreement with the verb. Agreement is only present within the object NP.

As far as the internal structure of the noun phrase is concerned, combinations of up to three determiners and modifiers are possible (cf. (82) and (83) below), but G.E. most frequently uses a relative clause for combinations of two or more dependent elements, especially with attributive modifiers. Thus, even though (84) is acceptable, (85) below is preferred and is in fact the most frequent structure in natural, not elicited, discourse. Note that G.E. heavily marks definiteness by combining the definite determiner on both the noun and its modifiers as can be seen in (83) and (84).

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[62] For a treatment of possessive phrases, see 3.2.3 below.

(82). **si-xaj**   **saus-u**   **s-úmbam**   *n-i-jaxali-e*   *mala*   *s-o*
      NC4-domestic   DEM.NC4-   CD4-mine   LOC-1SG-worry-PFV   about   CD4-PRO
      animal   MED
      'These domestic animals of mine, I am worried about' (ss041013_gnábai)

(83). **e-jjamen**   **yayu**   **é-utten**   **yayu**   *u-y-u*
      NC3-she-goat   NC3:DEF   CD3-second   NC3:DEF   PRES-CD3-MED
      'There is the second she-goat'

(84). **si-jjamen**   **sasu**   **sú-uba**   **sasu**
      NC4-she-goat   NC4:DEF   CD4-two   NC4:DEF
      'The two she-goats'

(85). **si-jjamen**   **sasu**   **s-a-am**   **me**   **sú-uba**
      NC4-she-goat   NC4:DEF   CD4-REL-be   SUBORD   CD4-two
      'lit: The she-goats that are two' (the two she-goats)

Distributive noun phrases are formed by the repetition of the head noun or by the combination of the head noun and the universal distributive pronoun (cf. 3.2.1.3.5 above) functioning as a determiner.

(86). **ji-ññil**   **ji-ññil,**   **ji-baj-e**   **e-kkaddar**
      NC11a-child   NC11a-child   CD11.3SG-have-PFV   NC3-room
      'Each little child has a room' (ss041013_matar)

(87). **ji-ññil**   **j-an-o-j-an**   **ji-baj-e**   **e-kkaddar**
      NC11a-child   CD11-QUANT-INFX-DUP   CD11.3SG-have-PFV   NC3-room
      'Every little child has a room'

3.2.2.1 Modifiers

In this section, I discuss the definite article, quantifiers, adjectives and numerals. Pronouns functioning as determiners are discussed in the 3.2.1.3 above.

3.2.2.1.1 The definite determiner

The definite determiner[63] has a complex morphological shape of the form *CD-a-CD-u*, where *CD* stands for the agreement marker which occurs twice, hence the label of double agreement marking, except when the head noun of the noun phrase belongs to noun class 1 *a-* (human class), which has a zero initial agreement marker as in (88) below.

(88).   *a-ññil*   *Øa-x-u*[64]   *n-a-te-e*
       NC1-child   CD1:DEF.DET-CD1-MED   LOC-CD1.3SG-run-PFV
       'The child has run'

When the noun class marker is a vowel (except for noun class 1), agreement is marked by the corresponding semivowel whose alternation is discussed in (2.1.4.7.6) note that the definite article exemplified in (89) can also be suffixed to the head noun. In these contexts, the initial agreement marker *CD-* and the final vowel *-u* are dropped and only the form *a-C* is kept as can be seen in (90) below.

(89).   *a-ññil*   *Øa-x-u*
       NC1-child   CD1:DEF.DET-CD1-MED
       'The child'

(90).   *a-ññil-a-w*[65]
       NC1-child-**DEF.DET-CD1**
       'The child'

The morphological break proposed here suggests that the basic form of the definite determiner is the morpheme *a-* and that the final vowel of the definite determiner *-u* is the medial demonstrative *-u* which alternates with the consonant *-w* according to the rule /u/

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[63] G.E. does not have an indefinite article equivalent to the English "a". The indefinite meaning is expressed with a bare NP.

[64] The examples in this section show the full morphological breakdown of the definite determiner. For the sake of simplicity, the independent definite determiner will be glossed 'NCX:DEF' meaning 'definite determiner of noun class followed by the class number'. Its suffixed form however, will be glossed DEF.DET-CD..., since only the morpheme *a* and the agreement marker are left in case of suffixation as in example (90).

[65] In related languages such as Jóola Fógny (Sapir, 1965) only the suffixed form of the definite article has been reported.

and /w/ alternation described in 2.5.5 above. The definite determiner which normally occurs in postnominal position can also be found in prenominal position with topic NPs meaning 'this/ that one' as in (91); 'the one' in (92) and 'the other' as in example (93).

(91). *Øaxu*   *u-boñ-ol,*   *n-a-tey*   *cab!*
NC1:DEF   2SG-send-3SG.DO   LOC-CD1.3SG-run   quickly
'As for this one, he always goes and returns quickly when you send him somewhere' (ss060426_fir-ao-hono)

(92). *Øaxu*   *á-xoji*   *me.*
NC1:DEF   CD1.3SG-ugly   SUBORD
'The one that is ugly' (ss060426_fir-ao-hono)

(93). *n-a-agen*   *Øaxu*   *a-ññil*
LOC-CD3.3SG-keep   NC1:DEF   CD1-child
'She kept (nursing) the other child' (ss060426_fir-ao-hono)

3.2.2.1.2 Numerals

3.2.2.1.2.1 Cardinal numbers

G.E. has a five-based number system in which cardinal numbers up to *fu-tox* 'five' are morphologically composed of a root preceded by an agreement marker (see also Bassène (2006: 71-76)). In addition to these, there are five other simple terms for cardinal numbers of which two are clearly built around body parts.

In G.E., counting is done with hands first and then with feet. This accounts for the use of terms for body parts, *gu-ñɛn* 'ten (lit: hands)' and *ga-at* 'fifteen (lit: foot)' in counting. The term *á-vvi* 'twenty' is not a translation of 'feet', but is homonymous with 'king' *ávvi*[66]. The cardinal numbers *é-temel* 'one hundred' and *éuli* 'one thousand' are mainly used in money counting. The cardinal number *anur* 'one' shows agreement with nouns from all noun classes, but has a zero agreement marker when the modified head noun belongs to noun class 1 *a-*. When it is followed by the definite article, *anur* 'one' is glossed 'the same'. Cardinal numbers use noun class markers 3 *y-* in the singular, and 4 *su-* in the plural in their citation forms, i.e., the form used in counting in isolation. Table 10 provides the list of simple terms for cardinal numbers.

Table 10: Simple cardinal number terms in G.E.

y-anur	'one'
sú-uba	'two'
sí-ffaji	'three'
si-bbagir	'four'
fu-tox	'five'
gu-ñen	'ten'
ga-at	'fifteen'
á-vvi	'twenty'
é-temel	'hundred'
é-uli	'thousand'

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[66] It is not clear whether the use of the term *á-vvi* for 'king' and 'twenty' is a simple case of homonymy or is metaphorically motivated. One of my consultants suggested that it used to be the case that, after twenty years, the king changes from one village to the other (Essil or Enappor). This claim will be researched further.

Addition is the process on which the complex cardinal number expressions involving numbers smaller than ten are generally based, as illustrated in (94) and (95) below.

(94). fu-tox   ni   y-anur
       NC7a-five   LOC   NC3-one
       'lit: five and one' (5 + 1 = 6) (six)

(95). fu-tox   ni   sú-uba
       NC7a-five   LOC   NC4-two
       'lit: five and two' (5+2 =7) (seven)

Apart from ávvi 'twenty', multiples of ten up to ninety (included) are formed by multiplication and addition rules. When the first digit of a multiple of ten is an even number, that is 2, 4, 6, 8, that multiple of ten is obtained by multiplying twenty to the initial digit number. Example (96) below illustrates the formation of multiples of ten having an initial even number. Note that the multiplication formula is obtained by a syntactic combination of the multiplied element followed by the multiplier.

(96). ú-vvi   gú-uba[67]
       NC2c-twenty   CD2-two
       'lit: twenties two'(forty) (20 * 2 = 40)

(97). ú-vvi   gú-ffaji
       NC2c-twenty   CD2-three
       'lit: twenties three' (sixty) (20* 3= 60)

(98). ú-vvi   gu-bbagir
       NC2c-twenty   CD2-four
       'lit: twenties four' (eighty) (20*4 = 80)

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[67] Note again that the plural of á-vvi 'twenty' is the same as that of 'king' ú-vvi which is class 2c u-, the plural class of humans. Moreover the agreement marker is the same for both 'twenty' and 'king'. This reinforces the hypothesis that these two concepts may be related by metaphor.

If the first digit of a multiple of ten is one of the odd numbers 3, 5, 7 and 9 it is obtained by adding of *guñen* 'ten' to the lower multiple of ten having an initial even digit, as exemplified in (99) to (101) below. Syntactically, the added number follows the locative *ni* which in turn is preceded by the number on which the addition is based.

(99).   *á-vvi*   *ni*   *gu-ñen*
         NC1-twenty   LOC   NC8-hand
         'lit: twenty and ten' (thirty) (20 + 10= 30)

(100).   *ú-vvi*   *gú-uba*   *ni*   *gu-ñen*
         NC2c-twenty   CD2-two   LOC   NC8-hand
         'lit: twenties two and ten' (fifty) (20*2 + 10 = 50)

(101).   *ú-vvi*   *gú-ffaji*   *ni*   *gu-ñen*
         NC2c-twenty   CD2-three   LOC   NC8-hand
         'lit: twenties three and ten'(seventy) (20*3 + 10 = 70)

In money-counting, the numeral *futox* 'five' is multiplied to basic or complex cardinal numbers. As a consequence, in the local currency, five CFA (5 CFA francs), which is the smallest coin, has the value of 'one' in normal counting. Similarly, a hundred CFA (100 CFA francs) has the value of twenty in normal counting. Table 11 below shows a few correspondences between normal and money counting.

Table 11: Comparison of normal and money counting

Gújjolaay Eegimaa	English Gloss	
	Value in normal counting	Value in money
yanur	1	5f CFA
guñen	10	50f CFA
guñen ni yanur	11	55f CFA
ávvi	20	100f CFA
étemel	100	500f CFA
éuli	1000	5000f CFA
súuli étemel	100 000	500 000f CFA
súuli étemel ni súuli úvvi gubbagir ni guñen	190 000	950 000f CFA
súuli sítemel súuba/ emilioŋ (French)	200 000	1000 000f CFA

3.2.2.1.2.2   Ordinal numbers

The formation of ordinal numbers is to a large extent based on cardinal numbers. They take agreement markers that cross-reference back to the head of the NP. Aside from

the ordinal number *(CD)V-tínar* (also *-tíar*) 'first', which is considered the only basic ordinal number, since it is not derived from any numeral, all other ordinal numbers up to *(CD)V-togen* 'fifth' are derived form cardinal number roots to which the causative suffix *-en* is attached. Ordinal numbers undergo some complex phonological processes such as deletion of the entire syllable of the corresponding cardinal number and consequent gemination. Table 12 presents the processes of formation of the first four non-basic ordinal numbers. Deleted segments are highlighted in boldface in the column of cardinal number and the input. In the output column, only one syllable of the G.E. word for 'fourth' is highlighted because it exhibits an unusual structure in comparison to its input.

Table 12: Formation of ordinal numbers

Cardinal number	Input	Output	Gloss
sú-uba	sú-uba-t-en	sú-utt-en	'second'
sí-ffaji	sí-ffaji-t-en	sí-ffatt-en	'third'
si-bbagir	si-bbagir-en	si-barig-en	'fourth'
fu-tox	su-tox-en	su-tog-en	'fifth'

The ordinal number for 'sixth' *(CD)V-togen n-V-tta* e.g. *a-togen n-a-ttta* 'the sixth' (for a singular human reference) is an phrase that can be glossed 'fifth with one left out'. All ordinal numbers from 'seventh' and above are formed by relative clauses that can be glossed 'the one that makes...' followed by the corresponding cardinal number. Complex ordinal numbers equal to or higher than seven are illustrated in (104) and (105) below.

(102). *y-a-kkan*   *me*   *fu-tox*   *ni*   *sú-uba*
       CD3-REL-make   SUBORD   NC7a-five   LOC   NC4-two
       'lit: the one that makes five and two' (the seventh)

(103). *s-a-kkan*   *me*   *á-vvi*
       CD4-REL-make   SUBORD   NC1-twenty
       'lit: those that make twenty' (the twentieth)

Similar to the cardinal numbers, ordinal numbers show agreement with their head noun. This is illustrated in (104) and (105), where agreement markers are highlighted in boldface.

(104). *e-joba* *y-anur*
NC3-dog CD3-one
'One dog'

(105). *e-joba* *yayu* *é-utt-en* *yayu*
NC3-dog NC3:DEF CD3-two-CAUS NC3:DEF
'The second dog'

3.2.2.1.3 Adjectives

Adjectives may be defined as words that in addition to functioning as modifiers of nouns may also function as predicates (Schachter, 1985). Gújjolaay Eegimaa has only a small number of lexical items that can be labeled adjectives. Typical semantic domains expressing adjectival notions across languages, e.g. concepts of age, dimension, color etc. (Dixon, 1982), are expressed by stative verbs in G.E. These verbs take tense, aspect and modality markers as well as the relative prefix *C-a-*. Consider examples (106) and (107) below.

(106). *y-aŋ* *y-a-wuŋ-e*
NC3-house CD3-REL-be wide-PFV
'A house that is large'

(107). *gá-bil-om* *gu-ñuget-ñuget*
NC9-loincloth-1SG.POSS CD9.3SG-be black-DUP
'My loincloth is black'

Certain notions that are typically expressed through adjectives in languages like English are noun-like in G.E. in that they are capable of occurring in argument positions and head NPs (cf. (109) below). Note that these adjectives are nominal in apparence since they only occur in isolation when their head noun is omitted. However, adjectives can be distinguished from pure nouns by their ability to combine with noun class markers of all classes, whereas nouns occur with a more restricted number of noun class markers (Creissels, 1991).

Sixteen of these lexical items, which constitute the small class of G.E. adjectives, have been collected. They are classified as adjectives following criteria proposed in Creissels (1991: 178-183): 1. they normally occur as modifiers of nouns (108); 2. when they occur in isolation in argument position, they take an agreement marker that cross-

references to the elided head noun as in example (109). Also, as pointed ealier, they combine more freely with all noun class markers as exemplified in (110) and (111) with noun class 3 *y-* and 5 *b-*.

(108). *e-jjaŋ-a*   *e-vvugul*
       NC3-light-AGT   CD3-new
       'A new lamp'

(109). *u-sen-ul-om*   *e-vvugul*   *yayu*
       2SG-give-DIR-1SG.DO NC3-new   NC3:DEF
       'Give me the new one'

(110). *é-be*   *y-ámax*
       NC3-cow   CD3-big
       'A big cow'

(111). *bi-fem*   *b-ámax*
       NC5a- angifera indica tree   CD5-big
       'A big angifera indica tree'

The list the 'adjectives' collected so far is presented in Table 13 below.

Table 13: List of adjectives

Root	Gloss
-acax	'spotted with color'
-ámax	'big'
-ffan	'old'
-fú	'grey'
-jjeb	'raw/ fresh'
-jjúgax	'red'
-jjónix	'straight'
-may	'left'
-ññex	'dark grey'
-ppu	'young'
-rakkel	'empty/ bare'
-ríb	'right'
-ttito	'small'
-ttot	'sterile' (esp. sows)
-túay	'white'[68]
-vvugul	'new'

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[68] The form *-ñuget* 'black' may occur as an adjective, or as a verb 'be black'. But it does not combine with the abstract suffix *-ay* like 'white'. The lack of a special term for its adjectival function is what motivates its exclusion in the list of adjectives provided in Table 13.

In addition to these adjectives, some nouns, e.g. ethnonymic nouns, may also occur as adjectives or may be the base for deriving adjectives. Nouns that function as adjectives refer to communities of peoples such as the Mankañ, the Jóola, and the Manjack etc. When the noun refers to an aspect of people's life e.g. a dance style, a song etc., it combines with the abstract suffix -ay. Consider the examples below.

(112). *a-mbal-a*   *á-jjola*
      NC1-net-AGT   CD1-Jóola
      'A Jóola fishmonger'

(113). *e-box*   *e-makkañ-ay*
      NC3-dance   CD3-mankañ-ABSTR
      'A Mankañ dance'

3.2.3 Possessive phrases

The possessive phrases dealt with in this section are of two types: a possessive construction consisting of juxtaposed NPs, and a possessive construction overtly marked by the possessive morpheme *CD-ala*. This morpheme is used to express different types of genitives such as ownership, genitive of material and genitive of origin. The basic structure of the possessive clause is represented in (114) below. Brackets include elements that may not occur in certain types of possessive NP.

(114).   **POSSESSUM**   **(DEF)**   **(CD-ala)**   **POSSESSOR**

3.2.3.1 The possessive construction with juxtaposition

In G.E., possession can be expressed by juxtaposition of NPs. In this type of construction, the possessor always follows the possessum as shown in (115) where the possessor is highlighted in boldface. The inactualis suffix -*en* which combines with alienable nouns to express former possession, is always attached to the possessum. Note as can be seen in (115) and (116) below, that this type of possessive construction is attested with both alienable and inalienable nouns.

(115).	ga-tegel-en	Ø-aare	Øaxu
	NC9-basket-INACT	NC1-woman	NC1:DEF
	'The woman's former basket'		

(116).	ga-ñen	Ø-aare	Øaxu
	NC9-hand	NC1-woman	NC1:DEF
	'The woman's hand'		

3.2.3.2 The possessive construction with the morpheme CD-ala 'of'

The possessive morpheme *CD-ala* 'of' has two allomorphic realizations. The first is the form *CD-aa*, which normally occurs with possessors having an initial consonant, but is also possible with a possessor having an initial vowel, if it combines with the inactualis suffix (cf. (118) below). The other allomorph is the form *CD-al* (cf. (117)), which occurs before possessors with initial vowels. In this case the possessive morpheme does not occur with the inactualis suffix.

The possessive morpheme *CD-ala* 'of', combines with the inactualis suffix *-en* to mark a past relation of possession, or one that did not to take place as expected. In the possessive construction with the morpheme *CD-ala* 'of', the possessum precedes the genitive morpheme which is followed by the possessor. This morpheme is as pointed out above, used to encode the genitive of material (119) and the genitive of origin (120).

(117).	y-aŋ	y-al	Ámbu
	NC3-house	CD3-of	Ámbou
	'One of Ámbou's houses'		

(118).	e-bbol-a-y	y-aa-en	Ø-aare-a-w
	NC3-bowl-DEF.DET-CD3	CD3-of-INACT	NC1-woman-DEF.DET-CD1
	'The bowl belonged to the woman'		

(119).	y-aŋ	y-al	e-ukkut
	NC3-house	CD3-of	NC3-clay
	'A house of clay'		

(120).	á-fula	Ø-ala	Mamatoro
	NC1-fula	CD1-of	Mamatoro
	'A Fula from Mamatoro'		

A possessive noun phrase can also be formed by the combination of a noun with a possessive pronoun (3.2.1.3.6 above), which occurs in post-nominal position. With the

possessive pronoun, only a possessive construction with juxtaposition is attested, hence the ungrammaticality of (122).

(121). *ga-tegel*   *gagu*   *g-ola*
        NC9-basket   NC9:DEF   CD9-hers
        'Her basket'

(122). **ga-tegel*   *gagu*   *g-ala*   *g-ola*

3.2.4 Prepositions

As typical for a VO language, G.E. has prepositions whose function is to introduce prepositional phrases. The prepositional phrase normally follows the verbs in the clause except in case of topicalization as in (123) below.

(123). *ni*   *ba-xa*   *n-i-kka-en-e*
       LOC   NC5b-forest   LOC-1SG-go-INACT-PFV
       'lit: It is to the forest that I went' (part-obsv)

G.E. has a semantically general preposition, *ni*, that is interpreted here as expressing 'location' in space or time depending on the meaning of the main verb in the clause, and glossed as 'LOC'. Bassène (2006: 171-179) identifies four contexts of occurrences of this morpheme, where it functions as a "preposition", a "coordinating conjunction", a "subordinating conjunction" and a fourth context where he argues that it has a semantically "ambiguous nature". He further discusses the occurrence of this morpheme with pronominal verbal prefixes. However, it is not clear from the conclusion of his discussion whether *ni* is a polysemous morpheme or whether it is simply a case of homonymy between morphemes that occur in different contexts.

The proposal made here is to look at *ni* as a preposition with a semantically general meaning expressing different types of locations. This permits us to account for its occurrences as a preposition where it has locative (cf. (123)) and instrumental (cf. (124)) amongst other meanings, and may be translated 'in, at, on, inside, during etc'. Such an interpretation also accounts for the occurrence of the morpheme *ni* as a coordinating conjunction as in (125) and in this case, it may be related to a location of one entity in

relation to another one. With verbs, either in the progressive or other TAM expressions (cf. 3.2.6.1.3.1 below), the morpheme *ni* also locates events in time, either as in the midst of happening or as factual. The latter cases seem to correspond to what in Bassène is referred to as the 'ambiguous nature' of *ni*. Cases of occurrences of the morpheme *ni* as a subordinating conjunction have also occurred as part of my participant observed data. But they were only produced by non-fluent speakers. Other speakers use the complementizer *min* in such contexts (3.3.3.3.1 below).

(124). *e-jow*   *ni*   *e-bekkan*
        NC3-go   LOC   NC3-bicycle
        'To go with a bicycle'

(125). *ja-om*   *ni*   *pay-om*
        mother-1SG.POSS   LOC   father-1SG.POSS
        'My mother and my father'

The preposition *ni* can also combine with other prepositions such as *bi* 'to', which expresses destination as in (126) below, to express a benefactive meaning as in (127) or to refer to a goal as in *fatia* 'top' in (128).

(126). *ji-maŋ-ut*   *a-ot*   *bi*   *é-sug-ol*
        2PL-want-NEG   CD1.3SG-go home   to   NC3-village-3SG.POSS
        'You do not want him to go back to his village' (ss041013_matar)

(127). *fí-liññax*   *fauf-e*   *bi*   *ni*   *ja-om*
        NC7a-bracelet   DEM.NC7-MED   to   LOC   mother-1SG.POSS
        'This bracelet is for my mother'

(128). *n-a-jiŋ*   *bu-ssana*   *babu*   *bi*   *fatia*
        LOC-CD1.3SG-climb   NC5a-Combretum racemosum   NC5:DEF   to   top
        'He climbed the Combretum racemosum tree up to the top.'

G.E. also has prepositions that may be termed "locational nouns" (Sasse, 1993), which originate from body parts and which express spatial locations as illustrated in (129) below.

(129). *u-m-u*   *bu-sol-i*
        PRES-CD1-MED   NC5a-back-2SG.POSS
        'She/ he is behind you'

Table 14 presents a list of prepositions and 'locational nouns'.

Table 14: Prepositions and locational nouns in G.E.

Preposition	Gloss
ni	'LOC'
galam/ gáin/ galof	'near'
fatia	'above'
bi	'for/ to'
ti/ nan	'like'
nende	'at' (a person's place)
Locational body parts nouns	
gayyoŋ/ fácil	'in front of' (lit: front/ male genitals)
búsol	'behind' (lit: back)
fattam	'under' (lit: female genitals)
bípimbor	'in front of'(lit: facing)

3.2.5 Adverbs

In G.E., adverbs do not exhibit any particular morphological structure that would set them apart from other word classes. However, they can be singled out through their syntactic functions (Sasse, 1993). Adverbs are not selected by the verb as arguments, but are adjuncts that give further information on time, manner, location, and degree etc. of the situation described by the verb. As an illustration of adverbs in G.E., I will discuss temporal, location, manner and degree adverbs in the sub-sections below.

3.2.5.1 Temporal adverbs

G.E. has adverbials to express time references, for example *maer* 'now', *figen* 'yesterday', *jama* 'today' and *gajem* 'tomorrow', *fíllim* 'last year' and *toon* 'next year'. In addition to these time adverbials that also function as nouns, there are adverbials to refer to 'time before or after' the time expressed by these time adverbials. These are formed by attaching the derivational suffix *-énum*[69] to four recorded time adverbials with various phonological changes: *figen* 'yesterday', *fíllim* 'last year', *gajem* 'tomorrow' and *toon* 'next year'. *fígenum* 'the day before yesterday' is the result of the amalgamation of *figen* 'yesterday' to the suffix *-énum* with an elision of the final syllable of the time adverbial

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[69] Recall that according to the orthography proposed here, the acute accent indicating the [+ATR] features of the vowels is put on the first vowel of the word.

figen. In the formation *gájimenum*[70], 'the day after tomorrow' from *gajem* 'tomorrow' and the suffix *-énum* the vowel /e/ is replaced by the vowel /i/. Temporal adverbials that combine with the suffix *-énum* (noted *-enum* to follow the orthographical convention) are illustrated in (130). Note that *jama* 'today' does not combine with the suffix *-énum*.

(130).   *figenum*   'the day before yesterday'
           fillimenum   'the year before last year'
           gájimenum   'the day after tomorrow'
           tóonenum   'the year after next'

Temporal adverbs appear in sentence-final position (131) but are also left-dislocated to sentence-initial position to mark topicality as in (132) below. Temporal meaning can also be expressed by prepositional phrases as in (133).

(131).   *pan*   *t-bbañ-ul*   *gajem*
        FUT   1SG-return-DIR   tomorrow
        'I will come back tomorrow'

(132).   **toon-énum**   **bú-xut**
        next year-T.LOC   NC5-initiation
        'The year after next year there is an initiation ceremony'

(133).   *e-añ*   *ni*   *fu-jam*
        NC3-cultivate   LOC   NC4-rainy season
        'To cultivate during the rainy season'

3.2.5.2   Location adverbs 'here/ there'

G.E. expresses location by the use of adverbials, which combine with the spatial locative classes 13 *t-* and 14 *d-*. Locative adverbials, e.g. *taute* 'precisely here', *baubu* 'there (in that area)', and *dáuru* 'inside there' are morphologically complex showing double agreement marking e.g. *CD-DEF.DET/ PRO-PRES-CD-PROX/ MED/ DIST* and thus exhibit a similar shape with the demonstratives discussed in 3.2.1.3.2.2 above. Adverbials can occur as in (134) below.

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[70] It is not clear whether the processes observed in the formation of the *figenum* 'the day before yesterday' or *gájimenum* 'the day after tomorrow' are based on a morphophonological rule. This will be researched further.

(134). *pan*   *a-cig-ul*   **baub-e**
      FUT   CD1.3SG-arrive-DIR   DEM.NC5-PROX
      'He will arrive here' (in this area)

Their agreement markers indicate general location, specific location, and location inside an entity. The demonstrative suffixes that are attached to the adverbials express proximal (-*e*), medial (-*u*) and distal locations (-*ua* and -*a*) relative to speaker or addressee. Locative adverbs usually occur in sentence-final position but can also appear in sentence-initial position to mark emphasis.

(135). **taut-e**   *pan*   *a-robo*
      DEM.NC14-PROX   FUT   CD1.3SG-stay
      'It is (precisely) here that he will stay'

There is another form of the locative adverbials (*CD-aa-CD-a*) which occurs with the distal suffix -*a*. Morphologically, it is formed by double agreement marking and extra-lengthening of the definite determiner morpheme. This form is used with pointing to refer to a remote location that is not clearly visible. It differs from the distal expression of the form *CD-a-u-CD-ua* which expresses a remote but visible location. In (136) for instance, the adverbial locative *baaba* 'over there' shows that the location of 'Appa' is remote from the speaker and addressee and that visibility is reduced.

(136). *Appa*   *u-m-u*   **baab-a**
      Appa   PRES-CD1-MED   DEM.NC5-DIST
      'Appa is over there' (on the horizon)

Table 15 presents the locative adverbials discussed above with the medial and distal demonstrative suffixes.

Table 15: Locative adverbials

Preposition	Gloss
tautu	'precisely there'
taala	'precisely over there'
baubu	'there (general location)
baaba	'over there (general location)
dáuru	'inside there'
dáara	'over there inside...'

3.2.5.3 Manner and degree adverbs

Manner adverbs appear in sentence-final position. They may be non-derived adverbs as in (137)-(138) below, or adverbs derived from adjectives using noun class 10 agreement as it is the case for the degree adverb *m-ámax* 'a lot' which is derived from the adjective *-ámax* 'big' (cf. (139) below.)

(137). *u-kkan*   *cab*
       2SG-do   Quickly
       'lit: Do (it) quickly' (hurry up)

(138). *u-kkan*   *bu-rokk-i*   *jon*
       2SG-do   NC5-work-2SG.POSS   well
       'Do your work well'

(139). *n-á-xoji-xoji*   *m-ámax*
       LOC-CD1.3SG-ugly-DUP   CD10-big
       'He is very ugly'

Many manner and degree meanings are expressed by ideophone words[71] i.e., words that "are supposed to sound like the concept they represent" (Payne, 1997: 363), as in (140) to (142).

(140). *n-u-xoji-xoji*   *tawl*
       LOC-2SG-ugly-DUP   IDEO
       'You are very ugly!'

(141). *ga-ppil*   *g-a-xuli-e*   *sar*
       NC9-stick   CD9-REL-long-PFV   IDEO
       'A very long stick'

(142). *n-a-lo*   *báp*
       LOC-CD1.3SG-fall   IDEO
       'He/ she fell heavily'

3.2.6 Verbs

Typically, verbs differ from nouns in that they express events/ states which prototypically occupy the end of the time stability scale (Givón, 2001). Verbs have a central role in the organization of the clause and can be further sub-categorized according to the

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[71] Whether sound symbolic words constitute a word class on their own will be a topic for future research.

grammatical roles that their participants assume within the clause and the semantic roles they play in the event referred to.

Similar to nouns, a G.E. verb is morphologically composed of a prefix, a base and an optional suffix (NC-base-(SUFF) e.g. *i-maŋ-ut* 'I do not want'). The prefix in a verb is either an infinitive marker or a bound subject prefix, which shows agreement with the subject head noun and inflects for person, number and noun class in finite clauses. Inflection, e.g. tense, aspect and modality, and derivation are expressed by suffixation.

3.2.6.1 Verbal morphology

3.2.6.1.1 Bound subject pronouns

Similar to Jóola Fógny, G.E. has two formally distinct variants of the bound subject pronouns; the so-called "full form" (Sapir 1965) (*n-)V-* and the clipped form *V-*. The full form occurs in all singular persons and in the first person plural inclusive as shown in Table 16. The first person plural inclusive is realized with the circumfix (*n-)V-* ... *-al*. In the plural persons other than the first person inclusive, the morpheme *n-* can occur in its full form *ni* as a separate word (see in brackets).

Table 16: The bound subject pronouns

Number	Person	Full form (realis)	clipped form (irrealis)	Root	Suffix	Gloss
Singular	1	*ni-*	*i-*	*ber*		'I laugh'
	2	*nu-*	*u-*	*ber*		'you laugh'
	3	*na-*	*a-*	*ber*		'she/ he laughs'
Plural	1.INCL	*nu-*	*u-*	*ber*	*-al*	'we laugh' (INCL)'
	1.EXCL	*(ni) ji-*	*ji-*	*ber*		'we laugh' (EXCL)
	2	*(ni) ji-*	*ji-*	*ber*		'you laugh'
	3	*(ni) gu-*	*gu-*	*ber*		'they laugh'

The different forms of the bound subject pronouns seem to show a realis and irrealis distinction. The full form occurs as a realis marker with declarative clauses, perfective forms and in narratives e.g. historical narratives, where it can be glossed 'then...', to indicate the actuality of the event referred to, or its anchorage in time (cf. (144)). As for the clipped form, it only occurs in the irrealis mode as in the imperative, the conditional, and also future tense expression and negative forms as in (143) below. Further research will

address the question of the difference between the full and the clipped forms of bound subject pronominal prefixes in more detail.

(143). a-ffan   Øaxu   a-rem-ut
        NC1-old   NC1:DEF   CD1.3SG-drink-NEG
        'The old man has not drunk'

(144). ja-jjamen   n-a-tey
        NC11b-goat   LOC-CD1.3SG-ran
        'Then Goat ran' (personified goat) (Jumuhuloŋ_2004)

A further observation with the subject pronominal prefixes is that there is a human vs. non-human distinction in the bound subject pronouns in the third persons, which show agreement with the subject NP. With the perfective aspect for example, the full form of the bound subject pronoun is only used for human referents (cf. (145)) and cannot combine to a verb that refers to non-human entities as exemplified by the ungrammaticality of (146) and its correct counterpart in (147).

(145). a-ffan   Øaxu   n-a-rem-e
        NC1-old   NC1:DEF   LOC-CD1.3SG-drink-PFV
        'The old man has drunk'

(146). *e-joba   yayu   n-e-rem-e
        NC3-dog   NC3:DEF   LOC-CD3.3SG-drink-PFV
        *'The dog has drunk'

(147). e-joba   yayu   e-rem-e
        NC3-dog   NC3:DEF   CD3.3SG-drink-PFV
        'The dog has drunk'

There is synchronic evidence that the full form of the bound subject pronoun comes from the morpheme ni 'LOC' which undergoes the inter-word morphophonological process of vowel deletion and is cliticized to the verb before vowels in the singular persons and in the first person plural inclusive[72]. This process has also been observed before consonants in

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[72] Ultimately, it can be argued that by expressing the anchorage of an event in time, the bound subject pronoun n- and its full form ni- are related to the temporal noun class n- (see Chapter 4) and also to the preposition ni- which has the general meaning of location as proposed in 3.2.4 above. This reinforces the analysis of ni- as a single morpheme with semantically general meaning of location glossed 'LOC'.

rapid speech as in (149) below, with a resulting non-phonological initial NC cluster [ng]. Recall that in the plural forms other than the first person plural inclusive, the full form of the morpheme *ni* is used in normal speech as in (148).

(148). *ni   gu-xattor*
LOC   CD2.3PL-chase
'lit: Then they chased each other' (about Hyena chasing Goat) (Jumuhuloŋ_2004)

(149). *n-gu-emor   bug-o   n-jámundumo*
LOC-CD2.3PL-meet   CD2-PRO   LOC-hyena
'Then he bumped into Hyena' (Jumuxulonjoŋ_2004)

3.2.6.1.2 Pronominal object clitics

The pronominal object clitics distinguish inclusive and exclusive meanings in the first person plural. They are formally identical to the possessive clitics which occur with nouns (see 3.2.1.2.3.1 above). The paradigm of pronominal object clitics is presented in Table 17.

Table 17: Pronominal object clitics for human

Number	Person	3SG	Root	Possessive suffix	Gloss
Singular	1	na-	ffas	-om	'she/ he knows me'
	2	na-	ffas	-i	'she/ he knows you'
	3	na-	ffas	-ol	'she/ he knows him/ her'
Plural	1.INCL	na-	ffas	-olal	'she/ he knows us' (INCL)
	1.EXCL	na-	ffas	-óli	'she/ he knows us' (EXCL)
	2	na-	ffas	-ul	'she/ he knows you'
	3	na-	ffas	-il	'she/ he knows them'

The pronominal object clitics function as direct object (cf. (150) below) or indirect object in ditransitive clauses. In this context the indirect object is always closer to the verbal base and is followed by the direct object (cf. (151)). Note that a human vs. non-human distinction is made in the third person. When the entity referred to is non-human, the subject-object free pronoun *C-o* is used instead of the bound object pronoun (cf. (152) below).

(150). *u-jog-ol*
2SG-catch-3SG.DO
'Catch him'

(151). *u-jog-om-ol*
2SG-catch-1SG-IO-DO
'Catch him for me'

(152). *u-jog-om*   *y-o*
2SG-catch-1SG.IO   CD3-PRO.DO
'Catch it for me'

3.2.6.1.3 Tense, aspect and modality

Following Comrie (1985) tense can be defined as the grammatical marking of the location of an event in time relative to a reference point, whereas aspect is defined as the grammaticalization of the internal structure of an event. As far as modality is concerned, it refers to the attitude towards the certainty, possibility, and obligation of occurrence of an event. The G.E. TAM (Tense, Aspect and Modality) system is predominantly aspectual[73]. An overview of the expression of G.E. TAM is given here with a detailed study of aspect in 3.2.6.1.3.1 below. The modality expressions discussed here, are expressed by the morpheme *ni* or its cliticized form *n-* as discussed in 3.2.6.1.1 above and by the particles *pan* 'FUT' and *ban* 'IMM.FUT' in 3.2.6.1.3.1.4 below.

3.2.6.1.3.1 Aspect

Similar to Jóola Fógny (Aronoff and Fudeman, 2005) the TAM system of G.E. can be said to be predominantly aspectual . This means that the language pays more attention to the internal structure of events than to their location in time. Consequently, categories like duration, regularity, and completion etc. of the event denoted by the verbs are more salient

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[73] The present and the future expressions are not marked morphologically in G.E. The language uses the progressive and habitual aspects to express the equivalent of the English present tense. It combines the inactualis marker *-en* with verbs to locate events in the past. However this is not the only function of the inactualis marker which also occurs with alienable nouns and prepositions among other word classes to mark past possession and a relation of possession that did not take place. Therefore it can be said that G.E. does not have an absolute past tense. The independent morphemes referred to as 'future markers' express the equivalent of the English future. However, their meaning is fundamentally modal as will be argued below.

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than absolute or relative tenses. I will discuss the following aspectual distinctions expressed in G.E: the imperfective (the progressive and the habitual), the perfective, the iterative, and the reversative as well as other suffixes which convey an aspectual meaning.

3.2.6.1.3.1.1   The progressive aspect

The progressive aspect is used to express ongoing events. It is formed in G.E. by the combination of the presentative demonstrative *u-C-PROX/ MED/ DIST* (see 3.2.1.3.2.2.1 above) with the preposition *ni* 'LOC'. In this context the presentative demonstrative pronoun functions as a predicate and has a locative meaning, which can be glossed 'be at/ in/ on etc.' This is a cross-linguistically common way of expressing the progressive aspect by use of periphrastic expression of locative meaning, to give the location of an agent in the middle of an activity (Bybee et al., 1994).

(153). *ínje   u-m-u   ni   e-añ*
       1SG   PRES-CD1-MED LOC   NC3-cultivate
       'lit: I am at cultivating' (I am cultivating)

The negative form of the progressive expression takes the copula verb *let* 'not be' which is also euphemistically used to mean 'die'.

(154). *ínje   i-let   ni   e-añ*
       1SG   1SG-not be   LOC   NC3-cultivate
       'I am not cultivating'

When it functions as a predicate, the presentative demonstrative can combine with the inactualis suffix *-en* to indicate the former location of an entity as illustrated in (155) below.

(155). *e-sarivvet-om   u-y-u-en   bae   taut-u*
       NC3-towel-1SG.POSS   PRES-CD3-MED-INACT   ADV   DEM.NC14-MED
       'My towel was (precisely) there anyway' (consultant rejecting a tissue paper) (ss041013_matar)

3.2.6.1.3.1.2   The habitual aspect

Reduplication combined with the insertion of the perfective *-e* between a base and its reduplicant, is used for the habitual aspect (cf. (156) below). The habitual describes a situation which is characterized by duration over time and includes iteration as part of its

meaning. It is negated with the negative habitual marker -*érit* without reduplication as shown in (157) below.

(156). *...jú-ffoñ-e*   *mee*   *jú-ggu-w-o-e-ggu*   *m-ámax*
       2PL-sing-PFV   like this 2PL-ruin-CD6-PRO-PFV-DUP   CD10-big
       Lit: the way you are singing, you ruin a lot' (You really ruin the songs that you sing)
       (ss041013_matar)

(157). *jú-ffoñ-erit*   *w-o*   *jon*
       2PL-sing-HAB.NEG   CD6-PRO   well
       'You do not sing them well'

3.2.6.1.3.1.3   The perfective aspect

In G.E., the perfective aspect is expressed by three morphological processes: the perfective suffix -*e*, base reduplication, and the directional-perfective suffix -*ulo*. There are slight semantic distinctions between these ways of expressing the perfective aspect some of which are discussed below. A more detailed analysis of these distinctions will be the topic for future investigations.

The suffix -*e* attaches to a verbal stem to indicate completion of an event. It may sometimes follow the inactualis suffix -*en* (cf. (160)-(161) below). The event is in this case viewed as a whole. In this sense the suffix -*e* can be considered as having a perfective meaning since it implies that the event is viewed in its entirety (Comrie, 1976). The perfective is negated with the suffix -*ut* as illustrated in (159) below.

(158).   *Jiñappu*   *n-a-lo-el*
       Jiñappu   LOC-CD1.3SG-fall-PFV
       'Jiñappu has fallen'

(159).   *Jiñappu*   *á-bukko-ut*
       Jiñappu   CD1.3SG-injure-NEG
       'Jiñappu is not injured'

In (158), the event of falling is complete and the speaker can see Jiñappu on the ground. Thus the perfective suffix -*e* can be used to describe events for which the speaker is a witness. When the perfective suffix -*e* combines with the inactualis suffix -*en*, it has the meaning of a perfective in the past (cf. (160) below) or it describes an event that failed to take place as in example (161).

149

(160).   *Sállagi*   *n-i-kkay-en-e*
          Jiñappu   LOC-1SG-go-INACT-PFV
          'I have been to Sállagi' (I am just coming from there)

(161).   *Jiñappu*   *n-á-bukko-en-e*
          Jiñappu   LOC-CD1.3SG-injure-INACT-PFV
          'Jiñappu nearly got injured'

Reduplication is a morphological process of copying all or part of a stem. The reduplicated element is referred to here as the "reduplicant" (Haspelmath, 2002). Reduplication of the verbal base may be used interchangeably with the perfective marker *-e* (cf. (162)-(163) below) with no meaning difference, a least according to most speakers.

(162).   *Jiñappu*   *n-á-bukko-e*
          Jiñappu   LOC-CD1.3SG-injure-PFV
          'Jiñappu is injured'

(163).   *Jiñappu*   *n-á-bukko-bukko*
          Jiñappu   LOC-CD1.3SG-injure-DUP
          'Jiñappu is injured'

Despite the identity in the glosses of the examples above, a few semantic differences can be found between the perfective *-e* and reduplication. For example, in the use of reduplication, the event is not considered in its entirety. Thus example (163) suggests that Jiñappu is injured but does not imply that the speaker can see his wound or see him bleeding or limping at the moment of speech. The speaker may or may not even have seen Jiñappu at all when he fell. Focus is laid on the description of the fact rather than the happening of the event. The speaker only knows that Jiñappu is injured either because they saw him during or after the event or because they have been told about it. The answer to the question, 'what happened to Jiñappu?' in (164) would be (165) but not (166) below. Example (165) focuses on the fact that Jiñappu is wounded without describing the actual event.

(164). *Jiñappu* *wa* *u-baj-ol ?*
   Jiñappu what CD6.3PL-have-3SG.DO
   'What happened to Jiñappu? '

(165). *n-á-bukko-bukko*
   LOC-CD1.3SG-injure-DUP
   'He is injured' (e.g. that is why he is not part the football team today)

(166). *??n-á-bukko-e*
   LOC-CD1.3SG-injure-PFV
   'He is injured'

Analogous to the perfective suffix -*e*, the perfective aspect marker by reduplication is negated with the negative suffix -*ut* as in example (159) above.

The suffix referred to as "directional-perfective" -*úlo* is used to describe a completed situation that took place in a different location and whose results are presented in the here and now. Morphologically the 'directional-perfective' is composed of the directional suffix -*úl* (cf. 3.2.6.1.4.2 below) 'toward the deictic centre' and the middle voice suffix -*o*. The suffix -*úlo* commutes with the perfective suffix *e*- and has the addition directional meaning, i.e. it indicates that the event viewed in its entirety took place far away but that its result are 'brought' to the observation or knowledge of the speaker. In this sense its meaning is comparable to that of a perfect, which refers to a past situation with a present relevance (Comrie, 1976), whereas the perfective aspect views the situation described from the outside, i.e. looking at it from its beginning and its end (Comrie, 1976, Saeed, 2003, Smith, 1991).

Because of this semantic specificity, the suffix -*úlo* is not considered here an allomorph of the directional -*úl* as it is the case in the Jóola linguistics literature (Bassène, 2006, Hopkins, 1990, Sambou, 1979, Sapir, 1965). Note that the negative form of the directional-perfective -*úlo* is made by the combination of the directional suffix -*úl* and -*at*, the allomorph of the negative suffix -*út* (cf. (169) below).

(167). *Jiñappu*   *n-á-bukko-ulo*
      Jiñappu   LOC-CD1.3SG-injure-DIR.PFV
      'Jiñappu has been injured' (I can see him. He got injured where he went)

(168). *Jiñappu*   *n-á-bukko-ulo-bukko*
      Jiñappu   LOC-CD1.3SG-injure-DIR.PFV-DUP
      'Jiñappu has been injured' (reporting that he came back home injured)

(169). *Jiñappu*   *á-bukko-ul-at*
      Jiñappu   CD1.3SG-injure-DIR-NEG
      'Jiñappu has been not injured' (He did not get injured where he went)

Whether some of the morphemes labeled as "perfective suffixes" have an evidential meaning i.e., allow the speaker to communicate attitude to the source of the information (Saeed, 2003) or whether perfect aspect is expressed by the directional-perfective suffix will be topics for future research.

3.2.6.1.3.1.4   Modality (futurity)

As stated above, two independent particle *pan* glossed 'FUT' for 'general future' and *ban* glossed 'IMM.FUT' for 'immediate future' express semantic distinctions which are fundamentally based on modality. *pan* 'FUT' (cf. (170)) refers to an event whose occurrence is predicted by the speaker, whereas the particle *ban* 'IMM.FUT' (cf. (171)) is used to indicate that the event expressed by the verb is going to take place in an imminent future. In the latter case, there is commitment on the part of the speaker as far as the actual realization of the event is concerned. Note that such a distinction is neutralized in the negative form of the future which is expressed by the particle *mati* glossed as 'FUT.NEG' in (172) below.

(170). *ínje*   *pan*   *i-tiñ*
      1SG   FUT   1SG-eat
      'I will eat' (later)

(171). *ínje*   *ban*   *i-tiñ*
      1SG   IMM.FUT   1SG-eat
      'I am going to eat (now)'

(172). *ínje*   *mati*   *i-tiñ*
      1SG   NEG.FUT   1SG-eat
      'I am not going to eat'

The future particle pan 'FUT' can also be used to express commands as illustrated in (173). The negative form *mati* is in this context possible as a negation marker for a command as in (174).

(173). *pan*   *u-kke*   *jangu!*
       FUT   2SG.go   church
       'You must go to church' (part-obsv)

(174). *mati*   *u-kke*   *jangu!*
       NEG.FUT 2SG.go   church
       'You must not go to church' (part-obsv)

3.2.6.1.3.1.5   The "quantificational" -lakken "once again"

The "quantificational" suffix -*lakken* indicates the repetition of instances of a given situation. It is referred to as "quantificational" because it includes the meaning of doing something another time and in this sense, it has an iterative meaning. However it should be distinguished from the iterative suffix -*ix* as discussed in the next section. The "quantificational" suffix is not productive and combines with a limited number of verbal stems some of which are exemplified in (175) below.

(175). *e-vvoy-lakken*   'melt again'
       NC3-melt-QUANTF
       ú-ti-lakken   'clean another time!'
       2SG-clean-QUANTF
       ga-bul-lakken   'grand-child' (given birth a second time)
       NC9-give birth-QUANTF
       é-ssil-lakken   'to cook again'
       NC3-cook-QUANTF

3.2.6.1.3.1.6   The iterative -ix

The suffix -*ix* is a non-productive morpheme that occurs with a few verbal stems to indicate an event whose internal make-up consists of repeating the same facts, movements, actions that together constitute the whole of the event denoted by the verb. It differs form the 'quantificational' suffix -*lakken* 'once again' discussed in the previous section, in that the latter describes repetition of a whole event with the meaning of 'redoing'. In most of its

occurrences the suffix -*ix* has the meaning of 'extracting' or 'depriving'. Note that in some cases, the meaning of the root is difficult to reconstruct.

(176) *ga-tiñ-ix*   'deprive people by eating their meal'
       NC9-eat-IT
       é-faj-ix   'to pick (e.g. grains one by one) by scattering them'
       NC3-pick-IT
       e-xor-ix   'to scour a pan' (repetitive gestures)
       NC3-scour-IT
       é-far-ix   'gather fruits by throwing a stick (many times) to pick them from a tree'
       NC3-fell-IT

*3.2.6.1.3.1.7   The anticipatory suffix -*áli* 'early'*

The suffix -*áli* is a productive aspectual marker that indicates that the event described by the verb took or will take place early or earlier than expected. It may be referred to, following Bassène (2006) as the "anticipatory" (originally "anticipative") suffix. In most of its occurrences it can be translated 'early' as illustrated in (177) and (178) below.

(177). *bi*   *é-ja-ali*   *ti*   *yayu*   *y-á-ja-ali*   *me,*
       to   NC3-go-ANT   like   NC3:DEF   CD3-REL-go-ANT   SUBORD
       'lit: to leave early like the one that left early,' (Jumuxlonjoŋ-2004)

(178). *gajem*   *pan*   *u-tiñ-ali-al*
       tomorrow   FUT   1PL.INCL-eat-ANT-1PL.INCL
       'Tomorrow we will have our meal early (earlier than usual)'

3.2.6.1.3.1.8   Reversative -úl

The reversative suffix -úl is used to refer to an event that undergoes a 'reverse' action with the meaning of 'undoing' (cf. (179)). In some instances the verb root with which it combines does not seem to have a clear synchronic lexical meaning (cf. (180)). Note that despite their apparent similarity, the reversative is different from the directional suffix -úl which indicates movement toward the speaker. These two suffixes can co-occur in the same word, in which case the reversative occurs closer to the base as exemplified in (181) below.

