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**Kujireray: morphosyntax, noun
classification and verbal nouns**

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Thesis submitted for the degree of PhD in Field Linguistics

2015

Department of Linguistics

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Abstract

The thesis constitutes a first description of the Joola language Kujireray. In addition to a grammatical sketch, it comprises an analysis of the noun classification system in Kujireray, including a detailed treatment of verbal nouns and their interaction with this system. The analysis takes place within a Cognitive Linguistics framework.

The noun classification system is shown to be semantically motivated along such parameters as number and physical configuration. The semantic analysis is carried out at the level of the noun class paradigm, which approach is able to draw a more fine-grained picture of the structure/organization of the system. However, it is recognized that noun classification operates on three distinct but interdependent levels – the paradigm, the noun class prefix, and the agreement pattern – all of which contribute meaning.

The analysis also encompasses a detailed treatment of verbal nouns, as they interact within the noun classification system. It is shown that the formation of verbal nouns in various noun class prefixes is semantically motivated just as in the nominal domain, and furthermore that analogies can be drawn between the semantic domains in the nominal domain and the verbal one.

The analysis is situated within a Cognitive Linguistics framework, whereby notions of embodied experience, encyclopaedic knowledge and metaphorical thought are invoked to account for the semantic organization of noun classification system. It is shown that noun formation in Kujireray is constructional, with individual components possessing underspecified semantics which are elaborated in combination with each other. Furthermore, it is the property of underspecification which accounts for the parallels between the nominal and verbal domains

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Abbreviations

Ø	zero
1	first person
2	second person
3	third person
ABSTR	abstract
AGR	agreement
ATR	advanced tongue root
ASSOC	associative
AUX	auxiliary
C	consonant
CL	noun class prefix
COMP	complementizer
CONN	connector
COP	copula
DEM	demonstrative
DIR	directional
DIST	distal
EXCL	exclusive
HAB	habitual
INCL	inclusive
INDEF	indefinite
INTR	intransitive
LOC	locative
MED	medial
MID	middle voice
NCP	noun class prefix
NEG	negative
O	object

P	plural
PASS	passive
PERF	perfective
PN	pronoun
POSS	possessive
PROX	proximal
QUANT	quantifier
RECIP	reciprocal
REDUP	reduplication
REFLEX	reflexive
REL	relativizer
S	singular
SUBORD	subordinator
TR	transitive
V	vowel
VN	verbal noun

1. Introduction

This thesis constitutes the first descriptive account of the Joola language Kujireray, which is the identity language¹ of the village of Brin, located in the Lower Casamance region of southern Senegal. In addition to the grammatical sketch, an in-depth analysis of its noun classification system is undertaken. This analysis builds on the paradigm approach to noun classification proposed by Pozdniakov (2010) and developed by Cobbinah (2013), and expands on their work to show how noun classification systems operate across three different areas of the morphosyntax – noun class prefixation, agreement patterns, and the noun class paradigm. It contributes to the Cognitive Linguistics literature in demonstrating how theoretical tenets thereof can be effectively applied to the analysis of noun classification systems. It also proposes an analysis of noun classification whereby schematic semantic content of both noun class and lexical stem permits the classification of verbal nouns via processes of metaphor. Finally it constitutes one of the first in-depth studies of verbal nouns in noun classification systems.

In the first part of this chapter, I present the linguistic facts of Kujireray that motivated the specific research questions, and a brief introduction to the theoretical framework within which the analysis is situated. The remainder of this introductory chapter provides further background to the study. I provide historical, geographical and cultural context for the language, discuss the genetic and areal affiliation of the language and its contact and endangerment situation. I also provide details of the field work situation and general data collection and management methods.

Chapter 2 comprises an introduction to the relevant approaches to meaning as well as an overview of the literature on classification, noun classification systems, and verbal nouns. I present the theoretical framework that underpins the analysis, and elaborate on the specialized methodology developed to investigate the interaction of verbal nouns within the noun classification system.

Chapter 3 is a sketch grammar of Kujireray, with description of major phonological and morphosyntactic features, with a particular focus on those indispensable to an understanding of noun classification and verbal nouns.