(179).   *e-fox*   'bury'   *é-fog-ul*   'disinter'
         NC3-bury   NC3-bury-REV
         e-ffaŋ   'bolt'   *é-ffaŋ-ul*   'unbolt'
         NC3-bolt   NC3-bolt-REV

(180).   *e-aŋ*   ?   *é-aŋ-ul*   'disconnect'
         NC3-?   NC3-?-REV
         e-xaf   ?   *é-xaf-ul*   'unstick'
         NC3-?   NC3-?-REV

(181).   *e-fox*   'burry'   *ú-fog-ul-ul*   'disinter and come'
         NC3-burry   2SG-burry-REV-DIR
         e-ffaŋ   'bolt'   *ú-ffaŋ-ul-ul*   'unbolt and come'
         NC3-bolt   NC3-bolt-REV-DIR

3.2.6.1.3.1.9   The suffix -ít

The suffix -ít has been recorded with only one verbal stem, *jox* 'catch', to form the verb *gá-jog-it* 'to appropriate to oneself the mother's sibling's or relative's belongings'[74].

(182).   *ban*   *i-kke*   *gá-jog-it*
         IMM.FUT   1SG-go   NC9-catch-SUFF
         'I am going to take some of my mother's relative's belongings'

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[74] This is a cultural practice whereby a sister's offspring is allowed to take chickens, clothes etc. from their maternal uncles and aunties.

3.2.6.1.4 Verbal derivation

3.2.6.1.4.1 Nominalization

Nominalization is defined here as a process whereby a noun is created from another part of speech, such as a verb, to name the activity or state denoted by a verb or to represent one of its arguments (Comrie and Thompson, 1985). Forms that name an activity or a state and which "retain certain properties of the verb [or the part of speech] they are related to will be referred to as "action/ state noun". On the other hand, those which name an argument and which "typically behave syntactically like other nouns" (Comrie and Thompson, 1985: 349) will be called deverbal nouns. Nominalization is a productive morphological process in G.E., and uses suffixation, zero derivation and change of noun class marker with suffixation as the mechanisms to derive nouns from verbs.

3.2.6.1.4.1.1 Action/ state nominalizations

"Action/ state nominalization" (Comrie and Thompson, 1985) refers to a process that creates a noun from action verbs and state verbs. In G.E., action nominalization is realized with zero derivation, a change of prefix where the infinitive marker, for example the default infinitive marker *e-*, is substituted by a noun class marker without further affixation. For example in (183) to (185) below, the stem *ccam* occurs as a verb, a noun or an action noun depending on whether it combines with noun class 3 *e-* or 5b *ba-* respectively.

(183). *ban*   *i-kke*   *é-ccam*   *lúas*
       IMM.FUT   1SG-go   NC3-pay   rent   (verb)
       'I am going to pay rent'

(184). *ban*   *i-kke*   *e-yab*   *ba-ccam*   (= noun)
       IMM.FUT   1SG-go   NC3-receive NC5a-pay
       'I am going to recive payment'

(185). *ba-ccam*   *é-be*   *bú-ssum-ut* (= action noun)
       NC5a-pay   NC3-cow   CD5.3PL-good-NEG
       'Paying (the price of) a cow is not easy'

In action/ state nominalization by zero derivation, the noun class marker used as the infinitive marker of the verb (see. (186)) and as the class marker of the noun (cf. (187) below) may not change. Note that the noun resulting from the action and state

nominalization process can be further quantified, showing the features of the most prototypical nouns (cf. (188) below)).

(186). *a-ññol-om*   *á-ju-erut*   *e-lob*
NC1-offspring-1SG.POSS   CD1.3SG-be able-IMP.NEG   NC3-speak
'My child cannot speak yet'

(187). *e-lob-i*   *e-kkan-e*
NC3-speak-2SG.POSS   CD3.3SG-make-PFV
'lit: Your speech made it' (It is because of what you said)

(188). *su-lob-i*   *si-mme-mmeŋ*
NC4-speak-2SG.POSS   CD4.3SG-be much-DUP
'lit: Your quarrels are a lot' (You quarrel too much) (part-obsv)

3.2.6.1.4.1.2 *Participant nominalization*

"Participant nominalization" (Payne, 1997), nominalizing a participant of the corresponding verb is mostly formed by suffixation and is the most productive strategy of creating deverbal nouns by attaching a productive derivational suffix to a verb stem. The following types of deverbal nominalizations based on suffixation have been identified in G.E.: agentive nominalization, abstract nouns formation, manner and result nominalization, instrument/ locative/ directive and product nominalizations.

3.2.6.1.4.1.2.1 *The agentive nominalization* -a

In its most prototypical function, the agentive suffix -*a* attaches to a verb stem to indicate the agent or origin of the action denoted by the verb, or 'the one who does X'. The action described by the verb may be a temporary or permanent activity e.g. the profession of an individual. In rare instances the deverbal noun derived from the combination of a verbal stem and the agentive nominalizer does not refer to an agent but an instrument that is used to perform the action described by the verb (cf. (190) and (191) below). Note that there is generally a change of noun class markers that signal the class membership of the derived noun when a deverbal agent noun is created. The semantic basis of the class assignment of agentive nouns like those exemplified below, follows parameters discussed in further details in chapter 5. The agentive suffix -*a* is very productive as exemplified in (189)-(193) below.

(189).	é-ttut[75]	'to create'	→	á-ttul-a	'creator'
(190).	e-ib	'to slice'	→	ji-ib-a	'knife'
(191).	e-jjaŋ	'to be bright'	→	e-jjaŋ-a	'lamp'
(192).	ja-baloŋ	'to play football'	→	a-boloŋ-a	'football player'
(193).	ja-mbal	'to fish with a net'	→	a-mbal-a	'fisherman who uses a net'

3.2.6.1.4.1.2.2 The abstract nominalization -ay

A number of abstract nouns having nominal or verbal stems are formed by the combination of those stems with the suffix -ay (194) below.

(194).	mú-ssum	'to be good/ goodness'	gá-ssum-ay	'peace'
	á-llin	'sister'	bá-llin-ay	'sisterhood'
	a-tti	'brother'	ba-tti-ay	'brotherhood'

3.2.6.1.4.1.2.3 Manner and result nominalization -er

The productive suffix -er is labeled a 'manner' nominalizer because it combines with verbal stems to form deverbal nouns which refer to the way the event/ state described by the verb happens. It can be glossed 'the way/ manner or result of 'X-ing' (cf. (195) and (196)). It can also be used by extension to describe the result of the activity referred to by the verb as in (197).

(195). ba-lluj-er-i   bu-fog-ut-om
       NC5b-look-MAN.2SG.POSS   NC5.3SG-please-NEG-1SG.DO
       'lit: Your way of looking does not please me' (part-obsv)

(196). ba-xur-er   Assaña   bú-ari-ari
       NC5b-raise-MAN   Assaña   NC5.3SG-good-DUP
       'Assaña's way of raising (children) is good'

(197). Jiñappu   a-ññil   a-xur-er
       Jiñappu   NC1-child   CD1-raise-MAN
       'lit: Jiñappu is a child who is the result of raising' (foster child)

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[75] Recall from the discussion in the previous chapter that /t/ alternates with /l/ in intervocalic position.

3.2.6.1.4.1.2.4 Instrument, locative, directive and product/ result nominalizations -úm/
-um

The suffix -úm is a polysemous suffix which is used to form instrument, locative, directive and product nominalizations. The semantic relations holding between the different senses are a subject for future research.

In the formation of instrument nominalization, the derived noun refers to an entity that is used to perform the action described by the verb stem. Most instrument nominalizations other than the few cases formed with the agentive suffix -a (cf. 3.2.6.1.4.1.2.1 above) use the suffix -um. Instrument nominalizations are illustrated in (198) below.

(198).	e-rus	'to behead'	ga-rus-um	'sickle'
	e-vallor	'to pick'	fú-vvalor-um	'tooth-pick'
	e-llix	'to try/ measure'	ga-llig-um	'measure'
	é-xago	'to lean'	fú-xago-um	'pillow'
	e-toj	'to block'	fú-toj-um	'cap'

G.E. has a locative nominalization process that forms deverbal nouns by the use of the suffix -úm. The derived locative nominal designates the place where the activity described by the verb takes place as exemplified in (199) below.

(199).	ja-kkuj	'to wrestle'	fú-kkuj-um	'cockpit'
	é-ggat	'to pass'	fú-ggal-um	'passage'
	ja-ssaw	'to hunt'	fú-ssaw-um	'hunting place'
	ja-teŋ	'to trap fish'	fí-teng-um	'place where a fish trap is placed'

Directive/ source nominalization formed with the suffix -úm indicates the source of an action as the one described in (200) or a pathway as in (201) below.

(200). ú-jog-um   ni   fu-xow   fafu
        2SG-hold-DIRECT   LOC   NC7a-head   NC7:DEF
        Lit: 'hold from the head' (start from the top)

(201). pan   í-jo-um   Essil
        FUT   1SG-go-DIRECT   Essil
        'I will pass through Essil'

The suffix -*úm* is also used to form product nominalization, naming the product or result of the event described by the verb stem (Payne, 1997). Consider the examples in (202) below.

(202). | *bu-rok* | 'to work' | *bú-rokk-um* | 'the product of someone's work/ actions' |
e-fes	'to give birth (king)'	*bí-fes-um*	'the king's offspring'
e-añ	'to cultivate'	*bú-añ-um*	'the product of plowing'
é-ffulor	'to crawl'	*bú-fful-or-um*	'ground track of e.g. snake'

3.2.6.1.4.2   The directional -úl / -ú / -íl

The directional suffix -*úl* e.g., *ú-jo-ul* 'come!', is a productive derivational suffix used to indicate a movement towards the speaker. Its allomorph -*ú* occurs before a consonant when inserted between a base and a reduplicant, whereas the other allomorph -*íl* has been found after the verbs *e-tey* 'run' and *e-kkay* 'go' which all have a final /y/ as exemplified in (203) and (204).

(203). | *balama* | *é-sux* | *é-ti-il* |
| before | NC3-village | CD3.3SG-run-DIR |
| 'Before people come running' (ss041013_matar) | | |

(204). | *n-á-kki-il* | *a-robo* | *t-o* | *n-a-agen-ol* |
| LOC-CD1.3SG-go-DIR | CD1.3SG-sit | NC14-PRO | LOC-CD1.3SG-hold-3SG.DO |
| 'She came and stayed there to nurse him' (ss060426_fir-ao-hono) | | | |

Example (205) illustrates the directional suffix -*úl*, contrasting it with the directional-perfective -*ulo* (cf. 3.2.6.1.3.1.3 above) which in previous works has been analyzed as its allomorph.

Clearly, there are semantic distinctions which lead to treat them here as different morphemes. Recall however, that the directional perfective -*ulo*[76] is formed by a combination of the directional suffix -*ul* and the middle voice marker -*o*.

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[76] The directional-perfective occurs with both [+ATR] and [-ATR] based on the rules of vowel harmony outlined in the previous chapter.

(205). á-jo-ul! 'let him/ her come' n-a-jo-ulo 'He/ she has arrived'
  jí-tey-ul! 'run towards me' ji-tey-ulo 'We have arrived running'
  ú-li-o-ul! 'wake up and come!' n-í-li-o-ulo 'I am here now that I am awake'
  ú-pur-ul! 'come outside!' n-í-pur-ulo 'I have come outside'

3.2.6.1.4.3 Reduplication

Several lexical items are composed of a reduplicated verb stem which has corresponding simple forms. This process of word formation is not productive. For instance the corresponding simple form of the reduplicated verb stem e-teteyor 'go from a place to another' is e-tey 'run'. The derived lexical stem having a reduplicated base behaves like any other verb and it can combine with inflectional and derivational affixes.

Semantically, reduplicated bases have a "pluractional" meaning in that they refer to the iterative occurrence of an event. The verbs derived by reduplication, may be referred to as pluractional verbs, a term borrowed from Newman (1990). Note that reduplicated bases cannot be broken by suffixation e.g. the inactualis suffix -en (cf. (206) and (207) below). For example, it is not possible to insert the inactualis suffix -en between the base and the rudiplicant of the verb e-teteyor 'go from a place to another', e.g. *e-te-en-teyor. Suffixes are only attested after the verbal stem which is composed of a base and a reduplicant e.g. e-teteyor-en 'did go from a place to another'. Reduplicated verb stem can be repeated like other G.E. verbs to express perfective meaning as shown in examples (206) and (207) below. In such cases suffixes such as the inactualis -en occur between the repeated stems but they cannot be repeated along with those stems e.g. *n-a-teteyor-en-teteyor-en. In the examples below, verb roots and verb stems derived through reduplication of those verb roots are highlighted in boldface.

(206).	*n-a-tey-tey*	'he/ she ran'
	n-a-tey-en-tey	'he/ she had ran'
	n-a-teteyor-teteyor	'he/ she went from a place to another'
	n-a-teteyor-en-teteyor	'he/ she had been from one place to another'
	*n-a-tey- or tey-or	
(207).	*n-a-lob-lob*	'he/ she has spoken'
	n-a-lob-en-lob	'he/ she had spoken'
	n-a-lolloben-lolloben	'he/ she did a monologue'
	n-a-lolloben-en-lolloben	'he/ she had done a monologue'
	*n-a-loben-loben-en-lob-en-loben	

3.2.6.1.5 Verbal valence-changing morphology

3.2.6.1.5.1   The passive -i

G.E. differentiates passive from active clauses via the passive suffix *-i*. The passive suffix is homonymous with the second person pronominal object clitic *-i* (3.2.6.1.2 above). It is argued here that these two suffixes are different morphemes in function and meaning. As a consequence, I disagree with Sambou's argument (Sambou, 1989) according to which in G.E., there is a glottal stop in word-final position after the vowel *-i* of the passive, to signal the difference between passive and active constructions. Recall from the discussion in section (2.1.4.1.1) that the glottal stop does not appear in the context predicted by Sambou and thus has no phonological function in G.E. As a consequence, it is not assumed that it functions as a passive marker in G.E.

Passivization with the suffix *-i* productively derives intransitive clauses from transitive verbs and thus has a valence-decreasing function. As illustrated by the contrast between active and passive constructions in (208)-(209) below, passivization results in a change of grammatical relations where the object of the active sentence becomes the subject of the passive sentence, but the active subject-agent is dropped.

(208). pan   a-jux   a-ññil-a-w
        FUT   CD1.3SG-see   NC1-child-DEF.DET-CD1
        'He will see the child'

(209). a-ññil-a-w   pan   a-jug⁷⁷-i
        NC1-child-DEF.DET-CD1   FUT   CD1.3SG-see-PASS
        'The child will be seen'

Note that the same suffix marks a medio-passive verb. In comparing the examples below, we can see that the active causative in (210) can be passivized as in example (211) with an implied agent, and in turn contrast with (212) which has a middle meaning since there in no semantically implied agent.

(210). n-u-jjeb-en-e   ba-el-om
        LOC-2SG-wet-CAUS-PFV   NC5b-bag-1SG.POSS
        'You drenched my bag'(the addressee is the agent)

(211). ba-el-om   bí-jjeb-en-i-jjeb-en
        NC5b-bag-1SG.POSS   CD5.3SG-wet-CAUS-PASS-DUP-CAUS
        'My bag was drenched (by somebody)'

(212). ba-el-om   bí-jjeb-i-e
        NC5b-bag-1SG.POSS   CD5.3SG-wet-PASS-PFV
        'My bag got wet' (spontaneously)

The difference between these constructions is that in the passive construction, the agent is syntactically absent but semantically present, whereas in the middle voice there is no implied agent. Note that the use of the same morphological marker to express the middle and passive is a cross-linguistically reported phenomenon (Payne, 1997: 217). In G.E., it is not clear why, despite the existence of a separate middle suffix -o, a few verbs which are incompatible with the middle suffix use the passive suffix -i to express the middle meaning. This will be investigated further in future research.

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[77] For intervolac voicing processes e.g. the alternation between [x] and [ɣ], see section 2.5.7.5 above. Recall that in the orthographical notation used here, lenition is not represented. Thus the intervolic [ɣ] is noted with the grapheme <g> as in example 209 above.

The suffix -o labeled the middle voice describes a situation without indicating the initiator of the event/ state denoted by the verb. With middles, "the subject of the verb is affected by the action described by the verb" (Saeed, 2003). It has a valence-decreasing function in that it combines with transitive verbs to derive intransitive verbs. Example (213) below illustrates the middle voice which can be contrasted with the occurrence of the same verb in the passive voice in (214) below and the active voice in (215). Note that in (214) there is an implied agent whereas in (213) no agent is implied.

(213).   *ga-rafa*   *gu-fum-o-e*
         NC9-bottle   CD9.3SG-break-MID-PFV
         'A bottle broke'

(214).   *ga-rafa*   *gu-fum-i*
         NC9-bottle   CD9.3SG-break-PASS
         'A bottle was broken'

(215).   *n-u-fum-e*   *ga-rafa*
         LOC-2SG-break-PFV   NC9-bottle
         'You broke a bottle'

In a number of instances the middle suffix -o is used to express emphasis and alternates with the passive suffix -i and the perfective suffix -e, which together describe a state, or the inherent properties of an entity as exemplified in (216).

(216).   *ndar-i-e*   'she/ he is beautiful'   ➡   *naar-o*   'she/ he really is beautiful'
         naxoj-i-e   'he/ she is ugly'   ➡   *naxoj-o*   'he/ she is really ugly'
         éttañ-i-e   'it is difficult'   ➡   *éttañ-o*   'it is really difficult'
         éral-i-e   'it is far'   ➡   *éral-o*   'it is really far'

With a number of verb roots, it is only by alternating the causative suffix -en with the middle suffix -o that the middle meaning becomes apparent since the verb roots by themselves do not show clear meaning e.g. *bukk* in (218) below. Examples (217)-(219) below are further illustrations of middle voice with the suffix -o. Verbs without the causative suffix are lexical causatives.

| (217). | *é-gun-en* | 'dupe' | *bu-gun-o* | 'be retarded' |
| | *é-rux* | 'distract' | *é-rux-o* | 'be distracted' |

(218).	*e-ssim*	'dress'	*bi-ssim-o*	'dress oneself'
	é-bukk-en	'wound/ injure'	*é-bukk-o*	'be wounded/ injured'
	é-ccix	'shave' (someone)	*gá-ccig-o*	'shave (oneself)'

| (219). | *e-il-en* | 'make stand/ straighten out' | *e-il-o* | 'to stand' |
| | *é-ba-x-en* | 'reverse' | *é-bax-o* | 'turn one's body' (turn around) |

3.2.6.1.5.3 The reflexive -oro

A reflexive situation is one where there is an identity relation between the subject and the object of a clause. Reflexivization is thus a valence-decreasing process in that two semantic roles are fulfilled by the same participant. In G.E., reflexivization is mainly formed through the derivational suffix -*oro* which seems to originate from a combination of the reciprocal suffix -*or* and the middle voice -*o*. Examples (220) and (221) below illustrate the reflexive construction in G.E.

(220). *Jaboloa*   *a-cila*   *a-kkan-oro*   *g-o*
Jaboloa   NC1-PRO   CD1.3SG-put-REFL   CD9-PRO
'It was he who nicknamed himself Jaboloa' (ss060426_fir-ao-hono)

(221). *n-i-bukk-en-oro-e*
LOC-1SG-injure-CAUS-REFL-PFV
'lit: I injured myself'

The reflexive suffix -*oro* can also have an autobenefactive meaning as in (222) below.

(222). *Jama*   *ban*   *í-ssil-oro*
today   IMM.FUT   1SG-cook-REFL
'I am going to cook for myself today'

The emphatic reflexive is formed with the morpheme *faŋ* combined with the pronominal clitic discussed in 3.2.1.2.3.1 above.

(223). aw   faŋ-i   n-u-ffas-el
       2SG   self-2SG.POSS   LOC-2SG-know-PFV
       'You yourself know!'

3.2.6.1.5.4   The reciprocal -or

The reciprocal suffix -or shows a partial formal resemblance with the reflexive suffix -oro, probably because reflexive and the reciprocal suffix are conceptually similar (Payne, 1997). However, the reciprocal does not reduce the number of arguments of a transitive and as a consequence, it has no valence-decreasing function in G.E. Unlike the reflexive, the reciprocal suffix -or is used to indicate a symmetric relation between two participants; the agent and the patient as can be seen in (224) and (225).

(224). Jíŋaa   ni   Dembo   gu-ssaf-or-e
       Jíŋaa   LOC   Dembo   CD2.3PL-greet-REC-PFV
       'Jíŋaa and Dembo greeted each other'

(225). baj-ut   t-o   e-ñag-or   u-cce
       have-NEG   NC14-PRO   NC3-pull-REC   NC6-INDEF
       'lit: There is nothing to pull each other (precisely) here' (nothing to argue about/ fight over) (ss040817_abas)

A number of verbs combine with the reciprocal suffix -or but do not have a reciprocal meaning. These exceptions are exemplified in (226).

(226). e-pin   'count'   ga-pin-or   'to think'
       e-vvis   'scatter/disperse'   e-vvis-or   'to scatter/ disperse' (e.g. crowd)
       e-raw   'stretch'   e-raw-or   'to stretch oneself'
       é-jum   ?   é-jum-or   'to forget'

3.2.6.1.5.5   Causatives

Three types of causative constructions can be identified in G.E., and correspond in Comrie's (1985) terms to analytic, lexical and morphological causative constructions.

Analytic causatives (also indirect causation (Payne, 1997)) are expressed by verbs such as e-kkan 'make; cause to do or become something'. They are periphrastic biclausal, indicating that an agent acts on a second agent and causes him/ her to do something as exemplified in (227).

(227).   *a-yaul*   *[a-kkan-e*   *[n-a-tey]]*
          NC1-male zombie   CD1.3SG-make-PFV   LOC-CD1.3SG-run
          'A male zombie made him run'

Lexical causatives are verbs that express direct causative in which causation is inherently expressed by their lexical meaning as in (228).

(228).   *ú-rur*   *e-mobilet*   *yayu*
          2SG-take inside   CD3-moped   NC3:DEF
          'Take the moped inside'

In morphological or direct causatives, the focus of this section, the notion of causation is expressed by derivational morphology by means of the suffix -*en* which is homophonous with the inactualis suffix -*en* as can be seen in example (229) below.

(229).   *Jiñappu*   *a-rokk-en-ol*
          Jiñappu   CD1.3SG-work-CAUS-3SG.DO
          'Jiñappu made him work'

Syntactically, causatives introduce a new participant, the causer, which functions as the subject of the active monotransitive sentence (cf. (231)). The subject of the corresponding intransitive sentence e.g. in (230) becomes the causee/ experiencer and functions as the object of the transitive causative sentence.

(230).   *Jiñappu*   *n-a-ssu-e*
          Jiñappu   LOC-CD1.3SG-shame-PFV
          'Jiñappu is ashamed'

(231).   *Jaja*   *n-a-ssu-en-e*   *Jiñappu*
          Jaja   LOC-CD1.3SG-shame-CAUS-PFV   Jiñappu
          'Jaja made Jiñappu ashamed'

When a base transitive verb combines with the causative suffix -*en*, the causee becomes the primary object whereas the patient functions as a secondary object (cf. (232)-(233) below).

(232). *Tatti*   *n-a-rem-e*   *bu-nux*
       Tatti   LOC-CD1.3SG-drink-PFV   NC5a-palm wine
       'Tatti drank palm wine'

(233). *Xamba*   *n-a-rem-en-e*   *Tatti*   *bu-nux*
       Xamba   LOC-CD1.3SG-drink-CAUS-PFV   Tatti   NC5a-palm wine
       'Xamba made Tatti drink palm wine'

Thus, the introduction of the causer in a causative construction is a typical valence-increasing process. Semantically, differences occur in the use of the causative derivational suffix *-en*.

Following Comrie (1985), one can distinguish 'causative proper', where the causer triggers the process denoted by the verb (cf. (229) above); "permissive" causative meaning, where the causer willingly allows a process to take place as illustrated in (234) below; and finally, the "assistive" causative where the causer helps the causee to accomplish the process described by a verb as in (235) below.

(234). *Jútoma*   *a-xal-en-e*   *su-xumba*   *sasu*
       Jútoma   CD1.3SG-let out-CAUS-PFV   NC4-pig   NC4:DEF
       'It is Jútoma who let the pigs out'

(235). *Jiñappu*   *a-rob-en-e*   *a-ññil*   *Øaxu*
       Jiñappu   CD1.3SG-sit-CAUS-PFV   NC1-child   NC1:DEF
       'It is Jiñappu who helped the child to sit'

3.3 Basic syntax

3.3.1 Grammatical relations

This section provides a brief discussion of the grammatical relations in G.E. It focuses on the order of different arguments in a simple clause in the language, starting from intransitive clauses (3.3.1.1) which typically have a one-place verb and then looking at transitive clauses which have two-place verbs (3.3.1.2), and finally, it discusses the order of elements in ditransitive clauses which contain three-place verbs (3.3.1.3). For a more detailed discussions of ditransitive clause types in G.E., including the correlation of the linear order of objects in relation to definiteness, see Bassène (to appear).

3.3.1.1 Intransitive clauses

When an NP occurs as a subject, it appears in preverbal position and shows agreement with verbs as can be seen in the intransitive clause in (236). The agreement marker on the verb cross-references to the head noun of the NP. It is possible to omit the NP, but the agreement marker on the verb stays and shows the person, number and noun class of the omitted noun as in (237).

(236). *Elaganner*   *e-nogen-ul-at*
      Elaganner   CD3.3SG-enter-DIR-NEG
      'Elaganner (cow) did not come in' (the enclosure) (ss041015_clarice)

(237). *e-nogen-ul-at*
      CD3.3SG-enter-DIR-NEG
      'It (the cow) did not come in'

3.3.1.2 Monotransitive clauses

G.E. shows a fixed basic word order of the SVO (Subject, Verb, Object) as pointed out in the introduction to this chapter. In monotransitive clauses, the object follows the verb without showing any agreement. The object NP in example (238) and the pronominal object clitic which substitutes it in (239) are highlighted in boldface.

(238).   *n-a-jug-e*   *a-ñño̱l*   *Nikkol*
         T-CD1.3SG-see-PFV   NC1-child   Nikkol
         'He saw Nikkol's child' (ss041015_clarice)

(239).   *u-kka-al-ol*   *bu-jux*
         1PL.INCL-go-INCL-3SG.DO   NC5a-see
         'Lets go to see him'

3.3.1.3 Ditransitive clauses

In ditransitive clauses, which have a double object construction, the basic SVO order is expanded to include an indirect object. But the linear ordering of the two object NPs is not fixed and their organization is sensitive to the animacy hierarchy (Bassène, to

appear)[78]. The following is a brief discussion of the linear ordering of arguments in a ditransitive clause based on their semantic roles and their correlation with the animacy hierarchy. As attested cross-linguistically the highest elements in the hierarchy precede the lowest and their linear order in relation to the verb is also determined by definiteness (Bresnan and Nikitina, to appear, Whaley, 1997).

In G.E. if a verb has two animate objects the recipient normally follows the theme (Bassène, to appear) (= SV.DO.IO cf. (240) below). Note as pointed out by Bassène, that the order of the pronominal object clitic is the reverse of that of the lexical NPs as shown in (240) and (241) where the recipient is highlighted in boldface.

(240). *u-sen*   *a-ññil*   *Øaxu*   *á-llin-i* (=SV.DO.IO)
      2SG-give   NC1-child   NC1:DEF   NC1-sister-2SG.POSS
      'Give the child to your sister'

(241). *u-sen-ol-o* (=SV.IO.DO)
      2SG-give-3SG.IO-DO
      'lit: Give her him' (Give him to her)

If two NPs differ in their position within the animacy hierarchy i.e., the co-occurring objects are animate and inanimate, etc., the following cases occur: the beneficiary normally immediately follows the verb and is in turn followed by the theme (Bassène, to appear) (=SV.IO.DO see (242) and). Note however, that this order is not fixed with a definite NP as shown in (244) and (245). With an indefinite direct object NP, the order is fixed. Placing the theme before the beneficiary as in (243), results in a different (possessive) reading compared to the indefinite NP in example (242).

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[78] Most of the discussion on ditransitive constructions follows Bassène's analysis of this phenomenon. More detailed discussions are provided in that work.

(242). *n-a-sen*   ***Káto***   *ju-tongole* (=SV.IO.DO)
       LOC-CD1.3SG-give   Káto   NC11a-flute
       'He gave Káto a flute'

(243). *n-a-sen*   *ju-tongole*   ***Káto*** (=SV.DO.IO)
       LOC-CD1.3SG-give   NC11a-flute   Káto
       'He gave away Káto's flute'

(244). *n-a-sen*   ***Káto***   *ju-tongole*   *jaju* (=SV.IO.DO)
       LOC-CD1.3SG-give   Káto   NC11a-flute   NC11:DEF
       'He gave the flute to Káto'

(245). *n-a-sen*   *ju-tongole*   *jaju*   ***Káto*** (=SV.DO.IO)
       LOC-CD1.3SG-give   NC11a-flute   NC11:DEF   Káto
       'He gave Káto the flute'

With inanimate goals, the theme (in boldface) is obligatorily placed before the goal both with the lexical nouns and with the corresponding pronominal clitics.

(246). *n-á-ja-en-um*   ***bu-nux***   ***babu***   *Yaabaccin* (=SV.DO.IO)
       LOC-CD1.3SG-go-CAUS-INSTR   NC5a-wine   NC5:DEF   Yaabaccin
       'He took the wine to Yaabaccin'

(247). *n-á-ja-en-um-b-o-b-o*
       LOC-CD1.3SG-go-CAUS-DIRECT-CD5-PRO-CD5-PRO
       'He took it there'

3.3.2 Simple clause types

This section deals with the structure of simple clauses. There are two types of simple clauses in G.E., verbal clauses, that is those that are headed by a verbal predicate, and verbless clauses. In section 3.3.2.1, I introduce verbal clauses, examining verbal declarative clauses in 3.3.2.1.1, negative clauses in 3.3.2.1.2, interrogative clauses in 3.3.2.1.3; yes/ no questions in 3.3.2.1.4, wh-questions in 3.3.2.1.5 and imperative clauses in 3.3.2.1.6. In section 3.3.2.2, I investigate the structure of verbless clauses.

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3.3.2.1 Verbal clauses

3.3.2.1.1 Declarative clauses

Simple declarative verbal clauses are typically used to make statements. They are composed of a finite verb and its arguments in the SVO order typical of many Niger-Congo languages (Watters, 2000).

(248). Jiñappu   n-a-tiñ-e   fu-mangu
       Jiñappu   LOC-CD1.3SG-eat-PFV   NC7a-mango
       'Jiñappu ate a mango'

3.3.2.1.2 Negation of verbal clauses

The type of negation that is dealt with in this section is clausal negation, where the clause as a whole is the scope of negation. Negation of verbal clauses is manifested in different ways depending on the type of clause. It may be marked morphologically on the verb as in (249) and (250) below. This includes negation of declarative sentences with present and habitual TAM. Recall that the suffix -at is an allomorph of the negative suffix -ut. It occurs after the directional derivational suffix -úl.

(249). e-kkar   yayu   e-jo-ul-at
       NC3-bus   NC3:DEF   CD3.3SG-go-DIR-NEG
       'The bus did not come' (part-obsv)

(250). gu-xur-ut-ol   ni   pay-ol
       CD2.3PL-bring up-NEG-3SG.DO   LOC   father-3SG.POSS
       'They did not bring him up at his father's' (ss041015_clarice)

(251). Honore   á-tiñ-erit   ba-raj
       Honore   CD1.3SG-eat-HAB.NEG   NC5b-gruel
       'Honore does not eat rice gruel' (part-obsv)

Negation may also be marked by use of negative particles such as *mati* (for future) in example (252), *jambi* (prohibitive) as in (253) and *indi* (habitual)[79] illustrated (254). Negative particles occur in preverbal position after the subject with the exception of the

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[79] The negative suffix -*erit* and the negative morpheme *indi* are glossed Habitual-Negative (HAB-NEG), because in available data and also in in my native speaker's intuition they are totally interchangeable.

prohibitive negation particle whose subject is omitted because it is in the imperative as exemplified in (253).

(252). *fi-il*   *fafu*   *mati*   *fu-maŋ*
NC7a-breast   NC7:DEF   NEG.FUT   CD7.3SG-want
'The lineage will not agree' (ss040908_fir)

(253). **jambi**   *ji-nnag-ol*   *n-á-ffoñ*
PROH   2PL-wait-3SG.DO   LOC-CD1.3SG-sing
'Do not let him sing' (ss041013_tiop)

(254). *e-llu*   *y-aa*   *ga-ogol*   **indi**   *e-sow-i*
NC3-meat   CD3-of   NC9-altar   HAB.NEG   CD3.3SG-grill-PASS
'Meat from an altar is not habitually/ should not be grilled' (ñuxul-dembo 2005)

Another way of marking clausal negation is through the use of the copula *let* 'not be', which behaves morphosyntactically like a verb as in (255).

(255). *Jiñappu*   *a-let*   *súndo*
Jiñappu   CD1.3SG-not be   home
'Jiñappu is not at home'

(256). *Jaññila-i*   *gu-let*   *é-ssar*
Jaññila-AST   CD2.3PL-not be   NC2c-nun
'Jaññila and others are not nuns'

3.3.2.1.3 Interrogative clauses

Two types of interrogative simple clauses are found in G.E.: yes/ no questions and Wh-questions.

3.3.2.1.4 Yes/ no questions

In G.E., in both positive and negative yes/ no questions, the word order of clauses is identical to that of declarative clauses. Yes/ no questions differ from declarative sentences in that they end with a rising intonation pattern, whereas declaratives end with a falling intonation pattern. In the illustration of yes/ no interrogative simple clauses e.g. (257), the rising of intonation pattern is represented by highlighting the sentence-final word in boldface. In the negative yes/ no question (258), a negative suffix is attached to the verb. Answering 'yes' to such a question as in (259) below implies that the speaker does not have

a mouth (will not speak) whereas answering 'no' would mean the speaker does have a mouth.

(257).   pay-i   u-m-u   b-o?
         father-2SG.POSS   PRES-CD1-MED   CD5-PRO
         'Is your father there?' (at home?) (ss060428_kup)

(258).   aw   u-baj-ut   bu-tum?
         2SG   2SG-have-NEG   NC5a-mouth
         'Do you not have a mouth?' (to talk) (ss041013_tiop)

(259).   ey   i-baj-ut   bu-tum
         yes   1SG-have-NEG   NC5a-mouth
         'lit: Yes, I do not have one' ('No, I do not have one')

3.3.2.1.5   Wh-questions

Two types of Wh-question markers can be distinguished: the interrogative determiners (CD-ay) which also function as pronouns, and the invariant monomorphemic Wh- interrogative adverbials. Interrogative determiners have a CD-ay shape where CD- stands for the agreement marker and shows which class the determined NP belongs to (cf. (261)-(263) below). Their distribution within the Wh-question clause follows the postnominal distributional properties of other determiners as can be seen in (260) below.

(260).   ga-ññil   g-ay   gu-ja-e?
         NC9-child   CD9-INT   CD9.3SG-go-PFV
         'Which useless child went?'

The interrogative determiners can also fill the position of NPs as autonomous pronouns (cf. (261)), in which case, the agreement marking shows that the NP which triggers agreement is omitted, but implicit.

Like other determiners in G.E. e.g. the definite determiner, interrogative determiners generally follow the head noun as can be seen in (262), but in echo questions the order is reversed as in (263).

(261). *Ø-ay*   *a-ja-e?*
NC1-INT   CD1.3SG-go-PFV
'Who went?'

(262). *fu-mangu*   *f-ay*   *fu-pul-e?* (=Wh-question)
NC7a-mango CD7-INT   CD7.3SG-rot-PFV
'Which mango went rotten?'

(263). *f-ay*   *fu-mangu*   *fu-pul-e?* (= echo-question)
CD7-INT   NC7a-mango CD7.3SG-rot-PFV
'Which mango went rotten?'

In addition to combining with different noun class markers to form 'who' (261) above, and 'which?' (cf. (262) and (263) above), the basic Wh- element *CD-ay* combines with locative classes to form 'where?' as in *t-ay?* 'where?' (precisely), *b-ay?* 'where?' (general location) and *d-áy?* 'where?' (inside where), and the temporal class marker *n-ay?* 'when?'.

Unlike the interrogative determiners/ pronouns, the monomorphemic Wh-adverbials do not participate in agreement. They normally occur in sentence-initial position as in (264)-(265) below, but are also attested in situ (cf. (266)-(267) below) i.e., they occur with the normal SVO order and function as echo-questions. With echo questions, monomorphemic Wh- adverbials occur in situ to express actual or feigned misunderstanding to show astonishment, disapproval, outrage etc. (266)-(267).

(264). *bu*   *n-u-lob-e?*
how   LOC-2SG-say-PFV
'lit: How did you say?' (How are you?)

(265). *wa*   *n-u-tiñ-e?*
what   LOC-2SG-eat-PFV
'What did you eat?'

(266). *n-a-ag-e*   *bu?*
LOC-CD1.3SG-say-PFV   how
'lit: he said how?' (what did he say?)

(267). *n-a-ag-e*   *wa!?*
LOC-CD1.3SG-say-PFV   what
'lit: he said what!?'

Of these monomorphemic Wh- interrogative adverbials, only *bu* 'how?', occurs in postnominal position with the sortal meaning of 'what kind of ...?' as exemplified in (268) below).

(268). *f-inde*   **bu**   *fu-om*   *me?*
NC7a-what do you call it   how   CD7.3SG-be   SUBORD
'lit: a thing like what is that?' (What kind of thing is it?) (ss040908_fir)

3.3.2.1.6 Imperative clauses

In G.E., verbs in the imperative form do not have any special morphological marking that differentiates them from declarative verbs. Both imperative and declarative verbs in addition to having similar intonation patterns combine with bound subject pronominal prefixes which mark person, number and noun class. However, imperatives differ from declarative sentences in that their subject NP is not expressed. Also, imperative clauses lack TAM (tense aspect and modality) marking. Note that the linear order of pronominal object arguments is the same as described in declarative clauses (3.3.2.1.1 above). Imperatives are illustrated in examples (269)-(272). Recall that negative imperatives are expressed with the prohibitive particle *jambi* (cf. 3.3.2.1.2 above).

(269).   *u-jow!*
       2SG-go
       'Go!'

(270).   *ju-jow!*
       2PL-go
       'Go! (PL)'

(271).   *u-sen-om*   *e-cela-om!*
       2SG-give-1SG.IO   NC3-ring-1SG.POSS
       'Give me my ring!'

(272).   *ji-sen-om*   *e-cela-om!*
       2PL-give-1SG.IO   NC3-ring-1SG.POSS
       'Give (PL) me my ring!'

3.3.2.2 Verbless clauses

Verbless clauses are formed by a combination of nominal expressions. As typical in SVO languages, the predicate in a verbless G.E. clause is placed on the right-hand side of

its subject. Verbless clauses express different kinds of relations. Equation is expressed by juxtaposition of two NPs (cf. (273)). Predicative possession is expressed by juxtaposition of a noun (followed by the definite determiner in a definite NP) and the independent possessive pronoun as the predicate (cf. (274)). Location and existential expressions are formed by juxtaposing a noun with the presentative demonstrative as the predicate as in (275). Presentative expression is similar to the location in that it localizes and presents an entity as shown in (276). Negation of verbless clauses is formed with the negative copula *let* 'not be' as illustrated in (277) and (278).

(273).   *Dímban*   *a-ttig-a*
            Dímban   NC1-war-AGT
            'Dímban is a warrior' (part-obsv)

(274).   *e-ttam*   *yayu*   *y-ololal*
            NC3-land   NC3:DEF   CD3-1PL.INCL
            'The land is ours' (part-obsv)

(275).   *a-jaora*   *u-m-u*   *súndo*
            NC1-stanger PRES-CD1-MED   home
            'There is a stranger at home' (part-obsv)

(276).   *Jiñappu*   *u-m-e*
            Jiñappu   PRES-CD1-PROX
            'Here is Jiñappu'

(277).   *Dímban*   *a-let*   *á-fula*
            Dímban   CD1.3SG-not be NC1-fula
            'Dímban is not a Fula' (part-obsv)

(278).   *Áo*   *a-let*   *súndo*
            Áo   CD1.3SG-not be home
            'Áo is not at home'(part-obsv)

3.3.3 Complex clause types

Complex clauses include compound and subordinate clauses. In a compound sentence two or more independent clauses of equal status are linked together to co-head the higher complex sentence. Coordination and verb serialization constructions are the most frequently used among compound sentences in G.E. Juxtaposition, another compound clause type, is also used as a coordinating strategy. In subordinate clauses there is a dependence relationship between a matrix clause and the embedded or subordinate clause.

3.3.3.1 Coordinate clauses

The main strategy for conjoining two or more independent clauses is by use of contrastive coordinating words *bare* 'but' to express contrast (see (279) below) or *ter* 'or' to express disjunction (cf. (280) below). G.E does not have a specific continuative coordinating word to express conjunction i.e. an equivalent of the English conjunction 'and'. It should be pointed out that the location marker *ni* which has among its meanings, 'and', and functions as a preposition in the language is not normally used to link independent clauses. Its function as a coordination conjunction is restricted to NP coordination. Note that juxtaposition without an overt connector may be used to express contrast as (281), but not disjunction. In such a context there is a rising intonation in the final vowel of the first clause verb followed by a pause.

(279).	*Bággu*	*n-a-tiñ-e*		*bare*	*a-ppoñ-ut*
Bággu	LOC-CD1.3SG-eat-PFV		but	CD1.3SG-be full-NEG
'Bággu has eaten but he is not full'

(280).	*ban*	*u-jow*	*ter*		*ban*	*u-robo?*
IMM.FUT	2SG-go	or		IMM.FUT	2SG-sit
'Are you leaving or you are staying?'

(281).	*Bággu*	*n-a-tiñ-e,*		ø	*a-ppoñ-ut*
Bággu	LOC-CD1.3SG-eat-PFV			CD1.3SG-be full-NEG
'Bággu ate but he is not full'

Note that the contrastive conjunction *bare* may be used to express intensification and in this context, it may or may not be reduplicated. Whenever it is reduplicated it expresses extra-intensification as in (282). It is also used to express focus restriction as in (283).

(282).	*aw*	*fi-tiñ*	*bare-bare*
2SG	NC7a-eat	but-DUP
'You do not do anything but eat' (part-obsv)

(283).	*a-sef-a-w*		*bare*	*a-am*	*t-o*
NC1-chief-DEF.DET-CD1		but	CD1.3SG-be	CD13-PRO
'Only the chief is there'

3.3.3.2 Verb serialization

G.E. very marginally makes use of serial verb constructions to describe events. In such constructions, two or more finite verbs which belong to the same clause expressing a single idea share the same subject (Creissels, 2000, Payne, 1997, Tallerman, 1998). For instance, in (284) below, the subject of the two verbs is 'Ánoo' to which the third person singular prefixes of each verb cross-reference.

(284).   Ánoo   n-a-ŋar-e   a-tiñ
          Ánoo   LOC-CD1.3SG-take-PFV   CD1.3SG-eat
          'lit: Ánoo took eat' (Ánoo took it and ate it)

The TAM in a serial verb construction is prototypically not independently marked on the second verb of the sequence (Payne, 1997). This is exemplified in G.E., by the use of the 'temporal' location marker *n-* and the perfective suffix *-e* in (284), and also, the use of the modality marker *pan* 'FUT' along with the inactualis marker *-en* on the first verb in (285) below.

(285).   pan   u-ŋar-en   u-tiñ
          FUT   2SG-take-INACT   2SG-eat
          'You should have eaten' (it))

Note that person and number marking in the two verbs of a serial verb construction is a cross-linguistically reported phenomenon (Tallerman, 1998: 80). Another property of a serial verb construction is that a single negative marker is used for the whole clause as exemplified in (288) below. Consider the examples in (286)-(288) below.

(286).   *u-kkan*   *n-u-ilo*   *u-jow*
          2SG-make   LOC-2SG-stand up   2SG-go
          'lit: Make (an effort) to stand up and go' (you should start thinking of leaving')

(287).   *a-ññol-om*   *pan*   *á-arul*   *a-kkoŋ*
          NC1-offspring-1SG.POSS   FUT   CD1.3SG-raise   CD1.3SG-cry
          'My child will start crying'

(288).   *a-ññol-a-w*   *mati*   *á-arul*   *a-kkoŋ*
          NC1-offspring-DEF.DET-CD1   NEG.FUT   CD1.3SG-raise   CD1.3SG-cry
          'My child will not start crying'

3.3.3.3 Subordinate clauses

3.3.3.3.1 Complement clauses

Complement clauses typically behave like nominals in that they occur as arguments of matrix clauses (Payne, 1997: 313). Depending on the verbal semantics of the matrix clause, a complement clause may or may not require a complementizer. It may also occur in its finite form (inflecting for tense and aspect) or its infinite form (i.e. in the infinitive or gerund form). The selection of the type of complementizer is dependent on the semantic class of the verbs. Thus, verbs of utterance and cognition typically select the complementizer *búox* (cf. (289) below), which is derived from *eox* 'say' and can be glossed as 'saying'. Manipulation verbs select the complementizer *min* 'so that/ that' as exemplified in (290). Indirect questions select the complementizer *ter* 'if / whether' (cf. (291)) which is also used in the language as a disjunction word in coordinate clauses.

(289).   *a-ffas-ut*   *búox*   *a-ññil*   *n-a-bug-e*
         CD1.3SG-know-NEG   COMPL   NC1-child   LOC-CD1.3SG-give birth-PFV
         'lit: He does not know that he has a child' (He behaved as if he does not have a child) (ss041013-tiop)

(290).   *u-kkan-ol*   *min*   *a-vvasen*
         2SG-make-3SG.DO   COMPL   CD1.3SG-do libation
         'Make him do a libation'

(291).   *n-i-roren-ndoren*   *ter*   *n-á-xoli-xoli*
         LOC-1SG-ask-DUP   COMPL   LOC-CD1.3SG-be afraid-DUP
         e-jow   *ni*   *fux*
         NC3-go   LOC   night
         'I was asking if he is afraid of walking (going out) in the nighttime' (ss041015_clarice)

Embedded clauses that are introduced by a complementizer are typically finite in G.E. Complement clauses that are not introduced by a complementizer are typically nonfinite as in (292). They share their subject with the matrix clause and cannot inflect for tense and aspect because they occur as infinitive.

(292).   *Firiso*   *n-á-ju-e*   *ga-vva*
         Firiso   LOC-CD1.3SG-can-PFV   NC9-tap palm wine
         'lit: Firiso can tap palm wine' (Firiso knows how to tap palm wine)

3.3.3.3.2 Adverbial clauses

Unlike complement clauses, which are sub-categorized by verbs (e.g. verbs of manipulation), adverbial clauses are typically optional clauses which are added to a sentence to provide information on the situational context for the event or state described by the verb in the main clause (Thompson and Longacre, 1985, Whaley, 1997). Adverbial clauses that are studied here include temporal, locative, manner, causal, purpose clauses and conditional clauses.

3.3.3.3.2.1 Temporal adverbial clauses

Temporal subordinate clauses, those that indicate the occurrence of events in relation to the one described by the matrix clause, are introduced with the subordinate conjunctions *balama* 'before' and *ikki* 'until'. (293) implies the termination of an event prior to the one described by the subordinate clause, whereas *ikki* 'until' in (294) indicates that the event/ state described by the matrix verb terminates at the time when the one described by the subordinate clause commences.

(293). *n-a-tiñ-e*   *balama*   *jaw-ol*   *a-cig-ul*
        LOC-CD1.3SG-eat-PFV   before   mother-3SG.POSS   CD1.3SG-arrive-DIR
        'He ate before his mother arrived'

(294). *n-a-tiñ*   *ikki*   *pay-ol*   *a-cig-ul*
        LOC-CD1.3SG-eat   until   father-3SG.POSS   CD1.3SG-arrive-DIR
        'He kept eating until his father arrived'

Note that relative clauses (cf. 3.3.3.3.3 below) are also used to describe the temporal order of events and the equivalent of 'when' as can be seen in (295) below. In this case, the pronoun *CD-o* is used as a relative pronoun and combines with noun class 15 *n-*.

(295). *ña-cce*   *n-o*   *n-í-somut*   *me*
        NC12b-INDEF   CD15-REL   LOC-1SG-illness   SUBORD
        'Once when I was ill' (Jumuxulonjoŋ_2004)

The equivalent of 'after' is expressed in G.E. by the verb *ban* 'finish' which takes subject pronominal prefixes that cross-reference to the head noun of the subject NP as can be seen in (296).

(296). gu-belen   wolil   pe   imbi   gu-**ban**
CD2.3PL-throw   theirs   all PERM CD2.3PL-finish
gu-maŋ-e   gu-ffas
CD2.3PL-want-PFV CD2.3PL-know
'lit:After they abandoned all theirs (culture), they want to know' (ss041013_matar)

3.3.3.3.2.2   Locative adverbial clauses

Locative clauses indicate the location of the event. They are expressed with a relative clause as exemplified in (297) below.

(297).   n-i-jug-ol   t-o   gu-ttep   me
          LOC-1SG-see-3SG.DO CD13-PRO.REL CD2.3PL-build SUBORD
          ga-surummal   gagu
          NC9-impluvium house NC9:DEF
          'I saw him, where they built the impluvium house'…(ss041013_matar)

3.3.3.3.2.3   Manner adverbial clauses

Manner adverbial clauses are marked by the use of ti 'like/ as' which is also used in comparative constructions. Consider the example in (298) below.

(298). pan   gu-kkan   f-o   ti   naxi   gu-kkan   me
       FUT   CD2.3SG-make CD7-PRO like HAB   CD2.3SG-make SUBORD
       'They will do it like they are used to doing' (ss060426_fir-ao-hono)

3.3.3.3.2.4   Causal adverbial clauses

Causal subordinate clauses which describe the cause and motivation of the event described by the matrix clause are introduced by the subordinate conjunction mata 'because'. This subordinate conjunction introduces a finite clause as in (299).

(299).   n-i-bba-bbañ   i-tiñ   **mata**   i-ppoñ-ut
          LOC-1SG-return-DUP 1SG-eat because 1SG-be satisfied-NEG
          'I ate again because I was not satisfied' (part-obsv)

3.3.3.3.2.5 Purpose clauses

The subordinator *bi* 'in order to/ to' (cf. (300)) which takes nonfinite clauses is used in the formation of purpose clauses.

(300). | *n-a-jo-ulo* | *bi* | *e-kke* | *fu-vvasen* |
|---|---|---|---|
| LOC-CD1.3SG-go-DIR.PFV | in order to | NC3-go | NC7a-libation |

'He came in order to go to a libation'

3.3.3.3.2.6 Conditional clauses

Conditional clauses of G.E. can be divided between real (those that could be fulfilled) and unreal ones (that cannot be fulfilled) (Thompson and Longacre, 1985, Whaley, 1997). G.E. uses the subordination marker *me* (in the protasis or if clause), and the morpheme *íni* and its variants *éni* and *eno*[80] as conditional markers (cf. (301) and (302) below).

(301). | *éni* | *pan* | *u-jow* | *n-u-lob* |
|---|---|---|---|
| if | FUT | 2SG-go | LOC-2SG-speak |

'If you are going, say it' (part-obsv)

(302). | *ji-jamor-ut* | *me,* | *mati* | *kan* | *e-paŋ* |
|---|---|---|---|---|
| 2PL-agree-NEG | SUBORD | NEG.FUT | make | NC3-shrine |

'If you do not agree, it will not become a shrine' (ss040817_abas)

3.3.3.3.3 Relative clauses

In G.E., the modifying relative clause always follows the head noun. This relative clause is introduced by a pronoun of the shape *(CD)-o* (cf. 3.2.1.3.1 above) functioning as a relative independent pronoun or a relative pronominal prefix which has the form *(CD)-a-* (304). These relative pronouns always show agreement with the head noun of the NP they modify as in (303) and (304) below, where the relative pronouns are highlighted in boldface.

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[80] The variation between *íni*, *éni* and *eno* is according to my observation based on speaker variation.

(303).
baj-e	waf	w-a-mmeŋ-e	w-o	mati	ú-ju
have-PFV	NC6.thing	CD6-REL-be many-PFV	CD6-PRO.REL	NEG.FUT	2SG-can

u-jux
2SG-see
'lit: There are things that are many that you will not be able to see' (ss040817_abas)

(304).
kakkan	waf	w-a-pi-e	n-u-cob-i
it is	NC6.thing	CD6-REL-last-PFV	LOC-CD6.3SG-chose-PASS

'It is something that was chosen long ago' (ss060426_dim)

(305).
babu	b-o	n-u-mmaŋ-en	me
NC5:DEF	CD5-PRO	LOC-2SG-want-INACT	SUBORD

'The one that you wanted'

There does not seem to be any overt grammatical difference between restrictive and non-restrictive relative clauses. In restrictive relative clauses like in (306) below, the modifying clause refers to a specific member of the class of entities denoted by the head noun whereas in a non-restrictive relative clause as illustrated in (307), the modifying clause provides more information about a referent already known or easily identifiable (Keenan, 1985, Kroeger, 2004).

(306).
bu-lago	babu	b-o	n-u-maŋ-en-al
NC5a-pathway	NC5:DEF	CD5-PRO.REL	LOC-1PL.INCL-want-INACT-INCL
me	bu-jo-ut		
SUBORD	CD5-go-NEG		

'The road that we wanted to take did not lead us anywhere' (ss060426_fir-ao-hono)

(307).
Jialeni	o	ji-al-en	me
Jialeni	PRO.REL	1PL.EXCL-descend-CAUS	SUBORD

Jialeni, whom we sheltered' (ss060426_fir-ao-hono)

Relative clauses can also be introduced by information questions as illustrated in (308)-(309).

(308).
i-osen-ut	n-ay	n-a-kka-e
1SG-remember-NEG	CD16-INT	LOC-CD1.3SG-go-PFV

'I do not remember when he left'

(309).
i-ffas-ut	b-ay	n-a-kka-e
1SG-know-NEG	CD15-INT	LOC-CD1.3SG-go-PFV

'I do not know where he has gone'

Note that the subordination marker me which occurs in conditional clauses also occurs with relative clauses as exemplified in (310) below.

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(310).   *gu-lob-um*   *gagu*   *g-o*   *n-u-lob*   *me*
          NC8-speak-INSTR   NC9:DEF   CD9-PRO   LOC-2SG-speak   SUBORD
          'The language that you spoke' (ss040817_abas)

3.4 Conclusion

In this chapter, I have investigated the basic grammatical features of G.E. I studied the major word classes and the nominal and verbal morphology. In the investigation of verbs, I have argued that the TAM system of G.E. is predominantly aspectual and shows perfective and imperfective differences. Sections 3.3.1 and 3.3.3 give an overview of the simple and complex clause types. One important grammatical aspect that has been mentioned but not studied in detail is the noun class system. The next chapter will study the formal properties of the G.E. noun class system. I will propose agreement criteria that take into account not only previous studies on the language but also cross-linguistic criteria to provide a full inventory of the noun classes of G.E. Also, the chapter proposes an examination of agreement in the language, especially the relationship between noun class markers and their corresponding agreement markers.

4 FORMAL PROPERTIES OF THE G.E. NOUN CLASS SYSTEM

4.1 Introduction

As introduced in the previous chapter, Gújjolaay Eegimaa (G.E.) has an overt nominal classification system whereby prefixes are used as noun class markers on nouns and agreement markers on dependent elements within the NP and on the verb. Every noun in the language belongs to a class. As it is the case for other Atlantic languages, there is no established numbering convention for the noun classes in G.E. and other Jóola languages, in difference to Bantu languages where a tradition of numbering classes is established. The assignment of nouns into classes in Jóola languages is a matter of controversy, especially since the introduction of the "postpréfixe" by Sambou (1979). Virtually, no two previous Jóola studies have proposed identical criteria or the same inventories of noun classes.

The goal of this chapter is to provide an inventory of noun classes in G.E. The chapter begins with a discussion of the basic terminology that is used in noun class languages (e.g., gender, noun class, concord, agreement etc.) and in the study of the G.E. noun class system proposed here (4.2 below). It is followed by a discussion of similarities and variations between noun class markers and agreement markers (4.3). I discuss the criteria for noun classification proposed by previous authors and show their relevance and limitations for G.E., including a critical analysis of the controversial notion of "postpréfixe". This is followed by a proposal of criteria for the inventory of noun classes based on the morphosyntactic structure of G.E. (4.5). A table that summarizes the proposed classes, following as much as possible the inventory of previous studies in Jóola languages, is included. Finally, I give an introductory analysis of gender/ noun class agreement resolution (4.6).

4.2 Terminological issues

4.2.1 Gender

The term "gender" is used in two different ways in the study of the nominal classification systems. This section reviews those different usages and justifies their use in this thesis. First, I discuss the different usages of the terms "gender" and "noun class" (4.2.1.1), and then "gender" and "class pair" (4.2.1.2 below).

4.2.1.1 Gender and noun class systems

In descriptive linguistics, the term "gender" and "noun class" are often used interchangeably as cover terms for systems of nominal classification that are based on the presence of agreement (Corbett, 1991). These two terms also have more specific usages depending on the tradition in linguistic research. "Gender" is generally used more specifically to refer to systems found in Indo-European languages e.g. French, and Afro-Asiatic e.g. Hausa, often referred to as "sex-based" gender languages (Greenberg, 1978, Heine, 1982), which make a distinction between masculine, feminine and also neuter sets.

Unlike these languages, languages that are traditionally referred to as "noun class languages" typically exclude the biological sex-based differentiation, even though very few of them include some aspects of masculine and feminine distinction (Creissels, 2000). "Noun class system" is traditionally used to refer to nominal classification systems found in most branches of the Niger-Congo phylum, as for instance in Atlantic e.g. Gújjolaay Eegimaa and Bantu e.g. Kiswahili.

Despite the fact that gender systems, e.g. the majority of Afro-Asiatic languages are generally more covert systems than noun class systems which are usually more of the overt type, both are to a large extent structurally similar, because they are defined and identified through the presence of agreement as pointed out above. Nouns in these systems belong to a finite number of sets and trigger agreement on agreeing elements, which include definite determiners, adjectives, demonstratives, numerals and anaphoric pronouns etc.

A noun class system is according De Wolf (1971) a more complicated kind of gender in that there are generally more than three classes which distinguish animate versus

inanimate as well as human versus non-human etc. This accounts for the frequent interchangeable use of "gender" (Greenberg 1978; Heine 1982; Corbett 1991; Creissels 1999) or "noun class" (Aikhenvald, 2000, Dixon, 1982) as cover terms in the description of these grammaticalized systems of nominal classification.

In this thesis, I follow the traditional use of the term "noun class" used for Niger-Congo languages that exhibit such systems, since it has the advantage of typically excluding the biological sex differentiation which is not attested in G.E.

4.2.1.2 Class/ gender

In defining the number of classes in a noun class language, each singular and each plural prefix and agreement set is individually described (Welmers, 1973). Consequently, the singular and plural forms of a stem are analyzed as different classes. When the singular and plural forms are analyzed as a pair, they are referred to by the term "gender". Gender in this context differs from its use as a cover term as discussed in 4.2.1.1 above. In G.E. for example, *bu-tum* 'mouth' and *u-tum* 'mouths', which are two inflected forms of the stem - *tum* 'mouth', would qualify for the treatment as a gender. However, G.E. has a crossed nominal classification system (Heine, 1982: 197) i.e., one where two or more singular classes can have one plural correspondent and where several plural classes have one singular correspondent (see Table 19 below). The lack of one-to-one correspondences between singular and plural classes in G.E. is the reason why the term "class pair" will be preferred to "gender", to refer to pairs of singular and plural forms of nouns.

4.2.2 Agreement / Concord

The terms "agreement" and "concord"[81] are used here interchangeably to refer to the "systematic covariance between a semantic or formal property of one element and a formal property of another" (Steele, 1978: quoted in Corbett, 2006: 4).

In G.E., nouns govern agreement on their syntactically dependent elements in a noun phrase and on verbs. This is illustrated in example (1) below, where there is

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[81] Agreement is the term used in text whereas CD (for concord) is the gloss used in the interlinearization of examples. This only means that no distinction is drawn here between agreement and concord.

agreement between a noun of class 3 *e-* and the two verbs that are in a syntactic relation with it, and also a noun in class 13 *t-* that triggers agreement on its modifier.

(1). | *e-xub* | *e-rob-o* | *t-iñ* | *t-anur* | *mati* | *e-fat* |
| NC3-crab | CD3.3SG-sit-MID | NC13-place | CD13-one | FUT.NEG | CD3.3SG–fat |

‘A crab that stays in one place does not get fat’ (ss060508_fir-hono-ao)

4.2.3 Controller and target

The term "controller" (Corbett, 1991, 2006) will be used to refer to the elements that trigger the agreement whereas "target" will designate the agreeing elements. As will become clear in the next sections, the choice of the form of an agreement morpheme depends on the class of the controller noun. The agreement system of G.E., is not fully alliterative, since the form of agreement morphemes (see Table 18 below) is not always identical to that of the noun class marker.

As mentioned in the previous chapter, in G.E. noun class agreement occurs between a subject noun phrase and the verb as illustrated in (2) below, but not between a verb and its object.

(2). | SUBJ[*a-rokk-a* | *Øaxu*] | *a-añ-ut* | [*ga-llax* | *gagu* | *g-ola*]O |
| NC1-work-AGT | NC1:DEF | CD1.3SG-cultivate-NEG | NC9-land | NC9:DEF | CD9-his |

‘The worker did not cultivate his land’

Noun class markers also incorporate number (singular/ plural) and person agreement distinctions in the third person pronoun. The examples below show an alternation between third person singular (cf. (3)-(4)) and third person plural[82] (cf. (5)-(6)).

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[82] The occurrence of Ø zero as an agreement marker and the lack of similarities between the controller and the target agreement forms will be accounted for in the next sections.

(3). *á-lullum*   *Ø-anur*   *á-kkumandi-oli*   *ti*   *sí-be*
NC1-white person   CD1-one   CD1.3SG-command-1PL.EXCL.DO   like   NC4-cow
'One white person commanded us like cows'

(4). *é-lullum*   *gú-uba*   *gú-kkumandi-oli*   *ti*   *sí-be*
NC3-white person   CD2-two   CD2.3PL-command-1PL.EXCL.DO   like   NC4-cow
'Two white people commanded us like cows' (ss040828_sidda)

(5). *imbi*   *eno*   *fi-ttix*   *fafu*   *fu-mug-i-mux,*
PERM   if   NC7a-war   NC7:DEF   CD7.3SG-kill-2SG.DO-DUP
'lit: If it happens that the war kills you' (If you die during the war) (ss040828_sidda)

(6). *imbi*   *eno*   *gu-ttix*   *gagu*   *gu-mug-ul-mux*
PERM   if   NC8-war   NC8:DEF   CD8.3PL-kill-2PL.DO-DUP
'lit: If it happens that the wars kill you' (If you (PL) die during the wars)

The examples above also show that the agreement markers for a given class are sometimes different in form with noun class markers and are not always identical in different syntactic environments. For instance, in example (4) the noun class marker differs in form with the agreement markers on the numeral and the verb.

The next section studies the shape of the noun class prefixes, mainly referred to as noun class markers here, and their corresponding agreement markers. It also provides a discussion of the variations in form between noun class markers and their agreement correspondents.

4.3 Noun class and agreement correspondences in G.E.

4.3.1 The shape of noun class markers and their agreement correspondents

The division of nouns into the 15 classes of G.E. is revealed by the agreement markers they trigger. As Corbett (1991: 105) puts it, "gender agreement provides the basis for defining gender and for establishing the number of genders in a given language." In G.E., the shape of agreement markers differs depending on the target. The table below presents controller genders and the targets for the definite determiner, the presentative demonstrative, the independent possessive pronouns, the third person subject/ object pronoun, the relative prefix, adjectives, and numerals. Cases where there is a lack of phonological similarity between controllers and agreement targets are discussed in section 4.3.1.1 below.

Table 18: Noun class prefixes and agreement markers (adapted from Sagna (2005).)

NC	E.g.	Gloss	DEF.DET	PRES.DEM	POSS.PRO	PRO	SUBJ[83]	REL	ADJ	NUM
1	Ø-an	'person'	Øa-x-u	u-m-DEM	Ø-úmbam	Ø-o	a-	Ø-a-	a-ADJ	Ø-anur
2a	bug-an	'people'	bug-a-g-u	u-bug-DEM	bug-úmbam	bug-o	gu-	g-a-	gu-ADJ	gú-uba
2b	gu-ttiay	'brothers'	g-a-g-u	u-bug-DEM	bug-úmbam	bug-o	gu-	g-a-	gu-ADJ	gú-uba
2c	u-aña	'peasants'	w-a-w-u	u-bug-DEM	bug-úmbam	bug-o	gu-	g-a-	gu-ADJ	gú-uba
2d	e-jjóla	'Jóola'	y-a-y-u	u-bug-DEM	bug-úmbam	bug-o	gu-	g-a-	gu-ADJ	gú-uba
3	e-ol	'fish'	y-a-y-u	u-y-DEM	y-úmbam	y-o	e-	y-a-	e-ADJ	y-anur
4	su-ol	'fish'	s-a-s-u	u-s-DEM	s-úmbam	s-o	su-	s-a-	su-ADJ	sú-uba
5a	bí-ril	'bowl'	b-a-b-u	u-b-DEM	b-úmbam	b-o	bu-	b-a-	bu-ADJ	b-anur
5b	ba-giŋ	'chest'	b-a-b-u	u-b-DEM	b-úmbam	b-o	bu-	b-a-	bu-ADJ	b-anur
6	u-giŋ	'chests'	w-a-w-u	u-w-DEM	Ø-úmbam	w-o	u-	w-a-	u-ADJ	Øú-uba
7a	fu-mangu	'mango'	f-a-f-u	u-f-DEM	f-úmbam	f-o	fu-	f-a-	fu-ADJ	f-anur
7b	fa-tama	'navel'	f-a-f-u	u-f-DEM	f-úmbam	f-o	fu-	f-a-	fu-ADJ	f-anur
8a	gu-mangu	'navels'	g-a-g-u	u-g-DEM	g-úmbam	g-o	gu-	g-a-	gu-ADJ	gí-uba
8b	gá-gur	'kind of felis nigripes'	g-a-g-u	u-g-DEM	g-úmbam	g-o	gu-	g-a-	gu-ADJ	gú-uba
9	ga-ser	'spoon'	g-a-g-u	u-g-DEM	g-úmbam	g-o	gu-	g-a-	gu- ADJ	g-anur
10a	mu-ppu	'birds'	m-a-m-u	u-m-DEM	m-úmbam	m-o	mu-	m-a-	mu-ADJ	mú-uba
10b	ma-fos	'grass'	m-a-m-u	u-m-DEM	m-úmbam	m-o	mu-	m-a-	mu- ADJ	-
11a	ju-ppu	'bird'	j-a-j-u	u-j-DEM	j-úmbam	j-o	ju-	j-a-	ju-ADJ	j-anur
11b	ja-acer	'crushed rice'	j-a-j-u	u-j-DEM	j-úmbam	j-o	ju-	j-a-	ju-ADJ	j-anur
12a	ñu-vvul	'Borassus aethiopium'	ñ-a-ñ-u	u-ñ-DEM	ñ-úmbam	ñ-o	ñu-	ñ-a-	ñu-ADJ	ñ-anur
12b	ña-ram	'syphilis'	ñ-a-ñ-u	u-ñ-DEM	ñ-úmbam	ñ-o	ñu-	ñ-a-	ñu-ADJ	ñ-anur
13	t-iñ	'precise place'	t-a-t-u	u-t-DEM	t-	t-o	tu-	t-a-	-	t-anur
14	d-iñ	'general place'	d-a-d-u	u-d-DEM	-	d-o	du-	d-a-	-	d-anur
15	n-	'temporal location'	-	-	-	n-o	-	-	-	-

[83] The prefixes used to illustrate subject agreement on verbs are the clipped form of the bound subject pronoun discussed in 3.2.6.1.1.

4.3.1.1 The shape of noun class markers

In G.E., it is not possible to have a combination of two noun class markers attached to the front of a noun[84], as is the case in Bantu languages like Herero (Möhlig et al., 2002: 38). These noun class markers have an inflectional function and mark noun class membership and number as pointed out above (see Chapter 3).

Noun class prefixes have the following shapes: Ø (zero), V-, C-, CV- and CVC- as can be seen in the column of noun class markers in Table 18 above. Vowels that are attested as part of noun class prefixes of the CVC and CV shapes are /u/ e.g. *bug-an* 'people' and *fu-xow* 'head'; /i/ e.g. *fi-ssix* 'finger' and /a/ e.g. *ga-rafa* 'bottle'. Vowels that can occur in isolation as noun class markers are /a/ e.g. *a-rafuxow* 'human being'; /u-/ e.g. *u-ser* 'spoons'; and /e/ *e-ral* 'river'. All these vowels may be realized with advance or retraction of the tongue root. For example, prefixes in *e-vvu* 'clean' and *é-vvu* 'fly' only differ because the first is -[ATR] while the second is [+ATR]. However, this does not signal a change of noun class. Another phonological alternation between vowels is between prefixes having a *Cu-* and *Ci-* shape which do not indicate a distinction in noun class as discussed in chapter 2 (see section 2.4.3 above).

Semivowels *y-* and *w-* and the high vowels /e/ and /u/ alternate in agreeing elements (cf. chapter 2: 2.5.5), as can be seen in classes 3 *e-* and 6 *u-* in Table 18 above. Semivowels are attested before vowels, whereas vowels occur before consonants. They are also attested as noun class markers of the *C-* shape in nouns like *y-aŋ* 'house' contrasting with *e-aŋ* 'kind of music instrument', and a noun like *y-on* 'crocodile'.

As mentioned above, number is marked by the use of distinct noun class prefixes for the singular and plural sets. For instance, the word *fi-eñ* 'month' included in class 7 *fu-* forms its plural in *gu-eñ* 'months' with noun class 8 *gu-*. All nouns of class 7 *fu-* form their plural in class 8 *gu-*, showing a one-to-one singular plural correspondence. There are also cases of syncretism (Corbett, 1991) where different singular noun class markers

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[84] There are cases where a stripped form of the definite determiner is attached to the prefix with a deictic meaning or to convey the meaning of 'this/that one/the other' e.g. *f-a-fu-nax* (CD7-DEF.DET-NC7a-day) 'the other day', *Øa-x-a-ñiñil* (ØDEF.DET-CD1-NC1-child) 'that (aforementioned) child'. However, these pre-prefixed forms of the definite determiner are not noun class markers.

have an identical plural class correspondent. For example, *bu-ssana* 'dug out canoe' and *ñi-xin* 'plot of rice field' which belong to classes 5 *bu-* and 12 *ñu-* respectively, form their plural in noun class 6 *u-* to produce *u-ssana* 'dug out canoes' and *u-xin* 'plots of rice field'. This is a case of many-to-one singular and plural pairing. Furthermore, words that have an identical singular noun class prefix do not always combine with the same plural morpheme. For example, *ga-ñen* 'hand' and *ga-ssin* 'horn' have an identical singular noun class prefix 9 *ga-*, but their plural form are class 8 *gu-ñen* 'hands' and class 6 *u-ssin* 'horns' respectively showing a case of one-to-many singular and plural pairing.

As typical in noun class languages, there are more singular than plural noun class prefixes. However, these singular and plural pairings of nouns are not easily predictable because of the intricate singular and plural relationship which includes one-to-one, one-to-many and many-to-one correspondences.

One of the most debated aspects of the noun class system in Jóola linguistics is the treatment of the noun class markers having a *Ca-* shape in relation to the prefixes having a *Cu-* shape. Before discussing this issue in 4.4 below, I propose a discussion of the variations in phonological form between controllers and their targets presented in Table 18 above.

4.3.1.2 Variations between noun class markers and agreement markers correspondences in G.E.

In the discussion proposed above, we can see cases of agreement where the form of the noun class marker on the controller is phonologically similar to that of all agreement markers on targets, thus showing cases of alliteration (see examples (1) and (2) above as well as classes 7 and 8 in Table 18.) However, there is a great deal of variation in the system that is best accounted for on the basis of prototypical noun class systems and their variations exhibited in Niger-Congo as shown in Creissels (2001).

4.3.1.2.1 Noun class prefixes do not always explicitly show class membership

This includes cases where a null prefix (Ø) occurs as a noun class marker (cf. example (7) below) and also instances where the noun class marker attached to noun as well as its determiners are formally distinct from the agreement marker on for example,

pronouns (see class 2 in Table 18 above) and on the verb as exemplified in (8)-(9). The second case is generally semantically motivated, as will be shown in the next chapter.

(7). *Ø-xáxae*   *naxi*   *é-sotten-i-sotten*
     NC3-leprosy   HAB   CD3.3SG-cure-PASS-DUP
     'Leprosy can be cured'

(8). *é-jjola*   *yayu*   *gu-bba-bbañ*   *ga-lam*   *g-anur?*
     NC3-jóola   NC3:DEF   CD2.3SG-return-DUP   NC9-side   CD9-one
     'Did Jóola people have their own emplacement?' (ss040828_sidda)

(9). *bá-jur*   *baub-u*   *n-a-kkay*   *a-jux*   *á-pur*
     NC5b-young woman   DEM.NC5   LOC-CD1.3SG-go   CD1.3SG-see   NC1-young man
                               -PROX
     'That young woman went to see a young man' (ss041013_gnabai)

4.3.1.2.2 Different noun class prefixes can have the same agreement correspondents

Controller nouns in examples (10) and (11) have different noun class markers, but an identical agreement marker on the verb. Cases where different noun class prefixes have an identical agreement marker but different prefix types also occur when noun class prefixes have the C- shape as in (11) below with only a similar initial consonant to those having the Cu-/ Ci- or Ca- forms as in (13)-(14) below. Here, similarity in agreement form is more important than the difference in noun class prefix form. Note that a number of phonological dissimilarities between controllers and targets have semantic motivations. This issue will be explored in detail in the next chapter.

(10). *jambi*   *ji-ggaj*   *yayu*   *y-ola*   *é-laput*
      PROH   NC11a-panther   NC3:DEF   CD3-his   CD3.3SG-be cruel
      'To prevent his panther from being cruel' (ss040918_ñuxul)

(11). *y-on*   *n-é-pur-ul*   *t-o*
      NC3-crocodile   LOC-CD3.3SG-go out-DIR   CD13-PRO
      'A crocodile appeared there' (SS041013_gnabai)

(12). *b-aŋ*   *babu*   *bu-uŋ-e*
      NC5-living room   NC5:DEF   CD3.3SG-be wide-PFV
      'The living room is wide'

(13). *bi-sem*   *bu-jox*   *y-o*
      NC5a-rust   CD5.3SG-catch   CD3-PRO
      'It is rusted' (ss040817_abas)

(14). *ba-ccin*   *bu-ja-or-e*   *ni*   *bi-cin*
      NC5b-village shrine   CD5.3SG-go-REC-PFV   LOC   NC5a-settlement
      'A village shrine does go together with the settlement' (ss040817_abas)

4.3.1.2.3 Nouns may have homophonous noun class markers but have different agreement markers

The plural noun class markers labeled 2c *u-* and 6 *u-* are identical. They trigger a similar agreement marker only on the definite determiner, but their agreement markers are different in all other cases including on the verb as illustrated in (15)-(16) below.

(15).
u-ffan	*wawu*	*bug-aa*	*rár-e*
NC2c-old	NC2c:DEF	CD2-of	DEM-NC15-PROX
gu-baj-e		*Ø-ánoan*	*ga-ja-ol*
CD2.3PL-have-PFV		CD1-DISTR	NC9-name-3SG.POSS

'Every one of the old people in this village has a name' (ss060426_fir-ao-hono)

(16).
u-jow	*wawu*	*bú-sol*	*naxi*	*ú-jo-ul*
NC6-name	NC6:DEF	NC5a-back	HAB	CD6.3PL-come-DIR

'The names usually come (are given) later' (ss060426_fir-ao-hono)

4.3.1.2.4 Agreement markers show phonological dissimilarity

Table 18 above shows cases where the agreement markers differ depending on the target. Noun class 2, which combines with different noun class prefix variants and agreement markers, can be used to illustrate the lack of uniformity of agreement markers on targets. Example (17) for instance shows that the agreement marker on the definite determiner, the relative prefix marker, and the bound subject pronouns have different shapes.

(17).
bug-an	*bug-agu*	*g-á-mund-oli*	*gu-kkay,*
NC2a-person	NC2a:DEF	CD2.3PL-REL-precede-1PL.EXCL.DO	CD2.3PL-go
Thiaroye	*gu-alen-e*		
Thiaroye	CD2.3PL-desccend-PFV		

'The people who left before us landed in Thiaroye'(ss040828_sidda)

4.3.1.2.5 Agreement in discourse

In addition to the obligatory agreement between a controller and its targets (within an NP and between a subject NP and a verb), there are cases where an agreement marker of an object pronoun refers to an entity which has been mentioned previously in a different clause. Recall here that there is no possible agreement between a verb and its object in G.E. The cases discussed here indicate a discourse dependent indexation of the direct object (Grinevald and Seifart, 2004) as exemplified by the

pronoun in (19) where the object pronoun in boldface substitutes the noun in (18) below.

(18). bug-aa   n-o   gu-maŋ-ut   **e-putelob**
      NC2a-of   CD15-PRO   CD2.3SG-like-NEG   NC3-lie
      'lit: Those of before do not like lies' (our forefathers do not like lies)

(19). bug-aa   n-o   gu-maŋ-ut   y-o
      NC2a-of   CD15-PRO   CD2.3SG-like-NEG   CD3-PRO
      'lit: Those of before do not like it' (our forefathers do not like that) (ss041013_matar)

4.3.1.3 Summary of variations between noun class markers and agreement markers

The discussion above may be summarized with the following points: noun classes cannot be identified on the basis of the morphological shape of the noun class prefix alone. This would result in a large number of classes with as many classes as prefix forms. Second, noun classes cannot be defined by considering singular and plural pairs as class units or genders, since G.E. has a crossed system of singular and plural pairing. Third, the inventory of noun classes is not based on semantics, despite the existence of semantic motivations justifying phonological dissimilarities between noun class markers and agreement forms.

The last option is the agreement evidence. This criterion is less problematic than the morphological and semantic criteria and is thus the most accepted in noun class assignment across languages. Recall that agreement is a sine-qua-non for the definition of a language as having a noun class system (Corbett 1991; Creissels 1999; Aikhenvald 2000). It should be pointed out that since the G.E. noun class system is not fully alliterative, difficulties may also arise in the application of the agreement criterion. For instance examples (8), (9) and (15) above show cases where the noun class prefixes on the controller and the agreement marker on the determiners differ from their shape on the other dependent elements in an NP and in the verb.

Because of the lack of uniformity in agreement marking between controllers and targets, the agreement criteria to be used to provide a full inventory of the noun classes in G.E. will take these peculiarities into account.

Before discussing those criteria, I discuss previous inventories of noun classes within Jóola languages and in G.E., not only to show how the problems outlined above

have been handled in previous studies, but also to show similarities and differences with the approach proposed here.

4.4 Approaches to the study of noun classes in Jóola linguistics and G.E.

The controversy surrounding the study of the formal properties of the noun class systems within Jóola linguistics regards, as stated in the introduction, the treatment of noun class markers of the forms *Cu-/ Ci-* in relation to those of the form *Ca-*. Note that these noun class markers have identical initial consonants and agreement markers.

A number of scholars treat them as prefixes that mark different classes (Sapir, 1965, Seck, 2002), whereas others analyze them as members of the same class, based on the interpretation of the vowel /a/ of the prefix *Ca-* as a morpheme called "postpréfixe" (Sambou, 1979), which was also used for the analysis of Jóola Fógny in Hopkins (1995). This position is also defended by previous authors of G.E. (Bassène, 2006, Tendeng, 2000).

My treatment of these two noun class prefix types in relation to the classification of nouns is closer to the latter authors with the difference that, I argue that the so-called "postpréfixe" could have a diachronic origin, but its synchronic relevance is highly questionable. Therefore it can not be used to account for the formal similarities between prefixes of the form *Cu-/ Ci-* and *Ca-* as will be argued below.

4.4.1 Sapir's approach

In his Grammar of Jóola Fógny, Sapir (1965) analyzes prefixes having the forms *Cu-/ Ci-* and *Ca-* as markers of distinct noun classes. For example, the Jóola Fógny words *bu-saana* 'dug out canoe' and *ba-koona* 'bed bugs' would, according to this analysis, be taken as belonging to different noun classes. Recall that the differences between prefixes of the form *Cu-* and *Ci-* are phonologically determined as discussed in the (2.4.3 above).

In Sapir's approach, countability seems to take precedence over agreement marking, since even when the initial consonant of two noun class prefixes and their agreement markers are identical, he considers them as two distinct classes if there is a countable versus non-countable distinction. As a consequence, in Sapir's approach,

noun class prefixes having the form *Cu-/ Ci-* and *Ca-* belong to distinct classes because, *Ca-* prefixes tend to combine only with non-count nouns[85].

4.4.2 Doneux's comparative hypothesis: the "augment" in Atlantic languages

Doneux's (1975) comparative study of the Atlantic branch postulates the hypothesis that proto-Atlantic had a morpheme that is the equivalent of the "augment" which occurs in the present day structures of certain Bantu languages. In those languages, the augment is a formative that precedes noun class prefixes and has a variety of functions, e.g. definiteness, specificity or focus (Katamba, 2003: 107).

According to Doneux's hypothesis, the prefix having the form *Ca-*, found in Jóola languages, is historically derived from **CV-a*, where the vowel *V* corresponds to /u/. This vowel is deleted as a result of the contact with the vowel /a/, the protolanguage form of the augment according to his account. According to Doneux's analysis, the synchronic prefix form *Ca-* is the result of a morphophonological rule of vowel deletion. This proposal is important since it is similar to the "postpréfixe" proposal which has often been an important factor in the inventory of the noun classes in Jóola linguistics as discussed below.

4.4.3 Sambou's "postpréfixe"

Sambou's treatment of the synchronic prefix form *Ca-* in his analysis of the noun class system of Jóola Kaasa Esuulaalu? echoes Doneux's hypothesis of the existence of a trace of the Proto-Atlantic augment. Sambou conducts a morphophonological analysis of Jóola Kaasa Esuulaalu? and suggests that the *Ca-* prefixes are the result of a synchronic rule that deletes a vowel before a stem having an initial vowel. Thus the form *Ca-* is analyzed as a result of vowel deletion originating from and underlying *Cu-a-* form. For example, in G.E., *ba-ccin* 'village shrine' would, according to this analysis, be underlyingly *bu-a-ccin*. He defines the vowel /a/ of the *Ca-* prefix as a separate morpheme that he calls the "postpréfixe" with the following explanation:

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[85] Countability with nouns and number distinction are introduced in the previous chapter (cf. 3.2.1. above) and are discussed in further details in the next chapter (see 5.4.1)

"Tout préfixe[86] peut être suivi d'un élément -a- dont le sens exact varie selon les catégories grammaticales [...] Il est toutefois intéressant de signaler [...] que sur le plan morphophonologique cet élément apparaît, d'une part, comme thème entraînant le choix de la variante à sélection morphophonologique du préfixe (règle.[87] & règle [88]), d'autre part, comme une voyelle de préfixe dont le comportement vis-à-vis du morphème suivant est explicité en [règle][89] [p: 89]..." "Tout comme le préfixe, le postpréfixe du substantif est un élément à sélection lexicale dont le sens n'est pas précis " (Sambou, 1979: 130).

A natural conclusion from Sambou's analysis would be that there is no noun class prefix having the form *Ca-* since it results from the morphophonological rule of vowel deletion exposed above.

Most authors in Jóola linguistics have adopted the "postpréfixe" theory following Sambou. Examples are Hopkins (1995), in his study of Jóola Fógny, Tendeng (2000) in her study of Gusiilay (G.E.) and Bassène (2006) in his study of Banjal (G.E.).

The only known author to have questioned the "postpréfixe" since its establishment is Seck (2002: 199) whose analysis is more similar to the one proposed by Sapir. She argues that "Sambou's construction of a so-called post-prefix cannot be convincing until the distribution and function of such an impressionistic morpheme will not (Sic) be obvious".

4.4.4 The "postpréfixe" in G.E.

Tendeng (2000: 146) adopts the "postpréfixe" theory, arguing for its synchronic relevance by using the prefix *ja-* (class 11b). According to Tendeng's explanation, this prefix, which is mainly used for personification of animals in tales, comes from an underlying **ju-a-* form. Thus, a morphophonological rule of vowel deletion occurs when class 11a *ju-*, the prefix used to express diminutive meaning, combines with the singular prefix *a-* for humans. According to this view, the combination of prefix 11a *ju-*

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[86] The phonological rules propsed by Sambou to account for the 'postpréfixe' are presented in footnote here.

[87] "La voyelle d'un classificateur de type CV- est une antérieure du premier degré si la consonne du classificateur est une dentale ou une palatale. "

[88] "La voyelle d'un classificateur de structure CV est une postérieure du premier degré. "

[89] "Toute voyelle disparaît si, dans le cadre du mot, elle se trouve devant un thème à initiale vocalique."

and noun class 1 *a-* that includes humans is a means of personifying non human entities while still keeping the human versus non-human distinction:

"Dans le conte, les animaux à qui l'on donne la parole et des qualités humaines entrent de ce fait dans la classe des humains. Du couple de classes d'accord 3/ 4 [*e-/ su-*], on obtient le schéma 11/ 1 [*ju-/ a-*], c'est à dire la classe *ju-*, le diminutif, associée à la classe *-a*, celle des humains. Cette association a certainement pour but de maintenir claire la distinction entre les traits +/ -humains qui distinguent la classe 1 de la classe 3. Lorsque les animaux sont évoqués au pluriel, le schéma classique est repris: classe 3/ 4"

Finally, Bassène's (2006: 57) account of the postpréfixe is based on Sambou's definition above. He gives more information about the distributional properties of the "postpréfixe":

"On le retrouve [le postpréfixe] dans certains substantifs et dans la formation de l'augmentatif et du Gérondif. Il est toujours placé entre le préfixe de class et le lexème nominal ou le lexème verbal" p. 57.

In summary, if we follow Sapir's reasoning, all prefixes with a *Ca-* structure in Table 18 above will be analyzed as separate noun class markers from those having *Cu-/ Ci-* structure even when their agreement markers are identical. On the other hand, Sambou and his followers' reasoning will lead us to consider *Ca-* as originating from an underlying *Cu-+ -a-*, that is, a noun class marker combined with a "postpréfixe".

The "postpréfixe" approach has the advantage of being compatible with an inventory of noun classes based on agreement class, since looking at a noun class prefix of the *Ca-* shape as an underlying *Cu-+ -a-* would help to get rid of the problem of lack of uniformity between noun class markers and agreement markers in some contexts.

However, the following questions are left unanswered by the "postpréfixe" theory at least for G.E.: does the morphophonological rule of vowel deletion really occur synchronically in G.E.? If so, how does one account for the minimal pairs that contradict the rule of vowel deletion between noun class markers and root exposed in the next examples (20)-(21) below? If these are taken to be exceptions, in what contexts do exceptions occur? Is there any morpheme that can be inserted between a noun class marker and a root in G.E.? If the answer is yes, the question of what is the distribution,

function and meaning of such a morpheme raised by Seck needs to be addressed. The next section provides a discussion of these questions based on the data used in this research.

4.5 Proposal for noun class inventory in G.E.

4.5.1 A few observations from the G.E. data

The first point to be made is that the rule of vowel deletion is not attested between the prefix and the root in G.E. Thus it is the very synchronic foundations of the so-called "postpréfixe" that are questioned. Example (20) below shows cases where roots having an initial vowel combine with a prefix of the C- shape i.e. having only a consonant. One may suggests that this is a result from a rule of vowel deletion as proposed by the proponents of the "postpréfixe". However example (21) below shows cases that contradict this theory. We find homonyms of words illustrated in example (20) where vowel deletion does not occur. So, for example if *f-ar* 'stomach' is synchronically *fu-ar*, one would expect *fu-ar* 'root' to also undergo the rule of vowel deletion or instead, there would be a rule that accounts for the blockage of assimilation in cases such as (21) below.

(20). | *f-ar* | *f-al* | *g-al* | *m-al* |
| 'stomach' | 'river' | 'rivers' | 'water' |

(21). | *fu-ar* | *fu-al* | *gu-al* | *mu-al* |
| 'root' | 'kind of brown snake' | 'plural of fu-al' | 'small furrows/ brown snakes' |

No synchronic phonological rule of G.E. accounts for the existence of these minimal pairs. Prior to his proposal of a synchronic "postpréfixe", Sambou had introduced what he referred to as the "disjunctive phoneme" discussed in Chapter II (see section 2.4.1), which accounts for the cases of vowel deletion or its blocking between the noun class marker and the root as follows:

"Si la réalité appelée ici phonème disjonctif n'est pas reconnue comme unité phonologique, on devra de toutes façons trouver un moyen d'expliquer le fait que des voyelles soient laissées en hiatus alors que dans la langue une règle générale veut qu'une voyelle s'assimile à la voyelle contiguë qui la précède" (Sambou, 1979: 18).

This may suggest that where the "disjunctive phoneme" is found, a possible context being cases exemplified in (21) above, no assimilation takes place, and that the rule of vowel deletion is relevant whenever there is no "disjunctive phoneme", possibly in (20) above.

If this was to be accepted that would mean that the underlying form of an assimilated realization e.g. *fu-ar*, could be found in other contexts synchronically. However this is not the case at least for G.E.

The reason why vowels of G.E., can occur in hiatus has been discussed in the section on the syllable structure (cf. Chapter II. 2.3.). As a consequence no rule of vowel deletion is attested in prefixation in G.E. Moreover, it does not seem to be clear from Sambou's and other proponents of the "postpréfixe" theory accounts when such a rule applies and when it does not in prefixation in G.E. Besides, I have shown that the "disjunctive phoneme" which is the foundation of the "postpréfixe" theory does not exist in G.E. Note that Bassène (2006) argues against the existence of Sambou's "disjunctive phoneme", which constitutes a fundamental problem for adopting the "postpréfixe" in G.E. Therefore, if there was a vowel that used to occur after the prefix for instance in (20) above, it seems to be only historically relevant. In addition example (21) above shows that vowels in contact between prefixes and roots do not merge.

It is thus posited here, as can be seen in Table 18, that a noun class prefix can also have a C- form and that such a prefix can only be considered a variant or a different form of a noun class marker depending on the agreement criteria proposed below. Another observation is that synchronically, there is no recorded instance where a prefix is followed by a vowel /a/ that is not part of the noun stem. Finally, it is possible to have a prefix *a-* in isolation as a noun class marker in the language. This prefix is attested in noun class 1 *a-* (the class that includes most humans). The question is whether the "postpréfixe" theory would consider it as a reflex of an underlying u-+ -a- form. Nothing is said about it by the proponents of that theory, but it seems to be implicitly excluded. It is consequently argued here that a noun class prefix can have both the forms *CVC-, Cu-/Ci-, Ca-* and also *V-* and *C-*.

In short, no synchronic phonological rule justifies postulating an "augment" in the synchronic stage of G.E. The "postpréfixe" is thus irrelevant in the assignment of nouns into classes. The fact that the "postpréfixe" does not have a precise meaning or function as its proponents suggest, is probably an additional sign of it synchronic

irrelevance in the language. This leads us to define the following criteria for an inventory of classes of G.E. which somewhat, summarize the discussion in previous sections.

4.5.2 The criteria for class assignment in G.E.

The "postpréfixe" theory is not adopted here, in the assignment of nouns to different classes, because there is no surface evidence that shows its existence from the data. This means that a prefix of the form Ca- is not interpreted as deriving from Cu-a- contrarily to the proposal of the "postpréfixe" theory.

A few criteria are proposed below to account for the variations noted in the agreement system of G.E.

a. Agreement is considered the primary and fundamental criterion for the identification of noun class membership.

b. If nouns have morphologically distinct noun class markers but the same agreement markers, then they belong to the same class.

c. If nouns have a similar noun class marker but different agreement markers, then they belong to different classes.

d. When agreement markers show phonological dissimilarities, focus is laid on pronominal agreement markers on independent pronouns and on the verb which consistently differentiate classes that are not subject to controversy in Jóola linguistics. For example, class 2 uses different noun class markers and also phonologically dissimilar agreement markers on most targets. But pronominal agreement markers are normally consistent.

e. The agreement markers on definite determiners are not considered primary because they show much more variations even within the same class (see class 2 in Table 18 above).

f. Singular and plural forms are considered different classes even when they have similar agreement markers.

g. Morphemes expressing a collective meaning are considered singular. This follows Corbett's (2000) argument that collectives indicate that entities are to be construed together, as a unit. What is important for our purpose is their agreement, not the expression of number.

4.5.3 Application of criteria

It should be pointed out before applying the criteria proposed here that previous works (Bassène, 2006, Tendeng, 2000) in G.E. have used the agreement criteria for the inventory of noun classes, in addition to the adoption of the "postpréfixe" , which constitute the first difference with the approach adopted here. I will also show that those previous inventories of noun classes differ, sometimes slightly with the one given here, because of reason's that will become clear in the discussion of the inventory of noun classes.

Criteria 'a' and 'g above' account for the class membership of nouns that combine with noun class markers having the *Cu-/ Ci-* and *Ca-* forms and having phonologically identical consonants in both noun class prefixes and agreement markers as shown in examples (22)-(27) below. Six noun classes show those variations. These include classes 5a *bu-/ bi-* and 5b *ba-* (cf. (22)-(23)); 7a *fu-/ fi-* and 7b *fa-* (cf. (24)-(25)); and 12a *ñu-/ ñi-* and 12b *ña-* (cf. (26)-(27))[90].

(22). *bi-sem*   *bu-jox*   *y-o*
NC5a-rust   CD5.3SG-catch   CD3-PRO
'It is rusted' (ss040817_abas)

(23). *ba-ccin*   *bu-ja-or-e*   *ni*   *bi-cin*
NC5b-village shrine   CD5.3SG-go-REC-PFV   LOC   NC5a-settlement
'A village shrine does go together with the settlement' (ss040817_abas)

(24). *fi-ttix*   *fi-cce*   *f-o,*   *t-o*   *gu-kkan*   *f-o*
NC7a-war   CD7-INDEF   NC7-PRO   NC13-PRO   CD2.3PL-do   CD7-PRO
'Another war was fought at that place' (ss040828_sidda)

(25). *fa-ragir*   *fafu*   *m-o*   *naxi*   *fu-teg-i!?*
NC7b-funerary dance   NC7:DEF   CD10-PRO   HAB   CD7.3SG-dance-PASS
'Is this how one dances the Faragir funerary dance!?'

(26). *ñi-cce*   *ñu-xul*   *ñi-baj*   *e-cce*   *é-sux...*
CD12a-INDEF   NC12a-mourning   CD12.3SG-have   NC3-INDEF   NC3-village
'A mourning took place in a village' (ss041013_tiop)

(27). *á-pur*   *Øaxu*   *ña-kkot*   *ñu-jog-ol*
NC1-young man   NC1:DEF   NC12b-murderer's depression   CD12a-catch-3SG.DO
'The young man has murderer's depression' (part-obsv)

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[90] For examples of the distinctions between prefixes of the form *Cu-* and *Ci-*, see section 2.4.3 in chapter 2. They are not treated here since their distinction is not related to class distinction.

Criterion 'f above' which separates singular and plural classes having the same agreement marker distinguishes cases like the singular class 9 *ga-* and the plural class 8a *gu-* and its variant 8b *ga-*, only found as a plural marker for a very restricted number of words e.g. *gá-gur* 'kind of felis nigripes'.

(28). *gá-sali*   *gagu*   *n-gu-fog-ol*
       NC9-pray   NC9:DEF   LOC-CD9.3SG-crave-3SG.DO
       'He craved for praying (a Muslim prayer)' (ss041013_matar)

(29). *gú-jjola-ay,*   *g-o*   *gu-pi-e*   *n-gu-nnem-o*
       NC8a-Jóola-ABSTR   CD8-PRO   CD8.3PL-last-PFV   LOC-CD8.3PL-vanish-MID
       'The Jóola language itself has already vanished' (ss041013_matar)

(30). *gá-gur*   *gú-ni*   *gú-uba*   *n-a-mug-e*
       NC8b-kind of felis nigripes   CD8.3PL-be   CD8-two   LOC-CD1.3SG-kill-PFV
       'He killed two felis nigripes'

Criteria 'a to f above' applies to cases such as the subclasses of noun class 2 (2a *bug-* 2b *gu-*, 2c *u-* and 2d *e-*), where the noun class markers are formally distinct but combine with nouns of the same class. Note that the noun class prefixes labeled 2b *gu-*, 2c *u-* and 2d *e-* are formally similar to those labeled 8 *gu-*, 6 *u-* and 3 *e-* and also have similar agreement markers on definite determiners. However, based on criteria 'c, d and e above', they are treated as markers of different classes. It will be shown in the next chapter that these subclasses of class 2 show a semantic sub-categorization of humans in the plural.

Criteria 'c' and 'e' also differentiate classes 2c *u-* and 6 *u-* (see examples (15)-(16) above) which have similar noun class markers, but different agreement markers. They also account for the differences between class 2d *e-* and class 3 *e-* as well as class 2b *gu-* and class 8 *gu-* exemplified in (31)(36) below.

(31). u-ffan   wawu   bú-sol   naxi   gú-jo-ul
      NC2c-old   NC6:DEF   NC5a-back   HAB   NC2.3PL-come-DIR
      'The old people usually come later'

(32). u-jow   wawu   bú-sol   naxi   ú-jo-ul
      NC6-name   NC6:DEF   NC5a-back   HAB   CD6.3PL-come-DIR
      'The names usually come (are given) later' (ss060426_fir-ao-hono)

(33). é-jjola   yayu   gu-bba-bbañ   ga-lam   g-anur?
      NC3-jóola   NC3:DEF   CD2.3PL-return-DUP   NC9-side   CD9-one
      'Did Jóola people have their own emplacement?' (ss040828_sidda)

(34). é-fos   yayu   e-bba-bbañ   ga-lam   g-anur?
      NC3-grass   NC3:DEF   CD3.3SG-return-DUP   NC9-side   CD9-one
      'Is the colony of grass one side?'

(35). gu-tti-ol   bug-ay   gu-ot-ulo?
      NC2b-same sex sibling-3SG.POSS   CD2-INT   CD2.3PL-go home-DIR.PFV
      'Which among his brothers came home?'

(36). gu-mangu   g-ay   gu-pul-e?
      NC8-mango   CD8-INT   CD8.3PL-rot-PFV
      'Which among his mangoes are rotten?'

At this point, one may wonder why the prefix *ba-* in *bá-jur* 'young woman' is still labeled class 5b even if, as can be seen in example (9) above repeated in (37) below, that the noun class marker and the agreement markers are phonologically similar on the definite determiner, but differ from agreement markers on other targets like the verb. In (37), the agreement marker on the verb differs from that of nouns in class 5 as exemplified in (38) below.

(37). bá-jur   baub-u   n-a-kkay   a-jux   á-pur
      NC5b-young woman   DEM.NC5-   LOC-CD1.3SG-go   CD1.3SG-see   NC1-young
                           MED   man
      'The young went to see a young man' (ss041013_gnabai)

(38). bá-rusu   babu   bu-roŋ   t-o?
      NC5b-jigger   NC5:DEF   CD5.3SG-remain   CD13-PRO
      'Are jiggers still there?'