¹ I adopt the term ‘identity language’ from Lüpke 2015 to refer to the fact Kujireray is the language associated with the village of Brin, but avoid the implication that this is the only language spoken here, or that this is the only place that Kujireray is spoken.

Chapter 4 comprises an analysis of the noun class system. I show how agreement operates in the language and discuss the implications of agreement mismatches and convergences in discourse. I provide a detailed account of the semantic properties of the system, taking the paradigm, rather than the noun class, as the primary unit of analysis.

In Chapter 5, I present the findings of the research on verbal nouns. I describe the relative syntactic behaviour of the forms and propose semantic motivations for differences observed. The final sections of this chapter comprise a conclusion, summarizing the findings presented in the thesis, and highlighting areas for future research.

1.1 Motivations for the research

The Kujireray noun classification system is typical for a Niger-Congo language; every noun in the language consists of a lexical stem and a prefix from an inventory of 16. There is obligatory agreement on certain targets controlled by the noun, such as determiners, adjectives and verbs. Although debate still exists on the matter, there is substantial evidence that noun classification systems of this kind are semantically motivated and the thesis provides evidence in support of this position, one of the primary goals of the research being an investigation of the semantic parameters according to which the Kujireray system is organized. A cognitive view of categorization is adopted which allows noun class semantics to be understood in terms of radial semantic networks, rather than lists of features, with cognitive phenomena such as embodied and lived experience, encyclopaedic knowledge and metaphorical thought all playing a role in the formation of the system.

The semantic analysis of the system is based in large part on work by Podzniakov (2010) and Cobbinah (2013), on the paradigm approach to the analysis of noun classification systems. Under such an approach, it is not the individual noun classes, but the monadic, dyadic and triadic groups – or paradigms – formed by noun classes that are considered central to the analysis of the noun classification system. Cobbinah (2013) uses this approach for Baïnounk Gubëeher, a language spoken in the neighbouring village to Brin, and demonstrates that it describes the system in a more detailed and accurate way than the more traditional class by class approach, thus recommending its application to Kujireray.

The paradigm approach explicitly captures the fact that there are not consistent, one-to-one relations between singular, plural and collective noun classes that form paradigms together. One noun class prefix may participate in a number of paradigms. For example, the human prefix *a-* in Kujireray is associated with two singular/plural paradigms – *a-/ku-*, and *a-/u-*. That is to say, some of the lexical stems that form singular nouns in *a-*, form plurals in *ku-*, others in *u-*. This is exemplified for two stems in Table 1.

Table 1 Noun class prefix *a-* in two paradigms

singular form	plural form	gloss
<i>a-are</i>	<i>u-are</i>	‘woman/women’
<i>a-pal</i>	<i>ku-pal</i>	‘friends/s’

Paradigms are semantically motivated. That is, a lexical stem will form its singular and plural nouns in one or other of the paradigms according to perceived properties of the entity denoted. Furthermore, since rules of combination mean paradigm membership is necessarily more restricted than noun class membership, it follows that an examination of the nouns formed in a paradigm will facilitate a more detailed and accurate description of the system.

Moreover, one and the same noun class can encode different semantic properties, particularly with respect to number values, according to the paradigm in which they participate. Under an analysis based at the level of the individual noun class, these values are assigned to the noun class prefixes. This causes difficulties for the analysis when it is observed that one and the same noun class prefix can be associated with both singular and plural semantics, depending on the noun it forms. For example in Kujireray, the noun class prefix *e-* is very commonly associated with singular semantics as in *e-siho* ‘cat’. However, it may equally be associated with semantics of collectivity as in *e-hana* ‘rice’ or *e-olof* ‘Wolof people’. Under a paradigm analysis, number values are associated not with individual noun classes but with the position that a noun class occupies within a paradigm. Thus this aspect of meaning is established in the oppositions between linguistic items, as much as by the items themselves.