The reason why the prefix *ba-* in *bá-jur* 'young woman' is labeled class 5b and not 5c for instance, is that it is not only identical to class 5 *ba-*, but also because it is not productive and as such, it does not constitute a subclass of class 1. It is the only example in this class to have a human reference. As with the subclasses of noun class 2, the agreement dissimilarities of the controller noun *bá-jur* 'young woman' and its targets has a semantic basis as will become clear in the next chapter.

4.5.4 Locatives

Locatives are looked at as a subset distinct from the nominal set. Apart from one recorded instance where class 13 *t-* combines with the lexeme *nax* 'day', locatives do not normally combine with lexical nouns. They exhibit a complex internal morphological structure with double agreement marking. Gújjolaay Eegimaa has three spatial locatives and one temporal class that have the following meanings: 'precise location', 'general location' (expressed by class 5), 'location inside' and 'temporal location'. They combine with demonstrative suffixes to express proximal, medial and distal location relative to the deictic centre. The locative that expresses general location is interpreted as belonging to class 5 because of its similar agreement with the latter. Locatives are exemplified in examples (39)-(42) below.

(39). *táut-e*
      DEM.CD13-PROX
      'This place (precise place) is wet'

      tí-jebi-jébi
      CD13.3SG-wet-DUP

(40). *báub-u*
      DEM.NC5-MED
      'That area is far away'

      bú-rali-rali
      CD5.3SG-far-DUP

(41). *dáur-u*
      DEM.CD14-MED
      'This place (inside) is deep'

      dí-sikki-sikki
      CD14.3SG-deep-DUP

(42). *n-án-o-n-an*
      CD15-QUANT-INFX-CD15-DUP
      'Whenever you come'

      n-u-jo-ulo
      CD15.2SG-go-PFV.DIR

In example (42) above, the agreement marker *n-* is identical in form with the temporal marker noted 'LOC-' in glosses. Semantically, both refer to the temporal anchoring of an event. Thus the morpheme 'LOC-' which occurs as the full form of the subject pronominal prefix, is interpreted as being related to noun class 15 *n-*. The application of the criteria discussed above results in the fifteen noun classes presented in Table 19 below. Not all allomorphs are presented in the table. For example, noun class markers of the shape *Ci-* and those of the *Ca-* shape labeled noun class *Xb* (X standing for the number of the noun class) are not presented in the table. Only the variants of class 2 which are formally similar to other noun class markers in the list are in the table. As briefly pointed out above, they constitute semantic subclasses that will be discussed in further details in the next chapter.

Table 19: The summary of noun classes and singular plural pairing

Singular	Plural
1. *a-*	2. *bug-/gu-/u-/e-*
3. *e-*	4. *su-*
5. *bu-*	6. *u-*
7. *fu-*	8. *gu-*
9. *ga-*	10. *mu-*
11. *ju-*	
12. *ñu-*	

13. *t-*

14. *d-*

15. *n-*

_____ Regular plural

.... Irregular plural

Regular plurals are the most frequent in number whereas irregular plurals are those that include very few members, sometimes only one.

The inventory of noun classes proposed here is closer to the one given by Bassène (2006) and has the same numbering of noun classes. However, my inventory does not recognize the "postpréfixe" and thus, class 9 *ga-* is not interpreted as being a derivation of an underlying *Cu-* noun class as argued by Bassène (2006) and Tendeng (2000). Another difference between my inventory and Bassène's is that he proposes a regular singular/plural correlation between class 11 *ju-* and class 8 *gu-* whereas class 10 *mu-* is in his analysis one that does not participate in singular and plural correlations. My proposal about this specific point is in line with Tendeng's where class 11 *ju-* appears as the singular regular form of class 10 *mu-*. The correspondence between class 11 *ju-* and 8 *gu-* is the irregular one since it contains very few members[91].

Tendeng finds sixteen classes which differ from Bassène's inventory and the one I propose here. Her additional class 13 *ba-* is interpreted in Bassène, an underlying of class 5 *bu-a-*. My interpretation of that prefix is closer to the latter's in that I analyze it

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[91] Only one is recorded in my data (*gú-cil* 'eyes') and it appears to be semantically motivated by the shape of the referents.

as a subclass of class 5 *bu-*. Again, the only difference with Bassène is that I have not adopted the "postpréfixe" for the reasons outlined above.

In the next chapter, I will continue the discussion of crossed singular-plural correlations of the G.E. noun class system and the agreement mismatches to argue for a semantic basis of the arrangements of nouns into classes. Prior to that discussion I proposed an introduction of the class resolution in G.E.

4.6 Noun class resolution

Agreement conflict may occur in a clause with conjoined noun phrases whose controllers belong to different classes. Note that in G.E. (cf. (45) below) and also cross-linguistically (Corbett, 2006: 238), conjuncts that belong to the same class may require resolution rules for the choice of their agreement marker. Resolution rules which apply in these cases may be defined as rules, which specify "the form of an agreeing element (or target) when the controller consists of conjoined noun phrases" (Corbett, 1991: 261). Given the large number of classes, conflict and resolution can be quite complex. Cases that are presented here include situations where both controllers of the conjoined noun phrases belong to the same class e.g. they are all human (4.6.1) and when none of the controllers of the conjoined noun phrases belongs to the same class e.g. human and non-human (4.6.2).

4.6.1 All controllers belong to the same class.

When two conjoined NPs belong to the same singular noun class, their plural correspondent is used if they have human denotation (43)-(44). Otherwise the default plural noun class is used (45). If both are plural, no change of class occurs (46).

(43). á-jjola   ni   á-sserer   gu-ja-or-e
      NC1-Jóola   LOC   NC1-Seereer   CD2.3SG-go-REC-PFV
      'A Jóola and a Seereer went together'

(44). e-jjola   ni   e-sserer   gu-ja-or-e
      NC2d-Jóola   LOC   CD2d-Seereer   CD2.3SG-go-REC-PFV
      'Jóola people and Seereer people went together'

(45). bi-ril   ni   bi-sigan   si-faco-e
      NC5a-bowl   LOC   NC5a-mortar   CD4.3PL-break-PFV
      'A bowl and mortar broke'

(46). u-ril   ni   ú-sigan   u-faco-e
      NC6-bowl   LOC   NC6-mortar   CD6.3PL-break-PFV
      'Bowls and mortars broke'

4.6.2 Controllers belong to different classes

If one of the conjuncts has human denotation, class 2, the human plural class is used as agreement marker (47)-(48) below. However a comitative construction is usually preferred in these cases.

(47). a-kkoñ-a   ni   si-be-ol   gú-ggal-e
      NC1-shepherd-AGT   LOC   NC4-cow-3SG.POSS   CD2.3PL-go passed-PFV
      'A shepherd and his cows went pass'

(48). a-kkoñ-a   n-á-ggal-e   ni   sí-be-ol
      NC1-sheperd-AGT   LOC-CD2.3SG-go passed-PFV   LOC   NC4-cow-3SG.POSS
      'A shepherd went passed with his cows'

If the two conjuncts are non-human and do not belong to the same noun class, the default plural noun class is used as an agreement marker (49)-(51) below. This applies regardless of whether the referents are animate or inanimate.

(49). bu-lun   ni   fa-aj   u-s-u   t-o
      NC5a-python   LOC   NC7b-bee PRES-CD4-MED   CD13- PRO
      'A python and bees are there' (precise place)

(50). m-al   ni   bu-nux   sú-yu-o-e
      NC10-water   LOC   NC5-palm wine   CD4.3PL-spill-MID-PFV
      'water and wine spilled'

(51). gú-ŋiŋ-ol   ni   w-al-ol   su-lo-e
      NC8-tooth-3SG.POSS   LOC   NC6-hair-3SG.POSS   CD4.3PL-fall-PFV
      'His teeth and his hair have fallen'

4.7 Conclusion

Like other Jóola languages, G.E. has a complex noun class system for which the inventory is controversial. In the analysis of the formal properties of the noun class system proposed here for G.E., focus has been laid on agreement criteria as a way of defining the number of noun classes. I argue that the "postpréfixe" found in Jóola Kaasa Esuulaalu? is not synchronically relevant to the analysis of G.E. noun class system and that noun class prefixes of the form *Ca-* do not derive from an underlying *Cu-a-* form because no morphophonological rule supports it in G.E. Prefixes having the form *Ca-* have the same agreement marker as those of the *Cu-/ Ci-* prefixes and are thus analyzed as subclasses of the same noun class. Gender conflict and resolution has also been introduced in this chapter and will be a topic for further investigations. In the following chapter, I will study the semantic motivation of the distribution of individual noun classes that have been identified in this chapter. I will argue that the noun class system of G.E. has a semantic basis.

5 THE SEMANTIC BASIS OF THE G.E. NOUN CLASS SYSTEM

5.1 Introduction

In chapter 4 I identified noun classes on the basis of morphosyntactic criteria. This resulted in the classification of G.E. nouns into fifteen morphosyntactically distinct noun classes. I have shown that the morphological noun class marker of a noun is not always identical to the agreement marker, but the class of such a noun can be inferred through the agreement it triggers. The results of the morphosyntactic classification of nouns have the merit of clearly revealing the class membership of nouns, but they do not show on what basis nouns denoting different entities are assigned to the same noun class. In other words, the underlying motivations for the assignment of nouns into the fifteen noun classes identified in the previous chapter still remain unclear.

The goal of this chapter is to investigate those underlying motivations by addressing the question of whether the nominal classification system of G.E. has semantic motivations. A total of 1,496 nominal lexemes constitute the database used in the investigation of the semantic basis of the nominal classification system. The nouns in the database come from lexicographical work on words collected from lexical elicitations, texts, participant observation and also personal introspection. Names invented for novel objects used in the baptizing experiment (1.4.1.4.3) are not included in this database.

My main argument is that the noun class system of G.E. has semantic bases, and in this chapter, I attempt a description of the semantic mechanisms underlying this nominal classification system. I take the view that the noun classification system of G.E. is a kind of categorization system where membership to a category is revealed formally by the morphosyntactic marking mentioned above and discussed in greater details in chapter 4. In addition to accounting for the semantic basis of the different noun classes, this chapter will also describe the underlying semantic motivations that trigger the

observed mismatches between the noun class prefix on a noun and an agreement marker that is formally dissimilar from it[92].

The first part of this chapter (section 5.2 below) provides a discussion of the cross-linguistic semantic parameters of nominal classification observed across languages of the world (Adams and Conklin 1973; Denny 1976; Allan 1977; Craig 1986; Aikhenvald 2000; Aikhenvald 2006), some of which are said to occur universally. In that section, I also discuss the issue of whether it is nouns or their real-world referents that are being classified in the G.E. nominal classification system.

In section 5.3 below, I investigate the semantic basis of individual classes with a discussion of the semantic organization of each noun class/ category. In section 5.4 I provide a further discussion of the semantic factors of the G.E. nominal classification system by examining class shift and a few selected domains: abstract nouns, loanwords, and birds. This is because the distribution of their members in different classes, may at first view appear as a challenge to the semantic account of the G.E. noun class system. This section also includes a study of shape encoding in the language through a discussion of body parts semantics and experiments testing the classification of novel objects. It shows that the classification of objects from experiments mirrors the classification of body parts and that here; shape is the main classificatory criterion. As will become clear throughout the discussion in this chapter, shape is an important parameter of the G.E. semantic classification system, which hitherto, has not been cited among the reported semantic domains in previous studies in Jóola linguistics.

5.2 The semantic parameters of nominal classification

The answer to the question of whether nouns are assigned to different classes on the basis of semantic properties is a matter of controversy in linguistics. As will be shown in this section, many studies have addressed this issue and proposed results usually range from opinions that argue for a semantic basis of the noun class systems to those that argue against such assumptions, claiming that other than the common

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[92] Once these mismatches are accounted for, one could suggest that the noun class system of Gújjolaay Eegimaa is by rule alliterative, as Sapir (1965) suggests for Diola Fógny, and that only semantic criteria can prevent this alliteration from taking place. I refuted this argument for Gújjolaay Eegimaa in chapter 4 on the grounds that from a purely formal point of view, there is not always alliteration between a noun class marker and its corresponding agreement marker

semantic criteria of humanness, sex (masculine vs. feminine) and animate etc, the assignment of nouns into classes is mostly semantically arbitrary in noun class systems. In this section, I provide a brief discussion of some important issues related to the semantic analysis of nominal classification across languages of the world and within the Niger-Congo language phylum to which Jóola languages belong. An abridged discussion of some semantic parameters of the nominal classification was provided in the overview of categorization and its relevance to nominal classification in 1.4.2. above.

5.2.1 Cross-linguistic semantic parameters of nominal classification

Cross-linguistic research on the semantic parameters of noun categorization devices (Adams and Conklin 1973; Denny 1976; Allan 1977; Aikhenvald 2000; Senft 2000; Grinevald and Seifart 2004; Aikhenvald 2006) suggests that the semantic parameters used for nominal categorization throughout the world show strong similarities. It is noteworthy pointing out here that classifiers are known to be in principle semantically motivated whereas noun class systems are generally said to have at least some semantic basis with a great deal of arbitrariness.

Allan (1977) identifies the following seven common semantic parameters of classification: material (from which an entity is made); shape; consistency (distinguishing flexibility from rigidity); location; arrangement ("non-inherent or resulting configuration" (Frawley, 1992: 128)) and quanta ("aggregates of entities " (Frawley, 1992: 128)). He argues that arrangement and quanta are the only categories of classification that are found in both classifiers and non-classifier languages. All other categories only appear in classifier language systems. Many languages, as he suggests, combine several of these categories of classification.

Aikhenvald (2000) proposes that certain semantic parameters of nominal classification are more frequent than others. Among these parameters, which mirror the categories suggested by Allan, are extendedness i.e., physical space occupied by an entity (Frawley, 1992: 121), interioricity i.e., "the way that an entity differentiates its inside from its outside" (Frawley, 1992: 125), shape and dimensionality[93], size, material and function (uses of an entity). She argues that these basic semantic factors of noun

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[93] Note that shape and dimensionality are treated as subcategories of extendedness (Frawley, 1992: 121-124).

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classification fall into the "three large classes of animacy, physical properties and function" (pp.272-274). She further proposes (Aikhenvald, 2006) that there are universal semantic parameters of noun categorization among which animacy, humanness, and physical properties.

Languages often differ in the use of those universal or close to universal parameters proposed by Allan and Aikhenvald. Moreover, some semantic parameters of classification tend to be preferred over others, depending on the type of noun classification system in question. For example, languages having a biological sex-based gender system have different classes for male and female entities.

In other classifier systems, culture-specific factors trigger language-specific classification for the categorization of nouns. Depending on the type of classifier language there can be different ways of classifying humans. For example, in numeral classifier systems such as Vietnamese (Adams and Conklin, 1973) and noun classifier languages like Mayan languages such as Jacaltec (Craig, 1986), humans can be classified on the basis of social status and kinship, a type of classification which does not seem to be attested in Niger-Congo noun class systems. The classification of women, fire and dangerous things in Dyirbal class II discussed in 1.4.2.1.1.3 above, is according to Lakoff (1987) also based on culture-specific motivations as suggested by his myth-and-belief principle.

The table below is an extract from Aikhenvald's (2000: 306) presentation of the tendencies of semantic classification across classifier systems.

Table 20: Preferred semantic parameters in classifier systems.

Classifier	Typical semantics
Noun classes	Animacy, physical properties, rarely nature or function
Numeral classifiers	Animacy, social status and kinship relationship, directionality and orientation, physical properties, nature, quanta, arrangement, functional properties
Noun classifiers	Social status, functional properties, nature
Verbal classifiers	Physical properties, directionality and orientation, nature, function, quanta, arrangement, rarely animacy.
Relational classifier	Functional properties, nature
Possessed classifiers	Physical properties, nature, animacy, functional properties
Locative classifiers	Physical properties, nature, rarely animacy
Deictic classifiers	Directionality and orientation, physical properties, nature

Table 20 shows among other things that criteria such as "physical properties" and "animacy" are prevalent across classifier systems whereas "social status" and

"directionality and orientation" are peculiar to systems such as noun classifier systems, and verb classifiers systems respectively.

This brief overview of the semantic basis of noun categorization shows that classifier systems (including noun classes such as Gújjolaay Eegimaa) across the world are not devoid of semantics and that some of the core semantic parameters of classification have a strong tendency to universality, whereas others are culturally specific. Note that in noun class languages which are the most grammaticalized types of nominal classification systems and our focus in this research, the assignment of nouns is neither random nor easily predictable by categories such as "animals", "trees", "body parts" (Grinevald and Seifart, 2004: 252). Among the proposed universal parameters discussed here, animacy and physical properties are the most recurrent categories of classification in Niger-Congo. Research on the semantic basis of noun class systems is discussed further in the next section with an overview of Niger-Congo noun class semantics.

5.2.1.1 Noun classification semantics in Niger-Congo

The semantic basis of the noun classification systems of individual Niger-Congo languages is a matter of debate. Here I discuss previous research on the issue in Bantu and Atlantic linguistics.

5.2.1.1.1 Noun class semantics in Bantu languages

A frequently cited example of the rejection of the semantic basis for nominal classification in Bantu is Richardson's claim that "it is impossible to prove conclusively by any reputable methodology that nominal classification in Proto-Bantu was indeed widely based on conceptual implication" (1967: 378). Even though Richardson's argument seems to be restricted to Proto-Bantu, his claim reflects a widespread rejection of the semantic basis thesis of nominal classification systems of individual Niger-Congo languages. Givón (1971: 33) lit to be in the antipodes of Richardson by arguing that the system of nominal classification of Proto-Bantu was a semantically coherent system and that such a semantic basis might have been lost for the present day Bantu languages in the course of history. However, he argues that "in synchronic Bantu grammar, one can also detect traces or relics attesting to an older state of affairs, in which the Bantu noun classes has strong semantic import."

This proposal has not remained uncontroversial. In turn, Givon's hypothesis was discarded on the ground that none of the present day Bantu languages has such a coherent system. Maho (1999: 69) puts it this way: "assuming a transparent and/ or regular semantic model for Proto-Bantu may not be that wise. Since there are no modern Bantu languages with easily defined noun class systems [...], there is no reason to expect Proto-Bantu to have exhibited such regularity."

In the heart of this controversy, different studies have proposed results that suggest a semantic basis of the nominal classification systems. Denny and Creider (1976) propose that the Proto-Bantu noun class system has semantic bases and that noun class prefixes can be divided according to those that express spatial configuration of the object classified and those that classify nouns into kinds. Another important argument made here is that classification according to spatial configuration may apply metaphorically to temporal extension. Spitulnik (1989) proposes an account of the level of structuring of the Bantu noun class system based on Putnam's (1975) theory of stereotypes. She proposes eight basic factors to account for that system (including number, animacy, shape, location, size). Moxley (1998) also proposes a study of the semantic structure of noun classes in Bantu languages from the prototype theory developed in Cognitive Linguistics, arguing for a semantic motivation of the classification system. The last research to be mentioned here is the study of the semantic basis of the Swahili noun class system from a cognitive-semantics point of view

(Contini-Morava 1997; Contini-Morava 1999; Contini-Morava 2002). Here the author also argues for a semantic basis of the noun class system using a computer database for her investigation.

While semantic studies of Bantu noun class systems have improved our understanding of this phenomenon the problem is still far from being solved. Similar attempts to explain the noun class semantics were undertaken in Atlantic languages.

5.2.1.1.2 Noun class semantics in Atlantic languages

For the Atlantic branch of the Niger-Congo phylum, the debate on the semantic basis of the classification systems of languages has been less important than in Bantu linguistics. However, similar assumption on the semantic basis of noun class systems have been made for languages such as Fulfulde (Breedveld, 1995a, 1995b, Mohamadou, 1994) and Mooré (Delplanque, 1995).

Mohamadou (1994) investigates a variety of the Fulfulde language from the Aadamaawa (Cameroon) on the basis the "théorie des opérations énonciatives" developed by Culioli (1990). His approach which argues for a semantic basis of the noun class system consisted of studying nouns on the basis of the "discrete", "dense" and "compact" categories used in that theory. The same approach is used in Delplanque (1995) in his investigation of the semantic basis of the Mooré noun classification system.

Breedveld (1995a: 295) argues that the grouping of nouns into classes in Maasinankoore, another Fulfulde variety, is a form of categorization. Her research of the noun class semantic system of that language, takes into account the culture of the people and also their mythology. Other aspects of her account include the exploration of loanwords, the linking between words on the basis of domains of experience, radial categories and the semantic networks they govern, an approach which is in line with Lakoff's (1987) proposal of the structure of categories.

In her study of the Seereer-Siin noun class system from a "multimodular approach of Autolexical syntax approach" McLaughlin (1992: 213) also investigates the diminutive and augmentative classes and consonant mutation which she compared to the Wolof[94] and the Fula (Fulfulde) systems. Even though she argues that the semantic

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[94]Mc Laughlin (1992) points out that except for the diminutive, the vast majority of Wolof nouns do not combine with class marker. Notice that there is no available semantics analysis of the Wolof noun class.

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coherence of the classes has been obfuscated, her observation that "the resistance of extensive and complex noun classification systems, such as those of the Northern West Atlantic languages, to semantic explanation is due to the multifaceted nature of the principles of noun classification" (1992: 217) is relevant to Jóola languages and G.E. In Jóola languages, research on the semantic motivations of the noun class systems of individual languages has not been the primary focus of previous descriptions. Thus, most previous works restrict to providing a list of categories like humans, trees, animals, fruits etc, but do not discuss the semantics and the possible meaning of the class markers any further. Sapir (1965) for instance, provides a list of noun classes along with the semantic domains attested in them for Jóola Fógny. A more recent publication on the noun class system of Jóola Fógny (Seck, 2002: 200) presents a preliminary attempt to look at the Jóola Fógny noun class system in terms of prototypes and semantic chains. Seck proposes semantic categories for a few noun classes of which some are new proposals and others the same as those proposed by Sapir (1965)[95]. For the sake of comparison, the semantic domains proposed by these authors are presented in Table 21 below. Note that some of Seck's conclusions especially the categories of collective expressions in her classes 9 *bu-* and 13 *ba-* (subclasses 5a *bu-* and 5b *ba-* in G.E.) and that of "properties" in her class 15 *ma-* (subclass 10b *ma-* in G.E.), are also applicable to G.E as will become clear in the discussion of classes 5 *bu-* and 10 *mu-* 5.3.1.3 and 5.3.2.5 below respectively.

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[95] In Table 21, I only include the noun "concord subclasses" for which Seck provides semantic categories.

Table 21: Main semantic domains of Jóola Fógny according to Sapir (1965) and Seck (2002).

Sapir's semantic domains		Seck's semantic domains	
Class	Semantic domains	Class	Semantic domains
1/ 2 (a-/ ku- ~ buka-)	humans		
3/ 4 (e-/ si-)	Concrete objects; most animals; most non-person loanwords; fruits; trees; containers; bony objects; plural for some human; sub-standard people; collective; mass nouns		
5/ 6 (fu-/ ku-)	No semantic form exclusive to this class; but include fruits; periods of time; events involving large crowds; augmentative; abstract nouns; augmentatives.		
7/ 8 (ka-/ u-)	All words for bones; bony objects; body limbs; majority of containers.		
9/ 8 (bu-/ u-)	All trees; collective; objects hollowed from trees; large limbs; augmentative	9 bu-	Abstract nouns; mass nouns; vegetation ; habitation ; rituals ; objects ; partitives ; body parts ; reptiles ; collectives ; residue
10/ 11 (ji-/ mu-)	diminutive; mass nouns; literary person	10 ji-	Animals; humans; abstracts; iron objects; plants; residue.
		11 mu-	Mass nouns; iron objects; animals; properties; plants; abstract; residue
12 (ñu-)	Abstract nouns, augmentative		
13 ba-	Collective; abstract ; augmentative	13 ba-	Abstract nouns; mass nouns; objects; body parts; collectives; residue.
14 fa-	Collective; mass nouns, abstract nouns; augmentative		
15 ma-	Abstract nouns; Adverb marker	15 ma-	Properties; residue
16 ja-	Augmentative; adverb marker		
17 wa-	Abstract nouns; adverb marker.		

5.2.2 The semantic basis of the G.E. noun class system

The two available descriptions of Gújjolaay Eegimaa differ in their focus on the investigation of the semantic basis of the nominal classification system. Bassène (2006) presents strong semantic tendencies in Gújjolaay Eegimaa (Banjal), following a traditional set-theoretical approach to noun classification. Among the semantic criteria he observes are the incorporation of humans in class 1 a- / 2 gu-; bug-, trees in class 5 bu-; fruits in class 7 fu-; mass and liquids in class 10 mu- etc. (2006: 63-64).

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An earlier study by Tendeng (2000: 115-141) provides a discussion of the noun classes in some detail[96] naming each class based on the main meaning it conveys (represented in bold in Table 22). Tendeng's approach seems to show more affinity with prototype theory than with set theory even though she does not say which approach she has taken. Her main generalizations which also include those proposed by Bassène are presented here in the form of a table[97]. For more details on her discussion see Tendeng (2000: 115-141).

Table 22: Semantic domains of noun classes in Gusiilay (Gújjolaay Eegimaa) according to Tendeng (2000)

Class	Semantic domains
1/ 2 Ø, a-, m-/ u-, w-, gu-, buk-	**Anthropocentric**
3/ 4 e-, y-/ su-	**Cosmos** (generic[98]; insects; plants; tubers; loanwords)
5/ 6 bu-/ u-	**Delimiter/ delimited** (forest; place with boundaries)
7/ 8 fu-/ gu-	**Production, product of human work** (fruits), **amorphous masses; diverse signified.**
9/ 6 gu-/ u-	**Objects of first necessity** (utensils and terms for material they are made of); **diverse signified.**
11/ 10 ju-/ mu-	**Diminutive; masses and liquids** (collection of objects; abstraction; amorphous masses)
12/ 5 ñu-/ u-	**Economy and its organization**

Recall that there are differences in the numbering of noun classes by linguists in different Jóola languages as pointed out in chapter 4. The semantic generalizations also differ as shown in the discussion above, not only from one language to another, but also from one author to another. This is mainly due to the approaches used and the degree of focus in the investigations of the noun class semantics.

The semantic bases of individual Jóola languages need to be studied separately since they exhibit variations in some varieties of Jóola Búluf (Blouf) such as those spoken in the villages of Tanduck and Elana, nouns denoting certain young domestic animals such as 'calf', 'kid (goat)' are incorporated in noun class 1 a- the so-called

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[96] Note that Tendeng's work was not available to Bassène, as he points out, during his PhD research.

[97] Tendeng's work was published in French. The translation proposed here is mine. Some of the terms e.g. "signifiés divers" translated 'diverse signified' do not have clear illustrations in her text. Probably this refers to the occurrence of different semantic domains in one class.

[98] Tendeng argues that class 3 e- indicates the generic. It is not clear what the term refers to. Since some of the labels she proposes do not come with detailed comments e.g. generic, I restrict to presenting them without further discussions.

human class. For example, with class 3 *e-*, *é-be* refers to a 'cow' whereas with class 1 *a-*, *á-be* refers to a 'calf'. Such a classification, which is not attested in Gújjolaay Eegimaa and Jóola Fógny shows that culture-specific motivations may trigger unexpected differences even within a group of languages like Jóola, usually referred to as "the same".

In summary, two main observations arise from the treatment of noun classification in previous descriptions. First it appears that most of these previous studies generally look at common denominators for nouns in a class, an approach whose limitations has been demonstrated by the prototype theory developed in cognitive semantics and used in the study of a number of Niger-Congo noun systems (Spitulnik 1989; Breedveld 1995; Contini-Morava 1997; Moxley 1998). Such an approach has only been used as the basis for preliminary investigation in Jóola Fógny (Seck, 2002) but also it seems to have inspired Tendeng's (2000) research even though she does not explicitly say so. The second observation is that none of the studies in Jóola linguistics mentions shape as a relevant aspect of the semantic basis of nominal classification system.

Shape is an important cross-linguistic parameter of semantic classification in nominal categorization systems. As will become clear in the discussion of individual classes (cf. 5.3), body parts semantics (cf. 5.4.2.4.1 below) and the discussion of the results of experiments I carried out (cf. 5.4.2.4.2 below), it is one of the basic criteria for noun classification of Gújjolaay Eegimaa and often, the source of category extension through metaphor and metonymy. Before discussing the relevance of shape in the semantic classification system of Gújjolaay Eegimaa, I will address the question of what between nouns and referents is being classified in the following subsection.

5.2.2.1 What is being classified; nouns or referents?

So far the term "classification" has been used without any explanation of, what between the linguistic forms or the extra-linguistic reality is being classified (Lucy 2000; Senft 2000). In the literature on noun class languages, there is a general agreement that it is nouns that are classified and that such a classification is revealed by the obligatory agreement marking they exhibit on dependent elements within the noun phrase and on verbs (Aikhenvald, 2000, Corbett, 1991, Creissels, 2001, Greenberg, 1978, Heine, 1982: etc.) The fact that all nouns must belong to a class, points at a classification of nouns rather than referents (Creissels, 2001: 158, Grinevald and Seifart,

2004: 246). By contrast, in a system of classification of referents e.g. numeral classification systems (Lucy, 2000: 329), it is extra-linguistic reality or experience that is the focus of the classification. Recall from Grinevald's (2000: 61) proposal that gender/ noun class systems, the most grammaticalized types of nominal classification systems, occupy one end of the lexico-grammatical continuum whereas the other end is occupied by classifier systems. Lucy (2000: 331) argues that the phrase "nominal classification" should be primarily used to refer to a classification of experience, "unless it can be firmly established that the marking is purely formal, in which case we can say that nouns, as linguistic forms, are themselves classified". Otherwise arguing that noun are classified would be misleading.

In G.E., it can be argued that even though all nouns are clearly classified in a finite number of classes, it is also the case that nominal referents can be classified by use of noun class makers, suggesting, as will be shown below, that the choice of the noun class marker is not always lexically determined. Therefore, the term nominal classification can be taken to refer to the linguistic classification of nouns as well as the classification of their referents.

Arguments that support the claim that the choice of a noun class marker is not necessarily lexically determined in G.E. are the possibility for the same lexical noun to combine with different noun class markers, a strategy widespread in Niger-Congo languages (Mufwene 1980; Grinevald and Seifart 2004). This phenomenon has also been described in Yucatec Maya (Lucy, 2000). For example, the G.E., lexical noun *kkáju* 'cashew' combines with different noun class markers with related, but semantically distinct contents depending on which one of those noun class marker is used as illustrated in (1) below. Changing the noun class marker as the example shows results in a different classification. It can be argued here following Lucy (2000: 330) that the noun class marker and the noun stem jointly contribute to the reference.

(1). *bú-kkaju*   'cashew tree'
fú-kkaju   'cashew fruit'
é-kkaju   'cashew nut'
jí-kkaju   'small cashew tree/ fruit/ nut'
bá-kkaju   'collection of small cashew trees/ fruits/ nuts'

(2). *ga-sun*   'hole'
fu-sun   'big but usually dark hole' (probably inhabited by e.g. a snake)
bu-sun   'pound' (usually made for bathing or for animals to drink in)
ju-sun   'small hole/ pound'

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As will be shown in the sections below, loanwords are assigned to various noun classes on the basis of semantics e.g. round shape. Also, the productive use of nouns with noun class markers, different from their basic class marker e.g. the diminutive or augmentative noun class prefixes based on the size of the referent, provide further evidence that G.E. does not only classify nouns, but it also classifies referents. The choice of the noun class marker can thus also be pragmatically motivated i.e. the speakers may use a different noun class marker from one expected to focus on certain characteristics of the entity or to point out factors that are only contextually relevant. Thus in (2) above, the root -sun has the general meaning of 'hole'. The use of different noun class markers allows the speaker to focus on for example the small size of the denoted entity with noun class 11a ju- (diminutive class) or its big size with noun class 7a fu-. In the meantime the use of noun class 7a fu- also points out whether it is considered safe or not, because it might be inhabited by a dangerous creature. This shows that the choice of a noun class marker can be motivated by the perceived characteristics of the referents rather than imposed by the stem. A further illustration of the pragmatically motivated use of noun class markers can be seen with the use of the noun of human denotation in (3) below to indicate esteem, lack of esteem or simply for humoristic purposes.

(3). *a-ññil*   'child'
     fi-ññil   'lit: thick child' (fat (humor))
     ga-ññil   'bad child' (useless/ rude/ hated (humor))
     ji-ññil   'small child' (also cute child)

The class shift of a noun stem is thus a good indication that the referent of the noun can also have an important function in classification. More example of class shift will be given in the subsequent sections especially in 5.3.3 below.

5.2.2.2 Main arguments on noun categorization in Gújjolaay Eegimaa

Below, I argue that some of the parameters of noun classification observed across languages of the world are also used in G.E. I will also show that many observations on semantic domains in different classes found in previous works on G.E. can be explained through the approach taken. My main arguments are the following:

- Basic shape is encoded in G.E. and is related to the distribution of nouns designating entities such as body parts and other entities in different classes.

- Terms for non-borrowed objects as well as loanwords, are distributed into the two classes that show clear shape encoding, when their referents have a basic shape (globular, round, flat).

- Some loanwords are integrated into the language system on phonological grounds. But a larger number of loanwords are directly included in classes on the basis of their semantic properties. However, the majority of borrowed terms are included in a transitional or default class which does not show any phonological or semantic basis of classification, before shifting to a noun class after a semantic reanalysis.

- The apparent mismatches between noun class markers and their agreement markers have a semantic basis in that different semantic criteria are employed for noun class and agreement markers.

- The one-to-many and many-to-one singular and plural pair correspondences have semantic bases.

- There are semantic motivations for including nouns that belong to different domains (mammals and birds) e.g. 'panther' and 'sparrows', into one noun class category. Similarly, there are semantic motivations for the distribution of nouns from the same domain e.g. fish, into distinct classes.

Note however, that the complexity of the internal semantic coherence differs from class to class. It is by no means easy to account for the semantic status of every single noun in a class. However despite the existence of exceptions to the facts discussed in the sections below, especially regarding abstract terms, there are clear reasons to argue for a semantic basis of the noun class system of G.E.

I will show that the language uses cross-linguistically attested and language-specific criteria to categorize nouns. Also, I will argue that in many instances, the noun categorization is organized radially and extended by metaphor and metonymy as well as family resemblance (Lakoff, 1987).

The next section studies individual classes and attempts to demonstrate the semantic motivations of the distribution of nouns into different classes.

5.3 The semantic basis of individual noun classes

This section provides an examination of the semantic basis of the Gújjolaay Eegimaa noun class system by researching the semantic structures of individual noun classes.

The results show that the semantic parameters observed across languages in classifier systems and outlined in the previous section are also relevant for the individual class categorization system of G.E. In addition to these parameters, there are also culture-specific motivations for the use of noun class markers with noun stems. The discussion of the semantic parameters of noun classification illustrates further the argument that a great deal of the classification system is based on prototypes, metaphorical and metonymic extension and family resemblance, developed within cognitive semantics (Lakoff and Johnson 1980; Craig 1986; Lakoff 1986; Lakoff 1987; Foley 1997; Clausner and Croft 1999). This approach is compatible with the idea that the culture of a speech community is important to understand certain motivations for noun classification.

In the discussion of individual classes, I also provide evidence that loanwords discussed further in 5.4.2.2 below, are distributed into classes according to three principles: the phonological, semantic and default assignment principles. The two main parts of this section investigate first, the semantics of individual singular[99] classes in 5.3.1 below (class 1 a-, class 3 e- class 5 bu-, class 7 fu-, class 9 ga-, class 11 ju- and class 12 ñu-), including locative classes (class 13 t-, 14 d- and 15 n-), and second the plural classes (class 2 bug-/ gu-/ u-/ e-; class 4 su-; class 6 u-, class 8 gu- and class 10 mu-) in 5.3.2. The main focus of the plural section is to account for the semantic motivations for the one-to-many and many-to-one plural correspondences.

5.3.1 Singular classes

5.3.1.1 Class 1 a- : Humans

All nouns that are included in class 1 a- denote humans. They constitute 85.3% of the 109 singular nouns denoting humans[100]. The inclusion of the majority of nouns with human denotation in classes 1 a- accounts for the reference to this class as the

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[99] In the discussion in the text, I will use the prefix of the form Cu- to name noun classes. The noun class form Ca- will only be used when talking about the subcategories which have a prefix containing the vowel /a/.

[100] In section 5.4.2, the noun class semantics is studied more systematically from the statistical distribution of members of certain domains e.g. loanwords, body parts, abstract terms etc., into different classes. With the research from class to semantic domains percentages are only used for illustrative purposes.

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default class for humans (Bassène, 2006, Sapir, 1965) or the "anthropocentric" class (Tendeng, 2000) in Jóola linguistics. It includes words like Ø-an 'person', a-rokka 'worker' as well as those denoting human-like supernatural entities such as a-cinacin 'human-like supernatural being that inhabits a place e.g. big tree or abandoned house' and the words for God á-ttula 'creator' Ø-álaemit 'the owner of the sky (God)' as illustrated in example (4) below and with the solid line between the "humans" circle and the "human-like supernatural" one[101].

(4). Persons   Human-like supernatural entities

a-vvaa	'palm wine extractor'	a-mbito	'female zombie[102,]
a-rokka	'worker'	a-yyaul	'male zombie'
a-ttepa	'builder'	a-malakka	'angel'
á-vvi	'king'	a-fuga	'ancestor'
Ø-anaare	'woman'	a-fena	'kind of ghost'

In addition to including nouns of exclusively human reference, class 1 a- is used in tales with the prefix 11b ja- for the personification of animals and/ or other non-human entities as shown by the solid line between the "humans" and "personified" circles in Figure 10 below. Tendeng (2000) suggests that the prefix form ja- labeled 11b ja- in this work and used for personification, is the result of a phonological process that deletes the high front vowel /u/ of the diminutive noun class marker 11a ju-, when in contact with noun class 1 a-. The combination of diminutive and the human noun class markers is, according to her analysis, a formal means of showing that these personified non-human entities are not fully equated to humans. Thus a personified entity can be interpreted as "slightly human". Despite the relevance of this analysis, it should be noted as has been shown in chapter 2 on phonology that such a process of vowel deletion can only be traced back to the history of the language, since no such rule has been observed in the synchronic phonological analysis of Gújjolaay Eegimaa. Note that

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[101] In the diagrams, I use solid lines to indicate clear motivations for semantic classification and dashed line for less clear ones.

[102] Among the Gújjolaay Eegimaa (and also other Jóola people), a dead person resurrects as a zombie only when they have done a lot of evil during their life. Such a person is not accepted among ancestors and comes back to a life that they live in the forests or mangrove swamp, away from humans. The zombie may or may not be aggressive towards humans. In any case, they are condemned to wander about alone until they disappear when they are accepted by ancestors.

in case of personification the agreement marker remains that of noun class 1 *a-* as illustrated in (5).

(5). *já-mundumo*   *a-jeg-or*   *me*   *bú-sol*   *maa...*
     NC11b-Hyena   CD1.3SG-turn-REC SUBORD   NC5a-back   like this
     'Every time Hyena turns back like this'(ss041013_gnabai)

There are other singular nouns with human references which are distributed over classes 3 *e-*, 5b *ba-* and 9 *ga-* or take a zero noun class marker. The nouns of class 1 *a-* that take a zero noun class marker and the only noun denoting human that takes noun class marker 5b *ba-* take the agreement marker of noun class 1 *a-* whereas terms for humans in noun classes 3 *e-* and those in noun class 9 *ga-*, take the agreement marker of the class in which they are included. It is not clear what semantic basis if any, triggers the use of a zero noun class marker, but as will be discussed in relevant sections, humans appear in other classes on purely semantic grounds.

In addition to this distribution of human nouns in the singular, there is a sub-categorization of humans that is revealed by the use of four distinct noun class markers as plural correspondences of noun class 1 *a-*. These plural noun class markers for humans are labeled class 2a *bug-*; class 2b *gu-*; class 2c *u-* and class 2d *e-* and will be discussed in greater detail in 5.3.2.1 below. There are two nouns from class 1*a-*having a zero noun class marker, *paya* 'father' and *jaya* 'mother' forming their plural in class 4 *su-* along with the only noun denoting human, included in class 5 *ba- bá-jur* 'young woman' and also nouns denoting special humans from class 3 *e-*. I will argue in the discussion of the plural classes that those nouns refer to humans who belong to the domain of experience of birth and maternity.

Note that most loanwords with humans reference like *a-soddali* 'soldier', *á-ppurofesar* 'professor', occur in class 1 *a-* in the singular. However, a few other recorded loanwords are assigned to class 3 *e-* on semantic basis as discussed in the next section. Example (6) and (7) below illustrate nouns of human denotation showing agreement marking, the one in (6) having a noun class prefix and the one in (7) occurring with a null prefix.

(6). *á-jjola*   *n-ay*   *naxi*   *a-kkan*   *a-ññil*   *ga-jow?*
        NC1-Jóola   LOC-INT   HAB   CD1.3SG-do   NC1-child   NC9-name
        'When do Jóola people usually name their children?' (ss060426_fir-ao-hono)

(7). *Ø-an*   *indi*   *a-xajen*   *ni*   *bu-nunux*
        NC1-person   NEG.HAB   CD1.3SG-damage   LOC   NC5a-tree
        'A person cannot be wrong with a tree' (He can only offend and be wrong with his fellow)
        (ss040911_chako)

The map below attempts a representation of the semantic networks found in class 1 *a-*[103]. The different shape in the diagram reflects a formal difference with the subclass of personified entities.

Figure 10: Semantic network of class 1 *a-*
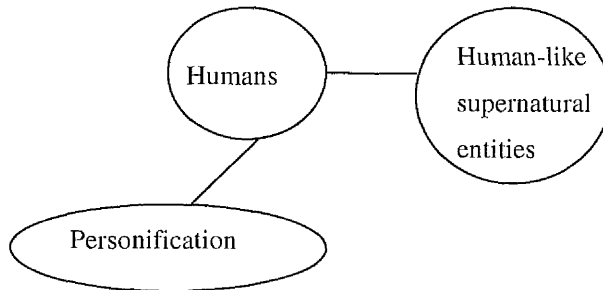
5.3.1.2 Noun class 3 e-/ y-: Default/ unfeatured

Noun class 3 *e-* comprises nouns from several domains that do not seem to be organized semantically. Yet, a few generalizations can be made as far as certain domains are concerned.

Tendeng (2000) labels class 3 *e-* the class of unmeasured things ("l'incommensurable"), because it includes nouns referring to things and areas whose boundaries are difficult, if not impossible, to measure. These include *e-ttam* 'earth', *é-mit* 'sky', *é-sux* 'village/ country'. The behavior of class 3 *e-* is similar to that of those classes labeled "default" or "residual category" in other Niger-Congo languages such as Swahili (Contini-Morava, 1997).

Class 3 *e-* is termed here the "default" or "unfeatured" because it shows the least internal coherence and its members have no relevant features for their incorporation in

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[103] My representation of semantic maps in this chapter is inspired from Breedveld's representation of the semantic networks in her study of the Fulfulde noun class semantic system.

other classes. The term "transitional" class is also used for loanwords of class 3 *e-*. It is the class that contains the largest number of loanwords. Class 3 *e-* incorporates 43.6% of the 133 loanwords used for this analysis which amount to 12.3% of the nouns in class 3 *e-*. This high percentage of loanwords compared to other classes, combined with the fact that many loanwords are temporarily incorporated in this class before they are moved to another one on semantic basis, account for the use of the term "transitional class".

Loanwords, mostly of French and Wolof origins, are stored in this class when there is no clear semantic motivation to include them in another class. All other loanwords are incorporated in different classes on semantic bases (cf. 5.4.2.2 below). Only two recorded loanwords denoting humans, *e-bandi* 'bandit' and *e-ccaga* 'prostitute', show a clear semantic motivation for their incorporation into class 3 *e-*. The assignment of these nouns into class 3 *e-* reflects the inclusion of other humans with special characteristics like those described later in this section. Furthermore, participant observation shows that class 3 *e-* seems to be the most popular among non-native speakers or non-fluent speakers who use it as an "all-purpose" class for nouns whose original class they ignore.

Singular nouns of class 3 *e-* denoting human reference amount to 12.8% of the nouns of the human semantic domain and form 2.9% of nouns in class 3 *e-*. Humans are included in this class because of their extraordinary good or bad characteristics. These humans include socially deviant individuals, that is, those whose behavior does not conform to the social norm. For example *e-soŋ* 'lunatic', *e-jjobu* 'prostitute' and *é-furax* 'bachelor'[104] are considered people with deviant behavior. This class also includes humans with extraordinary and valued qualities such as beauty and/ or strength. The nouns *é-mbiro* 'unbeatable champion of wrestling', and *e-janjaŋ* 'very beautiful person' for instance, are members of noun class 3 *e-*. The plural for nouns of human denotation included in class 3 *e-* is formed with noun class 4 *su-/ si-*, along with all other nouns from various domains in this class. Nouns of class 3 *e-* denoting humans are illustrated in example (8).

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[104] The term *é-furax* 'bachelor' refers to a man who has undergone the ceremony of initiation after which he is allowed to enjoy social rights such as taking the floor in public meetings and marrying. If the individual remains unmarried after all members of his age group are, he is referred to as *é-furax* 'bachelor'.

(8).   *e-motombo*   'spinster'
       é-ñofax   'bastard'
       é-mumune   'deaf person'

The inclusion of the majority of nouns denoting mammals (58.5%) in class 3 *e-* is probably a valid reason for referring to this class as the default class for animals. Mammals form 6.6% of the total number of nouns in class 3 *e-*. Note that class 3 *e-* includes the superordinate term for animal terms *é-nuxureŋ* 'animal'. Mammals in this class include the biggest animals among which the most dangerous and thus, the most feared. For instance: *é-ŋaŋ* 'lion'; *e-pua* 'hippopotamus'; *é-ñix* 'elephant' are included in this class. One big and dangerous animal, *ji-gaj* 'panther' seems to be an exception to this rule. The noun denoting the 'panther' combines with noun class prefix 11a *ju-*, the class that designates small things while keeping the agreement marker of noun class 3 *e-* / *y-*. The semantic motivation for the use of the "diminutive" noun class prefix is discussed in 5.3.1.6 below. Examples of mammals included in class 3 *e-* are given in the form of a list in (9) below.

(9).   *ji-ggaj*   'panther'   *é-mundumo*   'hyena'
      e-taxalla   'doe'   *é-be*   'cow'
      e-jjamen   'goat'   *e-xumba*   'pig'
      y-on   'kind of crocodile'   *e-ssixo*   'cat'

24 % of the 75 nouns denoting birds make up 3.8 % of the nouns in noun class 3 *e-*. These birds are generally big in size and include most birds (55.6 %) of bad omen[105] such as *é-llogir* 'bird species', *e-vview* 'bird species'. Even though the bird which one consultant described as the biggest in the area (*e-bbafa* 'bird species') is included in this class, most birds of big size occur in class 9 *ga-*. Thus birds in class 3 *e-* do not seem to constitute a clear semantic sub-category of birds.

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[105] A total of nine bird types were referred to as being birds of bad omen by different speaker. Of these, six of which four are in class 3 *e-* are not subject to controversy. Every bird announces a different omen with its chirp. The omens include among other things the death of a child, a man, a woman or an old person or some other type of negative event. Birds like pelican, for instance, indicate the coming of an enemy into a village. For this reason inhabitants of villages like Essil do not eat them. What specific omen other birds indicate is not always clear.

43.7% of the 48 recorded nouns denoting fish are included in class 3 *e-*. These nouns form 4.4% of the nouns of class 3 *e-*. Similar to most other domains in class 3 *e-* the superordinate term for nouns denoting fish *e-ol* 'fish' is included in this class. Class 3 *e-* can be considered the "default" class for fish because the fish in this class do not exhibit any special characteristics that motivate their inclusion in class 3 *e-*.

Nouns denoting insects in class 3 *e-* represent 7.4% of the total number of nouns in class 3 *e-*, but form 59.3% of the 59 recorded nouns denoting insects. No superordinate term for insect has been recorded. Insects in class 3 *e-* range from the smallest to the biggest. These insects do not show special characteristics that would motivate their incorporation to class 3 *e-* as a special sub-category of insects.

Nouns from class 3 *e-* denoting reptiles constitute 47.8% of the total of recorded terms for reptiles and 2.3 % of the nouns of class 3 *e-*. Most of the reptiles in class 3 *e-* are snakes whose superordinate term *e-luxunjaŋ* 'snake'[106] is also included in class 3 *e-*. However, there is no clear process of sub-categorization for reptiles in this class. As a consequence, class 3 *e-* is considered the default class for reptiles.

Class 3 *e-* is used as a collective for 36.9% of nouns denoting plants[107] including plants growing in the wild, plants grown by humans, and grass, all of which are "colonizing plants", that is, they grow in colony preventing other types of plants to grow in the same place. If denoting individual rather than collectives/ colonies of plants, these nouns go into class 9 *ga-* and in a few instances noun class 7 *fu-* (cf. (10) below).

Rice plants are included in this sub-category of plants even though they do not grow naturally as a colony or prevent other plants from developing. The motivation for treating rice like plants that grow naturally as a colony is that rice is always planted in rice fields after the plots are cleaned of grass. After the growing period, only a vast plantation of rice plants which resembles a colony of plants is seen interminably throughout the rice fields. If the plantation is not cleaned when required it is invaded by the grass, preventing the "colony" of rice plants from growing. In this context, using noun class 3 *e-* is rather inappropriate since it does not appear as a colony. The reason for using noun class 3 *e-* as a collective for rice is thus based on family resemblance (Lakoff, 1987) with "colonizing plants" whose superordinate noun is *ga-fos/ u-fos*

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[106] Note that in certain villages of Mof-Àvvi this word is realized *e-nuxunjaŋ* 'snake'.

[107] The term plant is used here as a generic term and includes both plants grown by human and all type of grass.

'grass' which becomes *e-fos* 'colony of grasses' in its collective forms. Example (10) below illustrates occurrences of plants in class 3 *e-*.