Finally, implicit in the observations above is the supposition that the noun class prefixes in *e-siho* ‘cat’ and *e-olof* ‘Wolof people’, even with their differential number values, share some sort of identity. It is posited in the thesis that the ability of noun class prefixes to participate in different paradigms is due to the fact that, while they do indeed carry meaning, this meaning is rather abstract, or schematic. This not only allows the noun class prefixes to assume different number values (which are both facilitated and constrained by their inherent semantics) but also accounts for the fact that noun class membership is seemingly so heterogenous. In fact it is quite unified, but at a level of abstraction that may not be immediately apparent.

The analysis of noun class semantics underpins the detailed investigation of verbal nouns. Verbal nouns in Kujireray are formed by the prefixation of a noun class marker to a verbal stem. Intriguingly, however, many verbal stems form verbal nouns in more than one noun

class prefix. The existence of two types of verbal noun for a given stem occurs in many languages in the Joola family; however, although researchers have discussed possible motivations for this, in varying degrees of detail (cf. Sapir 1965, Sagna 2008), there is no detailed treatment of the differences between verbal nouns in different noun class prefixes. A first detailed study of their relative form and function in Kujireray is therefore undertaken in this thesis. In addition, the significant variation exhibited in the choice of noun class prefix in the formation of verbal nouns suggests that the noun class markers have a function beyond mere nominalization. Indeed, if it is accepted that class membership in the nominal domain is motivated on semantic lines, it seems reasonable to assume that the variation observed in class membership between verbal nouns should be similarly motivated. While the semantic domains involved in the assignment of concrete nouns are extensively discussed in the literature, those pertaining to verbal noun classification are less so (although see Mufwene 1980, Delplanque 1995, Cobbinah 2013). It is argued in the thesis that the formation of verbal nouns in various prefixes is also motivated on semantic grounds, and that the parameters involved are to a significant degree analogous with those observed in the nominal domain, and can, again, be illuminated by appealing to the notions of underspecification and schematic semantics.

With the observations described above in mind, four specific research objectives were formulated:

1. Investigate the semantic structure of the Kujireray noun classification system, using the paradigm as the basic level of analysis.
2. Investigate formal and functional properties of verbal nouns particularly with respect to the two forms for a given stem.
3. Motivate on semantic grounds the formation of verbal nouns in different noun class prefixes.
4. Identify semantic correspondences between classification in the nominal and verbal domains.

The approach to meaning that forms the framework for the analysis is taken from the Cognitive Linguistics movement. The central tenet of this framework is that language is a general cognitive faculty directly indexed to humans' cognitive organization and their

embodied experience of the world. It will be shown that this approach is particularly suitable for dealing with noun classification systems. First, a cognitive view assumes a model of categorization that is not based on feature lists of necessary and sufficient conditions, but can account for the seemingly heterogeneous structure of noun classes and paradigms by appealing to notions of prototypes (cf. Rosch 1973, 1975, 1978, Taylor 2008) radial semantic networks (Lakoff 1987) and metaphorical thought (Lakoff and Johnson 1980). Furthermore, by invoking the Cognitive Linguistic notions of constructional meaning (cf. Goldberg 1995, 2003) and underspecification (cf. Langacker 1987, 1991, Talmy 2000), it is possible to account for the possibility of one and the same noun class prefix being associated with more than one number value. The prefix is associated with a more abstract, or schematic value, that is compatible with the number value or values associated with it, but which affords it a greater level of flexibility. Indeed, the fact that noun class prefixes can express number values in the nominal domain, as well as verbal categories in the case of verbal nouns, is evidence of this versatility. In fact, the notion of underspecification is extended to the lexical stems themselves, in order to account for the fact that most of these stems may combine with a number of different noun class prefixes, and participate in more than one paradigm to yield distinct but related meanings. Under the present analysis, each lexical stem represents a conceptual concept, which is mentally associated with a scene (cf. Fillmore 1976, Goldberg 2003; 1995) and a potentially limitless repository of knowledge associated with that concept. This scene and the associated knowledge underpin the semantic properties that are associated with that stem, and thus its distribution in the syntax. Finally, the introduction of a conceptual level that complements and interacts with the semantic and syntactic level facilitates the notion of construal, whereby one and the same real world referent can be conceptualized in different ways, and thus referred to using expressions with different semantic and syntactic properties (cf. Croft and Clausner 1999, Croft and Cruse 2004, Croft 2012).