(10).	*ga-rarax/ u-rarax*	'Ipomea asarifolia'	*e-rarax*	'colony Ipomea asarifolia'
	gá-gabal/ ú-gabal	'water lily plant/ s'	*é-gabal*	'colony of water lily plants'
	fi-ex/ gu-ex	'cassava plant/ s'	*e-ex*	'plantation of cassava plants'
	ga-mmano/ u-mmano	'rice plant/ s'	*e-mmano*	'plantation of rice'

Class 3 *e-* is also the class that includes 100% of singular nouns for nuts and the superordinate term for nut, *e-kkol* 'nut'. Note here that it is not the collective but the singular form of the term for 'nut' that is referred to. Nuts are products of trees and may be edible or non-edible. They include nouns such as *e-kkaju* 'cashew nut', *e-vvier* 'palm nut' among many other terms denoting 'nut'. As exemplified in 5.2.2.1 above, commuting different noun class markers with the same noun-stem changes meaning depending on whether it attaches to noun class 3 *e-* to refer to a 'nut', noun class 5 *bu-* to denote the 'tree' that produces the nut, or noun class 7 *fu-* to designate the fruit that may or may not include the nut as part of it. Thus *é-kkaju*, *bú-kkaju* and *fú-kkaju* for example, refer to the 'cashew nut', the 'cashew tree' and the 'cashew fruit' respectively. This will be discussed further in the section on the classification of trees in noun class 5 *bu-* in section 5.3.1.3 and fruits in class 7 *fu-*, in section 5.3.1.4 below.

Entities gathered under the domain of objects are also of different nature, shape and functions (containers and other artifacts etc.) as exemplified in (11) below, and form 16.6% of the nouns included in class 3 *e-* and 45% of the total number of terms for objects. Objects in this class do not seem to have a clear shape compared to those included in class 7 *fu-* (cf. 5.3.1.4 below) and 9 *ga-* (cf. 5.3.1.5 below). Similar to most entities in this class, they do not seem to be included in class 3 *e-* on the basis of a clear process of categorization.

(11).	*e-ligis*	'summit'	*e-bekkan*	'bicycle'
	e-bangal	'shield'	*e-biddoŋ*	'can'
	e-can	'gourd'	*e-bbol*	'bowl'
	é-ffaŋum	'lock'	*e-ccabi*	'key'
	e-cup	'nail'	*é-bbato*	'boat'
	e-ŋoc	'hat'	*é-cappo*	'hat'

32.1 % of terms denoting liquids make up 1.9 % of the nouns in class *3 e-*. Even though the superordinate term *e-rem* 'drink' is included in class 3 *e-* most recorded

nouns in class 3 *e-* with liquid denotation are loanwords from French and Wolof some of which have a zero noun class marker e.g. *Ø-bier* 'beer', *Ø-bisab* 'sorrel juice'. The other liquids are mainly included in classes 5 *bu-/ bi-* (cf. 5.3.1.3 below) and 10 *mu-/ mi-* (cf. 5.3.2.5).

Body parts included in class 3 *e-* (cf. 5.4.2.4.1 below) do not show any apparent semantic basis of their incorporation in this class.

The remaining domains in class 3 *e-* have fewer members than those discussed above. Represented are domains such as natural phenomena, dispersive mass nouns e.g. words for powders and spirits among others. In spite of the few cases of internal coherence discussed above, noun class 3 *e-* seems to be the most complex class because of the diversity of the domains it comprises. Thus, it is not clear whether nouns in class 3 *e-* represent concepts that fall into a structured semantic category.

As mentioned at the beginning of this section, this class may be referred to as the "default" class for several reasons: it is the class that is used in simplified speech by both native and non native speaker. It is also the class of "transition" where loanwords are included until they are reinterpreted and integrated to another class on the basis of semantic criteria. This class is also the main class of many animal types, but also the class of humans that can be regarded as "special". Class 3 *e-* can be interpreted following Contini-Morava's (1997) argument for the Swahili class 9-10 labeled "catch all class", as one whose existence helps to keep the coherence of the system. Entities of this class interpreted as special e.g. special humans can be considered "unfeatured" i.e., they do not exhibit features that make them relevant to any other semantic category described for other noun classes. Thus the term "unfeatured" helps not only to capture the types of human because of the non-standard characteristics that they exhibit, but may also account for the classification of loanwords and complex shapes because of their non-ordinary status.

An important observation made in the study of noun class 3 *e-*, which will be investigated further in noun class 5 *bu-* and the subsequent classes is that nouns from the basic level tend to be included in classes where their superordinate term is incorporated. In short even the "default class", which is generally presented as not having any possible semantic basis because it includes the largest variety of domains, has some subcategories that show a great deal of internal coherence e.g. plants and humans.

Figure 11 attempts a representation of the main semantic domains observed within class 3 *e-*. Future research will aim at finding more coherence in this class, a useful task that will certainly shed more light to the whole semantic structure of the G.E. nominal classification system.

The solid lines in the diagram show that entities such as animals, humans but also shapes and other collective expressions do not exhibit the required features for their incorporation in noun classes where the semantic parameter are more established. Loanwords are treated by default among unfeatured entities when they do not show clear properties that would justify their incorporation in another class in the language.

Figure 11: Semantic network of class 3 *e-*.
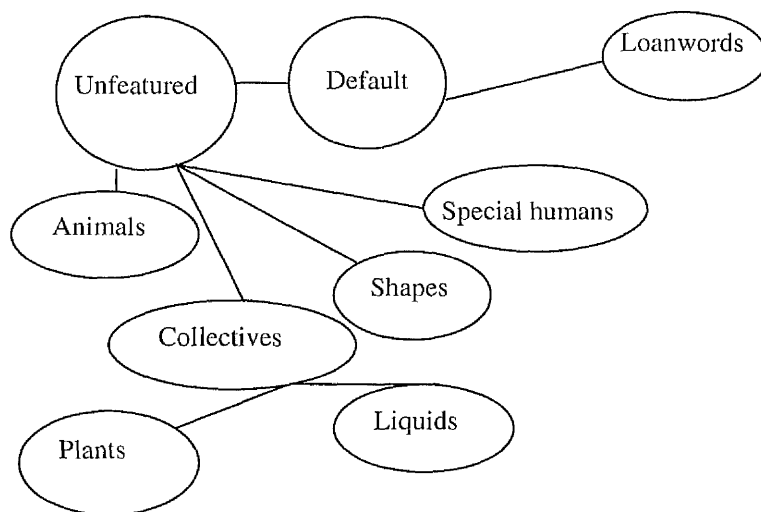
5.3.1.3 Noun class 5 bu-/ bi-; ba- : "whole"/ "assemblage", "birth", "production" and "protection"

Noun class 5 *bu-* is interpreted as a category structured by a complex network including the meanings "whole"/ "assemblage", "birth", "production" and "protection". It is also interpreted as the class for "enormous entities" as will be argued in the discussion of the shape experiments. The category of "whole" is linked to the semantic component referred to as "assemblages". "Assemblages" refers to a collection of elements that together form a unit, accounting for the incorporation of most nouns in class 5 *bu-*.

Trees for example appear to show the feature of assemblages from their inherent composition of different elements such as branches, leaves etc. Example (12) below illustrates terms that refer to assemblages or collections of entities when they combine with noun class 5 *bu-*.

(12). | *bu-fal* | 'body hair/ fur' | *bí-ssit* | 'plumage' |
|---|---|---|---|
| *ba-somay* | 'the set of father's sisters' | *ba-ccin* | 'shrine belonging to a whole village' |
| *bu-ra* | 'bed' (originally, assemblage of sticks tied together to make a bed) | *bu-xogen* | 'assemblage composed of the corpse and the wooden stretcher used to carry it' |
| *bi-cin* | 'settlement' | *bi-it* | 'total of plots of rice fields' |

Most nouns in example (12) can occur with other noun class markers to denote individual entities of these collections as can be seen in (13) below where some of the nouns of example (12) are repeated.

(13). | *ga-fal* | 'hair' | *gá-ssit* | 'feather' |
|---|---|---|---|
| *a-somay* | 'paternal aunt' | *e-ra* | 'stick use to make a bed' |

Assemblages also refer to human collectivities expressed by nouns such as *bi-cin* 'settlement', *bí-emor* 'confrontation', *ba-joj* 'meeting'.

The meaning of "whole" is relevant to the expression of "extended surfaces" and "oversized" entities and relates to body parts that extend on a given surface of the body or include other body parts as in (14) below.

(14). | *bu-tum* | 'mouth' |
|---|---|
| *bu-ul* | 'face' |
| *ba-giŋ* | 'chest' |
| *bi-lefej* | 'palm' |
| *bú-fulum* | 'enormous backside' |
| *bu-xax* | 'sole of the foot' |

In the experiments discussed in 5.4.2.4.2 below, noun class 5 *bu-* is only used to refer to entities that are described as gigantic, hence the label "enormous entities".

In G.E. 92.2% of the 77 recorded nouns denoting trees are included in noun class 5 *bu-*. Those nouns constitute 40.3 % of the 176 nouns in class 5a *bu-*. The other

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trees are included in noun class 12 ñu- and also in the default class 3 e-. Note that the superordinate term for tree bu-nunux 'tree' is included in class 5 bu- thus confirming the tendency for superordinate terms to occur in the same class as the basic level terms. Furthermore, the only recorded loanwords in class 5 bu- are terms referring to trees.

The terms for plants (distinguished from bigger trees), which make up 4.4 % of the nouns in class 5 bu- and 21.7% of the overall terms for plants, are included in class 5 bu- on the basis of their use either as medicine or because some part of them has some utility to humans. These plants differ from those described in class 3 e- which, to a large extent, grow in colony. Therefore, the terms which denote plants in class 5 bu- do not combine with noun class 3 e- to express collective meaning. Example (15) illustrates a few terms for trees and plants, most of which are glossed with scientific names following Diatta (to appear).

(15). | bú-funux | 'harungana madagascariensis' | bu-ttara | 'bamboo tree' |
|---|---|---|---|
| bu-puta | 'cassia occidentalis' | bí-cirit | 'jatropha curcas' |
| ba-sekkete | 'indigo fera tinctoria' | bu-bax | 'baobab tree' |
| bú-pandaŋ | 'waltheria indica' | bu-xunum | 'ceiba pentandra' |
| bu-yyaba | 'guava tree' | bú-bbam | 'detarium senegalense' |

Terms referring to illnesses in class 5 bu- are spreading illnesses, that is, infections that spread all over the body or the infected area. They constitute 4.4% of nouns in class 5 bu- and 52.6% of the recorded terms referring to illnesses. Among those illnesses which are mainly incorporated in class 5b ba- are ba-kkollor 'scabies', bámur 'measles', bá-xumukkumuj 'mumps'. It can be suggested, but rather as a conjecture that these illnesses relate to the concept of "whole", because their symptoms appear in a whole specific area of the body. For example, pimples may appear on one hand and spread to the other when one has scabies or the whole body if one has measles. The spread of small things such as pimples shows a direct relation with the meaning of collection of small things as will be shown in Figure 12 below.

Terms for liquids amount to 4.9% of nouns in class 5 bu- and 39.2% of the overall recorded terms for liquids. Liquids of class 5 bu- are mostly alcoholic or drinks which are extracted from trees. For example, bu-nux 'palm wine', bu-kkac 'type of alcoholic drink'. However, there are other substances like bí-nniw 'venom (from snake)', bí-rem 'type of poisonous drink derived from tree' which are poisonous but not alcoholic. A common feature between these liquids is that they affect the whole human

body in some way or another. *bu-pos* 'dregs from washed rice' is an example of a viscous liquid that appears as an exception to the rule. Medical substances derived from trees are included in class 5 *bu-* through a process of metonymy and are referred to with the same noun as that of the tree. Note that the superordinate term *bu-bbun* 'medicine' is also included in class 5 *bu-*. Note that medical substances also affect the body and in this sense they are comparable to other liquid types in this class, but contrast with liquids in class 10 *mu-* which do not have such effects. Another observation is that liquids in class 5 *bu-* appear to be more viscous than those in class 10 *mu-*.

The notion of "assemblages" also accounts for the use of the allomorph of class 5 *b-* as an expression for general location e.g. *b-aubu* 'there (in that area)'. As argued in 5.3.1.8 below it contrasts with the use of the locative class 13 *t-* which expresses precise location. General location includes a collection of precise locations and in this sense translates the meaning of assemblage by use of noun class 5 *bu-*. The inclusion of general location in class 5 *bu-* and not any other class is thus a metaphorical extension from the expression of assemblage of concrete entities which function as the source domain of such a metaphor (Foley, 1997, Lakoff and Johnson, 1980, Lakoff, 1987). In other words, general location is conceptualized as an assemblage of precise locations and thus comparable to illustrations of examples in (12) above.

The concept of "whole"/ "assemblages" also applies to bounded spaces that have an interior, and in this sense correlates with the assemblages of body parts discussed in classification of body parts e.g. *bu-tum* 'mouth' 5.4.2.4.1 below. As pointed out by Tendeng (2000), these boundaries are visible and thus are easier to measure than those of spaces in class 3 *e-* (e.g. *e-ttam* 'earth'). The terms that refer to spaces having an interior form 5% of the nouns in class 5 *bu-*. For example, *ba-xa* 'forest' has an interior that includes *ga-pandaŋ* 'glade', *fi-reŋ* 'thickly wooded area of the forest'. *ba-xa* 'forest' is regarded as relating to an assemblage of entities, essentially trees. The bounded spaces either contain elements in the interior or are designed for that purpose and on the whole constitute an assemblage. For instance, *bí-gidden* is a 'fish trap with an interior consisting of a bounded space with a small entrance to catch fish', while *bu-xangen* is a 'wood fence whose interior is designed for growing things like cassava', *bí-jej* 'loft (made of wood)' are examples of the bounded spaces with an interior. These examples, apart from including the meaning of "whole" also refer to things made of assemblages of wood and could also be interpreted as cases of metonymy between trees which are

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included in this class and the wood which is derived from them, without contradicting their meaning as referring to "whole"/ "assemblages". Other examples of the tree-product metonymy are *bí-sigan* 'mortar', *bí-xemum* 'pipe', *bi-ril* 'bowl' and *bu-ssana* 'dug out canoe', *ba-xan* 'gigantic drum' and *bi-lingir* 'ladder/ bridge' are made of wood.

Mass nouns in class 5 *bu-* mostly refer to cohesive mass substances, which except in a few cases, are purposeful assemblages. These terms constitute 4.4 % of the nouns in class 5 *bu-* and 62.5% of mass nouns. Among these are *ba-raj* 'rice gruel', *ba-tipan* 'glue', *ba-rexut* 'chicken excrement', *ba-fira* 'sorrel paw' etc.

Terms that designate gigantic/ enormous entities in class 5 *bu-* refer to entities that have an enormous size in comparison to other entities of the same kind like *ba-xan* 'gigantic drum' which is the biggest drum used by the G.E. people in their ceremonies. Further evidence for the inclusion of enormous things in this class comes from class shift, where the same entity can be referred to using different noun class markers such as class 3 *e-* and class 5 *bu-* with a difference of focus on size. The difference between *é-fulum* 'backside' and *bú-fulum* 'enormous backside' and also *é-ñundu* 'nose' and *bú-ñundu* 'enormous nose' for example clearly shows the use of noun class 5 *bu-* as an augmentative to describe enormous body parts with an additional humoristic connotation.

Only one reptile, *bu-lun* 'python' and one water creature *ba-lliray* 'whale', are included in noun class 5 *bu-*. These two animals are the biggest known animals among their kind and are thus considered enormous compared to the size of the other ones.

There is only one recorded term denoting a human to combine with the subclass of 5 *bu-*, class 5b *ba-*, *bá-jur* 'young woman'[108] as exemplified in (16) below. The only mammal included in class 5 *bu-*, apart from the gigantic animals described above is *bu-yyan* 'heifer', which triggers the agreement marker of class 5 *bu-*. Consider the examples in (16)-(17) below which illustrates the *bá-jur* 'young woman' and *bu-yyan* 'heifer' in sentences.

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[108] This refers to a young woman who is old enough to get married.

(16). ñer   ba-jur   babu   n-a-cig-e...
      so   NC5b-young woman   NC5:DEF   LOC-NC1.3SG-arrive-PFV
      'So when the young woman arrived...' (ss041013-gnabai)

(17). bu-yyan   bi-let   tale
      NC5a-heifer   CD5.3SG-not be   here
      'There is no heifer here!'(part.obsv)

The noun bá-jur 'young woman' uses noun class 5 bu- but keeps the agreement marker of class 1 a- on the verb. As for bu-yyan 'heifer', it uses both noun class 5 bu- and its corresponding agreement marker. The use of noun class 5 bu- for these terms comes from the fact that they belong to the same domain of experience. According to the domain of experience principle, "if there is a domain of experience associated with A, then it is natural for entities in that domain of experience to be in the same category as A" (Lakoff, 1987: 93).

During a wedding ceremony the term bu-yyan 'heifer' is used metaphorically to refer to the bride-to-be. This metaphorical use of the term for 'heifer' is motivated by focus on characteristics common to both entities. A young girl as future mother is valued mainly for her future role in the family as a mother, as previously suggested by Tendeng (2000). In the same way a heifer is valued for the potential of reproduction and thus the wealth that it brings to its owner[109]. Consequently it is argued here that the concept of "reproduction" is also related to noun class 5 bu- and prototypically represented by the terms for 'tree', and related to 'young woman' and 'heifer' because they belong to the same domain of experience[110]. Trees provide shadow as protection from the heat and at the same time produce fruits. Similarly, the young woman by virtue of her future role as mother the link to the notion of reproduction is also taken as the main protector of the child. Note that in the past having many children implied having more contributors in the field works and as a consequence, implied the expansion of

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[109] The value of the heifer is shown by the place it occupies in 'funeral songs' u-fuluŋ. These are songs made for an individual in their lifetime and used during their funerals and those of other people. Wealth among the G.E. is measured by the size of the loft of rice and by the size of the cattle. A heifer is a sign of wealth because it contributes to the expansion of the cattle of its owner.

[110] The structure of the G.E. class 5 bu- has a lot of similarities with the Fulfulde KI- class of Breedveld's (1995a: 400) analysis. The Fulfulde KI- class also contains trees and the medicine they produce among other things, and includes, according to Breedveld's analysis, the concepts of protection and a metaphorical association between 'trees' and 'mother'.

one's wealth. The heifer is also linked to birth and production on similar ground since it expands the cattle, which is one of the measures of wealth among the G.E. people. As noted above, the term *bá-jur* 'young woman' uses noun class marker 5 *bu-* but does not belong to that class. It is only included in this class on the basis of culture-specific motivations. Furthermore, *bá-jur* 'young woman' can only realize its plural using noun class prefix 4 *su-/ si-* the plural class of *paya* 'father' and *jaya* 'mother'. These nouns have a null prefix, but are included in noun class 1*a-* in the singular. The domain of experience of production and birth, which is related through a chaining process (Lakoff, 1987), to the notion of protection accounts for the incorporation of words like *bá-rinay* 'maternity place' and *bá-llega* 'the religious association of mothers' also referred to as the initiation of women in noun class 5 *bu-*. It also justifies the inclusion of the *bu-loba* 'shrine of protection held by women' in this class.

Another meaning conveyed by noun class 5 *bu-*, more precisely by its subclass noun class 5b is that of collective expression. In the majority of its occurrences, noun subclass 5b *ba-* functions as a collective marker for count nouns of all noun classes, to refer to a collection of small entities or diminutives as illustrated in example (18) below.

(18).	*a-ññil*	'child'	*ba-ññil*	'collection of children'
	e-kkol	'nut'	*ba-kkol*	'a pile of nuts'
	ji-ray	'small fish'	*ba-ray*	'pile of small fish'
	e-nux	'bead'	*ba-nux*	'collection of beads'
(19).	*ga-rafa*	'bottle'	*ba-rafa*	'collection of small bottles'
	e-ssixo	'small cat'	*ba-ssixo*	'collection of small cats'
	a-labe	'priest'	*ba-labe*	'assemblage of little priests'
	á-muse	'teacher'	*bá-muse*	'assemblage of little teachers'

Noun class 5b *ba-* can be used with nouns of human denotation for humor or in a 'downgrading way' as in *ba-labe* 'assemblage of little priests' (maybe too zealous). When noun class 5b *ba-* does not have diminutive meaning, it is difficult to differentiate the semantic sub-category it expresses in relation to the one expressed by noun class 5a *bú-*.

In short, class 5 *bu-* is structured by a complex network of concepts that include the notions of "assemblages", "whole" as well as the domains of experience of "birth", "production and protection" as discussed above.

Despite the existence of a number of exceptions that do not seem to be included in class 5 *bu-* on the basis of the principles discussed above, it can be argued that class 5

bu- has a semantic basis as shown in Figure 12. Exceptions include for instance words denoting periods of time and some abstract terms as exemplified in (20) below. Further examples of nouns included in class 5 *bu-* based on the semantic parameters discussed above are presented in (21) below.

(20). *bu-jom*   'morning'   *bu-lago*   'pathway/ religion'
      bi-inum   'mind'   *bu-oy*   'dam'
      bí-ttiŋa   'period preceding the rainy season'   *bu-lla*   'swelling'
      bú-jjusa   'fever'

(21). *bi-mmillum* 'ceiling'   *bu-now*   'baldness on top of the head'
      bi-lem   'leftovers'   *ba-xofor* 'scabies'
      bu-ŋaŋ   'insomnia'   *ba-rexut* 'chicken excrement'

The semantic organization of class 5 *bu-* may be summarized in Figure 12 which presents a network relation of concepts in this class.

Figure 12: Semantic network of class 5 *bu-*
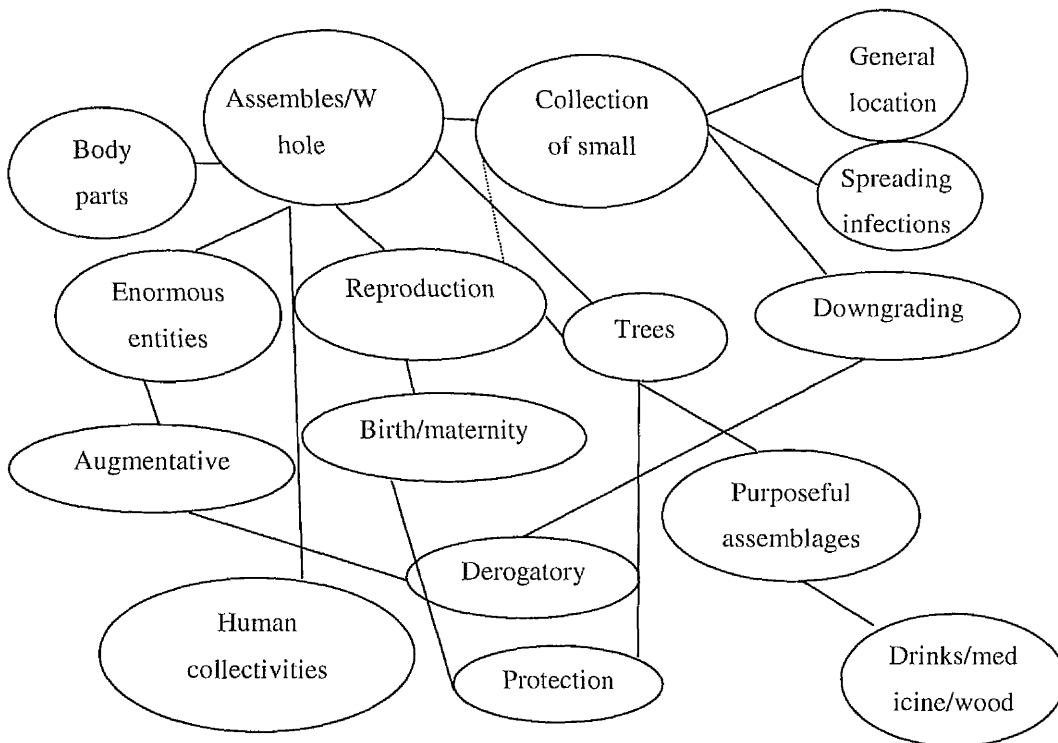
The semantic links shown in the diagram above suggests relations between the meaning of assemblages and "collection of small things" which in turn relate to the

expression of general location and spreading infections analyzed here as collections of precise locations and manifestation of symptoms with small entities e.g. pimples. The "downgrading" to "derogatory" links in the diagram are based on smallness in size. In turn, derogatory meaning is related to "augmentative" meaning because of the inclusion of oversized and enormous entities in class 5 *bu-* which are also linked to assemblages.

"Reproduction" as discussed here implies the production of many entities hence the relation with assemblages. These entities may or may not be small as suggested by the dashed line between the circle representing "reproduction" and the "collection of small things". The meaning of "reproduction" in turn, justifies the links with trees which ultimately connect with "purposeful assemblages", a generic term used here to account for products derived from trees and some types of substances. It also accounts for the link with birth (reproduction for animates) and protection as discussed in previous paragraphs. Finally, "human collectivities" are types of "assemblages" as shown by the solid line in the diagram, while body parts are linked to assemblages and extended surfaces.

Similar to class 5 *bu-*, noun class 7 *fu-* is structured by a categorization process that is discussed below.

5.3.1.4 Noun class 7 fu-/ fi-; fa-: "roundness and elongation", "thickness" "extended parts of things"

Noun class 7 *fu-* is prototypically organized around the domain of globular and round shape including "roundness and elongation", but also "thickness" and "extended parts of things". It will be shown in the shape experiments (5.4.2.4.2 below) that round, especially globular objects are predominantly assigned to this class. In addition, body parts, objects and borrowed items having a globular, round or "roundish" shape are unambiguously incorporated in class 7 *fu-*. Example (22) below illustrates the expression of roundness in class 7 *fu-*.

(22). *fi-melep*   'object having globular shape with no hole'
       fu-xay   'circle formed during a meeting or dance'
       fi-mindiŋ   'piece of palm-tree trunk'
       fi-liñnax   'bracelet'

100% of the terms denoting fruits e.g. *fu-mangu* 'mango', *fi-rillo* 'kind of fruit', make up 9 % of nouns in class 7 *fu-*, whereas those denoting nuts are incorporated in

class 3 *e-* (cf. 5.3.1.2 above). Loanwords denoting fruits e.g. *fu-ppapa* 'papaya', *fu-mandarin* 'mandarin' are also included in class 7 *fu-* based on their round shape. Similarly, the 100% of recorded terms for vegetables (generally loanwords) and tubercles are incorporated in noun class 7 *fu-* because of their shape as exemplified in (23) below.

(23). *fú-cuppome*   'cabbage'
      fi-liñoŋ   'onion'
      fu-jjaxata   'aubergine'
      fu-kkarot   'carrot'
      fu-ppom   'apple'

Roundness is also the criterion according to which loanwords other than fruits, denoting objects with a round configuration are incorporated in class 7 *fu-*. For example *fu-baloŋ* 'football', *fú-ru* 'wheel', *fú-barigo* 'barrel', *fu-camburaer* 'air tube' among other nouns are included in class 7 *fu-* on semantic grounds.

Body parts (cf. 5.4.2.4.1 below) and parts of things with a round configuration are also included in class 7 *fu-*. Fruits and the body parts in class 7 *fu-* have the feature of roundness in common hence their incorporation in this class. Also, they are usually located at the extremities of the bodies they are part of, hence the label "extended parts". Example (24) below illustrates noun in class 7 *fu-* which also indicate extended parts of things with body parts (see discussion in 5.4.2.4.1.3 below).

(24).   *fi-ssix*   'finger'
        fu-ttun   'penis'
        fi-lej   'tail'
        fu-ar   'root'

There are two nouns denoting liquids in this class: *fu-mas* 'spittle' and *fi-sim* 'blood'. These nouns along with other terms referring to emissions from the body are included in class 7 *fu-* as illustrated example (25) below.

(25).   *fu-kkas*   'thick spittle'
        fi-rim   'voice'
        fu-ffujux   'whistling'
        fu-sur   'puddle of urine'
        fi-mmel   'long and round piece of excrement'

It is argued here that the inclusion of body emissions in this class follows a process of chaining that uses concrete emissions (e.g. *fi-mmel* 'long and round piece of excrement', *fu-sur* 'puddle of urine') as prototypes because of their round shape, and that other amorphous and more abstract emissions such as voice emissions are metaphorically related to those concrete emissions.

There is a strong tendency for terms denoting periods of time to be incorporated in class 7 *fu-*. These terms include, terms for the two main parts of the year; *fu-jam* 'rainy season', *fi-e* 'dry season' and also *fi-eñ* 'month/ moon[111]' which can be seen as extensions of the 'year' *é-mit*, and terms referring to days of the week such as *fi-gindiŋ* 'first day of the week', *fi-yyay* 'last day of the week (holiday)'. The inclusion of days in this class could be possibly motivated by the interpretation of days of the week as extensions similar to periods of the year (cf. 5.4.2.4.1.3 below for the discussion of extensions). It is not clear however, whether there is a general term for 'week' which would account for the basis of this extension. The possible interpretation of periods of time like *fi-lay* 'this year' but also, *fi-llim* 'last year' as extensions may also be restricted by the difficulty to find the basis of such extension. Moreover, not all time references are included in class 7 *fu-*. For example it is not clear why *bu-jom* 'morning' and *bi-ttiŋa* 'period before the rainy season' which can be interpreted as periods of the year, are included in class 5a *bu-*. Note that terms for periods of time such as *gá-llim* 'evening' and *gá-yyil* 'era' are included in class 9 *ga-* and not class 7 *fu-*.

Another sub-category of nouns in class 7 *fu-* includes terms for the three recorded natural phenomena in this class. These phenomena are mostly triggered by heavy rains and thus occur in the same domain of experience. The noun *fú-rus* 'tornado' can be said to have a round shape like most nouns in this class. The other nouns *fu-paranu* 'thunder', *fi-nnir* 'lightening', denoting natural phenomena, are associated with it because they occur in the same domain of experience.

All recorded terms for male domestic animals such as *fi-jjin* 'bull', *fi-jexel* 'he-goat' are included in noun class 7 *fu-*. However, it is not clear why *fu-baax* 'she-goat that never dropped' is the only female domestic animal to be included in class 7 *fu-* along with other wild animals of different sub-domains such as *fu-sañel* 'porcupine' and *fu-al*

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[111] The word for sun occurs in class 13 *t-* which denotes precise location. As will be argued in 5.3.1.8, this is because the sun and the term for sun are used for reference to daytime.

'type of brown snake' and *fi-ccicon* 'cayman'. For the domestic animals, it could be proposed rather speculatively that their inclusion in class 7 *fu-* along with the male genital organs is motivated by a process of metonymy. It is not clear however, what makes animals of class 7 *fu-* special, compared to those included in the "default class". The criterion of roundness and extension do not seem to be applicable in these cases.

The fish in class 7 *fu-* show common features, among which roundness and thickness. These fish, *fu-sabet* 'brown bullhead/ cat fish', *fu-lac* 'shark', *fú-xun* 'type of fish' and *fi-ŋŋeŋam* 'type of fish' have as common features, thick skin and a tough body and wide mouth, in addition to the features of roundness and thickness.

17.3% of birds constitute 4.5% of nouns in noun class 7 *fu-*, probably because they are considered rounder than birds in other classes and are the most valued for food. These are big birds with a thick and tough body that are usually more difficult to kill then the birds in other classes[112]. These include birds of prey and the web-footed birds. Some of the birds in class 7 *fu-* are valued as food e.g. *fu-fora* 'partridge'; *fu-ppata* 'duck'. Other birds with round shape in this class include *fú-puget* 'kind of wild duck'; *fu-ffug* 'eagle'; *fi-ic* 'sparrow hawk', *fú-muɲjux* 'kind of sparrow hawk'.

Plants in this class 7 *fu-* represent 10.8 % of all plants. They are creepers or flexible long-stemmed plants with a round shape of the trunk e.g. *fu-ttara* 'bamboo', *fi-ssisit* 'kind of long-stemmed plant', *fú-kkuxus* 'type of creeper plant'. The criterion of elongation combined with a certain degree of roundness like that of creepers is also applied to loanwords like *fi-bbik* 'pen.' *fi-kkirayoŋ* 'pencil' and also *fu-kkapucoŋ* 'top of a pen' which can also be interpreted as an extended part of the pen and similar to *fú-tojum* 'lid/ top of the bottle'.

Two utensils have been recorded in class 7 *fu-*. They are objects with a long and round shape for *fu-ux* 'pestle' and long and flat shape for *fí-ssil* 'type of utensil' which is used as an extension to stir hot food in a pan.

6.6% of nouns in class 7 *fu-* refer to "extended places" made for certain human activities or to fulfill certain functions in or outside the main house whose noun class is 3 *e-*. These places can be interpreted as extension of the house and include *fí-ssilum*

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[112] This explains why having a tough body is associated with the partridge, hence the expression *iak ennil ti fufora* 'my body is as tough as that of a partridge'.

'kitchen', *fu-xalab* 'backyard', *fi-ffilo* 'place designed for sleeping'; *fú-llugen* 'store place for palm wine', *fú-kkujum* 'cockpit', *fu-robo* 'place made for sitting and chatting'.

Noun class 7b *fa-* represents 8.3% of nouns in class 7 *fu-*. Very few nouns in class 7b *fa-* have singular-plural distinctions. These include *fa-et* 'hairy part of an animal tail' and *fa-tama* 'navel'. Class 7b *fa-* functions mostly as a collective marker for the majority of other nouns it combines with.

All insects that live together as a strong colony in swarms are included in class 7b *fa-* e.g *fa-aj* 'bees', *fa-baut* 'black ants that live in small termite nests'. This subclass is thus organized primarily around the round shape of swarms. Other insects that do not live in swarms, but constitute a colony e.g. *fa-ttiga* 'ant-lions', are included in this class, based on similarity of behavior with the former. For example, they attack and sting their prey simultaneously. Some of the insects in class 7b *fa-* e.g. *fá-mbangur* 'locusts' do not sting but live in a colony that invades and destroys human's crops. They are included in class 7b *fa-* by the process of family resemblance, since their behavior is similar to that of other insects in this class, for example 'ant-lions'. Similarly, the only plant in this class *fa-ñumora* 'type of long-stemmed creeper with thorns on the stem' is included in class 7b *fa-* because the simultaneous scratches of its closely set claw-like thorns feel similar to the sting of insects that live in swarms.

There is only one recorded non-insect animal in class 7b, *fá-gur* 'kind of felis nigripes'. It is most likely included in this class by metaphorical extension, since the strong and bad smell of its urine clings and perpetuates onto the skin and is difficult to get rid of like ants from swarms and claw-like thorns. The argument is that the source domain of the metaphor is insects living in colonies and that the target domain shows similarity of features with the former.

Noun class 7 *fu-* is used to derive augmentatives mostly for nouns from class 9 *ga-* to denote bigger size, and thus combines with lexical stems such as those denoting humans or body parts, for instance *a-ññil* 'child'/ *fi-ññil* 'fat child', *e-nnil* 'body' *fi-nnil* 'fat/ thick body'. In most of these contexts, class 7 *fu-* is used in a derogatory sense, usually for humor. It should be noted that class 7 *fu-* is less productive in augmentative derivation than class 9 *ga-* whose semantics is studied in section 5.3.1.5 below. It is however used more frequently than class 5 *bu-* which refers to oversized entities.

A number of nouns in class 7 *fu-* do not show any clear motivations for their inclusion in this class and thus require further investigations. For the purpose of

comparison, I provide in (26) below, some words which seem to be exceptions to the strong semantic tendencies of the classification of nouns in class 7 *fu-*, and more data illustrating the semantic aspects of the discussion provided above, in (27) below.

(26). *fá-ggux*   'evil spirit'
      fu-kkaen   'main road'
      fi-rixinjaŋ 'structure of house'
      fi-ttit   'shore'
      fi-bbe   'head butt'
      fá-landiŋ   'king's tunic (all red)'
      fa-ffaj   'heated leftovers'
      fa-kkor   'smoke'

(27). *fu-ssor*   'rice cake (round)'
      fi-ttep   'wall'
      fu-tata   'potato'
      fu-ttara   'bamboo stick'
      fi-ppil   'pipe'

A network of semantic categories of noun class 7 *fu-* is proposed in Figure 13 below. The diagram shows that the main semantic categories of classification here are those of roundness and extensions as discussed above and shown here with the solid lines from the main circle which names the categories by its different semantic categories. Extensions include abstract terms such as periods of time, but also terms for places designed for human activities. The dashed line between "round" and "extension" circles indicates cases of overlap where round entities also include the semantic features of "extension of things". As for the solid lines which are linked to the category "round" they indicate a clear classification of nouns on the basis of the possession of the feature "round" by their referents. The dashed line from the male domestic animal circle shows a hypothetical link with the feature "round".

Figure 13: Semantic network of class 7 fu-.
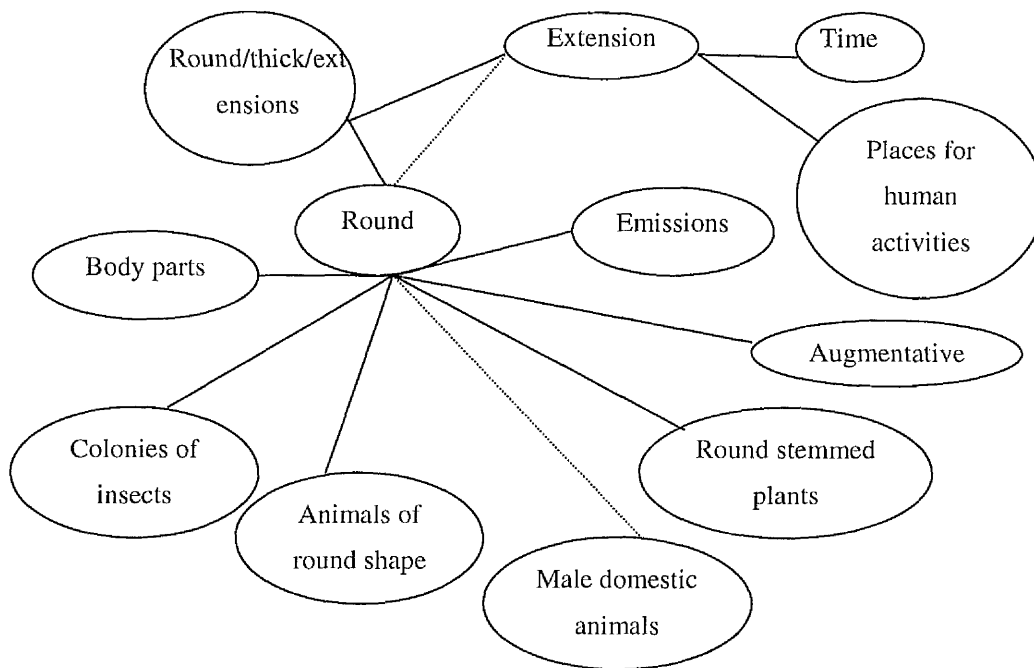
5.3.1.5 Noun class 9 ga- : "flatness", "thinness" and "width"

Objects that are included in class 9 *ga-* are predominantly of flat shape but also have a wide and thin configuration. Noun class 9 *ga-* is interpreted as the class that encodes the semantic categories of "width", "flatness" and "thinness" (see solid lines between those categories in Figure 14 below). Note here that flatness may co-occur to width and thinness in certain contexts, but these features may not all be relevant at the same time. For example, two objects may be flat, but their width and thinness may differ in degree[113].

The criterion of flatness is a feature that is possessed by many artifacts and other objects which constitute 32 % of the nouns in class 9 *ga-* e.g. *ga-ppex* 'mat', *gá-bifum*

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[113] This distinction became more apparent in the experiments discussed in 5.4.2.4.2. Very thin objects were unambiguously assigned to class 9 *ga-*, but square or rectangular and very thick objects were assigned to class 7 *fu-*. Between these two extremes, conflicting assignments of objects to classes 9 *ga-* , 7 *fu-* has often occurred, some speakers assigning objects to the former class where others classify the same objects in the latter class.

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'fan'. Most of these artifacts also possess the criterion of thinness which justifies the solid line in Figure 14 between the "thin" and "flat" categories.

Loanwords in class 9 ga- form 22.6% of the total of recorded loanwords and 7.9% of nouns in class 9 ga-. Most loanwords in class 9 ga- (see 5.4.2.2 below) refer to objects that have a flat configuration some of which are rigid rather than flexible objects. Consistency is thus not a primary criterion of noun classification, but its role will be investigated further in future research. Examples of loanwords are illustrated in (28) below.

(28). *ga-kkorijet*   'corrugated iron'
      ga-ssede   'CD'
      ga-xait   'sheet of paper'
      ga-kkes   'case'

In many cases when the language has a noun for an object and borrows one denoting the same type of entity the class marker tends to be that of the most familiar object. The borrowed terms may have a generic or specific reference as shown in (29) below.

(29). *ga-sinja* 'belt'   *gá-sentur* (French) 'belt'
      ga-ffon 'shoe'   *ga-dalla* (Wolof)   'shoe'
                          ga-ccarax (Wolof) 'sandal'
                          gá-lue (French)   'shoe'

The criteria of width and flatness are also metaphorically applied to open spaces i.e., wide and clear areas where visibility is unlimited as indicated by the lines from the "wide" and "flat" circles in Figure 14 below. Among the terms referring to this semantic domain are *ga-parandaŋ* 'glade', *ga-ffit* 'shore' and *ga-xaŋ* 'clear area of the rice field'.

The spatial configuration of flatness and with is also metaphorically applied to abstract concepts such expressions for periods of time in class 9 ga-, some of which are characterized by the lack of activity in the community (see solid lines in Figure 14). These are the periods of *gá-elo* 'rest' or *ga-robo-ró* 'literally staying at home/ on a holiday'. Note that the terms for *ga-ttaw* 'lunch' and *gá-jjimel* 'dinner' also appear in class 9 ga-, most probably related by a radial process with categories referring to the

resting periods[114]. However, the term *ga-jem* 'tomorrow', also referring to a period of time, seems to appear as exception. The relation between "open space" and "vacant time" shown by the solid line in Figure 14 is a metaphorical one, which is based on similarity to concrete entities. Example (30) below illustrates a few other terms referring to periods of time in class 9 *ga-*.

(30). *ga-vvela*   'period without the ceremony of *ba-ccin*[115]'
      gá-yyil   'era'
      gá-jimandiŋ   'sacred week after the death of a member of the royal family[116]'

Containers included in class 9 *ga-* have as a common property, an opening at the top that is wider than the bottom e.g. *ga-tegel* 'basket', *gá-rix* 'kind of container' and *ga-ttew* 'kind of water container'.

The fish in class 9 *ga-* constitute 21.7 % of the fish and 2.6% of nouns in class 9 *ga-*. These fish, among which figure *ga-felej* 'kind of flat fish', *ga-pparax* 'kind of flat fish' and *ga-porox* 'carp', have a flatter shape than the fish in all other classes.

Noun class 9 *ga-* also includes entities of large size, which relate it to the expression of width. Terms denoting birds form 6.1% of class 9 *ga-* and 30.7% of the total number of collected terms for birds. These include birds of big size, most of which are not edible contrarily to birds of class 9 *fu-*. Some of those birds are despised because of the noise they make, e.g *ga-xororor* 'kind of noisy bird', or because they are considered lazy *gá-ttaŋal* 'kind of bird that has difficulty flying when it rains'. The criterion for the categorization of birds in this class is primarily their size, but also for some, the fact that they are unpleasant.

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[114] The term *saa-bujom* 'breakfast' comes from the expression *si-nnaŋ saa-bujom* which literally means the 'morning rice'. This is because still today, G.E. people generally have rice as breakfast. The noun class marker used here is noun class 4 *su-* discussed in 5.3.2.2 below.

[115] The ceremony of *ba-ccin* is a kind of pre-initiation ceremony where only boys, usually when their first two front teeth grow, are presented to the village shrine *ba-ccin*. The ceremony takes place every two years.

[116] *gá-jimandiŋ* is a week during which no inhabitant of the whole kingdom of Mof-Ávvi is allowed to work in the fields or cut part of a tree. This only happens when a member of the sacred royal family passes away (or disappears as is euphemistically said for a member of the royal family in Mof-Ávvi).

Similar to terms for birds, terms for insects in class 9 *ga-* not only refer to big insects, but also to those that are unpleasant and thus the most despised, like *ga-ffokkot* 'cockroach' or *gá-luñña* 'beetle'.

Noun class 9 *ga-* is used more productively than any other noun class marker to express augmentative and also derogatory meanings. For example, the use of nouns from different classes with class 9 *ga-* to express augmentative meaning in (31) below, can also have a derogative and insulting meaning.

(31). | *fu-xow* | 'head' | *ga-xow* | 'big head (ill-proportioned)' |
|---|---|---|---|
| *e-joba* | 'dog' | *ga-joba* | 'big/ useless/ rabid dog' |
| *e-telefon* | 'phone' | *ga-telefon* | 'big/ oversized/ broken phone' |
| *Ø-áine* | 'man' | *g-áine* | 'bad/ useless man' |

Some of the nouns exemplified in (31) e.g. *-xow* 'head' can also combine with class 5 *bu-* as in *bu-xow* 'enormous head' to express augmentative-oversized meaning as discussed in 5.3.1.3 above. It should be pointed out that entities having a big size may or may not be directly related to the "unpleasant" meaning.

Nouns denoting mammals in class 9 *ga-* constitute 1.5% of nouns in class 9 *ga-*. Despite their restricted number, it is interesting to see how they differ from mammals in other classes like class 3 *e-*, where most of them occur. Most of these mammals in class *ga-* are despised, and their names can be used as insults when equated with a human. For example *ga-bbarum* 'sheep' is included in this class because 'sheep', in addition to being too noisy, are equated with silliness. Similarly, reptiles in class 9 *ga-* are also despised, and some of them are noisy or very dangerous. The shift to noun class 9 *ga-* from the superordinate term *é-nuxureŋ*, which is class 3 *e-* for 'animal', to produce *gá-nuxureŋ* 'bad animal', reveals some semantic property of animals in class 9 *ga-* i.e. dangerous or negatively viewed. Example (32) below illustrates nouns of class 9 *ga-* that refers to animals and reptiles.

(32). | *ga-ssikkin* | 'jackal' |
|---|---|
| *ga-bbarum* | 'sheep' |
| *ga-ffol* | 'toad' |
| *ga-ubulat* | 'black mamba' |

The examples above show that animals in this class are usually those to which humans relate to negatively because they are unpleasant, e.g. make irritating noises (*ga-oja* 'bat'), are lazy or even dangerous like *ga-ubulat* 'black mamba'.

In addition to its use as augmentative, class 9 *ga-* includes words that refer to impaired entities e.g. *ga-llame* 'old and corroded machete', *ga-bekkan* 'impaired/ useless bicycle' (see solid line in Figure 14). When non-impaired, these nouns take different noun class markers e.g. *e-llame* 'machete', *e-bekkan* 'bicycle'.

The criteria of "impairment" and uselessness are metaphorically applied to the two nouns denoting humans found in class 9 *ga-*. *gá-ffannum* 'old person who has lost their physical and mental ability' and *ga-yugum* 'lazy person' are respective metaphorical applications of the "impairment" and "uselessness" to humans. Note that the use of noun class *ga-* with these nouns of human denotation is lexicalized. Although *á-ffannum* is possible, with the meaning of 'person of old age' (different from one who has lost their physical and mental abilities) **a-yugum* is not attested. It is likely that these metaphorical extensions originate from the derogative meaning associated with class 9 *ga-*.

In addition to the superordinate term for plant, most terms for plants and grass (41.3% of plants, which make up 5 % of nouns in class 9 *ga-*) are included in class 9 *ga-*. Many of these plants produce thorns, e.g. *ga-lallañ* 'kind of thorny grass that grows in the rice fields' or are useless in that they prevent seeds from growing. The superordinate term *ga-fos* 'grass' and basic level terms for most plants and grass that grow in colonies and thus occupy the whole surface of the area where they grow, realize their singular in class 9 *ga-* e.g. *ga-xangul* 'kind of plant', *ga-rarax* 'Ipomea asarifolia'. Recall that plants from which medicine is extracted or that are consumed are generally included in class 5 *bu-*.

In addition to the semantic classification of nouns in class 9 *ga-*, there is a case of noun class assignment based on phonological similarity of the initial syllable of one borrowed item with noun class 9 *ga-*. The noun *ga-rafa* 'bottle' whose plural is *u-rafa* 'bottles' originates from either the French (carafe) or the Portuguese Creole *ka-raafa*[117].

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[117] Recall that French is the language of formal education whereas Portuguese Creole has been the lingua franca of the region where G.E. is spoken for a long period before being replaced by Wolof in the last few decades. The word *ka-raafa* 'bottle' is also found in other Jóola varieties like Jóola Fógny with the same form as that of Portuguese Creole.

Its initial syllable #ga is identical to the noun class prefix of class 9 ga- where the word has been assigned. Note that there is a sound correspondence between /k/ in Jóola Fógny and /g/ in Gújjolaay Eegimaa.

A number of nouns referring to cultural aspects such as mourning tend to be incorporated in noun class 9 ga- e.g., ga-ogol 'place devoted to a dead person where libations are made to him before the end of the funerals' shrine'; ga-fuluŋ 'funeral song/ ancestors' shrine located in the house'. This seemingly points to the existence of a singular domain of experience of mourning with nouns. However, such an observation requires further research especially to show the correlations with other nouns of class 9 ga-.

Similar to noun class 7 fu- there are many examples of nouns in class 9 ga- that do not seem to be incorporated in this class on a semantic basis. ga-el 'noise; ga-ssal 'bud' and ga-jow 'name' among others. In (33) below, I present more examples of nouns of class 9 ga- having the meaning of flatness, but also rigidity. For comparison, I included here, are also nouns whose inclusion in this class requires further research.

(33). ga-acer   'grain of crushed rice'
      ga-alax   'hoof'
      ga-as   'territory'
      ga-kkot   'bogey'
      ga-kkaraj   'dried fish'(normally flattened)
      gá-bbie   'ticket'
      ga-kkart   'card'
      gá-ppano   'panel'

(34). gá-bbiru   'veranda'
      ga-bbut   'fishing rod'
      ga-melej   'spark'
      ga-mon   'dew'
      ga-ligis   'kind of necklaces'
      ga-ib   'cut'
      ga-jandu   'plow'

The semantic network discovered for noun class 9 ga- is presented in Figure 14 below.

Figure 14: Semantic network of class 9 *ga-*.

Flat/thin/wide   Wide

Thin   Open spaces   Big size

Flat

Hair/fiber   Vacant time

Derogatory   Augmentative

Impaired things   Unpleasant things
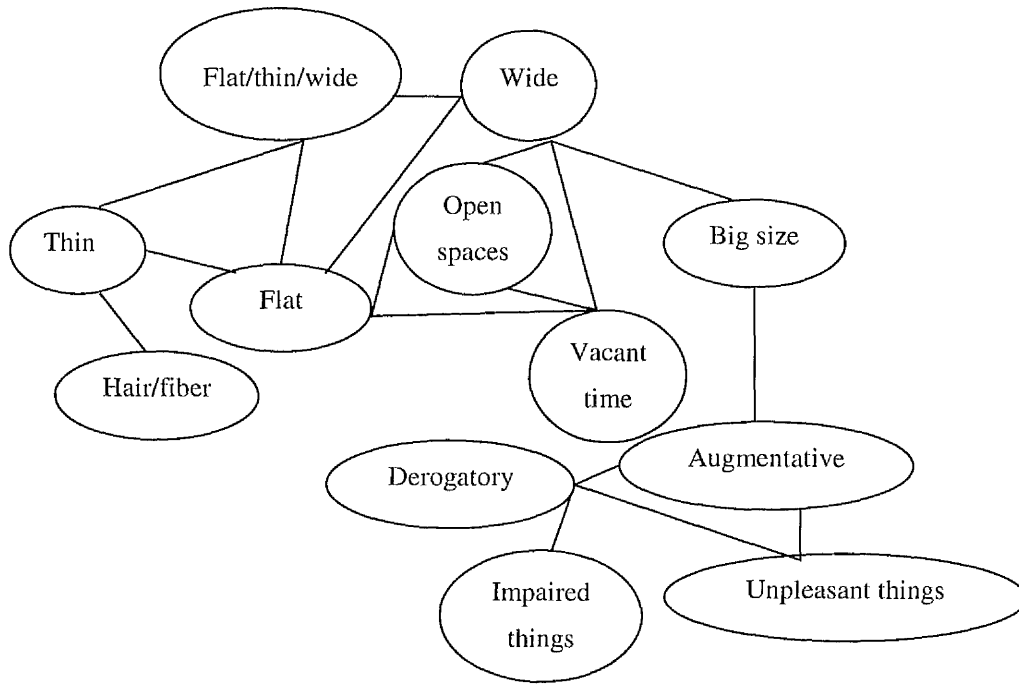
5.3.1.6 Noun class 11 ju-/ ji-; ja-: "small things"

Class 11 *ju-* is the class of "small things". All countable and most non-countable nouns combine with class 11 *ju-* to express diminutive meaning. For example, *a-ññil* 'child' becomes *ji-ññil* 'baby', *mú-xum* 'honey' becomes *jú-xum* 'small quantity of honey'. Small and usually fragile entities have an intrinsic membership of class 11 *ju-*. Not surprisingly *jí-cil* 'eye' is the only recorded body part to be included in class 11 *ju-*. Noun class 11 *ju-* is also used to express endearment, such as when used for praising. For example, *ji-aña* 'lit: small cultivator (also beloved cultivator)' is frequently used to praise hard-working people. On the other hand, noun class 11 *ju-* can express derogatory meaning, downgrading the value of an entity. For instance, *j-áine* 'little man' instead of *Ø-áine* 'man' may express endearment, but can also be abusive depending on the context.

Animals included in class 11 *ju-* are of small size. Surprisingly, *ji-ggaj* 'panther' appears with noun class prefix 11 *ju-* in spite of being a big, dangerous and feared animal. Note that the agreement marker it triggers is that of noun class 3 *e-*. This is interpreted as a case of euphemism based on the experience of the G.E. people with this

animal[118]. The motivation of such a euphemism is a way of figuratively taming that animal, making it "insignificant" by equating it to other small animals and minuscule creatures like sparrows. Another possible use of class 11 *ju-* for euphemism is with *ji-faŋala* 'kind of evil spirit'. It is not clear whether the use of class 11 *ju-* is motivated by the fact that it is a dangerous supernatural entity, or because of its size[119]. In example (35) I provide further examples of nouns in class 11 *ju-*.

(35). *ja-acer*   'grains of crushed rice'   *ji-rimbon*   'kind of small bird'
      ji-ssix   'small finger'   *ji-rafen*   'calf'
      ji-as   'small broom'   *jú-sux*   'small village'
      ju-tumandu   'kind of small bird'   *jú-ccop*   'small mouse'
      ji-ññil   'new born baby'   *ji-bioŋ*   'small plane'

Figure 15 below presents the semantic network of noun class 11 *ju-*. The solid lines indicate relations between smallness in size and the expression of diminutive which extends to endearment and also downgrading entities by describing them as smaller than normal. It also shows a correlation with the classification of fragile entities e.g. 'babies' which require to be treated with more gentleness than others. As discussed above, the description of the dangerous entities with class 11 *ju-* has a euphemistic origin.

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[118] One ritual practice (*ga-ggaj* 'imitating the panther') during the funerals of a man consists of killing a chicken and dragging it in zigzag to imitate the way the panther drags its prey. The aim of this ritual is to prevent any possible reincarnation of the dead man into a panther that would come to habitation to capture humans and their domestic animals.

[119] Among the G.E., only those who are endowed with the supernatural power can see those beings. Since the researcher is not one of them, no conclusion can be drawn here about the size of *ji-faŋala* 'evil spirit'.

Figure 15: Semantic network of class 11 *ju-*.
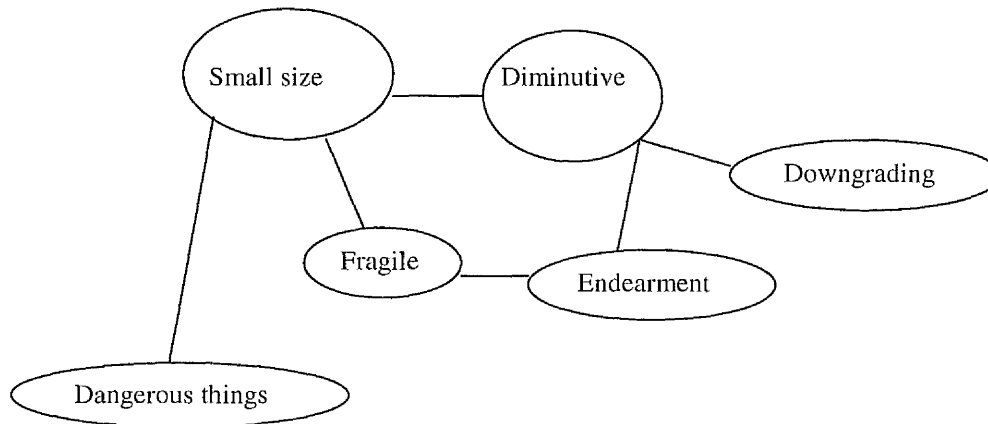
5.3.1.7 Noun class 12 ñu-/ ña-: "economy" and "social organization"

Following Tendeng (2000), this class, which has few members, is referred to as the class of the domain of experience of "economy" and "social organization" or "social interaction" (Denny, 1976), and includes related domains such as property. It encompasses *ñi-xin* 'plot of rice field', *ñu-vvul* 'Borassus aethiopium' and *ñi-it* 'palm tree', which are crucial elements of the economy and social organization of the G.E. people (see proposed link in Figure 16). Note that class 12 *ñu-* does not seem to make any semantic difference between its two subcategories as is the case for other classes discussed above, where noun class prefixes of the form *Ca-* generally have an additional meaning of the collective expression.

The social organization of the G.E. people is largely based on wet rice plantation which is linked to the possession of plots of rice fields (*ñi-xin* 'plot of rice field'), owned by a lineage and used by a member of that lineage. However, the latter is not allowed to sell any of the plots of rice fields at their disposal because this would mean a loss of property for the whole lineage. Despite this, plots of rice fields are often the source of conflicts between members of the G.E. community or lineages. This is because they are sometimes used as a guarantee when the member of a lineage borrows a domestic animal from another member of the community to make sacrifices during funerals. The plots of rice field are only returned when the debt is paid[120].

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[120] The animals sacrificed are always valued cattle (bulls, cows, pigs or goats) of which the bulls or heifers are preferred. In the Gújjolaay Eegimaa faith, the cattle sacrificed during a person's funerals and

In addition to the rice field properties, the only trees in class 12 ñu-; ñu-vvul 'Borassus aethiopium (kind of palm tree)' and ñí-it 'palm tree' are properties which are also often the source of conflicts about property in the community. These two trees differ from other trees included in class 5 bu- in shape and function. They have a long and round stem and palm leaves instead of branches in contrast to other trees. Their trunk is carved to make the frames of a house or to build a bridge. Similar to plots of rice fields, they are usually not easily sold or exchanged, but their products e.g. palm wine (included in class 5 bu-) can be bartered, like rice, hence their prestige and importance among the G.E. people.

The other words that are not directly related to the domain of experience of economy and social organization in this class, relate to 'pain' ña-tiñ or things that affect negatively the individual or the community e.g. ñu-xul 'mourning/ funerals', ña-mbaf 'base sale of property (e.g. plot of rice field) at a very low price'. These terms include the meaning component of pain (emotional or physical) and are related to social organization through a process of chaining.

It is during funerals and ends of mourning ceremonies that most exchanges of plots of rice fields for domestic animals are generally made. Mourning takes place with the involvement of the whole community and requires sacrifices of animals as pointed out above. During these occasions, it is often the case that one is compelled to exchange

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end of mourning ceremony become their property in their future life among ancestors. Therefore the more animals are sacrificed during these occasions, the richer the person in their new life. When a person exchanges property for mourning, they are bound to pay the price agreed before the exchange in order to bring it back to the lineage. Such a process of reimbursement often takes many years to complete. It is possible that another member of the lineage recovers the exchanged properties by paying the dept. However in some cases when the debt is not paid for one or two generations, descendents of the donor's family may appropriate the plot of rice field and may refuse any compensation from those of the borrower's, convinced that it is part of their lineage's heritage. Problems of this kind are usually solved at the local tribunal where the versions of the two plaintiffs are analyzed by a panel of older people. Whenever possible, the oaths of other members of the community who possess rice fields in the same location are taken into account. But this can only happen if they have some kind of knowledge about the issue from their forefathers' accounts. In some other cases, the problem may simply be impossible to solve due to lack of sufficient evidence to solve the matter.

a piece of property (e.g. a plot of rice field) in order to acquire a required animal to honor the sacrifices to a deceased relative. The loss of property in such circumstances and the mobilization of a whole lineage to recover it is what accounts for the inclusion of ña-mbaf 'base sale of property at a very low price' in class 12 ñu-. The term ñu-xul 'mourning/ funerals' is included in class 12 ñu- because the loss of a member of the community affects and involves the entire community of Mof-Ávvi, thus an entire social network, in the mourning[121]. For instance, relatives from the deceased person's mother's side are said to be the first to receive the official announcement from the family of the deceased. Furthermore, the organization of funerals is dependent on the involvement of different families and lineages, such as the paternal and maternal lineages as well as the lineage of the undertakers. Both men and women have crucial tasks during these events. It is proposed that the superordinate term for physical and emotional pain ña-tiñ 'pain' is included in noun class 12 ñu- as a result of a chaining process from social and economic organization to the pain that results from the loss (of a member of the community or property).

Other terms related to pain include ña-kkot 'kind of depression affecting a murderer/ ritual for the purification of a murderer[122]', which takes place at the royal shrine and is said to affect an individual and sometimes a whole family or lineage, and the only term denoting an illness in class 12 ña-rum 'gonorrhea', a 'shameful' infection that brings about sharp pain.

Another term related to pain is ñi-ssel 'big chain used to tie captives during the slave trade'. Exceptions to the generalizations proposed here seem to be the two terms referring to body parts; ña-gir 'back of the knee', ñ-ondoŋ 'nape' which denote vulnerable part of flat configuration located at the back of certain body parts (see discussion in 5.4.2.4.1 below), and one noun denoting an object ñi-xap 'kind of net made for the purpose of containing a piece of pottery to be hung up on a wall'. It is not

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[121] Note that positive social events appear in other classes, depending on the semantic features at focus. For instance, those where the human collectivity feature as the most prominent appear in class 5 bu-, e.g., bú-yabo 'wedding', bu-xut 'initiation'. On the other hand social events like ga-ggan 'celebration', ga-bbomen 'period of preparation for an initiation ceremony' are included in class 9 ga- because of their duration in time.

[122] Traditionally, anybody who commits a murder is bound to go into exile or undergo the ña-kkot ritual of purification, which is said to be a real dishonor to the lineage of the culprit.

clear why these nouns are included in this class. For the first two however, it is proposed as a conjecture (see dashed lines in Figure 16 below) that "vulnerability" may be the motivation for the classification of those nouns in this class.

The diagram below shows the semantic network that has been identified in class 12 ñu-. The diagram proposes that "property" is linked to "pain" through the loss of the former. It also shows with the solid lines, that "mourning", which is an emotionally painful event, is the place where property is generally lost.

Figure 16: Semantic network of class 12 ñu-.
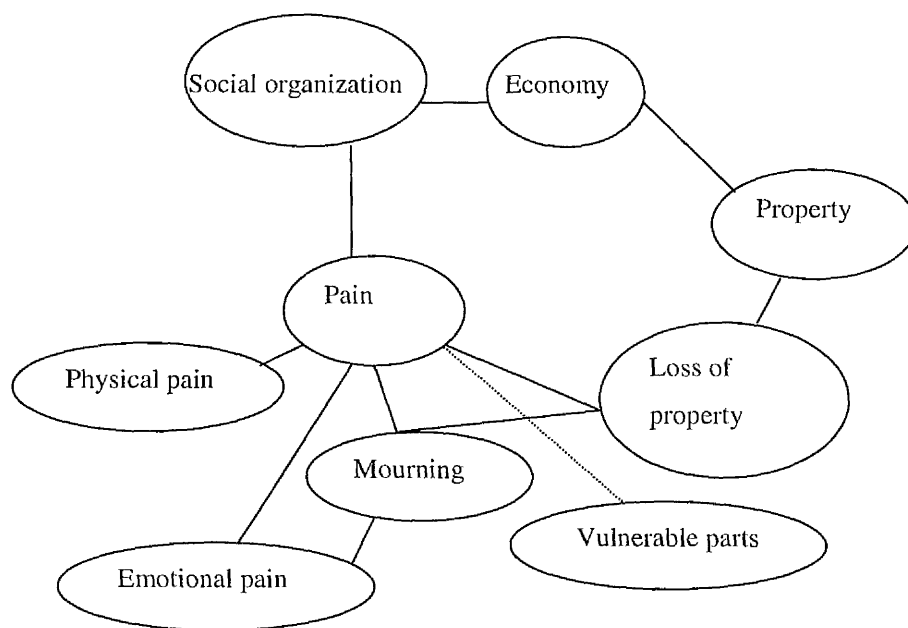
5.3.1.8 Locatives: noun classes 13 t-, 14 d- and 15 n-

There are clear semantic distinctions of a spatial and temporal order expressed through the use of locatives. Except for class 13 t(i)-, no lexical item has been recorded in the classes referred to here as locatives. Rather, the locative prefixes combine with the definite determiner morpheme -a and the proximal, medial and distal demonstrative suffixes.

Class 13 t(i)- primarily refers to a precise spatial location or point in space, for instance a place where a person is sitting, and is metaphorically extended to precise punctual temporal location. The only lexical noun that occurs with class 13 t(i)-, ti-nax

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'sun', not only indicates the physical entity 'sun', but is also used as time reference to indicate precise time of the day or night. It is only when it combines with the lexical noun *nax* 'sun' that noun class prefix 13 *t(i)-* contains a vowel. In all other cases as in (36) below it does not combine with a vowel.

(36). *t-ale*   'precisely here'
      t-áno-t-an   'any precise place'

Recall that in contrast to class 13 *t(i)-* which refers to a precise place, the allomorph of class 5 *b-* refers to general location. General location (cf. (37) below) refers to a wide or large area that is conceived of as including a collection of multiple precise locations. In other words, general location is conceived of an assemblage of precise locations which justifies its inclusion in class 5 *bu-*, the class of assemblages.

(37). *b-abe*   'around here'
      b-áno-b-an 'any general location/ area'

Class 14 *d-* denotes a 'location inside' e.g. a room, a forest or water, for instance (cf. (38) below). Put differently, this class refers to the inside of a container or an area with physical boundaries, or conceived of as having physical boundaries, with an inside and an outside.

(38). *d-áre*   'inside here'
      d-áno-d-an 'any place inside'

Finally, similar to the locatives, the temporal maker class 15 *n-* does not combine with lexical nouns. Only its agreement marking motivates its classification together with locative class markers (cf.4.1.3.4). Class 15 *n-* locates events in time but differs from class 13 *t(i)-* in that it is not used in the division and localization of precise daytime. There are formal but also semantic similarities between the temporal marker *n-* and the preposition *ni-* which can also be realized *n-* when it undergoes an inter-word assimilation process. This probably originates from a metaphorical extension of spatial location of the preposition to the temporal location discussed here and exemplified in (39) below.

(39). *n-o*   'then'
      n-áno-n-an 'any time'

5.3.2 The plural classes

The seven singular classes discussed above pair with five plural classes. Singular and plural correspondences are related on a one-to-one, one-to-many and many-to-one basis. Table 23 below shows the singular and plural complex correspondences where one singular noun class marker can have more than one plural correspondent and vice versa. The plural classes also have a semantic basis and reveal more clearly the semantic features expressed in a more complex fashion in the singular classes. Table 23 below presents the singular-plural noun classes correspondences.

Table 23: Table of noun class singular-plural pairing

Singular		Plural	
1.	a-	2.	bug-/ gu-/ u-/ e-
3.	e-	4.	su-
5.	bu-	6.	u-
7.	fu-	8.	gu-
9.	ga-	10.	mu-
11.	ju-		
12.	ñu-		

5.3.2.1 Class 2: 2a bug-/ 2b gu-/ 2c u-/ 2d e-: Humans

There are four different plural noun class prefix correspondences to noun class 1 a-. An analysis justifying the classification of these plural markers as subclasses of the human class based on agreement is provided in 4.1.3 above.

Among plural noun class prefix correspondences for class 1 a-, class 2a bug- is the only noun class marker to be entirely lexicalized since it only occurs in bug-an 'people'. All nouns with human denotation and combining with the noun class prefix labeled 2b gu- in the plural form their corresponding singular in class 1 a-. These nouns are generally terms of consanguineal kin relations or are terms that refer to humans that are considered extended parts of the family. The terms paya 'father' and jaya 'mother', which have a zero noun class prefix but take the agreement marker of classes 1 a- or 2 gu-, depending on their number, seem to form an exception to the rule since they form

their plural in class 4 *su-*. However, as will be demonstrated, in 5.3.2.2 below, these terms use this plural marker because they refer to the domain of experience of birth.

Nouns that form their plural in class 2b (9.1% of terms of human denotation) include the plurals *gu-ttiay* 'same sex siblings' and *gú-llinay* 'opposite sex siblings' and terms for in-laws, friends and neighbors who are considered extensions of the family[123].

The majority of singular nouns of human denotation in class 1 *a-* form their plural with noun class 2c *u-*. This human plural subclass is considered the default plural class within class 2 *bug-* , *gu-*, *u-* , *e-* because the referents of nouns in this class do not constitute a coherent or special group and form the biggest plural subclass of nouns denoting humans. It is in this subclass that supernatural entities (except for *alaémit* 'God' which does not have a plural) are incorporated.

The fourth plural noun class marker labeled 2d *e-* is homonymous to the singular noun class marker 3 *e-*[124]. Recall from the discussion in 4.1.3 that they have identical agreement markers on the definite determiner, but differ from each other because they show distinct agreement markers in all other cases within the noun phrase and the verb phrase. 32.1% of recorded nouns of human denotation form their plural using noun class 2d *e-*. The nouns in 2d *e-* denote humans that constitute a "body of people" or "identity group" with the same geographical, ethnic or linguistic origins as well as people participating in the same activities, like those who practice the same modern profession, for example *é-muse* 'teachers', *e-labe* 'priests' etc.

Most loanwords of human reference are assigned to class 1 *a-* in the singular and in class 2d *e-* in their plural form on the basis of their semantics. Use of 2d *e-* as a plural prefix for most loanwords of human reference is motivated by the fact that loanwords denoting humans generally refer to modern professions or a "body of people" that were

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[123] Among the G.E., neighbors and friends are considered extended parts of the family because they share the life of their neighbor or friend and often develop a greater complicity than with their family members. Similar to, and possibly more than siblings, they generally provide assistance and rescue in case of necessity. Marriage within the same lineage is an interdict. Similarly, even though marriage between the offspring of two friends or neighbors may strengthen their relations, it is usually not encouraged since any domestic conflicts may negatively affect such relations.

[124] The reason why it is considered a distinct noun class was discussed in 4.1.3. However, recall here that there are only formal similarities on the prefix and the definite determiner between noun classes 2 *e-* and 3 *e-*. Since these environments are not primary according to the noun class assignment criteria used in this thesis they are considered homonymous.

not part of the social organization of the G.E. people. Example (40) below illustrates the distribution of nouns in class 1 *a-* and their plural correspondent class markers.

(40).

Ø-an	'person'	*bug-an*	'people'
a-ttiay	'same sex sibling'	*gu-ttiay*	'same sex siblings'
á-llinay	'opposite sex sibling'	*gú-llinay*	'opposite sex siblings'
a-ppalay	'friend'	*gu-ppalay*	'friends'
Ø-aar	'wife'	*w-aar*	'wives'
a-ssex	'queen'	*u-ssex*	'queens'
a-mbala	'fisherman'	*u-mbala*	'fishermen'
á-pur	'young man'	*ú-pur*	'young men'
a-labe	'priest'	*e-labe*	'priests'
á-jjola	'Jóola person'	*é-jjola*	'Jóola people'
a-pirisoŋ	'prisoner'	*e-pirisoŋ*	'prisoners'
a-sef	'chief'	*e-sef*	'chiefs'

As argued above, not all nouns denoting human entities are included in classes 1/ 2. 14.67 % of the 109 nouns denoting humans are incorporated in noun classes 4 *su-/si-* on semantic grounds discussed in the next section. Figure 17 below presents the proposed semantic structure of noun class 2. It shows that plural noun subclasses of human denotation do have different referent types which do not relate to each other. The subclasses that show clearer semantic motivation are class 2b *gu-* and 2d *e-*. The solid lines indicate strong semantic links between the humans in different subcategories as discussed above.

Figure 17: Semantic networks of class 2: 2b *gu-*; 2c *u-*;2d *e-*
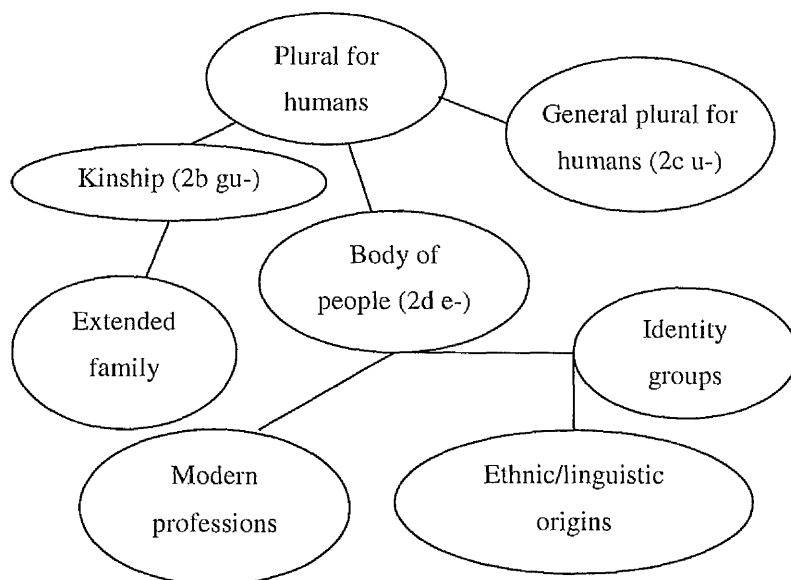
5.3.2.2   Noun class 4 su-/ si-: "Default"; "birth and maternity"

All singular nouns of noun class 3 *e-* (cf. 5.3.1.2 above) form their plural with noun class marker 4 *su-/ si-*. Recall that class 3 *e-* is the "default" or "unfeatured" class for most entities, e.g. animals. It contains not only the largest number of nouns, but also it functions as a "transitional class" for loanwords. However, not all nouns using noun class marker 4 *su-* combine with noun class marker 3 *e-* in their singular form. This is a case of what has been referred to as a many-to-one singular and plural correspondence (many singular classes forming their plural in one plural class) that has semantic motivations, at least for nouns whose singular forms are realized with noun class markers other than noun class 3 *e-*.

Nouns in class 4 *su-* included in class 3 *e-* in their singular form have the same semantics as their singular counterparts except for the difference in number. Among the nouns forming their plurals with noun class 4 *su-* and whose singular is different from class 3 *e-* are two singular nouns of human denotation from noun class 1 *a-*, *si-ppaya* 'mother's male siblings and male relatives' and *si-jjaya* 'mother's female siblings and female relatives'. Morphologically, these nouns combine with noun class prefix 4 *su-* but their agreement is that of noun class 2 *bug-*, *gu-*, *u-* , *e-*, the human plural class.

The other noun denoting a human and forming its plural with noun class 4 *su-* is *bá-jur* 'young woman'. As outlined in 5.3.1.3 above, nouns with human reference and forming their plural in class 4 *su-* are related to the domain of experience of "birth" and "maternity". As a consequence of their special role among humans, these nouns make their plural with the same plural class marker as other "special" humans e.g. *é-mbiro* 'champion of wrestling', described in 5.3.1.2 above. Recall that nouns for "standard" humans are in class 1 *a-* in the singular and in the plural class 2 *bug-*, *gu-*, *u-* , *e-* as discussed in the previous section.

The other noun that takes the plural class marker 4 *su-* and has a singular other than noun class marker 3 *e-*, is *ji-ggaj* 'panther'. In the singular, *ji-ggaj* 'panther' combines with the "diminutive" noun class marker 11 *ju-* but the agreement markers are those of class 3 *e-* 5.3.1.6 above. Its plural is formed with noun class plural 4 *su-*, *si-ggaj*

'panthers'[125] combined with the agreement marker of noun class 4 *su-* which is used for terms referring to most animals including the other biggest and most dangerous animals.

Noun class 4 *su-* is used as a collective plural for a limited number of noun stems[126]. These noun stems normally form their singular in the class 9 *ga-* and their plural in noun class 6 *u-*. It is used as a plural for collectives to describe entities of different varieties. This process of pluralizing collectives, which is by no means productive is illustrated in (41) below. Note that *si-nnaŋ* 'cooked rice (ready for eating)' uses noun class 4 *su-* as a collective even though it does not have a sortal meaning (distinguish kinds of rice) like other collective plurals in this class. It is not clear what motivates the use of noun class 4 *su-* here, but this will be investigated further in future research.

(41).

ga-nnaŋ/ u-nnaŋ	'grain/ s of cooked rice'	*si-nnaŋ*	'cooked rice'
a-jaora/ e-jaora	'stranger/ guests'	*si-jaora*	'strangers/ guests of various origins'
ga-mmano/ u-mmano; e-mmano	'grain/ s of rice; plantation of rice'	*si-mmano*	'varieties of rice'

In 5.3.1.2 above, I argued that loanwords are included in class 3 *e-*, the singular class correspondent of noun class 4 *su-* in a transitional stage, towards their incorporation to other classes on the basis of semantic motivations.

However, noun class 4 *su-* contains one of the few recorded loanwords that have been assigned to a class on the basis of phonological similarity of its initial syllable with a noun class marker in G.E.

The initial syllable of the noun *si-garet* 'cigarettes' borrowed from French is identical to one of the allomorphs of noun class 4 *su-* which explains its incorporation into that noun class on phonological grounds. As a consequence of the integration of the noun 'cigarette' to the plural class 4 *su-* based on phonology, its singular correspondent is formed with class 3 *e-* by analogy with most other nouns that use classes 3 *e-* and 4

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[125] Note that some consultants suggested that in the plural the diminutive singular prefix 11 *ji-* can still be kept on the noun. But the agreement marker must be that of the plural as in *ji-ggaj sú-uba* 'two panthers'. Using the diminutive singular prefix and the plural agreement marker is another way of expressing the euphemism in the plural. However, there is a general agreement that using the corresponding normal plural marker of the diminutive as in *mu-ggaj* would mean 'small panthers'.

[126] Less than a dozen of those nouns have been recorded so far.

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su- as singular and plural correspondents. Thus, the singular form of *si-garet* 'cigarettes' is *e-garet* 'cigarette'. In a few observed cases, 'cigarette' was combined with noun class 7 *fu-* in the singular and 8 *gu-* in the plural to produce *fu-garet* 'cigarette' and *gu-garet* 'cigarettes'. This points to a semantic reclassification of this loanword on the basis of its shape among entities of round configuration.

The diagram in Figure 18 proposes a network of the semantic domains that have been identified for noun class 4 *su-*. Similar to its singular counterpart noun class 3 *e-*, the solid links in the diagram below show that noun class 4 *su-* includes nouns whose referents do not exhibit the required features for their incorporation in other classes on semantic bases. Collectives in classes 4 *su-* distinguish entities of different kinds as pointed out above and thus differ from other collective expressions such as small entities, or insects. Humans in this class, like in the singular, have special characteristics/ status which humans in other classes do not possess, hence the link from the "unfeatured" circle to the "special humans" and then to "birth and maternity".

Figure 18: Semantic networks of class 4 *su-*.
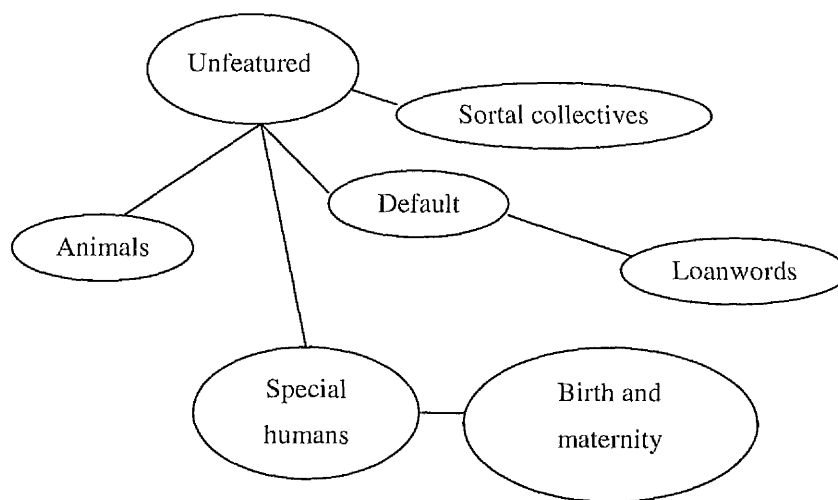
5.3.2.3 Noun class 6 u-: "Flat"; "big size"; "assemblages"; "social organization"

Noun class marker 6 *u-* is homonymous with noun class 2c *u-* but both are markers of different classes because of their distinct agreement markers, as argued in 4.1.3 above. This class functions as the plural noun class correspondent for the singular noun classes, 5 *bu-*, 9 *ga-* and 12 *ñu-*. Virtually, all singular nouns included in class 5 *bu-*

except *ba-jur* 'young woman', form their plural in class 6 *u-* e.g. *bu-ssana/ u-ssana* 'dug out canoe/ s'. The semantic basis for these plural nouns coincides with the meanings of "whole" and "assemblages" among other meanings of class 5 *bu-* discussed in 5.3.2.3 above.

99% of the 298 countable nouns of class 9 *ga-* make their plural in noun class 6 *u-* whereas the other 1% of those countable nouns are included in class 8 *gu-* in the plural (5.3.2.4 below). The nouns with a plural in class 6 *u-* also share the same meaning of "flatness", "width" and "thinness" that are expressed in noun class 9 *ga-*. It will also be argued in section 5.4.2.4 below that cases of conflict of noun class assignment occur as in the case of *ga-nnu* 'ear' which is mostly realized as *gu-nnu* but also as *u-nnu* 'ears' in its plural form, revealing an apparent conflict of criteria of flatness or roundness. Apart from body parts[127] and the assignment of objects in the shape experiments (5.4.2.4 below), no conflict of noun class assignment has been observed in the plural formation of nouns between class 6 *u-* and 8 *gu-*.

The remaining nouns of class 6 *u-* are plural nouns whose singular is realized in noun class 12 *ñu-*, the class of social organization whose semantic motivations are described in 5.3.1.7 above.

In addition to the semantic domains of its singular class correspondents, noun class 6 *u-* also incorporates meanings of augmentative and pejorative, negative feelings e.g. pain, oversized entities among other meanings that can be found its singular correspondents classes 5 *bu-*, 9 *ga-* and 12 *ñu-*. Concrete nouns in class 6 *u-* also include the feature of flatness of noun class 9 *ga-*, a semantic component also found, though marginally, with nouns in class 5 *bu-* having the feature of extended surface e.g. *bu-xax* 'sole of the foot', and also body parts of class 12 *ñu-*, *ñ-ágir* 'back of the knee'. Aside from these common features which may possibly justify the use of noun class 6 *u-* as a plural for three singular classes (see dashed lined in Figure 19 below), it is not clear why these singular classes form their plural with noun class 6 *u-*. Example (42) below provides a few more illustrations of noun class 6 *u-* and its singular correspondences.

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[127] In my data and the list of words proposed by previous authors of G.E. linguistics, body parts appear to be the only entities of class 9 *ga-* to form their plural in class 8 *gu-*. What all these body parts have in common is the feature 'roundness', and some of them are paired. But 'pairing' seems to be less relevant as a criterion for classification. In the discussion on shape encoding in G.E. (5.4.2.4), I show that body parts are classified on the basis of their shape, like most other entities in the language.

(42).

bu-lago	'pathway/ religion'	*u-lago*	'pathways/ religions'
ba-giŋ	'chest'	*u-giŋ*	'chests'
bí-xemum	'pipe'	*ú-xemum*	'pipes'
gá-ar	'apartment'	*ú-ar*	'apartments'
ga-ccac	'rib'	*u-ccac*	'ribs'
gá-ffoñ	'song'	*ú-ffoñ*	'songs'
ñu-xul	'mourning/ funeral'	*u-xul*	'mourning ceremonies/ funeral'
ñi-xin	'plot of rice field'	*u-xin*	'plots of rice field'
ñí-it	'palm tree'	*ú-it*	'palm trees'

The semantic network of class 6 *u-* is shown in Figure 19 below. Because class 6 *u-* has three singular correspondences and includes the semantic categories they express, rather than clearly expressing its own semantic category, no central circle is proposed for this class. Most solid lines express semantic categories already discussed in singular correspondents of noun class 6 *u-*. The diagram shows in addition to these categories, the links to "negative feelings" and "pejorative/ derogatory" expressions shared by the three singular noun classes that make their plurals in class 6 *u-*.

Figure 19: Semantic networks of class 6 *u-*

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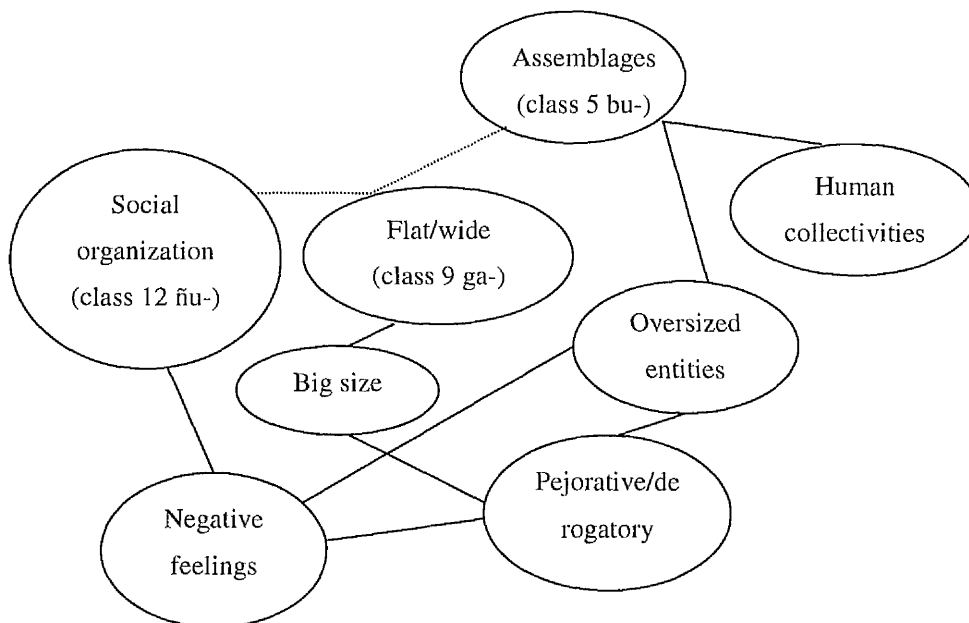
5.3.2.4 Noun class 8 gu- : "roundness"

Noun class marker 8 *gu-* is homonymous with noun class marker 2b *gu-*. However, because of a difference in agreement marking between the two classes, these prefixes are considered different noun class markers (cf. 4.1.3). All nouns in class 7 *fu-* form their plurals in class 8 *gu-*; the correspondence is thus on a one-to-one basis. However, nouns from class 9 *ga-* that form their plural in class 8 *gu-* make this class a plural correspondent for two singular classes. The plural forms have meanings similar to their singular correspondents in noun class 7 *fu-* described in 5.3.1.4 above.

These meanings include "roundness", "thickness" and "extensions of things". The criterion of roundness accounts for the incorporation of nouns of class 9 *ga-* into noun class 8 *gu-* in the plural. Note that this noun class includes among other things, languages e.g. *gú-jjolaay* 'Jóola language', *gu-bainukkay* 'Bainunk language' which do not have singular correspondences, and do not seem to fit into the categories of roundness and extensions of things. The reason why terms for languages are incorporated in class 8 *gu-* requires further investigations.

Example (43) below illustrates terms that form their plural in noun class 8 *gu-* including body part terms that use noun class marker 9 *ga-* as a singular prefix.

(43). | | |
|---|---|
| *ga-at/ gu-ot* | 'foot/ feet' |
| *ga-ñen/ gu-ñen* | 'hand/ hands' |
| *ga-nnu/ gu-nnu* | 'ear/ ears' |
| *fú-rus/ gú-rus* | 'wind/ winds' |
| *fu-ŋŋajen/ gu-ŋŋajen* | 'bow/ bows' |
| *fu-roffoŋ/ gu-roffoŋ* | 'demijohn/ demijohns' |

The proposed semantic structure of noun class 8 *gu-* is presented in Figure 20 below. The diagram shows some of the links between the semantic subcategories of class 8 *gu-* especially those discussed in its singular counterparts e.g., "extension" and "pejorative" expression. The question mark in the circle located between the "round entities" and "languages" shows that the basis of the consistent incorporation of nouns in class 8 *gu-* is not clear. Furthermore, the dashed line indicates that the link between the feature "round" and the possible basis for the classification of languages in class 8 *gu-* is not solid since it is not known.

Figure 20: semantic structure of class 8 gu-
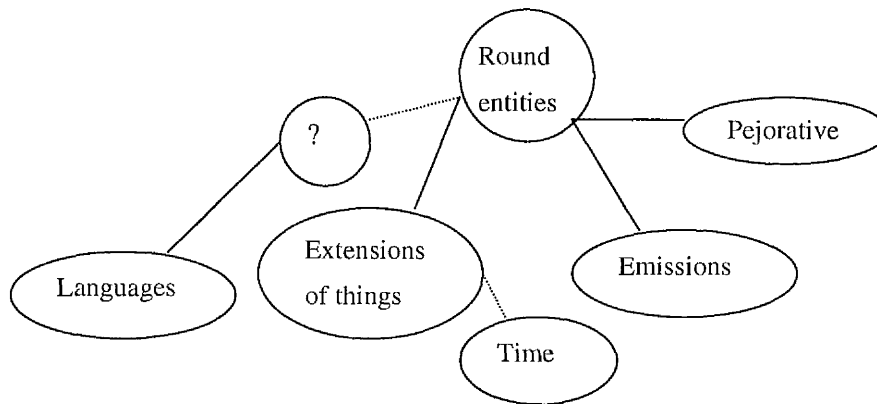
5.3.2.5 Noun class 10 mu- : "small entities"

Similar to its singular correspondent noun class 11 *ju-*, most nouns in class 10 *mu-* refer to small entities such as *mu-ttaja* 'sparrows', *mi-ññil* 'babies' etc. This class is also the plural class for "diminutives" formed by the combination of the noun class marker *mu-* with a noun stem that in its standard form, combines with another noun class marker. For example, *gu-roffoŋ* 'demijohns' can be given a diminutive meaning by replacing its basic (i.e. non-diminutive) noun class marker 8 *gu-* with noun class 10 *mu-* as in *mu-roffoŋ* 'small demijohns'. Note that it is also possible to alternate their singular counterparts as in *fu-roffoŋ* 'demijohns' and *u-roffoŋ* 'small demijohn'. The diminutive meaning as stated in 5.3.1.6 above may denote endearment as in *mu-ññolom* 'my little (beloved) babies' or may convey derogatory meaning as in *mu-labe* 'little insignificant priests'.

The use of noun class 10 *mu-* to express endearment in the plural is a productive strategy which applies to loanwords without restriction. For example, the basic noun class markers of the stem *-mobilet* 'moped' are class 3 *e-* in the singular and class 4 *su-* in the plural. Noun class 10 *mu-* can be used as a diminutive plural and depending on the context, *mu-mobilet* 'small mopeds' can be either a pure description of the small size of the entities referred to or an expression of the speaker's admiration to new and/ or fast mopeds (they may not have a small size.)

In addition to expressions for small entities, class 10 *mu-* encompasses nouns for which singular/ plural pairing is irrelevant. These include liquids and abstract terms. Abstract terms in class 10 *mu-* mostly express inherent characteristics of physical

entities e.g. *mi-ñex* 'sharpness', *má-tali* 'bitterness' and properties of the mind like *mú-u* 'supernatural power', *mu-ssay* 'witchcraft'[128] and in this sense, they differ from those in class 9 *ga-* for example, which generally denote vacant periods of time (5.3.1.5 above). Note that abstract nouns in class 9 *ga-* are compatible with the plural e.g. *ga-nnay* 'era' realized *u-nnay* 'eras' in the plural, whereas those in class 10 *mu-* do not normally occur with a singular noun class marker.

In contrast to class 5 *bu-* which includes poisonous and alcoholic drinks, most of which are extracted from trees (5.3.1.3 above), liquids whose terms are included in class 10 *mu-* are all non-alcoholic and only one (*mí-cir* 'myrrh') is a tree product. Some of these liquids among which, a few are extracted from the body, e.g. *mi-il* 'breast milk', *mí-i* 'milk'[129], are consumed whereas others like *mu-ffu* 'tears' and *mu-u* 'salted water from the river' are not.

It is proposed here that noun class 10 *mu-*, when it does not refer to concrete countable entities, describes inherent characteristics (see Figure 21 below), which correlate with the inclusion of "properties" as one of its semantic features in Seck (2002).

A semantic network that summarizes the structure of class 10 *mu-* is proposed in Figure 21. It shows most semantic subcategories found in its singular counterpart, noun class 11 *ju-*, but also the links between the "inherent properties" meaning, liquids and abstract nouns in class 10 *mu-* with solid lines.

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[128] Witchcraft is seen among the G.E. as a malicious use of supernatural power (mental power). This most probably justifies the incorporation of the *mu-ssay* 'witchcraft' in this class along with other nouns related to inherent properties.

[129] The term *e-jjen* 'sweat' is in the default class (class 3 *e-*) which does not show clear semantic assignment.

Figure 21: Semantic network of class 10 _mu-_.

Inherent properties

Small size

Abstract

Diminutive

Liquids

Related to body & mind

Downgrading

Endearment

Non-alcoholic
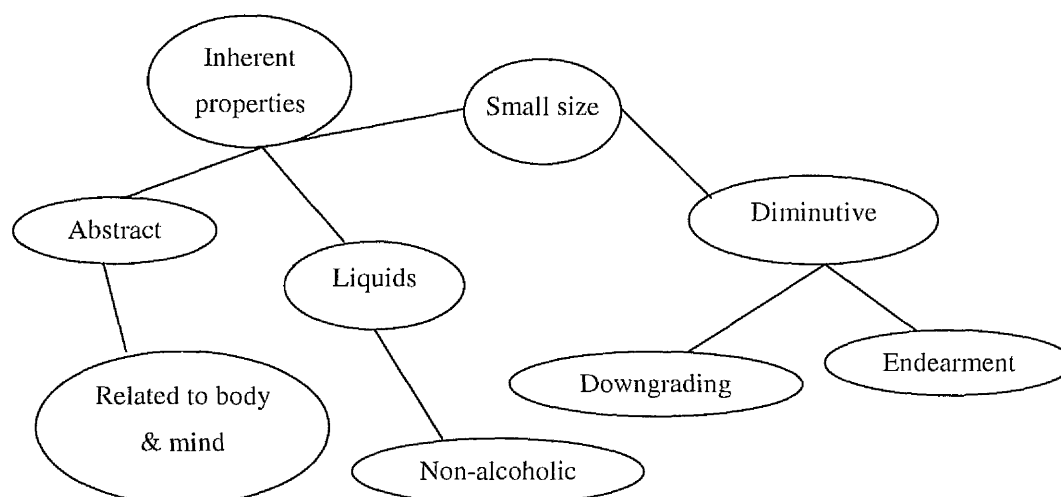
5.3.3 Individual class semantics: summary

The study of the semantic basis of the individual classes in G.E. led to the discovery of a number of semantic categories around which the structure of each class is organized.

I have shown that in G.E. class 1 _a-_ includes terms for "humans" where human-like supernatural entities are classified and where personification of non-human entities is expressed. In its plural expression, the human class (class 2) further classifies humans into subclasses which comprise humans having a kinship relation (class 2b _gu-_), and those that share a similar background (origin, linguistic or professional etc.) (2d _e-_). However, the other subclasses of humans include one that is lexically determined (2a _bug-_) and another one which is the most general human plural class 2c _u-_.

Class 3 _e-_ includes the largest number of words and is termed the "default" class especially because it shows more semantic variation than any other class, and functions as a transitional class for loanwords before they are reclassified on semantic bases. This class also includes special humans and functions as collective for plants that grow in colony. The plural correspondent of this default class 4 _su-_ also expresses the plural semantic category of "birth and maternity" and collective meaning for entities of different kinds.

Class 5 _bu-_ is the class of "assemblages" and the singular domain of experience of "birth and maternity". Its subclass 5b _ba-_ expresses collective meaning for small

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entities. This class also denotes extended surfaces and oversized entities and is thus, related to pejorative expressions.

Pejorative meaning is also conveyed with noun class 7 *fu-* whose semantic structure is organized around "roundness". In class 7 *fu-* pejorative expression usually refers to protrusion of the entity described. Its plural correspondent class 8 *gu-* expresses the same meanings as those expressed in the singular, but also included terms for languages.

Class 9 *ga-* has a semantic network organized around the meanings of "flatness", "thinness" and "width" and expresses pejorative meaning and is also used to indicate negative feelings about an entity because it is ill-proportioned, corroded or useless. It relates to noun class 5 *bu-*, but also 12 *ñu-* which expresses negative feelings and uses the same plural noun class marker as noun class 5 *bu-*.

The class of "small entities", class 11 *ju-* is also used euphemistically for dangerous things such as *ji-gaj* 'panther' and possibly, *ji-faŋala* 'kind of evil spirit'. It can be used to express endearment or derogatory meaning. Its plural marker class 10 *mu-* also encompasses liquids and abstract terms in addition to the meaning of small size expressed by noun class 11 *ju-*.

The semantic structure of class 12 *ñu-* is organized around "social organization" and unpleasant feelings resulting from social factors. In this sense it relates to class 5 *bu-* and 9 *ga-* which also express unpleasant things through their pejorative meanings (see Figure 19 above).

The rest of the noun class markers class 13 *t-*, 14 *d-* and 15 *n-* express precise location, location inside, and temporal location. Recall that general location is expressed by the class of assemblages, class 5 *bu-*.

In addition to the meanings expressed in the individual classes discussed above, it is possible to alternate noun class markers to express singular and plural differences as well as collective meanings. The semantic basis of such class shift is explored in the next section, which also examines the semantic basis of the G.E. noun class system from the distribution of a few domains into classes.

5.4 The semantic basis of the G.E. noun classification: further discussion

This section summarizes the discussion of the semantic basis of the noun class system by addressing a number specific issues, in particular the cases of assignment to different noun classes of nouns that at first sight belong to the same semantic domain. In section 5.4.1, I discuss the semantic basis of class shift by studying in greater details the singular and plural distinctions, the collective expressions as well as discussing diminutive and augmentative formation.

Section 5.4.2 below looks at the semantic motivations for the distribution of members of one domain e.g. abstract nouns, into distinct classes. The issue of shape encoding in G.E. is also discussed here in further details with an analysis of body parts and the experiments I carried out with novel objects. This is followed by a discussion of the culture-specific semantic motivations of the G.E. noun categorization system in section 5.4.3. Section 5.4.4 below addresses the issue of whether noun class markers have meaning, based on the results of the research proposed here.