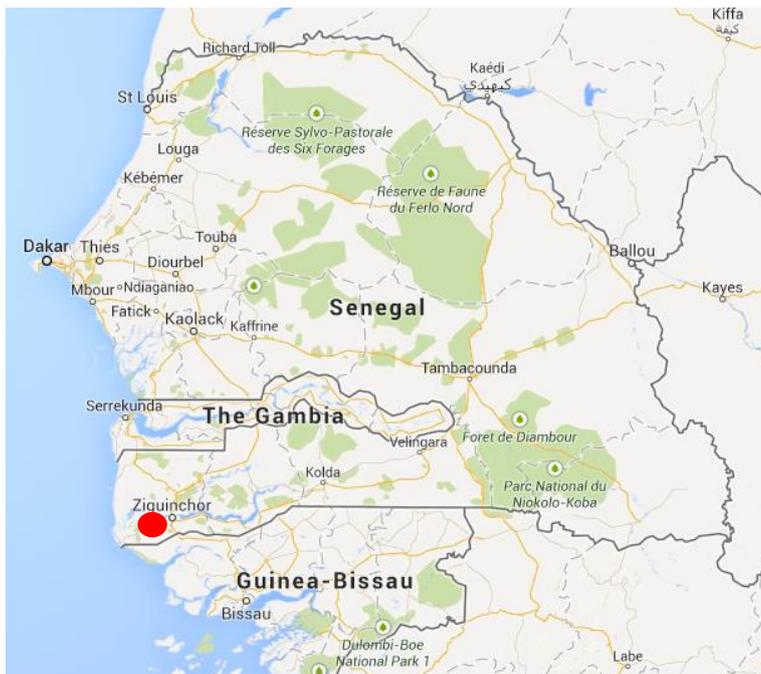
1.2 Geographical, historical and cultural context

In an approach that recognizes the role of human cognition and interaction with the environment and society, it is clear that the structure of language cannot be fully understood without some understanding of the people who speak it. The following sections comprise a brief description of the geographical, historical and cultural context within which Kujireray is situated. The rich and complex history and culture of Brin cannot be treated fully here, but some central points are highlighted with a focus on those aspects that are relevant to the linguistic analysis, in particular natural surroundings, agricultural practices and religious and spiritual beliefs, as well as historical facts that contributed to the rich linguistic diversity in Brin and indeed the whole region.

1.2.1 Geographical context and physical surroundings

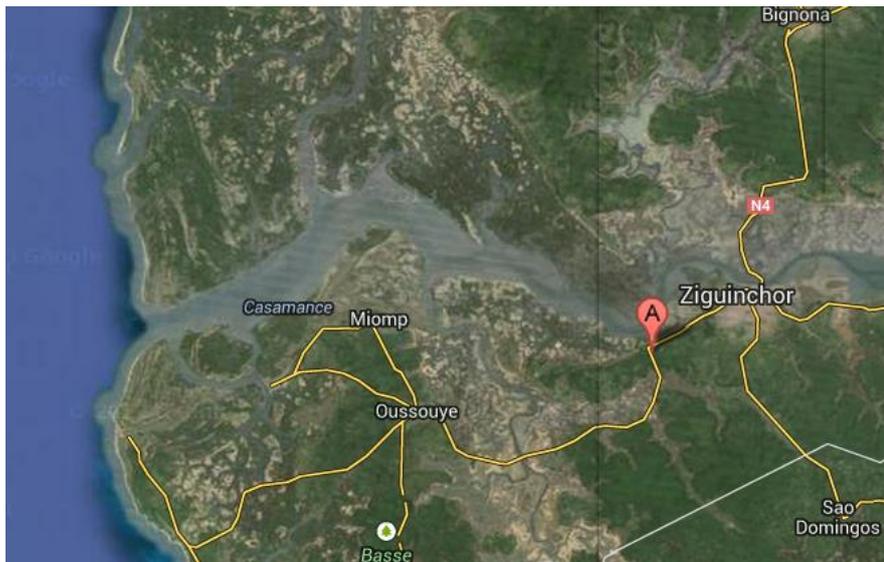
Brin is located in the Lower Casamance region of Senegal, about 10km south-west of Ziguinchor, the capital of the region. The village extends on both sides of the main road running from Ziguinchor to the coastal resort of Cap Skirring. It is bordered to the north-east by the village of Djibelor, to the south and south-east by the village of Djibonker, to the west by the village of Bajat, and to the north by the Casamance River. The road is paved and in good condition, and public transport runs along it regularly. As such travel around the region is relatively straightforward – a factor which contributes to the impressive degree of individual and societal multilingualism observed in the region (see 1.3.2 below). Map 1 shows the location of Brin with respect to Senegal, and the satellite image in Map 2 shows a more detailed picture of Brin and its immediate environs, with its dense forest and network of creeks and mangroves leading out the Casamance River.

Map 1 Map of Senegal, with location of Brin indicated with red circle



source: www.google.co.uk/maps/

Map 2 Map of Basse Casamance, with Brin marked “A”



source: Google Earth

The tropical savannah climate of the region is characterized by a long dry season from around November to June and heavy rains from June to November. Brin, like the region in general, is characterised by rather dense vegetation and forest. Some of the most striking features of the forest are the huge kapok trees, the fan and oil palms and the baobab and fig trees covered in parasitic creepers. These trees are also culturally important. Both types of palm are fully exploited - their wood, fruits and leaves are used for tools, building materials, and food. The oil palm, in addition to palm oil, is the source of *bu-nuh* ‘palm wine’ which is of great social and cultural significance. The kapok trees also provide wood for building and for the fishermen’s dug out canoes which bear the same name as the tree – *bu-sana/u-sana*.² Kapok trees, baobabs and fig trees often have spiritual significance, being common locations for spirit shrines (see 1.2.4 below). Countless other plants are used for food, technology and medicine.

Although the variety of indigenous fauna has declined due to overhunting there are still many animals that make their home in the forest and river. Many of these are eaten – crabs, snails, giant rats, palm rats, monitor lizards, monkeys and snakes, and a large variety of birds. Most people also have some domestic animals. There are generally dogs and cats

² Where applicable, both the singular and plural terms are provided, in that order. The hyphen in terms within the text signifies the boundary between noun class prefix and lexical stem.

associated with households, and most people have at least a few chickens. Wealthier people may also keep goats or pigs, either to be sold, or to be slaughtered at special occasions.

To the north the forest slopes gently down to the *ka-tama* - a word which denotes both the water's edge and the rice fields that are located there. The rice fields are separated from the Casamance River proper by a dense network of mangrove swamp. The wood from these plants is also valued as a building material and fuel.

1.2.2 History

The Casamance has known a rich history, although lack of records from times prior to European settlement (and unreliability of some subsequently) means that much uncertainty still surrounds the origins of the communities that are found there today (Baum 1986:46ff, Barry 1987:3). It is beyond the scope of this brief introduction to solve the mysteries that remain even to dedicated scholars of the history of the Casamance – I aim rather to provide a broad overview of some of the possible scenarios that have been posited in the historical literature, with a focus on how these may have shaped the linguistic landscape of the region. A difficulty of particular relevance to a linguistic study is the fact that even where records do exist, it is not always possible to be certain exactly how appellations for various languages and ‘ethnic’ groups are applied. Various groups would have their own appellations for their groups and languages as well as those of outsider groups, which may not have been applied universally by all peoples of the region. These would then have been appropriated in a somewhat ad hoc way by subsequent invading and colonial powers, with the result that many sources referring to different languages or ethnic groups must be approached with a degree of caution. Even synchronically, the notion of ethnicity is not a fixed and absolute value, but a rather nebulous concept that makes up part of a fluid sense of identity both individually and societally (see below, this section, for further discussion).