5.4.1 Class shift

5.4.1.1 Singular and plural distinctions

The discussion in chapter 4 and the previous sections has shown that the semantic category of number is marked morphologically in G.E. by an alternation of singular and plural noun class markers attached to a noun stem. In simple cases, a single lexical stem may combine with two noun class markers to inflect for singular and plural as illustrated in example (44) below.

(44). | *a-rokka* | 'worker' | *u-rokka* | 'workers' |
fi-ssilum	'kitchen'	*gú-ssilum*	'kitchens'
é-sux	'village/ country'	*sú-sux*	'villages/ countries'
ji-lellenjul	'swallow'	*mi-lellenjul*	'swallows'

There are seven singular and five plural noun class markers that combine with lexical stems to express these singular and plural distinctions.

In more complex cases of noun class alternation, where a third noun class marker is used with the same stem, collective meaning may be expressed as in *ba-lellenjul*

'group of swallows' whose singular and plural correspondences are illustrated in example (44) above (see 5.4.1.2 below for a discussion of collectives).

In the light of the discussion of the semantic categories of the individual noun classes proposed in the previous section, it can be argued that all irregular singular-plural pairings (see Table 23 section 5.3.2 above) are semantically based.

Noun class 1 *a-* the class of nouns denoting humans, normally alternates with noun class 2 *bug-* , *gu-*, *u-* , *e-* in the plural on a regular basis. But nouns denoting "special humans" such as terms for parents in class 1 *a-*, make their plural in class 4 *su-*, the class that expresses the semantic domain of experience of "birth" in the plural. This accounts for the irregular singular and plural correspondence between class 1 *a-* and 4 *su-* expressed with a dashed line in Table 23 above. The domain of experience of birth also accounts for the irregular plural of 'young woman' also expressed in Table 23 by the dashed line from class 5 *bu-* to class 4 *su-*.

Two lines starting from the singular noun class 9 *ga-*, show a one-to-many correspondence with the plural noun classes 6 *u-* and 8 *gu-*. Recall that noun class 9 *ga-* is organized around the categories of flatness and width but also has a few nouns which have round shape. As argued in the section on the plural realization of body parts in 5.4.2.4.1.2 below, only body parts having essentially round configuration form their plural in class 8 *gu-*. The rest of the nouns in class 9 *ga-* realize their plural in class 6 *u-* based on criteria such as flatness but also rigidity. The fact that noun class 9 *ga-* has two plural correspondences is also based on round versus flat shape distinction. The alternation between singular noun class markers and the plural ones in class 9 *ga-* is shown by the two lines from noun class 9 *ga-* to noun classes 6 *u-* and 8 *u-* in Table 23 above.

The singular noun class marker, class 11 *ju-* is normally expected to alternate with noun class 10 *mu-* in its plural form, except when there are specific semantic motivations for using a different plural marker. The use of noun class 8 *gu-* for 'eyes' (see dashed line between class 11 *ju-* and class 8 *gu-* in Table 23) which in the singular are included in class 11 *ju-* because of their fragile status, is motivated by their round configuration. On the other hand, the use of noun class 11 *ju-* and its irregular pairing with noun class 4 *su-* is a rare case of singular-plural alternation with semantic motivations (the euphemistic classification of the 'panther' as discussed in 5.3.1.6 above). It follows from this, that the irregular combinations of noun class prefix 11 *ju-*

with noun class prefix 4 *su-* and noun class prefix 8 *gu-* are infrequent singular-plural alternations that are semantically motivated.

Non-count nouns use either singular or plural noun class markers and are usually referred to as "singularia tantum" and "pluralia tantum" respectively (Corbett, 1991). For instance, most nouns denoting liquids are included in class 10 *mu-*, the plural class for small things discussed in 5.3.2.5 above. Other mass nouns are incorporated in the default class 3 *e-* (cf. 5.3.1.2) with no clear semantic basis, and in class 5 *bu-* as discussed in 5.3.1.3 above if they are alcoholic and purposefully assembled other kinds of substances. In these cases, singular-plural alternations are normally not attested.

In summary, the seeming mismatches between singular and plural noun class alternations are actually means of expressing semantic information by selecting different semantic criteria which can be "universal" e.g. shape (Aikhenvald, 2000, 2006, Allan, 1977) or culture-specific e.g. domains of experience (see 5.4.3 below for further discussion). Bear in mind that where there are regular singular-plural alternations, the same semantic criteria are normally expressed in both.

5.4.1.2 Collectives

In G.E., both singular and plural noun class markers can express collective meaning. The primary function of collectives is to specify the cohesion of a group, sometimes manifested in joint activity (Corbett, 2000). The use of certain noun class markers to express collective meaning may be taken as a secondary classificatory function. Some basic noun class pairs may alternate with certain collective prefixes but not others, showing restrictions in collective marking. Collectives are discussed in greater detail in their respective classes. Here, I restrict the discussion to outlining the preferences in noun class alternation and the resulting meanings of such alternations. Frequent cross-referencing will be made to individual classes.

5.4.1.2.1 Alternations of class 1/ 2 *a-/ e-* with class 4 *su-* and class 5b *ba-*

In section 5.3.2.1 above, I showed that noun class 2d *e-* functions as a plural noun class marker for humans that form an identity group or share the same profession e.g. *é-ppurofesar gú-uba* 'two professors'. However it is also possible to use noun class prefix 2d *e-* with a collective meaning to point at a unified group without focusing on individual members, as in *é-ppurofesar* 'professors' and *é-jjola* 'Jóola people'.

The alternations between classes 1/ 2d *a-/ e-* and 4 *su-* are discussed in great detail in 5.3.2.2 above, where I showed that class 4 *su-* is used to distinguish entities of different varieties such as *si-jaora* 'strangers/ guests from different origins'. Another expression of the collective is with the singular noun class 5b *ba-* which is used as a collective for small entities and may be used with nouns of human denotation with a downgrading meaning (cf. 5.3.1.3 above). Example (45) below shows the different types of collective expressions with nouns of human denotation. Note that other plural subclasses of class 2 (2a *bug-*, 2b *gu-* and a 2c *u-*) are only compatible with the diminutive collective 5b *ba-* ((46) below).

(45). *a-jaora*   'stranger/ guest'
      e-jaora   'strangers/ guests'
      si-jaora   'a collection of strangers/ guests from different origins'
      ba-jaora   'a bunch (collection) of small strangers'

(46). *a-ññil*   'child'
      u-ññil   'children'
      ba-ññil   'bunch of children'
      *si-ññil   'children'

5.4.1.2.2 Alternations of class 3/ 4 *e-/ su-* with class 7b *fa-* and class 5b *ba-*

As outlined in 5.3.1.4 above, noun class 7b *fa-* is prototypically used as a collective for nouns of the class pair 3/ 4 *e-/ su-* denoting insects that live in swarms as a colony. It is extended to other entities e.g., thorns, on the basis of family resemblance (cf. 5.3.1.4 above). Noun class 5b *ba-* is also used with a collective meaning for small things whose basic noun class markers are 3/ 4 *e-/ su-*. Consider the semantic differences triggered by the alternations of noun class prefixes in (47) below.

(47). *e-abut*   'ant'
      si-abut   'ants'
      ba-abut   'small ants'
      fa-abut   'colony of ants (e.g. black ants or lion-ants')

5.4.1.2.3 Alternations of class 7/ 8 *fu-/ gu-* with class 3 *e-*

The alternation between noun class 7 *fu-/* 8 *gu-* and noun class 3 *e-* is restricted to plants such as tubers that usually live in a colony, i.e. they prevent other plants from growing in the same places. Note that noun class 5b *ba-* is not normally used to express

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collective of small things in this class. However noun class 10 *mu-* can be used as a diminutive plural, as can be seen in the examples given in (48) below.

(48).   *fi-ex*   'cassava (plant or tubers)'
         gu-ex   'cassavas (plants or tubers)'
         e-ex   'plantation of cassava (plants or tubers)'
         mi-ex   'small cassavas (plants or tubers)'

5.4.1.2.4   Alternations of class 9/ 6 *ga-/ u-* with class 3 *e-*; 4 *su-*; 5b *ba-* and 10b *ma-*

Nouns from the class 9/ 6 *ga-/ u-* pair which express flatness and width etc., use different noun class prefixes to express collectives. Noun class 3 *e-* generally alternates with noun class 9 *ga-* with nouns denoting "colonizing" grasses, as discussed in 5.3.1.2 above. Noun class 4 *su-* is also used with a sortal meaning, to refer to different varieties of entities such as *si-mmano* 'varieties of rice' (5.3.2.2 above). Noun class 10b *ma-* has been recorded in one instance where it functions as a general term for grass with collective meaning as in (49). As for noun class 5b *ba-* it is also used to express collective meaning for small entities as in (50) below.

(49).   *ga-fos*   'plant of grass'
         u-fos   'plants of grass'
         e-fos   'colony of grass (typically of the same kind)[130],
         ma-fos   'grass of different kinds'

(50).   *ga-ppil*   'stick'
         ba-ppil   'a collection of small sticks'

5.4.1.2.5   Alternations of class 11/ 10 *ju-/ mu-* with class 5b *ba-*

The noun class 11/ 10 *ju-/ mu-* pair only alternates with class 5b *ba-* in the expression of the collective for small entities as illustrated in (51) below.

(51).   *ji-ray*   'small fish'
         mu-ray   'small fish' (pl)
         ba-ray   'pile of small fish'

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[130] Note that here it is not possible to use noun class 4 *su-* as in **su-fos*.

From the summary of collectives in individual classes proposed here, it can be argued that G.E. has different types of collectives for different kinds of entities. The language expresses collections of entities of different varieties with the default plural noun class 4 *su-*, whereas collections of entities of the same kind are formed with other noun class markers.

Noun class 3 *e-* is used for collections of plants that grow in colony and bears formal similarity with the plural expression of humans class 2d e.g. *é-jjola* 'Jóola people' which can also have a collective meaning. Recall however, they are assigned to different classes on the basis of agreement criteria proposed in 4.1.3.2 above. G.E. classifies differently collectives of small entities (including humans) with noun class 5b *ba-* and collectives of ants of the same kind like ants that live in swarms with noun class 7b *fa-*.

In short, it appears from the discussion of the collectives that both singular and plural noun class markers can be used for collective expression. The motivations for having formal similarities between the expression of human and plant collectives on the one hand, but different collective markers for small entities and insects requires further research.

5.4.1.2.6 Diminutive and augmentative expressions

When a noun stems shifts from its original class to express the diminutive meaning, it alternates with 11 *ju-* in the singular and 10 *mu-* in the plural as exemplified in (52) below.

(52).

a-rokka	'worker'	*ju-rokka*	'small worker'
fi-ssilum	'kitchen'	*ji-ssilum*	'small kitchen'
sú-sux	'villages/ countries'	*mú-sux*	'small villages/ countries'
fu-xow	'head'	*ju-xow*	'small head'
gu-xow	'heads'	*mu-xow*	'small heads'

In G.E., the augmentative meaning is formed with noun class 5 *bu-* to denote enormous entities, noun class 7 *fu-* to indicate big size combined with round shape and noun class 9 *ga-* to indicate big size and also derogatory meaning as illustrated in (53) below. Note as pointed out in individual noun class discussions that derogatory meaning can also be expressed with noun classes 5 *bu-* and class 7 *fu-* depending on the context.

(53).   *e-telefon*   'phone'
        ga-telefon   'broken phone' (possibly big)
        fi-telefon   'big (thick) phone'
        bi-telefon   'enormous phone'

Nouns that belong to any of the classes used in the formation of augmentative meanings can also shift to other classes to express augmentative and possibly derogatory meaning. For example nouns from class 7 *fu-* shift to classes 5 *bu-* and 9 *ga-* (cf. (54) below) while nouns from class 9 *ga-* shift to classes 5 *bu-* and class 7 *fu-* (see (55) below). However, nouns from class 5 *bu-* shift to class 9 *ga-* but are generally not accepted in class 7 *fu-* as in (56) below.

(54).   *fu-xow*   'head' (normal)   *ga-xow*   'big (ill-proportioned) head'
                                        bu-xow   'enormous head'
(55).   *ga-jandu*   'Plow' (normal)   *fu-jandu*   'very big (thicker than normal) plow'
                                        bu-jandu   'enormous plow'
(56).   *bu-tum*   'mouth'   *ga-tum*   'big/ ugly mouth' (insulting)
                                        fu-tum

5.4.2 The distribution of nouns from selected domains into classes

This section provides a discussion of the semantic motivations for the distribution of members of certain domains into several classes. The domains reviewed here are abstract nouns, loanwords[131], and birds whose distribution into various classes may suggest an arbitrary classification. The section on shape encoding discusses the semantic basis of the distribution of different shapes like body parts and the results of the experiments carried out with objects of different configurations to test the relevance of shape encoding in G.E. noun class system.

5.4.2.1 The classification of abstract nouns in G.E.

There are terms that do not denote entities with a readily observable physical structure. These terms are generally abstract terms. In this section, I discuss the semantic basis of the distribution of 90 of those terms which appear in ten noun classes of which five singular classes (3 *e-*, 5 *bu-*, 7 *fu-*, 9 *ga-* and 12 *ñu-*), four plural classes (4

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[131] Most loanwords (other than those of the default class 3 *e-*) are directly categorized on the basis of the shape of their referents. However other loanwords are classified on semantic parameters other than shape e.g. phonological form. This is why they are not discussed among shape types.

su-, 6 u-, 8 gu- and 10 mu-) and one locative non-pairing class (13 t-). Table 25 below shows the distribution of abstract terms in those noun classes.

Table 24: The class distribution of abstract terms

Class	Number	%
3 e-	22	24.4%
4 su-	2	2.2%
5 bu-	13	14.4%
6 u-	2	2.2%
7 fu-	15	16.7%
8 gu-	11	12.2%
9 ga-	7	7.8%
10 mu-	12	13.3%
12 ñu-/ ña-	5	5.6%
13 t-	1	1.1%
Total	90	100.0%

As with concrete nouns, abstract nouns in class 3 e- and 4 su- (the singular and plural default classes), do not seem to show any clear semantic motivations for their incorporation in this class. Certain abstract nouns in class 3 e- are compatible with the plural expression and thus combine with noun class 4 su-. For example, e-cet 'death' may be pluralized as si-cet meaning 'many occurrences of death (many people dying)'. In the same way, y-alor 'soul' has the plural s-alor 'souls'. There are also abstract nouns like s-embe 'strength' and sú-mmori 'dream (revelations in dreams)' which only occur with the plural noun class marker 4 su-, but do not combine with noun class 3 e-. Cases like sú-mmori 'dream (revelations in dreams)' which are derived from verbs e.g. gá-mmori 'sleep' take noun class 4 su- to express multiplicity of occurrences. These cases are discussed in the next section.

Abstract nouns in class 5 bu- (14.4% of abstract nouns) include concepts that can be interpreted as metaphorical extensions from the concepts of "assemblages" or "whole" or "extended surfaces". Most abstract nouns in subclass 5a bu- include phenomena which tend to extend in space and time and show a seemingly long lasting negative effect. Examples include, bí-cet 'epidemic (successive death of animals)', bu-ŋaŋ 'insomnia', bi-pila 'unending bad luck' or bi-eb 'hunger/ famine'. These phenomena correlate with the negative feelings triggered by oversized entities and extended concrete surfaces expressed by concrete nouns 5a bu- as discussed in 5.3.1.3 above.

All abstract nouns in class 5b ba- except for ba-gun 'kind of evil spirit' for which it is not clear whether the referent is a collection of small entities, relate to assemblages.

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Examples of these nouns whose available members are human groups are *ba-ssomay* "the set of father's sisters", *ba-ttiay* 'brotherhood', *bá-llinay* 'sisterhood' and *ba-buge* 'friendship'.

Noun class 6 *u-* contains abstract nouns which do not have singular counterparts. These nouns are *ú-bbitten* 'cultural practice consisting of receiving gifts from in-laws before an initiation ceremony' and *w-af* 'thing'. Further research with additional data is required to determine the semantic basis for the incorporation of nouns in this class.

Abstract nouns of class 7 *fu-* (16.7% of abstract nouns) include terms for time periods among which days of the week, but also parts of the years like *fi-eñ* 'moon/ month'. Other abstract nouns in this class include *fu-ffane* 'adulthood', *fi-ññile* 'childhood', *fí-ssil* 'jealousy' and *fu-ssumo* 'reverence'. These nouns do not seem to relate to the core meanings of "roundness" or "extension of things" expressed in class 7 *fu-* discussed in 5.3.1.4 above. Also, it is not clear whether there is any connection between these nouns and life stages as for example, "jealousy" with young age or "reverence" with old age. One abstract noun however, that seems to correlate by metonymy with concrete nouns, is *f-áine* 'manhood', which is included in noun class 7a *fu-* along with domestic male animals and singular organs specific to male species. Note that no abstract noun has been found in class 7b *fa-*. An important observation for abstract nouns in this class is that they differ from those of class 5 *bu-* in that they do not denote assemblages or extended surfaces.

Abstract nouns in class 9 *ga-* include those that express vacant periods of time as discussed in 5.3.1.5 above which are generally characterized by duration in time. Similarly, other terms in this class e.g. *gá-ssumay* 'peace', *ga-ssio* 'hysteria (as part of character)' and *ga-maŋ* 'love' appear to show the semantic components of duration. As a consequence, the 7.8 % of abstract nouns included in class 9 *ga-* relate to concrete nouns in that duration in time can be interpreted as a metaphorical expression of width. Note that abstract nouns in this class do not express extended duration which is a semantic component of class 5 *bu-*.

Noun class 8 *gu-* which expresses the meaning of roundness in the plural includes the word for language (*gú-lobum* 'language') and all other language names. It is not clear what motivates the inclusion of languages in the plural class of round entities.

With noun class 10 *mu-* the meaning expressed by abstract nouns is that of inherent body and mind characteristics. Nouns in this class make up 13.3% of the total

number of abstract nouns and include nouns such as *m-iñ* 'that which is scandalous (by essence), *mú-u* 'supernatural power'. Note that subclass 10a *mu-* incorporates only 25 % of abstract nouns in class 10, whereas the other 75 % of nouns are included in subclass 10b *ma-*. Examples of abstract nouns included in class 10b *ma-*, are *ma-ttaño* 'difficulty', *ma-ñao* 'taboo/ interdict' and *ma-agen* 'truth' etc. As with concrete nouns, it is not clear what the difference is between subclasses of noun class 10 in the expression of abstract terms. However, the two subclasses seem to express the nature of inherent characteristics of things.

5.6% of abstract nouns are incorporated in class 12 *ñu-* and have to do with social organization and pain as demonstrated in the discussion of class 12 in 5.3.1.7 above. Those abstract nouns include *ña-kkot* 'kind of depression affecting a murderer/ ritual for the purification of a murderer', *ñu-xow* 'envy' but also *ñu-ttot* 'cold'.

In only one instance is a locative, class 13 *t-*, used with a lexical noun to denote the entity *ti-nax* 'sun' and metaphorically to refer to precise time in the day or night as illustrated in (57) below. Other locatives do not combine with lexical nouns as pointed out in the discussion of the semantics of locative classes 5.3.1.8 above.

(57).   *ti-nax*   *bu*   *ti-cig-e*
        NC14-sun   how   CD14.3SG-arrive-PFV
        'What time is it?'

From the discussion of abstract nouns above, it appears that the distribution of abstract nouns in different classes is less easily explainable than that of concrete nouns. However, it can be argued that the classification of such terms is not always arbitrary. Wherever the semantic basis for the classification of an abstract noun has been found, it appears that such a classification is often based on metaphorical extension from the meanings expressed by concrete nouns.

5.4.2.2   The classification of loanwords

Allan (1977: 290) argues that there are three ways of "deciding whether noun class markers have meaning i.e., denote perceived or imputed characteristics of the entity (or entities) to which the associated noun refers"; native speakers' intuition, foreign observers' intuition and the introduction of new words and objects to a number of native speakers to find which noun class marker they use.

The 133 recorded loanwords occur in five noun classes as can be seen in Table 25 below.

Table 25: The class distribution of loanwords

Class	Number	%
1a-	15	11.3%
3 e-	58	43.6%
5 bu-	7	5.3%
7 fu-	21	15.8%
9 ga-	30	22.6%
4 su-	2	1.5%
Total	133	100.0%

11.3 % of the 133 loanwords are included in class 1 a- because of their human denotation. These include nouns such as *a-kkumandaŋ* 'commanding officer' and *á-suppurefe* 'prefect (of part of a department)'. They confirm the preference for nouns of human denotation, to the exception of 'special humans', to be included in class 1 a-.

In their plural form, loanwords of human denotation are distributed into two subclasses of class 2, class 2 c u- (13.3%) where most G.E. plural nouns of class 1 a- are included and class 2d e- (86.7%) depending on whether they refer to a community of people, identity groups or a group or people exercising professional activity. Thus *u-baloŋa* 'football player', *ú-tatisa* 'catechists' refer to people involved in temporary activities whereas *e-kkumandaŋ* 'commanding officers' and *é-suppurefe* 'prefect (of part of a department)' refer to member of cohesive groups (e.g. professions).

Noun class 3 e- (43.6% of loanwords) contains loanwords with various semantic denotata which, as with non-borrowed terms, do not seem to show any coherent semantic structure that would account for their inclusion in this class. Only words such as *e-bandi* 'bandit' and *e-ccaga* 'prostitute' show clear semantic motivations for their incorporation in these classes along with other nouns denoting special humans as discussed in 5.3.1.2 above. Loanwords of class 3 e- form their plural in class 4 su- which also contains two other recorded terms that do not have singular counterparts: *su-lunet* 'glasses' and *si-ekkutar* 'headphones'. A common semantic feature between the two entities denoted by these nouns is that they are arranged in pairs. However, pairing does not seem to be a relevant classificatory criterion for class 4 su- since no other cases of pairing have been observed in this class. Also, there are loanwords denoting paired entities e.g. *é-ssiso* 'scissors', which are not directly integrated in plural class 4 su-.

All recorded loanwords in class 5 *bu-* (5.3% loanwords) denote trees or plants of some utility to humans. No loanwords have been collected for the noun subclass 5b *ba-*.

Class 7 *fu-* includes 15.8% of the total 133 loanwords studied here. Of these, 95.4 % denote entities with a round shape. Among these borrowed nouns are words for fruits like *fu-mandarin* 'mandarin fruit', vegetables like *fu-kkaŋja* 'okra', round and long objects such as *fú-ttuyo* 'pipe' and other objects of circular configuration e.g. *fi-serikkal* 'rim'. The other 4.6 % of nouns refer to objects that are used as covers e.g. *fu-ddarab* 'bed sheet' and *fu-kkapucoŋ* 'top of pen', which can be interpreted as an expression of extension for things, which is one of the meanings expressed by noun class 7 *fu-* (see 5.3.1.4 above). Note that no loanwords are included in class 7b *fa-*.

22.6 % of loanwords are incorporated in class 9 *ga-*, mainly based on semantic grounds. 83.3% of the loanwords of class 9 *ga-* denote flat entities, the main semantic component for the class of nouns in class 9 *ga-*. Examples of loanwords of flat configuration include *ga-afic* 'poster', *ga-bbataŋ* 'shutter', *gá-ttike* 'ticket' etc. 46.6% of the total of loanwords in class 9 *ga-* also have the semantic component of rigidity which, though marginal, shows a chaining relation between words such as, *ga-aruduas* 'board' (flat + thin+ rigid), *ga-kkaset* 'cassette'(flat +thick+ rigid) and *ga-kkess* 'box' (rigid).

The summary of the semantic basis of the distribution of loanwords in different classes proposed here shows that the classification of novel words is not arbitrary. Rather, it uses the same semantic as parameters of classification which also account for the classification of non-borrowed terms in G.E., as discussed in the individual class section (5.3 above). Those parameters include culture-specific motivations e.g. the classification of loanwords for "special humans" (*e-bandi* 'bandit') and inherent properties of classified entities like round or flat shape. A large number of nouns are included in the default class because there is no clear semantic basis for their classification. Some of them are reanalyzed and then reclassified on a semantic basis. This is why classes 3 *e-/* 4 *su-* are referred to as the transitional classes for loanwords. The case of *si-garet* 'cigarettes' which is also realized *gu-garet* 'cigarettes' in the plural, illustrates as discussed above, a case of phonological assignment because of the similarity of the initial syllable with one of the allomorphs of class 4 *su-*. Of the 133 loanwords, only two (*ga-rafa* 'bottle' and *si-garet* 'cigarettes') seem to show clear cases of phonological classification. At the same time it shows a progressive semantic reclassification into the plural class of round entities, noun class 8 *gu-*.

5.4.2.3 The classification of birds

The 75 recorded terms denoting birds are incorporated in four singular classes and their regular plural counterparts as shown in Table 26.

Table 26: The class distribution of birds

Class	number	%
3 e-	18	24.0%
7 fu-	13	17.3%
9 ga-	23	30.7%
11 ju-	21	28.0%
Total	75	100.0%

Birds are classified primarily on the basis of their perceived shape and size. Those in the default class (24%), class 3 e- do not seem to have much in common since they include birds of medium and big size as well as birds of bad omen e.g. e-llogir 'kind of bird', é-bagur 'kind of bird'. Birds in class 3 e- form their plural in class 4 su-.

No birds have been recorded in noun class 5 bu- or its subclass 5 ba-. Those in class 7 fu- are said to be the roundest, and also the most hunted compared to other birds. They include fu-fora 'partridge' and fu-gotta 'kind of wild duck'. Most birds in this class e.g. fi-ricon 'guinea fowl', fi-ic 'kind of sparrow hawk' are said to be the sturdiest and thus most difficult to kill. Even though most birds in class 7 fu- have a relatively big size, their description as being of round shape takes precedence on their size (they do not have the same size), which accounts for their incorporation in this class. This shows that the classification of birds also follows the basic parameters of classification of most nouns in class 7 fu-. In their plural forms, birds of class 7 fu- are included in class 8 gu- where round entities make their plurals. Note however that no bird has been recorded in subclass 7 fa- where insects that live in swarms are included.

As far as birds of class 9 ga- are concerned (30% of birds), they include most birds of big size among which gá-laŋa 'pelican' and gá-gutum 'vulture'. Unlike birds of class 3 e- which may also have a big size, those in this class are generally despised because they are considered too noisy like ga-oja 'bat'[132] or have some characteristics that G.E. speakers do not value (5.3.1.5 above). Birds of this class also differ from those

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[132] The other name for 'bat' is gappu gapeppor 'a bird of gapeppor (unknown meaning)' which suggests that bats are classified as birds. Note that generic term for 'bird' –ppu combine with noun class 11 ju- or ga- depending on the size of the bird the speaker has in mind.

in class 7 *fu-* in that the latter are said to be rounder and more valued for food whereas those of class 9 *ga-* are generally not consumed.

Birds in class 11 *ju-* differ from those in other classes regarding their size, but not their shape. Recall that class 11 *ju-* is the class of small entities and of diminutive expressions. All birds in this class (28% of birds) are of small size e.g. *ji-ttaja* 'sparrow', *ju-tumandu* 'kind of small bird that lives in the rice fields', *jí-ssingaora* 'kind of small bird that generally lives in wells'.

In summary, the classification of birds is based on semantic criteria such as their perceived physical properties, e.g. shape, especially for those in class 7 *fu-*, but also their size, which allows contrasting the small ones of class 11 *ju-* with to the big ones in class 9 *ga-*.

The next section studies shape encoding in further detail by looking at the distribution of body parts and the objects used for the shape experiments.

5.4.2.4 Shape encoding in G.E.

5.4.2.4.1 The semantics of the distribution of body parts in different classes

Similar to terms for abstract nouns and birds, nouns denoting body parts are dispersed into several noun classes, which may appear at first view as evidence against the semantic motivation of the G.E. nominal classification system.

By summarizing the semantic basis of the classification of body parts in this section, I wish to show that the classification of terms for these entities focuses on shape as a parameter for noun classification. The term body part is used here as a generic term to refer to human and animal body parts as well as parts of things such as plants. Table 27 presents the different noun classes in which body parts are distributed.

Table 27: The class distribution of body parts

Class	Number	%
3 *e-*	22	20.6%
5 *bu-*	13	12.1%
7 *fu-*	30	28.0%
8 *gu-*	2	1.9%
9 *ga-*	37	34.6%
10 *mu-*	1	0.9%
12 *ñu-/ ña-*	2	1.9%
Total	107	100.0%

5.4.2.4.1.1   Singular body parts

There is no clear semantic motivation for the incorporation of body parts in the default class 3 *e-* which includes 20.6% of body parts. Thus, they are not discussed in this section.

The most important feature of body parts in 5 *bu-* is that they indicate extended surfaces which relates them to the concept of whole of noun class 5 *bu-* as in *bi-lefej* 'palm' or the *bu-xax* 'sole of the foot'. The remaining body parts in this class indicate assemblages and are related the concept of whole, because they include other body parts. For example, *bu-ul* 'face' includes other parts, among which *e-ñundu* 'nose', *fi-riŋ* 'forehead' but also *bu-tum* 'mouth' which in turn includes body parts such as *gú-ŋŋiŋ* 'teeth' and *fi-rerum* 'tongue'.

In addition to human body parts, animal body parts of class 5 *bu-* also refer to assemblages of things such as *bi-ssit* 'plumage', *bú-ttoy* 'tuft of feathers'. Nouns referring to animal body parts are either the same as those of humans, or they are classified on the basis of the same principles into the same classes. Examples of the use of the same terms for humans and animals include *bu-tum* 'mouth' which, depending on the context may refer the mouth of a human, or of some other kind of animal.

The meaning of "assemblages" of noun class 5 *bu-* can be captured from the contrast that arises when noun class prefix 5 *bu-* and noun class 9 *ga-* and its plural class 6 *u-* combine with the same noun stem. Examples illustrating such cases are *gá-ssit* 'feather', *ú-ssit* 'feathers' and *bi-ssit* 'plumage', and also *ga-fal* 'animal hair/ human body hair', *u-fal* 'animal hair/ human body hair' and *bu-fal* 'fur/ human body hair'. Clearly, these cases of noun class alternation show that noun class 5 *bu-* is used to derive the meaning of "assemblages" from certain noun stems that normally combine with noun class 9 *ga-* in their singular form and class 6 *u-* in their plural form. Finally, noun class 5 *bu-* is used in one recorded instance with plant body parts to refer to assemblages of things in *bú-kkugay* 'foliage for fertilizing'. All body parts of class 5 *bu-* make their plurals in class 8 *u-*.

In summary, body parts in 5 *bu-* essentially include the classificatory parameters of assemblages, whole and extended surfaces.

Body parts that function as the central members of class 7a *fu-* and 7b *fa-* *(28%* of body parts) are prototypically globular. Other less prototypical exemplars are incorporated in this class on the basis of family resemblance to those prototypes.

Among members of this class, are *fu-xow* 'head', *fu-la* 'buttock' and *fi-il* 'breast'. Members of this class also include nouns denoting body parts with "roundish" (half circle) shape i.e. those showing some degree of roundness e.g. *fi-ep* 'chin', *fu-rongol* 'back of the neck', but also those having a long and round configuration e.g. *fi-ssix* 'finger'. The criterion of roundness also accounts for the inclusion of nouns specific to animal body parts such as *fi-lej* 'tail' in noun class 7 *fu*. In the same vein, plant body parts that are long and have some degree of roundness e.g. *fu-ar* 'root' and *fú-ggox* 'creeper's trunk' are included in class 7 *fú-* mirroring the class assignment of human and animal body parts. All body parts of class 7 *fu-* make their plural in class 8 *gu-*. The classification of body parts in class 7 *fu-* may also be interpreted metaphorically, based on their location at the extremities of other body parts, as extension of things as proposed in 5.4.2.4.1.3 below.

34.6% of the body parts are included in class 9 *ga-*. Nouns denoting human body parts in class 9 *ga-* are organized primarily around the meaning of "flatness" and in some cases they include "thinness", "rigidity" or a combination of some of these features. This class also includes nouns that denote certain singular body parts having a round or round and long configuration e.g. *ga-at* 'foot' and *ga-ñen* 'arm/ hand' and *ga-nnu* 'ear'.

The criterion of thinness is illustrated by examples such as *g-al* 'hair' and also *ga-pol* 'skin', while the feature of rigidity justifies the inclusion of nouns such as *ga-vvul* 'bone' and *ga-sen* 'skull' in noun class 9 *ga-*. Body part terms in class 9 *ga-* form their plural in two classes; noun class 6 *u-* for most nouns and noun class 8 *gu-* for a small number of recorded nouns which have round shape. The semantic distribution of these body parts in the plural is discussed below.

Nouns denoting specific animal body parts are also included in class 9 *ga-* on the basis of the criteria of flatness as in *ga-yew* 'scale', *gá-ssit* 'feather', and *ga-bes* 'wing', of rigidity e.g. *ga-ssin* 'horn', *ga-alax* 'hoof', *ga-ub* 'shell'; and finally thinness e.g. *ga-fal* 'hair (animal or human body)', *ga-baŋ* 'animal skin'.

Note that *ga-ñen* 'hand' is used for humans and animals like apes. However, G.E. seems to make a human and non-human distinction by using class 5 *bu-* for humans in *bi-lefej* 'palm' but class 9 *ga-lefej* 'palm (for apes)'. Plant body parts that are included in noun class 9 *ga-* predominantly have a flat shape: *ga-toj* 'leaf', *ga-bbob* 'leaf of the Borassus aethiopium' or thin *ga-ccil* 'blade of a palm leaf'. However, *ga-an*

'branch' which does not exhibit the features of thinness, or flatness but rigidity is included in class 9 *ga-*. It will be discussed further later in this section.

There is only one noun, *jí-cil* 'eye' denoting a body part that is included in noun class 11 *ju-*. This class refers to small size and usually fragile entities and may be used to express diminutive meaning as discussed in greater details in 5.3.1.6 above. Consequently the motivation for classifying *jí-cil* 'eye' in the class of small things in the singular is not its round shape but its small size and also its fragile state as pointed out above. As will be argued below, in the plural, the classification of this noun is done on the basis of its shape rather than its small size and vulnerability. Moreover, noun class 11 *ju-* can also combine productively with other body part terms to refer to their small size especially when referring to a newborn baby.

Only two body parts nouns from class 12 *ñu-*, *ña-gir* 'back of the knee' and *ñ-ondoŋ* 'nape' have been recorded. These refer to flat areas at the back of certain body parts. Aside from referring to similar areas of the body, the only common link between these two nouns is that they describe vulnerable parts of the body from where a person can be easily paralyzed, which suggest a possible link with pain as discussed in 5.3.1.7 above.

In summary, the discussion of the classification of human body parts in the singular classes shows strong tendencies of the distribution of those body parts according to their inherent properties including shape, and less importantly size and rigidity etc., which are among the criteria that generally recur cross-linguistically in classifier systems (Aikhenvald, 2000, Allan, 1977).

The classification of nouns denoting body parts in different singular classes is rather complex, in that there are cases of overlaps between the criteria of classification and also use of few cases that seem to suggest multiple criteria. The Venn diagram in Figure 22 below summarizes the different basic classificatory semantic criteria for singular nouns denoting body parts.

Figure 22: Representation of the semantic relationship between singular classes

Class 9 ga-

Class 5 bu-

Rigid
Thin
Surfaces
Long   Flexible
Flat   Paired   Thick
Round
Class 7 fu-
Back of body
Fragile
Class 12 ñu-
Small
Class 11 ju-
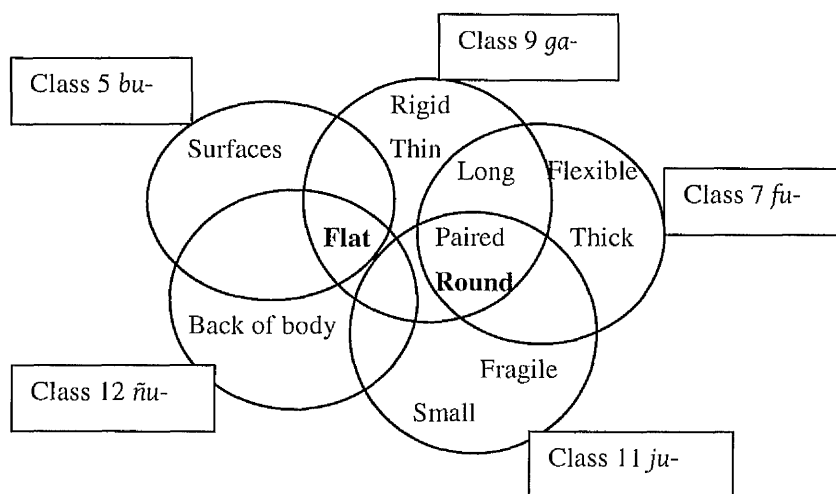
The semantic classificatory criteria presented here are those that refer to the physical properties of body parts discussed above. They show features that are peculiar to each of the noun classes as well as intersecting (in boldface) semantic criteria between the different classes. For example the feature "flatness" is found with nouns of classes 9 ga-, with some nouns in class 5 bu- (as extended surfaces) and with body parts of class 12 ñu-, whereas the feature "roundness" occurs as the main criterion for the incorporation of nouns in class 7 fu- and is possessed by a few nouns in classes 9 ga- and class 11 ju-.

Below I suggest that the classification of body parts is primarily based on the criteria of shape and that flatness and roundness constitute the most salient classificatory categories through which nouns denoting body parts are categorized. The contrast in shape distinction for body parts and other entities is captured more clearly in the plural expression.

5.4.2.4.1.2   Plural body parts

The nouns denoting body parts of different kinds of entities discussed above fall into three noun classes in the plural. Excluding the plural for the default class 3 e- which is class 4 su-, the other nouns are included in noun class 6 u- and noun class 8 gu-. This classification has semantic motivations.

Noun class 6 u- is used as the plural expression for body part terms of noun classes 5 bu-, 9 ga- and 12 ñu-. Flatness is a feature that is found in these classes. But

recall that class 5 *bu-* is organized around the meaning of whole or extended surfaces which may be flat and assemblages. Consequently, the plural formation of body parts in noun class 6 *u-* follows that of other nouns of the same singular classes.

All body part terms that form their singular in noun class 7 *fu-* e.g. *fi-ssix* 'finger', *fi-bbeñ* 'lip', use noun class 8 *gu-* as a plural noun class because they exhibit the semantic characteristics of roundness. All body parts that make their singular in class 9 *ga-* but their plural in class 8 *gu-* also possess the criterion of roundness. This accounts for the plural expression of *ga-at* 'foot' as *gu-ot* 'feet', *ga-ñen* 'hand' as *gu-ñen* 'hands' and also *ga-nnu* 'ear' as *gu-nnu* 'ears' in class 8 *gu-* among body parts with round shape. Note that there are cases of speaker variation in the plural expression of the term *ga-nnu* 'ear' where some speakers use class 6 *u-* to form the plural *u-nnu* 'ears' instead of the most productive *gu-nnu* 'ears'. This case of speaker variation is based on conflict of criteria between flatness and roundness. Foregrounding the round configuration of the 'ear' accounts for use of noun class 8 *gu-* whereas backgrounding it and foregrounding the flat shape justifies using noun class 6 *u-* as a plural marker. The feature of roundness also justifies the classification of *ji-cil* 'eye' from the class of "small entities" in the singular to *gu-cil* 'eyes', the plural class of round entities, instead of the normal plural class of small entities class 10 *mu-*. Use of class 10 as in *mí-cil* 'small eyes' is only possible when highlighting the small size of the eyes especially when referring to eyes that are smaller than average.

The terms that could be taken as an exception in the plural assignment of plant body parts according to their round shape are *gá-un* 'branch of the Borassus Aethiopium' and *ga-an* 'branch' which refer to entities with a round or more or less round configuration but form their plural in noun class 6 *u-* among flat entities. This brings us back to the question why these round and roundish body parts are incorporated in class 9 *ga-* in the singular and in class 6 *u-* in the plural, whereas other nouns such as *ga-ñen* 'hand' use noun class 9 *ga-* in the singular and noun class 8 *gu-* in the plural.

The differences found are first, that singular body parts of class 9 *ga-* that form their plural with noun class 8 *gu-* are round and paired whereas those which use noun class 6 *u-* are round but not necessarily paired. Second, paired body parts of class 9 *ga-* which form their plural in class 8 *gu-* are flexible, whereas those that form their plural in class 6 *u-* are not flexible. Note that pairing, which seems to surface here as a distinctive feature, has not been observed elsewhere as a classificatory criterion. Thus, its relevance

to the classification of nouns, if any, can only be considered marginal. However rigidity is a semantic feature possessed by many nouns in class 9 *ga-*. Although it is considered a secondary feature of classification for class 9 *ga-*, rigidity appears to be the most likely source for the incorporation of *gá-un* 'branch of the Borassus aethiopium' and *ga-an* 'branch' in this class. This is represented in Figure 23 by the intersection between the two plural classes that clearly, show a semantic classification of body parts on the basis of their shape.

Figure 23: Representation of the semantic relationship between plural classes.
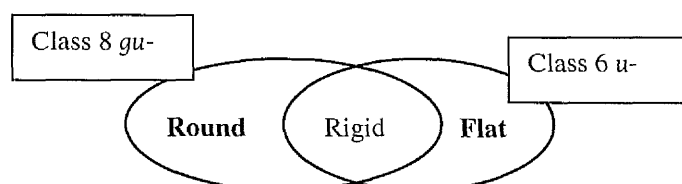
The investigation of the assignment of body parts into noun classes shows the use of complex singular classificatory criteria which become simpler in the plural with the focus on the most salient parameters of classification of shape. Besides, the examination of body parts shows clear correlations with the parameters of classification of other entities in the language.

Shape is the primary criterion used in the classification of body parts and other objects. However, criteria such as size, flexibility, rigidity, are also relevant features of classification even though they appear to be of secondary relevance.

The next section poses other possible ways of interpreting the semantic assignment of body parts into classes.

5.4.2.4.1.3   The possible metaphorical interpretation in singular body parts classification

From the discussion of the classification of human, animal and plant body parts, it can be suggested that body parts are classified primarily on the basis of their physical properties. In addition to these physical properties, body parts of different types included in class 7 *fu-* also have in common that they tend to be located at the extremities of the body. For instance, *fi-ssix* 'finger', *fi-lej* 'tail', and *fu-mangu* 'mango fruit' have the physical property of round shape in common, but also they are located at the extremities of the bodies. This interpretation raises the question of why terms such

as *gá-ssit* 'feather' and *ga-toj* 'leaf' are classified in class 9 *ga-* since they can also be regarded as extremities. The argument proposed here is that in this case, the criterion of flatness overrides that of extremity.

The criterion of flatness which is prevalent in class 9 *ga-* does not explain why terms such as *ga-ñen* 'hand', *ga-at* 'foot' and *ga-an* 'branch' discussed in the previous section are included in class 9 *ga-* even though they do have a round configuration. One common feature other than physical property between the denotata of these terms and those of nouns such as *gá-un* 'branch of the Borassus aethiopium ' and *ga-bes* 'wing' is that they refer to limbs of the human body, but also the animal body and trees, an observation also made in Sapir (1965) where limbs have been included in the class corresponding to the one labeled class 9 *ga-* in G.E.

This suggests the a possible use of multiple criteria for classification based not only on shape, but also the location in relation to the main body as another criterion. Thus this would account for the classification of limbs such as *ga-at* 'foot', *ga-ñen* 'hand' and *ga-bes* 'wing' in class 9 *ga-* among nouns which normally refer to entities with a flat configuration.

Note that among body parts of class 9 *ga-* that could be classified as limbs, there is an important difference between those that have a round shape e.g. *ga-at* 'foot' and *ga-an* 'branch' but form their plurals in classes 8 *gu-* and class 6 *u-* respectively e.g. *gu-ot* 'feet' and *u-an* 'branches', and those that are flat e.g. *ga-bes* 'wing' and take class 6 *u-* as plural correspondent. The assignment criteria seem to be blurred in these instances. But such differences become clearer in the plural assignment of those nouns as shown in the previous section. Note also that human but also animal body parts are used as a source of metaphor to refer to parts of things such rivers with terms like *fu-xow e-ral 'lit: head of river (upstream)'*; *fi-lej e-ral* 'lit: tail of river (downstream)'; *fu-xow bura* 'lit: of bed' which can be interpreted as cases of bodily projection to inanimate entities.

It is thus proposed to look at the location of body parts as a bridging semantic parameter between shape and the metaphorical classification of entities. This is what justified the analysis of periods of time, but also places designed for human activities as extension of things located at extremities (cf. 5.3.1.4 above).

5.4.2.4.2 The shape experiments

The study of the semantics of body parts assigned to different noun classes in the previous section showed that shape is the main parameter for the categorization of nouns denoting body parts and parts of things. This section is a further investigation of shape encoding in the G.E. noun class system through the use of experiments. In undertaking these experiments, I sought to find out how novel objects are categorized and if such a categorization correlates with body part classification and the classification of other entities discussed in previous sections.

The phenomenon of shape encoding of entities i.e., the expression of shape through classifiers, has been reported in languages of different families (Adams and Conklin, 1973, Aikhenvald, 2000, Contini-Morava, 1997, Denny, 1976, Denny and Creider, 1976, Friedrich, 1970, Seifart, 2005, etc.). The investigation of basic shape encoding in G.E., was undertaken through experiments with describing and naming objects of different sizes and dimensionalities contained in pictures designed by the MPI (Max Planck Institute for Psycholinguistics) in Nijmegen (cf. Hellwig, 2003, Hellwig, 2006, Seifart, 2005).

The tasks undertaken during the shape investigation are: the description task, the matching game, the power point picture elicitation task (Lüpke, 2005b), the baptizing task, and map task. A detailed description of each of these experiments based on nonverbal stimuli experiment is provided in the introduction (cf. section 1.5.1.4) along with a sample of pictures used in these tasks. The number of descriptions for each task is presented in the form of a table in the appendices. The results of these tasks are discussed below.

5.4.2.4.2.1 The results of the shape and baptizing experiments

Of the fifteen noun class markers, only five were used by consultants during the shape experiments to describe the objects in the pictures. These are noun class markers 3 *e-*; 5 *bu-/ bi-* ; 7 *fu-/ fi-*; 9 *ga-* and 11 *ju-/ ji-*. Two of these noun class prefixes, noun class markers 7 *fu-* and 9 *ga-*, show a clear correlation with shape. These prefixes were consistently used to describe objects of different shapes and sizes[133].

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[133] So far only these prefixes appeared to show evidence for shape encoding. Future research will aim at finding out whether other shape types are incorporated in other classes.

The shape types that are encoded in these noun class markers include round, especially globular and flat shapes. The results of the description task show a high proportion of the use of noun class 7 *fu-* to describe objects with a globular shape and objects with a round and long configuration. For example, 70.3% of round, long and thick objects, like those in Picture 1 below were described by use of noun class 7 *fu-* along with objects having a globular or globular-like shape and also thick shape, 88.5% of which are described by use of the same noun class marker.

Picture 1: MPI-Serge-picture 20

Picture 2: baptizing task-05

The consistent distribution of globular objects in class 7 *fu-* suggests that they instantiate the prototype of round entities, confirming the strong tendency for round shaped objects but also those less prototypically round (not globular) to be incorporated in noun class 7 *fu-*.

As far as noun class 9 *ga-* is concerned, it is predominantly used to describe objects such as those having a round and flat; flat, thin and wide shape (79%), as well as oblong, flat and thin shape (79.4%) as those in Picture 3 below.

Picture 3 MPI-serge-picture VII
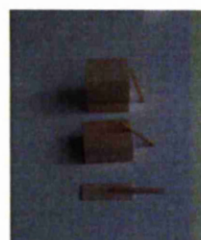
Picture 4: MPI-serge-picture III

Cases of conflict of criteria of class assignment between noun classes 7 *fu-* and 9 *ga-* occur where the objects described are thick and square or rectangular (Picture 4), or

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when the object is round; flat and thin; or round, flat and thick with curved edges. In these cases, the choice between the aforementioned classes is more subject to speaker variation.

Class 5 *bu-* was used by some speakers to describe objects they considered gigantic i.e. bigger than those described with noun classes *fu-* and *ga-*, (e.g. the biggest object of picture 4) suggesting that the size of the object described with noun class 5 *bu-* is bigger than those of the aforementioned classes (classes *fu-* and *ga-*). As for classes 11 *ju-* and 3 *e-*, they are used for small objects and object described as having a medium size respectively.

In the baptizing task the only noun class markers used, were 3 *e-*, 7 *fu-* and 9 *ga-*. Similar to the description task results, entities with a clear round or oval configuration are named by use of noun class 7 *fu-*. For example 85.7% of the descriptions of the air-balloon (Picture 2 above) used noun class 7 *fu-*. Class 7 *fu-* was used to a 100% in the description of the globular white electric light bulb in Picture 5 below. Similarly, the description of the red letter boxes (Picture 6) whose pictures were taken on a London pavement was made to 57.1% with noun class 7 *fu-*, whereas the remaining descriptions used noun class 9 *ga-* (14.2%) and 28.5% for class 3 *e-*.

Picture 5: Baptizing task-01   Picture 6: Baptizing task-02

Flat objects are predominantly included in class 9 *ga-* during the baptizing task. For example a stone described as flat and thin was predominantly described with noun class 9 *ga-*, *ga-imilac* (Picture 7).
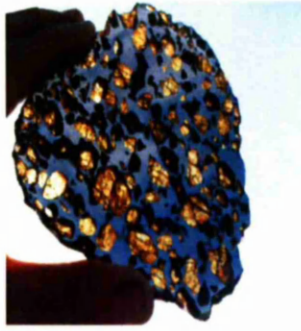
Picture 7: baptizing task-07
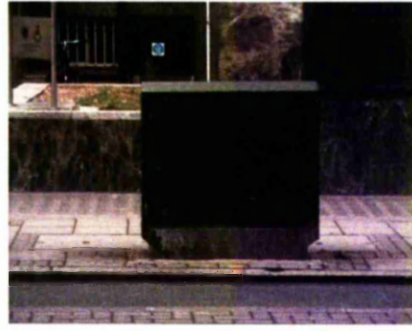
Picture 8: baptizing task-08

Three main cases of conflict have been noticed. In the first case, the object has a quadrilateral shape with one plane surface more visible than others (picture 8 above). The object was described as being thick, before asking the consultants to name it. In the second case the object is flat and round and was described as thin (picture 9 below). The last case is one where the object is a slice of a globe (picture 10 below).