Bearing in mind these caveats, it has been suggested that the area where Brin is located was originally Banyun (Baïnouk) territory and that the Baïnouk occupied a large part of the region and controlled a large kingdom and regional trade routes (Barry 1987:7). Nowadays the Lower Casamance is largely occupied by Joola groups, with the Baïnouk surviving in a few isolated pockets, for example in the village of Djibonker which is directly adjacent to Brin (problematic nature of ethnic labels notwithstanding). Significantly for the present study, many inhabitants of Brin claim Baïnouk heritage, rather than the Joola indicated by their language.

It is suggested in several sources that Joola populations arrived in the area sometime before the 15th century, although whether this was from the east or the south appears to be uncertain

(Linares 1992:85, Barry 1987:3ff), and as stated earlier, records from these times need to be approached with a certain degree of caution. Indeed, Mark, Jong and Chupin. (1998:37) attest that, whatever the historical links between groups, the term Joola “did not come into widespread use until after the French “pacification” of the Lower Casamance” in the late 19th and earlier 20th century. The very use of the term undoubtedly contributed to a new sense of identity which in turn has gone on to shape political decisions etc.”

While it is widely accepted that the complex strata of different societal, linguistic and cultural practices observed in the region is due to the successive waves of migration and settlement, the exact nature of these developments is subject to discussion. Of particular note is the imputed arrival of the Islamic Mandinka people from the east and southeast, who are generally credited with a significant impact on the cultural landscape of some parts of the Casamance and some degree of influence throughout. However, the generally accepted picture of violent invasion and occupation has been contested by historians such as (Wright 1985), who proposes an alternative scenario, namely that of a more subtle and fluid assimilation due to intercultural contact from trade and marriage for example.

Facts about more recent influence from Portuguese and French colonial powers may be easier to pinpoint due to more plentiful historical sources. The Portuguese arrived in the region in the late 16th century (Brooks 1993), and the French in the early 19th century, and both have influenced the cultural and linguistic landscape. Despite the fact that the particular part of the Lower Casamance where Brin is located is notable for having largely resisted penetration from large state powers, colonial or otherwise since the arrival of the Joola (Boulègue and Suret-Canale 1985:50, Palmeri 1995:31, Nugent 2010:145), the Casamance is not a vast area, and it would be naïve to conclude that the ethnic, cultural and linguistic landscape of Brin has been immune to the continual waves of migration that have characterised the history of the Casamance over the centuries. It is pertinent to mention at this point a salient aspect of the more recent history of the Casamance. Since 1982 the region has been subjected to a civil conflict, ostensibly a separatist struggle instigated by the *Mouvement des Forces Democratiques de la Casamance* (MFDC). For many years the region was subjected to significant trauma. All community members above a certain age remember times of curfew, attacks from both sides (military and militia) and the conflict has shaped the social, cultural and linguistic landscape as people migrated from village to village as refugees and subsequently settled. At the time of writing a level of stability obtains, although sporadic incidents of violence between the two factions are not unknown.

While many of the details of the events that have formed the current socio-cultural and linguistic landscape of the Casamance are uncertain at this time, and indeed may never be

fully known, the fact remains that they have resulted in a situation of extreme linguistic diversity, fascinating in itself, and even more so for the fact that it appears to be being maintained – not in a static conservative way whereby a particular cultural practice or language is enforced, but in a vibrant ecology of constant adaptation and complex understanding of multilingual practices (cf. Lüpke and Storch 2013:19). Some of the languages now spoken in the region include, not exhaustively, Mandinka, Manjaku, Peul, Wolof, northern Joola varieties such as Fogny, Portuguese – which also acted as the lexifier language for Kriolu – and French, and evidence of their influence is present throughout the languages of this region.

The exact circumstances of the founding of the village are unknown at present. However, it is intriguing to note that while Brin is typically identified as a Joola community - due in large part to the fact that the language of the village is identified as a Joola variety – there is an oral tradition among the people of Brin that claims that the origins of Brin are in fact Baïnouk. The story goes that the village was founded when inhabitants of the neighbouring (Baïnouk) village Djibonker relocated as a strategic move against hostile Joola factions in Mof Èvi (land of the king), a territory lying to the north west of Brin, and for one reason or another started to speak Joola. It is often stated that the Brinois are ‘Baïnouk who speak Joola’.

Whatever the validity of this claim, it is worth commenting briefly on the notion of ethnicity and the validity of ethnic labels in the present context, drawing a particular distinction between ethnicity and identity. In deciding whether to apply a label of Joola or Baïnouk to the people in question, it is important to realise that given the long history of exogamous marriage between groups, practices of fostering children, invasions, occupation and slavery, ethnic labels, at least as they are used by the people of the Casamance, are better understood as markers of identity or allegiance than indicators of some inherited bloodline. For example, despite the fact that exogamous marriage means many children are of ‘mixed’ ethnicity, the identity that they inherit comes from their father. Nugent’s (2010:127) observation that “[t]he great debate about the stems of ethnicity in Africa has arguably reached the point of diminishing returns” can certainly be applied in this context. Although this is not to refute the fact that there are historical connections between certain groups, such as the Joola or Baïnouk, these very appellations, labelling perceived groupings of people, are often bestowed by outsiders rather than the groups themselves. Such labels may be based on purely on perceived linguistic and cultural similarities without necessarily having any historical basis. For example Baum (1986:44-45) contends that the term Joola was given by Wolof sailors to a cluster of coastal communities, appropriated by the French and not used by the people so designated themselves until “they embraced a common ethnicity in the face

of increasing integration into a multi-ethnic colonial society” (Baum 1999:26). Previous to this, various communities now subsumed under the label Joola would have referred to themselves by what would now be considered the subgroup name. In any case, an accurate assessment of the ethnicity of speakers of Kujireray is not only elusive but to some degree unnecessary, for the current study at least – central cultural values and practices are very similar in both Joola and Baïnouk groups (Lüpke 2010b:160-161).

1.2.3 Society

In any part of the world societal practices and structures are continuously developed and redeveloped according to the needs of the people who practise them, in reaction to various internal and external pressures. While the highly dynamic nature of the region’s history means that societies have certainly been in a constant state of flux and adaptation, the uncertainty of the history, as well as a lack of rigorous anthropological training necessary for a thorough assessment of the whys and wherefores of Brinois society, the following is necessarily descriptive, a snapshot of the current situation. I aim merely to set the scene, providing more particular detail where it is considered relevant for the linguistic analysis.

Joola societies do not organize themselves into a hierarchy as do many other societies in the region such as the Wolof and Sereer. There is “little concentration of authority... [and] such authority roles as exist affect a rather limited sector of the lives of those subject to them” (Horton 1985:87). Some communities in the region have *ě-vi/ú-vi* ‘priest-king/s’ responsible for the more important spirit-shrines who have some degree of power in terms of arbitration and dictation of ethics and morals (Palmeri 1995:57ff), but Brin does not have a king, and since the widespread conversion to Christianity the power of the spirit-shrines is reduced, at least in the day to day running of village affairs (although the power of the spirit-shrines still plays a significant role in moderating people’s behaviour (see 1.2.4 below)). Brin has a *chef du village*, but he is primarily a civil servant as opposed to a political leader – he is elected and unpaid. This is a role created by the French in the early 20th century so that they might have someone to confer with on administrative issues (Nugent 2010:145). He mediates between the village and the regional administration, as well as arbitrating any village-internal disputes.

Management of village affairs is largely done by committee, with the *chef du village* acting as chairman. Regular meetings are held to discuss various aspects of village life, such as fund-raising activities for the church, special celebrations, as well as settling any disputes between members of the community. On a more informal basis it is also common to form *ku-peelum* ‘societies’ (singular: *fu-peelum*) – generally formed along gender and generational lines - to perform certain labour intensive tasks. For example, the nature of the

cycle of rice cultivation inherently involves labour bottle necks, when a large amount of work must be done in a short space of time; the rice fields must all be prepared and planted soon after the onset of the rains, and the mature rice must be harvested before it spoils or is eaten by birds or mice. Although rice fields and their yields are privately owned, through necessity people organize themselves into cooperative groups to ensure the work is done on time.