Picture 9: baptizing task-9

Picture 10: baptizing task-10

In all these three cases were conflict arose, the description was made by use of noun class markers 7 *fu-* and 9 *ga-* at 42% each. This shows that the criteria of roundness and flatness conflict when additional parameters such as thickness and thinness are involved.

The noun class markers that were used in the task referred to as the power point elicitation task are noun class markers 3 *e-*, 7 *fu-*, 9 *ga-* and 11 *ju-*. The most commonly used prefix in the description is noun class marker 9 *ga-* in 46.9% of the descriptions. Most objects described here have a flat configuration. Among the descriptions for which noun class marker 9 *ga-* was used are the following: lean and flat (79%), medium size, tall and flat (71%) wide and square (79%). The second most frequently used prefix was

noun class 11 *ju-*. It was used to describe the size of objects rather than their shape. For example in the picture of the objects labeled short and thin, short, tall and flat; lean, flat and small, the use of noun class marker 11 *ju-* amounted at 100%, 82.5% and 78.5% respectively.

In only one instance, the percentage of use of noun class 7 *fu-* was higher (70%) than noun class markers 9 *ga-* (30%) and 11 *ju-*, to describe an octagonal figure. This is due to its similarity with globular objects which are the prototypical instances of class 7 *fu-*. Noun class marker 3 *e-* was the least used prefix in the description of figures in the power point task. It generally occurs in the description of figures that were said to have a medium size i.e. those whose size is not big enough to be referred to with noun class 7 *fu-* or 9 *ga-* but surpasses the size that would motivate their inclusion in class 11 *ju-*, the class of small entities. Similar to the baptizing task, there is a strong tendency to use noun class marker 7 *fu-* for objects with a globular-like or round configuration and noun class marker 9 *ga-* for objects with a flat, thin wide configuration.

As pointed out in 1.5.1.4.2, with the matching game, focus was laid on the possible agreement between the describer and the matcher. Six speakers were divided into three 'teams' where they alternate the roles of the describer and the matcher, working with ten pictures each. Of the resulting 60 descriptions, the matchers found the right pictures in 50 instances from the first attempt. In the remaining 10 descriptions, the matchers failed to find the described picture in the first attempts. The described picture was correctly matched five times at the second attempt and five other times in the third attempt.

The map task (cf. 1.5.4.4) has been undertaken in three sessions where consultants were divided into thee groups of two members each. There were two map types, with one (Map 1) containing eleven pictures and the other one (Map 2) containing nineteen pictures. As explained in 1.5.1.4.4 above speakers alternatively play the role of director and matcher using each of these maps.

With Map 1, out of 66 descriptions, the matchers successfully followed the lines traced by the directors following the latter's descriptions in 44 cases, but failed in 22 cases. As for Map 2, it resulted in a total of 80 successful matches but 34 failed attempts.

The attempts to assess the speakers agreement through the matching game and the map task have shown cases of disagreement between describers and matchers,

which may suggest speaker variation resulting from the use of different classificatory criteria. However the larger number of cases of agreement between speakers confirms the claim that semantic criteria are predominantly used in the classification of novel words across speakers.

The results of the experiments suggest that the main distinctive parameters that come into play are shape (roundness versus flatness) but also size (small versus big, gigantic and also wide) and to a lesser extent, thinness versus thickness. A prototypical object of class 7 *fu-* usually combines the features of roundness and thickness, which are typical for three-dimensional entities, whereas a prototypical object of noun 9 *ga-* combines flatness and thinness, a configuration that is typical to two-dimensional objects.

Conflicting noun class assignment arises where a flat object is more or less thick or where a round object is more or less thin. Size is less relevant to the conflict of noun class assignment between noun class 7 *fu-* and noun class 9 *ga-*. When an object is perceived as small, it is assigned to class 11 *ju-*. However when it is perceived as large, i.e. bigger than those described with noun class markers 7 *fu-* and noun class markers 9 *ga-*, it is assigned to noun class 5 *bu-*. In between these two extremes are objects with a size considered as medium size and also objects described as having a relatively complex shape which are usually included in class *e-*. However those with a more or less big size go to class 7 *fu-* and 9 *ga-* depending on the shape they have. Note that in the shape experiments classes 3 *e-*, 5 *bu-* and 11 *ju-* were used to refer more to the size than the shape of the objects. The results of the experiments are summarized in the diagram in Figure 25 below.

Figure 25: Diagram summarizing the expressions of shape and size in the experiments
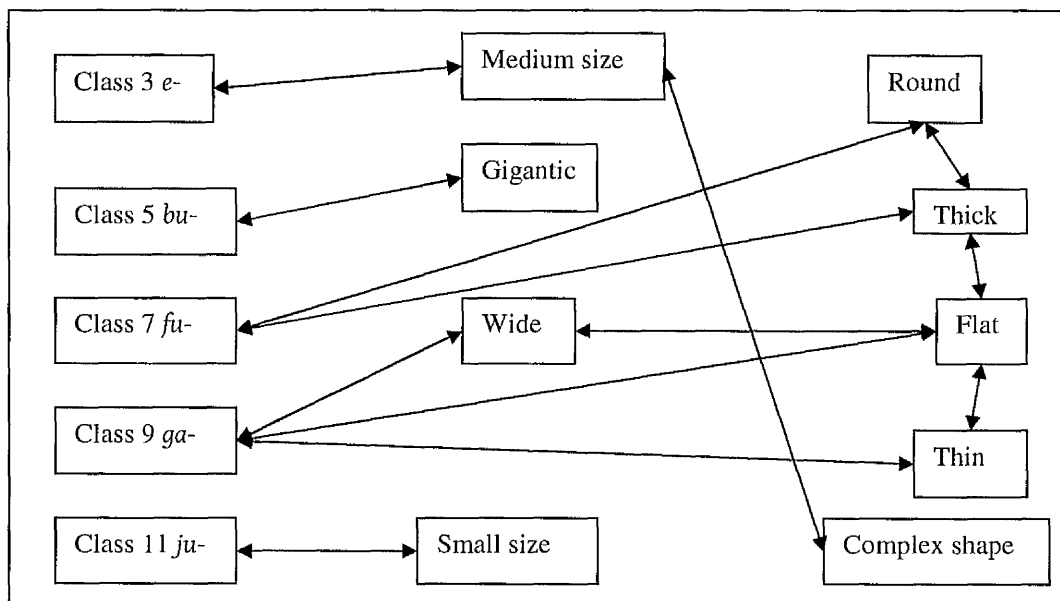
The diagram in Figure 25 comprises three rows representing the noun class markers discussed above in the leftmost column, the size of object described in the middle column and the configuration of those objects in the rightmost column. Connectors indicate the relevance of size and or shape as a semantic criterion for noun classification. Recall from the discussion above that for some noun classes, size was more relevant than shape in the descriptive experiments. These are represented by a single connector from the noun class to the box representing the relevant size. For other noun classes e.g. class 7 fu-, shape is more relevant than size. In these cases the connector goes from the noun class to the shape type column. But in a few case e.g. class 9 ga-, size is indicated before the relevant shape type.

Connectors between the different boxes within the shape type column (the rightmost one) indicate association of features that an object may possess. The cases of conflict of assignment between classes 7 fu- and 9 ga- discussed above are shown in the diagram by the connection between flat and thick[134]. Recall that round and thin can also be the source of conflict of assignment even though they appear at the two extremities in the shape column.

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[134] 'Flat and thick' simply designates object with a plane surface and which have some degree of thickness e.g. quadrilaterals.

In summary, the results of the experiments carried out to find out how novel objects are classified show that the classification of those objects use the same criteria of shape and size as other objects denoted by G.E. non-borrowed words as well as loanwords, discussed in previous sections. This further corroborates the important role of shape in the noun classification system of the language while pointing at a semantic basis of the noun class system.

5.4.3 Overview of culture-specific semantic classification

I have mentioned the relevance of the culture of the G.E. people in different places in the discussions in previous sections. The argument was that there are culture-specific motivations that account for the use of certain noun class markers with certain noun stems. By and large, the culture-specific motivations of the noun class system are based on the type of interactions the G.E. people have with a given entity.

Many of the culture-specific semantic motivations of the noun class system are reflected by agreement mismatches between noun class markers and their agreement markers and also in the irregular alternations in singular and plural pairing (5.4.1.1 above). The examples I discussed include personification where noun class prefix 11b *ja-* is used with an agreement marker of noun class 1 *a-*, and the combination of noun class marker 5b *ba-* with the stem *-júr* to produce *bá-jur* 'young woman', also with an agreement marker of noun class 1 *a-*. Recall that in all these cases, nouns use the agreement marker of the classes they are assigned to (e.g. class 1 *a-* for *bá-jur* 'young woman') which does not match with the form of the noun class prefix (e.g. class 5b *ba-* for *bá-jur* 'young woman') with which they combine (also see 5.4.1.1 above).

Such mismatches show multiple category membership of the entity denoted by the noun stem. For example, *bá-jur* 'young woman' belongs to the class of 'birth and maternity', hence its combination noun class 5b *ba-* and at the same time, the class of 'humans', hence the use of the agreement marker of class 1 *a-*. Similarly, in *ji-ggaj* 'panther', the use on noun class 11 *ju-*, but an agreement marker of class 3 *e-*, the class where most animals are classified, clearly shows the membership of the denoted animal to class 3 *e-*, while pointing out its figurative classification among small things of class 11 *ju-*.

Other culture-bound components of the noun class system include the classification of entities such as *ñi-xin* 'plot of rice field' among other terms denoting

socially relevant factors or entities. As discussed in 5.3.1.7 above, many of the terms in class 12 ñu- also express negative feeling which correlate with the expression of unpleasant things of class 5 bu- and 9 ga- with which they share an identical plural marker.

The classification of humans in different subclasses in the plural (cf. 5.3.2.1 above), the different collective expressions e.g. with noun class 7b fa- for insects (cf. 5.3.1.4 above), the diminutive and augmentative expression and their extended expression of endearment and derogatory meanings with different noun classes (cf. 5.4.1.2.6 above), are also other cases of culture-specific aspect of the G.E. noun class system.

Thus culture-bound classification not only shows that entities may be assigned to more than one class, but they also show that culture-specific classification can override the basic criteria for noun classification, e.g. humanness for bá-jur 'young woman'.

5.4.4 Do noun class markers have meaning?

I have shown that noun class markers alternate in their combination with noun stems to express different meanings. For example, it is possible to derive augmentative meaning by means of noun classes 5 bu-, 7 fu- and more productively, noun class 9 ga-. A question that thus arises is whether noun class markers have meaning in themselves that compositionally adds to the meaning of the noun stem.

Two of the methods proposed by Allan (1977: 290) to find whether noun class classifiers have meaning; native speaker's intuition and the introduction of novel words and objects have been extensively applied in order to test whether the class prefixes of G.E. convey meaning.

The result of the experiments discussed in the previous section show that for geometrical objects, the choice of noun class markers is largely based on the inherent characteristics of the referents, generally their shape but also their size. These cases illustrate culture-free motivations (Allan, 1977) for the choice of the noun class marker. Recall that loanwords are also incorporated in classes other than the default class on similar semantic grounds. However, there are also cases of culture-specific motivations for the choice of noun class markers.

In the discussion in 5.4.3 above, I showed that in a number of cases, a noun can combine with a noun class marker but take a different agreement marker, which shows

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its class membership. Examples of those cases are those described as culture-specific motivations of the noun class system which also point at a multiple class membership. In these cases, semantic components of one of the classes is expressed by the use of the prefix e.g. "birth and maternity" for class 5b *ba-* but class 1 *a-* agreement marking to show membership to the human class.

Another case is the use of different noun class markers with one noun stem, which also points at a classification of referents (see 5.2.2.1 above). Recall that in this case, the meaning of the noun changes depending on the noun class marker used. For instance, a single noun stem like *kkaju* expresses three different meanings when it combines with three noun class markers as in *e-kkaju* 'cashew nut' (noun class 3 *e-*), *fu-kkaju* 'cashew fruit' (noun class 7 *fu-*), *bu-kkaju* 'cashew tree' (noun class 5 *bu-*). Furthermore, noun class markers can alternate to express diminutive or augmentative meanings or for humoristic purposes.

The culture-free and culture-bound motivations for the choice of noun class markers suggest that the latter carry meaning, as evident from the regular change of meaning in case of class shift. Otherwise, the change of a noun class marker would not produce a change of meaning of the resulting noun (Allan, 1977, Contini-Morava, 2002, Denny, 1976).

The production of infinitives discussed in the next chapter seems to work according to similar principles and sometimes correlates with the semantic categorization processes described in the previous section. For example, the idea of "assemblages" discussed with nouns seems to be also expressed with verbs by the use of noun class 5 *bu-* as in *ba-joj* 'meeting', *bu-taj* 'fighting' and *bu-yabo* 'getting married' which refer to collective activities.

Similarly, the change of noun class marker with the same root can also show a noun/ verb distinction. The noun class marker used in these cases also indicate semantic classification of the noun or the verb, as in (58) below where noun class 10b *ma-* shows the membership of the verb to the subclass of verbs of bodily function. The use of class 7 *fu-* shows the membership of the related noun to the class of round entities and more precisely, emissions expressed in class 7 *fu-*. The use of the default singular noun class 3 *e-* does not show any semantic motivation as pointed out in different sections above.

(58). *ma-sur*   'urinating'
     fu-sur   'puddle of urine'
     ma-lumo 'to cough/ coughing'
     e-lumo   'cough'

In summary, the combinations of noun class markers and lexical stems, either verbal or nominal, seems to have regular semantic components carried by the noun class marker e.g. bodily expression with noun class 10b *ma-* in the examples.

5.5 Conclusion

This chapter has explored the semantic motivations for the assignment of nouns into the fifteen noun classes of Gújjolaay Eegimaa. The argument I propose here is that the noun class system of G.E. is a kind of categorization system where categories (as marked by noun classes) have an internal semantic structure, which accounts for the classification processes described here. G.E. is not a unique case in showing semantic motivations on its nominal classification system. The typological survey provided in 5.2 above shows that there are recurring cross-linguistic but also culture-specific semantic parameters of nominal classification across the languages of the world

The noun classification system of G.E. uses some of the universally attested parameters of nominal classification such as shape (Aikhenvald, 2000, Allan, 1977, Friedrich, 1970) and also culture-specific factors. I showed that shape, which is usually not mentioned among the categories of classification in the Jóola languages, is encoded in G.E, especially in noun classes 7 *fu-* and 9 *ga-* in the singular, and classes 6 *u-* and 8 *gu-* in the plural. The distribution of loanwords and the classification of novel words in shape experiments on semantic grounds also provide evidence that shape is an important parameter of the classification of nouns on the basis of the observed physical properties of their referents.

Exploring cultural aspects of the G.E. people, e.g. mourning has also proven fruitful for the understanding of those culture-specific semantic motivations of the noun class system such as the domains of experience.

An important point to remember is that the success in uncovering the semantic criteria of the nominal classification proposed here was much dependent on the approach adopted. The examination of the semantic basis of the individual noun classes was mainly inspired by the prototype semantic approach developed in cognitive

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linguistics (Kleiber, 1990, Lakoff, 1987, Taylor, 1995, 2003: etc.). It suggests that categories may have a complex internal organization and that their members may be related by a chaining process, such that members of one and the same category may not have any features in common. This approach has proven to be more productive than one that only looks for common properties shared by all nouns in a class. Also, it allowed accounting for the category extension revealed through classification of abstract nouns based on metaphor and metonymy. The semantic networks proposed in the form of diagrams for each noun class mainly follows the principles of such a theory.

In the course of the discussions in this chapter, I have also demonstrated that singular and plural pairing, especially the one-to many and many-to-one correspondences, have a semantic basis. This is also based on "universal" e.g. shape but also culture-specific factors.

In short, the analysis proposed here compellingly shows that there is evidence supporting the view the noun class noun class system of G.E. has underlying semantic motivations.

6 General conclusion

6.1 Thesis overview

In this thesis, I have explored the formal and semantic properties of the nominal classification system of Gújjolaay Eegimaa, with in mind the research hypothesis that the Gújjolaay Eegimaa noun class system has semantic motivations. The research began with a presentation of the language and the geographical location of the people, as well as a discussion of some of the cultural aspects of the life of the speech community (cf. chapter 1). This first chapter also includes a typology of nominal classification systems and a discussion of the theoretical tools used for the analysis of the semantic motivations of the G.E. nominal classification system (cf. 1.4).

In chapter 2, I studied the segmental phonology of G.E., and questioned the existence of the controversial "disjunctive phoneme" introduced by Sambou (1979, 1989) to account for the difference of vowels within noun class prefixes. The chapter also comprises a study of palatal vowel harmony, which is also the source of phonological variations between the vowels of noun class markers (cf. 2.4.3), and a discussion of the alternation between vowels and semi-vowels on agreement markers.

Chapter 3 provided a grammatical sketch of G.E. and constitutes a prerequisite for the analysis of the formal properties of the G.E. noun class system proposed in chapter 4. The latter chapter provides an inventory of the fifteen G.E. noun classes. It comprises a critical discussion of the previous proposals showing their strengths and limitations and proposes criteria that justify the inventory given here. I also argued in this chapter that the "postpréfixe" adopted in previous studies of G.E. (Bassène, 2006, Tendeng, 2000), and whose existence Sambou justifies with the so-called "disjunctive phoneme" is not attested in G.E. In addition, chapter 4 shows that the singular-plural pairings are organized on one-to-one, one-to-many and many-to-one correspondences.

The claim that the G.E. noun class system is semantically based motivates the discussion proposed in chapter 5. The chapter begins with an overview typology of the semantic parameters of nominal classification systems of the world's languages. It shows amongst other things, that the assignment of nouns into classes is based on universal (e.g. shape) and language-specific (domains of experience) parameters. The claims that the noun class system is semantically based and that noun class markers have meaning can be seen with use of choice of the noun class markers to combine with

the non-specific proform nde 'what do you call it/ so and so', the integration of loanwords and the semantic expressions resulting from class shift.

The main analytical tool used here, is the "extended version" of prototype theory as discussed in Kleiber (1990). This version of prototype theory does not consider a category to be organized around a most representative entity i.e., the "best example" of that category. Rather it posits that the organization of categories is based on multiple criteria including family resemblance, metaphor and metonymy, and that entities in a category may not have anything in common.

Prototype theory has also been used in previous analysis of the noun class systems of languages with nominal classification systems e.g. Fulfulde (Breedveld, 1995a, 1995b) Swahili (Contini-Morava, 1997, Moxley, 1998) and Bemba (Spitulnik, 1989). The analysis I proposed in this thesis draws on some of the methodologies applied to those languages, to account for the semantic basis of the G.E. noun class system. Some of terms used in other languages e.g. "extended things" (Contini-Morava, 1997) or "protection" (Breedveld, 1995a) have also been used in my analysis to describe comparable semantic processes of categorization.

The major limitations of this research relate to the lack of generally accepted ways of measuring the semantic basis on noun class systems as pointed out by Seifart (2005: 337). From the research proposed here, it can be argued that a diagnosis aiming at measuring the semantic motivations of noun class systems needs to combine not only the classical and prototype approaches of categorization, but also experiments researching physical properties of entities as well as a detailed study of the culture of the speech community.

This research, which is the outcome of nine months of fieldwork, has attempted to combine these methods in addition to a constant recourse to my native speaker's intuition. The results proposed here validate the working hypothesis that the noun class system of G.E. has semantic motivations. Future research will aim at reinforcing the diagnoses used here and apply them to investigate the semantic basis of the combination of noun class markers with verbs to form infinitives as discussed in the next section.

6.2 Future research

My goals for future research include further exploration of the G.E. nominal classification with additional data, research on the language and the culture as well as

the introduction of new experiments. An additional research topic is that of overt verb classification in G.E. manifested by a combination of noun class markers with verbs.

As pointed out in 6.1.1.1.1.1, ten of the fifteen noun class markers of G.E. (excluding the human class pair noun classes 1/ 2 and locatives classes 13-15), aside from combining with noun stems, also appear with verb stems to form action nouns, deverbal nouns and the infinitive forms of the verb. These derivations may be produced by the combination of the same noun class marker as that of the noun, as in (1) or different noun class markers with a given verb stem as exemplified in (2) below (see also section 3.2.6.1.4.1.1).

(1).　　*e-lob*　　'to speak'　　*e-lob*　　'act of speaking/ speech'
　　　　fi-tiñ　　'to eat'　　*fi-tiñ*　　'the act of eating'
　　　　ba-pax　　'to be rude'　　*ba-pax*　　'rudeness'

(2).　　*e-jju*　　'to start/ begin'　　*bu-jju*　　'act of beginning'
　　　　e-ccam　　'to pay'　　*ba-ccam*　　'act of paying/ payment'

The forms yielded by a combination of noun class markers with verb stems include both infinitives, which are non-nominalized, and "action nominals" i.e. noun phrases which contain, "in addition to a noun derived from a verb, one or more reflexes of a proposition or a predicate" (Comrie and Thompson, 1985: 358). For example, like nouns (cf. (3)) they follow prepositions as can be seen in example (4) below. However like verbs they are modified by adverbs rather than adjectives as illustrated in (5) and the ungrammaticality of (6) below.

(3).　　*Ayyatta*　　*n-a-roŋ-ulo*　　　　　　*ni*　　*ba-xa*
　　　　Ayyatta　　LOC-CD1.3SG-remain-DIR.PFV　　LOC　　NC5b-forest
　　　　'Ayyatta is still in the forest'

(4).　　*...min*　　*á-ni*　　*ni*　　*fi-tiñ*
　　　　COMPL　　NC1.3SG-be　　LOC　　NC7a-eat
　　　　'lit: ...So that he was eating' (and he was eating) (ss060428_kup)

(5).　　*Ăruma*　　*n-a-ju-e*　　　　　　*ja-ppaŋ*　　*mámax*
　　　　Áruma　　LOC-CD1.3SG-can-PFV　　NC11b-fishing　　NC10:big (a lot)
　　　　'lit: Áruma knows how to fish a lot' (Áruma is very good at fishing') (introsp)

(6).　　**Ăruma*　　*n-a-ju-e*　　　　　　*ja-ppaŋ*　　*j-ámax*
　　　　Áruma　　LOC-CD1.3SG-can-PFV　　NC11b-fishing　　CD11-big
　　　　'lit: Áruma knows how to fish the big fishing'

Preliminary analysis of this phenomenon (Sagna, 2007) suggests that the combination of noun class markers with verbs is a case of overt verb classification comparable to the nominal classification system, studied in the previous chapters. Overt verb classification refers to a situation whereby "verbs and or the events they refer to are overtly categorized into types by grammatical means" (McGregor, 2002: 1-2).

Cross-linguistically, overt verb classification systems have been described for languages of Australia e.g. Jaminjung where the overt classifiers are a closed class "generic" verbs which "categorize events" on semantic bases (Schultze-Berndt, 2000). Verb classifiers have also been reported in Tibeto-Burman and other East and South Asian languages and "are related to common nouns whose classificatory function is obvious in a special construction type, namely in numeral verb classifier constructions" (Gerner, 2007: 1). Other languages that have been reported as having verb classification systems include South-American languages such as Tsafiki (Dickinson, 2002) and Mosetén (Sakel, 2007).

The use of noun class markers to form nonfinite verb forms such as infinitives has been reported across Niger-Congo noun class languages. In Bantu languages, the most common infinitive class is noun class 15 (Maho, 1999, Schadeberg, 2003). However, there are languages that use a different infinitive than class 15, e.g. class 5, (Forges, 1983, Hadermann, 1999, Maho, 1999, Schadeberg, 2003), and in some cases, "one and the same language can also use more than one infinitive class" (Maho, 1999: 214). However none of these authors reports the use of different noun class markers as having a classificatory function.

In Seereer-Noon (Soukka, 1999) an Atlantic language, the infinitive takes noun class 4 and is marked by the prefix *ki-*. In Wolof, another Atlantic language, there do not seem to be any affinities between infinitives and the noun class systems (Diouf, 2001, 2003).

In languages such as Jóola Fógny from the Northern branch of the Atlantic languages, different noun class markers are used to mark infinitives (Kennedy, 1964, Sapir, 1965). Sapir (1965) reports two regular infinitive markers; noun class 3 *e-* and 7 *ka-* and six irregular infinitive markers. Note however, that the claim according to which the choice of the infinitives markers 3 *e-* and 7 *ka-* has phonological motivations seems to be contradicted by verbs such as *ka-waj* 'swim', *é-labi* 'be heavy' which have

monosyllabic and polysyllabic roots, but unexpectedly combine with noun classes 7 *ka-* and 3 *e-* respectively.

To my knowledge, the term overt verb classification is not commonly used in African linguistics. One of the rare examples of overt verb classification as defined here comes from Igbo where the verb roots which appear in a verbal complex have been analyzed as having a classificatory function (Uchechukwu, 2004, 2005). According to this analysis Igbo verb roots contain a "root schema" i.e. the invariant meaning components of the verb roots, which can be extended by metaphor and metonymy.

In Gújjolaay Eegimaa, the formation of infinitives with different noun class markers, of which six singular and four plural noun class markers, has semantic motivations which in some cases mirror those underlying the noun classification (Sagna, 2007).

The plural noun class marker 4 *su-* is used with verbs to express pluractionality i.e. it denotes iterative or multiplicity of occurrence of an event whose single occurrence is described with noun class 3 *e-*. Recall that with nouns, noun class prefix 3 *e-* is the singular form of the plural noun class marker 4 *su-*. Consider the example in (7) and (8) below. Example (8) shows that not all verbs that combine with noun class marker 4 *su-* are attested with noun class 3 *e-*.

(7). | *é-jumor* | 'to forget' | *sú-jumor* | 'to be/ being forgetful' |
| *e-roren* | 'to ask' | *su-roren* | 'to question/ questioning/ bothering with many questions' |
| *e-osen* | 'to remember' | *su-osen* | 'to remember/ remembering too much' (especially bad events) |

(8). | **e-ttexumor* | | *si-ttexumor* | 'to hesitate/ hesitating' |
| **é-bbunnen* | | *sú-bbunen* | 'to joke/ joking' |

In describing verbal pluractionality, the meaning resulting from the use of noun class marker 4 *su-* on verbs, shows an analogy with the use of this class marker as a plural marker for nouns (Bach, 1986, Newman, 1990), which suggest a correlation between the nominal and verbal domains.

Another example of semantically motivated verb classification is the combination of verb stems with noun class prefix 10b *ma-* which describes bodily processes that refer to emission from the body or in rare cases ingestion of substance into the body as illustrated in (9) below.

(9).	má-jju	'to blow/ blowing one's nose'
	ma-sur	'to urinate/ urinating'
	ma-boy	'to defecate/ defecating'
	má-amulo	'to yawn/ yawning'
	má-tti	'to fart/ farting'
	ma-rem	'to drink/ drinking'

A third example of the semantic motivations of the overt verb classification comes from verb class 11b, the second subclass of verb class 11, which is organized in radial structure (Lakoff, 1987). Most verbs in this subclass are dynamic verbs (92.59%) with activity verbs making up the majority of verbs and a few verbs referring to achievement and accomplishment. Only two stative verbs have been recorded for this class. However, preliminary tests based on Vendler (1967) and Dowty (1979), show that Aktionsart is not the classificatory criterion that motivates the inclusion of verbs in class 11b and other overt verb classes. For example the Vendlerian activities and other lexical aspects are found in different classes.

Noun class marker 11b is the subclass of class 11 that expresses the meaning of "contact" and "force". The expression "verbs contact and force" has been previously used in Schultze-Berndt (2000: 338) to describe a class of verb of Jaminjung that "encode different means of affecting an entity by physical interaction". In G.E., most verbs in class 11b are verbs of killing, fishing and physical games with opponents and thus have the components of contact and force. Also most of these verbs refer to physical activities that presuppose "attraction", "counterforce" (Clausner and Croft, 1999). Verbs in class 11b include verbs of 'fishing', 'hunting', either by 'trapping', 'cornering', 'chasing' or 'catching' or a combination of some of these features as part of their semantics.

A small number (29%) of verbs in this class have the additional meaning of manipulating or acting over entities whose nouns share the same root with the verbs. It is, however, clear that class 11b ja- does not refer to the manipulation of the same type of objects e.g. long or pointed objects. In example (10) below gloss could be alternatively paraphrased 'manipulation of X' or 'transforming X'.

(10).	ja-baloŋ	'to play/ playing football/ manipulating a football'
	ja-ppaŋ	'to fish/ fishing with a fish trap/ manipulation of fishing trap'
	ja-bbut	'to fish/ fishing with fishing rod/ manipulating and fishing rod'
	ja-xac	'to clear / clearing of brushwood' (transforming the wood)

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A few additional verbs that occur in verb class 11b are illustrated in example (11) below.

(11). *ja-raw*   'to catch/ catching small fish'
     ja-bbom   'to challenge/ challenging a stronger person/ trying to do something for which one is physically not apt for'
     ja-mbal   'to fish/ fishing with a net'
     ja-ramul   'to slaughter/ slaughtering'

Future research on the G.E. overt verb classification will thus look at the morphosyntactic and semantic properties of the combination of noun class markers with verbs and their possible correlations with the nominal classification system studied here. This research will provide an opportunity to explore further the question related to the meaning of noun class markers.

Appendix A: Transcribed and translated text from G.E.

This text is an interview with Abass Sory Bassène about the traditional religion of the G.E. people. He explains the relatedness of the different senses of the word *bu-lago* 'pathway/ religion' the nature and function of shrines and how they differ to the notion of God in the G.E. people's faith.

wolal   pan   gu-og -i   aw   an   bu?
1PL.INCL FUT   CD2.3PL-say-2SG.DO   2SG   person   how
'Among us, they will ask you what kind of person you are' (= to ask what your religion is.)

ter   a-vvasen-a,   ter   aw   n-ú-ttubi-ttubi,   ter   aw a-jangara
whether NC1-libation-AGT whether 2SG LOC-2SG-convert to Islam-DUP whether 2SG NC1-Christian.
'Whether you are an Animist, or you have converted to Islam, or you are a Christian.'

y-o   y-om   me   bu-lago-i.   bu-lago   mata   wa?
CD3-PRO CD3-be SUBORD NC5a-pathway-2SG.POSS NC5a-pathway because what
'That is what your pathway (religion) is. Why call it a pathway?'

mata   xummul, fi-ŋis   imbi   u-cet   gajem,   min   u-ñum   me   e-jow
because obviously NC7a-search PERM 2SG-die tomorrow COMPL 2SG-ought to SUBORD NC3-go

bi ni   ala-é-mit.
to LOC of-NC3-sky
'Because obviously, it is a way of looking for how you ought to reach the owner of the sky (God) if you die tomorrow (one day)'

y-o   e-cil   me   ni   gu-ox   bu-lago.
CD3-PRO CD3.3SG-own SUBORD LOC CD2.3PL-say NC5a-pathway
'That is why they call it a pathway.'

bu-lago   ti   wouw-e   w-o   n-u-ja-al-e   me
NC5a-pathway like DEM.NC6-PROX CD6-PRO LOC-1PL.INCL-go-INCL-PFV   SUBORD

ni   e-ttam
LOC NC3-earth
'A pathway like those we walk on, on earth'

bu-lago   pop   bi e-jow   bi ni   ala-é-mit
NC5a-pathway   also   to NC3-go to LOC   of-NC3-sky
'A pathway also to go to God'

m-o   kkan -e   wolal   naxi   u-og-al   bu-lago.
CD10-PRO make-PFV 1PL.INCL HAB   1PL.INCL-say-INCL   NC5a-pathway
'That is why we say pathway.' (we call a religion a pathway)

ey. bare an   a-ax   bi e-roren-i   ni   gú-lob-um
yes. but person CD1.3SG-say to   NC3-ask-2SG.DO LOC   NC8-speak-INSTR

goug-u   g-o   n-u-ox   me...   g-o   n-u-vvox   me
DEM.NC8-MED CD8-PRO LOC-2SG-say SUBORD CD8-PRO LOC-2SG-call SUBORD

tout-u;   *ni*   *gú-lullum-ay,*
DEM.NC14-MED LOC   NC8-white person-ABSTR
'Yes. But if somebody wants to ask you in the language for which you said... that you mentioned here; in French,'

pan   *a-ag-i*   *aw*   *an*   *bu?*
FUT   CD1.3SG-say-2SG.DO 2SG person   how
'They will say to you, what kind of person are you?'

n-u-og-ol   *ínje ey... gu-cce*   *pan íni ter*   *e-nde,*
LOC-2SG-say-3SG.DO 1SG yes...   CD2-INDEF FUT   if   whether NC3-so and so

pan *u-kkonfonde* *n-u-ox*   *ínje...*   *ter*   *á-jjola...*
FUT 2SG-confuse LOC-2SG-say 1SG   whether   NC1-jjóla
'You tell him, I ... yeah. Some might be confused and give answers like, I am Jóola'

pan   *a-ag-i*   *ñer aw bu-lago-i*   *b-ay*   *n-i-roren-e*   *maa.*
FUT   CD1.3SG-say-2SG.DO so 2SG NC5a-pathway-2SG.POSS CD5-INT LOC-1SG-ask-PFV like this
'He will say to you, so what I am asking now is what your religion is'

ey.   *n-u-og-ol*   *ínje bu-lago-om...*   *ínje*   *an*   *a-man.*
yes.   LOC-2SG-say-3SG.DO 1SG NC5a-pathway-1SG.POSS... 1SG   person NC1-such and such,
'Yes. You will tell him, my pathway is... I am such and such a person.'

ínje a-jangara,   *ínje a-misilima.*   *mamu*   *naxi*   *u-lob-al*
1SG NC1-Christian, 1SG NC1-Muslim   NC10:DEF HAB   1PL.INCL-speak-INCL
'I am Christian, I am a Muslim. This is how we speak'

yoo.   *é-lullum*   *gu-og-e*   *wolal*   *e-nde...*
ok.   NC3-white person   CD2.3PL-say-PFV 1PL.INCL NC3-so and so

ni   *bu-lago-olal,*   *n-ú-inen-al-e*   *ni* *ñer*
LOC NC5a-pathway-1PL.INCL.POSS LOC-1PL.INCL-believe-INCL-PFV LOC so

u-og-al   *sí-mit*
1PL.INCL-say-INCL   NC4-sky
'Europeans say that we... in our religion, believe in, lets call them skies (gods)'

pan   *gu-og-i*   *e-nde...*   *u-baj-ut-al*   *ala-é-mit*   *anur*
FUT   CD2.3PL-say-2SG.DO NC3- so and so   1PL.INCL-have-NEG-INCL   of-NC3-sky one

mata   *naxi* *gu-jux*   *me*   *si-paŋ*   *sasu*   *u-vvasen*   *me*
because HAB   CD2.3PL-see SUBORD NC4-shrine NC4:DEF   2SG-libation SUBORD

tout-e   *n-u-jow*   *n-e-cce.*   *si-paŋ*   *sasu*
DEM.NC13-PROX LOC-2SG-go LOC-NC3-INDEF NC4-shrine   NC4:DEF

si-mmeŋ-mmeŋ.   *ñer n-gu-jux*   *me*   *n-gu-ox*   *e-paŋ*
CD4.3PL-be numerous-DUP so   LOC-CD2.3PL-see SUBORD LOC-CD2.3PL-say NC3-shrine

y-án-o-y-an   *é-mit*   *y-om.*
CD3-QUANT-INFX-CD3-DUP   NC3-sky   CD3-be
'They will tell you... that we don't have one God because when they see the shrine where you do libations and then move to another one. There are many shrines. So having seen that they said that every shrine is a god'

á-jjola   *bu*   *n-a-pinor-e*
NC1-jjóla   how   LOC-CD1.3SG-think-PFV
'What do Jóola people think?'

dáur-u leti   *ma-agen*
that   not be   NC10b-truth
'That is not the truth'

é-mit, wolal   *ala-é-mit*   *anur. ala-é-mit*   *Øaxu*   *o*   *a-kkan*   *me*   *an*
NC3-sky 1PL.NCL of-NC3-sky   one   of-NC3-sky   NC1:DEF PRO CD1.3SG-make SUBORD person
'God, for us God is one. That God is the one who made man'

ala-é-mit   *a-cila*   *a-baj*   *me*   *sembe mata búox*   *a-cila*
of-NC3-sky NC1-PRO   CD1.3SG-have   SUBORD   strength because COMPL   NC1-PRO

a-kkan-e   *min*   *u-kkan*   *an*
CD1.3SG-make-PFV   COMPL   2SG-make   person
'God himself is the one that has strength, because he made it possible for you to become a person'

gajem   *u-cet,*   *ala-é-mit*   *pan a-vvog-i.*   *ala-é-mit*   *a-vvog-i*
tomorrow 2SG-die, of-NC3- sky FUT CD1.3SG-call-2SG.DO of -NC3-sky CD1.3SG-call-2SG.DO

n-u-cet.
LOC-2SG-die
'lit: Tomorrow when you die, God will call you. God has called you, then you die.'

e-paŋ,   *ba-ccin,*   *u-jux me*   *ni*   *gá-inen*   *g-ololal, bab-baj*   *waf*
NC3-shrine   NC5b-village shrine 2SG-see SUBORD LOC NC9-faith CD9-our   have-DUP NC6.thing

w-a-mmeŋ-e   *w-o*   *n-u-ffas-e*   *búox*   *ti*   *aw ni*   *ínje*
CD6-REL-be numerous-PFV CD6-PRO LOC-2SG-know-PFV COMPL   like   2SG LOC 1SG
n-i-jug-i   *maa*   *n-i-lluj-i.*
LOC-1SG-see-2SG.DO like this   LOC-1SG-look-2SG.DO
'If you consider a shrine or a village shrine in our faith, there are many things that you can see, like I can see you when I look at you,'

bare ni   *gá-inen-olal*   *gu-og-e*   *baj-e*   *waf*   *w-a-mmeŋ-e*
but   LOC NC9-faith-INCL   NC2.3PL-say-PFV have-PFV NC6.thing CD6-REL-be numerous-PFV

w-o   *mati*   *ú-ju*   *u-jux.*   *bare*   *waf*   *w-a-bab-baj.*
CD6-PRO NEG.FUT 2SG-can   2SG-see but   NC6.thing   CD6-REL-have-DUP
'But in our faith, it is said that there are many things that you cannot see. But those things exist'

waf   *wouw-u*   *u-baj-e*   *bá-gun,*   *fá-ggux,*
NC6.thing DEM.NC6-MED   CD6.3PL-have-PFV   NC5b-evil spirit NC7b-evil spirit

a-cce   *n-gu-og-i*   *ammal,*   *n-gu-og-i*   *e-nde,*
NC1-INDEF   LOC-CD2.3PL-say-2SG.DO person water LOC-CD2.3PL-say-2SG.DO NC3-so and so,

ji-faŋala,   *n-gu-og-i*   *ba-ccin,*   *e-paŋ.*
NC11a-evil spirit   LOC-CD2.3PL-say-2SG.DO   NC5b-village shrine   NC3-shrine
'Those things include evil spirits like those we call "bágun", "fággux", or one would also talk about "ammal", "jifaŋala", village_shrine or shrine'

e-paŋ   *youy-u*   *ni*   *ba-ccin*   *waf*   *w-om,*   *an*   *á-ju-ut...*
NC3-shrine DEM.NC3-MED LOC   NC5b-village shrine NC6.thing CD6-be person CD1.3SG-can-NEG

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mati   ú-ju   u-jux   w-o.
NEG.FUT 2SG-can   2SG-see   CD6-PRO
'The shrine and village shrine are things nobody can... you cannot see.'

w-o   u-kkan   me   min   a-rafuxow,   balama min   imbi
CD6-PRO CD6.3PL-make SUBORD COMPL   NC1-human being before COMPL PERM

u-cig-al   gajem   n-á-ari   n-é-mit,
1PL.INCL-arrive-INCL tomorrow   LOC-CD1.3SG-be good   LOC-NC3-sky
'That is why in order for a human being to be in good terms with God'

si-cila   u-s-u   s-a-am   me   si-pan
NC4-PRO   PRES-CD4-MED CD4-REL-be SUBORD NC4-shrine

s-a- am   me   u-ccin   s-o   sú-ju   me   si-kkan
CD4- REL-be SUBORD NC6-village shrine CD4-PRO CD4.3PL-can SUBORD CD4.3PL-make

min   aw   ni   bu-ron-i   mati   u-nnax   mata   búox   imbi   ikki
COMPL   2SG LOC NC5a-life-2SG.POSS NEG.FUT 2SG-wait   because COMPL PERM until

u-cet   min   ala-é-mit   a-kkan-om   ni   s-ambun s-a-bao-érit.
2SG-die COMPL of-NC3-sky   CD1.3SG-make-1SG.DO LOC CD4-fire CD4-REL-end-HAB.NEG
'These entities, the shrines and village shrines are those that can prevent you, in your life time, from
waiting until you die for God to put in eternal fire'

pan ú-xoli   e-kkan   ma-arat   mata   baj-e   an   a-cce
FUT 2SG-fear   NC3-do   NC10b-bad   because have-PFV   person   CD1-INDEF

a-am   t-o   a-ja-e   bi imbi u-kkan ma-arat   mamu,
CD1.3SG-be CD13- PRO   CD1.3SG-go-PFV to PERM 2SG-do NC10b-bad NC10:DEF

n-a-teg-i   t-o   t-o   t-o   t-o !
LOC-CD1.3SG-beat-2SG.DO CD13-PRO CD13-PRO CD13-PRO CD13-PRO
'You will be dissuaded from doing wrong, because there is someone out there who will punish you
immediately if you do that wrong'

baj-ut   búox   min   a-nnax   ala-é-mit
have-NEG COMPL   COMPL CD1.3SG-wait of-NC3-sky
'It is out of the question that he waits for God'

o   om me   e-pan,   o   om me   ba-ccin.
PRO be SUBORD NC3-shrine PRO be   SUBORD NC5b-village shrine
'That is the one called the shrine or the village shrine.'

mata   ba-ccin   u-un   me   ba-ccin,
because NC5b-village shrine 2SG-hear SUBORD NC5b-village shrine

buru pan   ju-lob,   ter e-pan,   buru pan ju-lob
2PL FUT   2PL-speak or   NC3-shrine 2PL FUT 2PL-speak
'Because when we talk about a shrine or a village shrine, there has to be an agreement between you and
them'

n-ju-ox, yoo.   ter   dár-e   Essil n-ju-jux   búox
LOC-2PL-say, ok. Whether DEM.NC14-PROX   Essil LOC-2PL-see COMPL

bab-baj   bug-an   naxi gú-kku-et
have-DUP NC2a-person HAB   CD2.3PL-thief-VBLZ

'You say ok. For example you notice that here in Essil, there are people robbing'

n-gú-kku-et   ikki gú-ni   n-e-xek   n-ju-ox,
LOC-CD2.3PL-thief-VBLZ until CD2.3PL-be LOC-NC3-surpass LOC-2PL-say,

wolal   gá-kku-et   goug-e   gu-faf-e
1PL.INCL NC9-thief-VBLZ DEM.NC9-PROX CD9.3SG-be excessive-PFV
'They keep robbing to the point that it becomes too much, then you say, this robbing is excessive'

n-ju-vvox   ba-joj.   n-ju-jow   imbi ji-cix   n-ju-lob,
LOC-2PL-call NC5b-meeting LOC-2PL-go PERM 2PL-arrive LOC-2PL-speak

n-ju-ox   pan u-kkan-al   maer an   á-kku-et   dár-e,
LOC-2PL-say FUT 1PL.INCL-make-INCL now   person CD1.3SG-thief-VBLZ DEM.NC14-PROX

n-á-ni   maa
LOC-CD1.3SG-be like this
'Then you call a meeting. When you arrive you agree that whoever robs will be punished like this or that.'

n-ji-jamor.   ji-jamor-ut   me   mati   kkan e-paŋ,   mati   kkan ba-ccin.
LOC-2PL-agree 2PL-agree-NEG SUBORD NEG.FUT make NC3-shrine NEG.FUT make NC5b-village
shrine
'You agree. If you do not agree, no shrine or village shrine will be created,

buru ñer pan   ju-cob.
2PL so FUT   2PL-chose
'So, you will be the ones to choose.'

e-nde   yayu   min   e-ñum   me   e-teg-i
NC3-so and so NC3:DEF COMPL CD3.3SG-ought to SUBORD NC3-beat-2SG.DO

e-paŋ-a-y   bu   n-e-ñum   me   e-teg-i
NC3-shrine-DEF.DET-CD3   how   LOC-CD3.3SG-ought to SUBORD CD3.3SG-beat-2SG.DO
'How the thing ought to punish you. How the shrine ought to punish you'

ter   e-teg-i   n-u-xaj,   ter   e-teg-i
whether   CD3.3SG-beat-2SG.DO   LOC-2SG-disablement whether   CD3.3SG-beat-2SG.DO

n-e-jog-i   n-gú-cil,   ter   e-teg-i   n-u-kkan
LOC-CD3.3SG-catch-2SG.DO LOC-NC2b-eye, whether CD3.3SG-beat-2SG.DO LOC-2SG-become

ti e-tey   n-fu-xow.
like NC3-run LOC-NC7a-head
'Either it punishes by handicapping you, or it punishes you by catching your eyes (makes you blind), or it
turns you mad'

Appendix B: Consultants' sociolinguistic information

The table below presents the information on contributors to this project. The names in boldface are those of the main consultants. In the "languages" column, the italics indicate a non-fluent command of the language referred to. For the meaning of the abbreviations, refer to the abbreviation section (pp 10-12).

Name	Code	Sex	Year of Birth	Languages	Main place of Residence
Genevieve Bâ	Tiop	F	1983	G.E., FR, WF	Essil
Bassène Appolo Alfred	AAM	M	1972	G.E., FR, WF	Enappor
Bassène Abass Sory	Abas	M	1956	G.E.; FR; WF; JF; JK; *EN*	Essil
Bassène Catherine	Cato	F	1971	G.E.; FR; WF; JF; JK; *MDK*, PC	Dakar
Bassène Edouard Tuŋa	TB	M	1955	G.E.; FR; WF	Essil
Bassène Eric	EB	M	1983	G.E., FR, WF	Essil
Bassène Famara	FM	M	1959	G.E., FR, WF	Enappor
Bassène Gaëtan	GA	M	1983	G.E., FR, WF	Essil
Bassène Ignace	IB	M	?	G.E., BB, MDK	Banjal
Bassène Jean Appu	JAB	M	?	G.E., JK, KT	Banjal
Bassène Jean Christophe (Firiso)	Fir	M	1962	G.E.; FR; MDK; *WF*	Essil
Bassène Jerôme Alainda	ALD	M	1975	G.E.; FR; WF; JF; JK; MDK, *PC, MK, EN*	Ziguinchor
Bassène Julien (Dimas)	DIM	M	1945	G.E., PC, *WF*	Essil
Bassène Máiti	MB	M	1937	G.E.	Enappor
Bassène Martin Cetugay	MCB	M	?	G.E.	Banjal
Bassène Paul Honoré	Hono	M	1972	G.E.; FR; WF ; *MDK*	Essil
Bassène Raphael Ásambuil	AsB	M	1958	G.E.; FR; WF	Essil
Bassène Raymond	RyB	M	1959	G.E., WF , FR	Banjal
Bassène Robertine Titi	ROB	F	1974	G.E.; FR; WF; JF; JK; *MDK*	Essil
Bassène Romélie	RB	F	1951	G.E.; FR; WF; JF; JK; MDK, PC, *FUL*	Ziguinchor
Bassène Sidda	Sidda	M	1910's-2006	G.E.	Essil
Diatta William (Gúippory)	GWD	M	1964	G.E., FR, *WF*	Dakar

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Diop Mar	MD	M	1959	FR, WF, *EN*	Dakar
Manga Cheikh Sadibou	Gnabai	M	1946	G.E.; *FR*; *WF*; JF; MDK	Enappor
Manga Matar Jibas	Matar	M	1952-2004	G.E.; FR; *WF*	Enappor
Manga Xáresa	Áo	F	1928	G.E., PC, *WF*	Essil
Sagna André Kúpira	Kúp	M	1944	G.E., FR	Essil
Sagna Charles Alex	Chaco	M	1964	G.E.; FR; WF; JF; *JK*; MDK, *PC*	Essil
Sagna Clarice	CS	F	1944	G.E., *JF, JK*	Gáabal
Sagna David	DAV	M	1967	G.E.; FR; WF ; PC; JF, JK, *MDK*; *EN*	Essil
Sagna Gilbert Ambouleut	GAS	M	1973	G.E.; FR; WF; JF; *JK*; MDK, *PC*	Ziguinchor
Sagna Maurice Nazaire	MNS	M	1948	G.E., FR, WF	Ziguinchor
Sagna Rolande Virginie	RV	F	1984	G.E.; FR; WF; JF; JK; *MDK, PC, EN*	Ziguinchor
Tendeng Aimé	AmT	M	1976	G.E., FR, WF, JF, *JK*	Linguère
Tendeng Aimé David (Ákkokko)	ADT	M	?	G.E.; FR; WF; JF; JK; *MDK*	Essil
Tendeng Anne Marie	AT	F	1972	G.E.; WF ; *PC; JF*, JK	Essil
Tendeng Ignace	IT	M	1966	G.E.; FR; WF; JF; *JK*	Dakar

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