To a large degree social structure is based on the family. This can be observed in the importance of family names in the region; it is the first piece of information one solicits upon meeting someone as it establishes links and confirms alliances. In Brin there are five families who are taken to be originally Brinois – Diandy, Biagui, Sagna, Bassène and Coly. The distinction between nuclear and extended family prevalent in the Western concept of family is less pronounced; this is evidenced in the fact that (with the exception of certain culturally privileged relations) there are no special terms for ‘aunt’, ‘uncle’, ‘cousin’, ‘niece’, or ‘nephew’ – the same terms are used as for ‘mother’ *jei*, ‘father’ *pai*, ‘sibling’ *a-ti/a-lin*, and ‘child’ *a-pemb*.

In terms of domestic living arrangements, there is substantial variety - as in any society, no two households are the same, although certain tendencies may be observed. A husband and wife generally live together along with some or all of their children, as well as any who have been fostered from other families. They may share their house with other family members or one may find members of the family living in other houses around the same courtyard. What is certainly the case is that, whatever the particular arrangement, these domestic groups are important in the organization of shared labour, childcare and other domestic tasks. In general, living arrangements are based around the male line of a family – women move to the families of their husbands, and children receive their family name from their father, as well as their ethnic identity (although married women retain their own family name, crucial as it is for identity).

However, the situation described above represents a prototype of the domestic situation, a hypothetical exemplar, with actual situations representing various permutations thereof. Significant divergence from these patterns can be observed in Brin for various reasons. The conflict that has been waged in the region during the last thirty years, along with economic pressures leading to rural exodus has resulted in significant changes in these structures. There are now many houses that are either abandoned and boarded up, and many people do not live in conventional family arrangements – elderly people often live alone as their children have left to seek employment in the towns and cities and there are many men of marriageable age who live alone or with male relatives, since their lack of financial means

mean they are not considered a suitable match by the parents of most potential wives.

1.2.3 Economic activity

The principal economic activity in Brin, as is typical for the region, is wet rice cultivation. This type of agriculture requires a great deal of expertise and is highly labour intensive at the times of the year when preparing the paddy, planting the rice and harvesting it take place. Being a highly specialized type of agriculture there is a good deal of specialized vocabulary associated with its various processes (this lexical domain happens to be highly relevant to the study of verbal nouns, and will be examined in detail in Chapters 4 and 5).

The rice is cultivated in the sandy earth between the forest and the network of mangrove swamps that lead out to the open river. A large dam is built, using communal labour, between the mangroves and the rice fields to prevent the salt water running into the paddies and killing the rice. The walls of the rectangular paddies are built up in a similar fashion, and a series of furrows and ridges are created in each paddy. The young rice plants, germinated in nurseries in the forest, are then transplanted into the ridges where they mature. When the paddies are full of rain, water sluices may be created in the walls to allow water to run from one to another. Stereotypically, each activity is associated with one gender; men dig and build the paddies, women transplant the seedlings and harvest the rice. To an extent these stereotypes hold true, although the village is no longer sufficiently populous for them to be strictly adhered to. In reality, whoever is available must carry out the work.

Many men collect palm wine to supplement their income. This involves climbing to the top of the oil palms, to where the trunk meets the foliage, with the aid of a hoop-shaped belt (*ka-ɲomo/u-ɲomo*) that supports the climber as he ascends. A hole is then made in the tree, into which a funnel is inserted, and a container suspended beneath to catch the sap as it flows from the hole. In the past, the container would be a hollow gourd, but harvesters increasingly make use of empty plastic bottles although the disposable funnels are still made by weaving leaves together. This arrangement is left in place for about a day, after which the *a-waa/u-waa* ‘palm-wine harvester/s’ will climb again to collect the filled bottles. The palm-wine is not alcoholic when leaving the tree, but ferments rapidly to become stronger and stronger. Although palm wine has ritual significance it is drunk at all social occasions when in season, so its cultivation is a lucrative activity – a litre can be sold for up to 350 francs CFA (about 40 pence, or 70 cents at the time of writing). The retail of palm wine is typically done by women; a woman will buy a substantial amount of palm wine, and sell it on in smaller units for a small profit. The same practice is observed with cashew apple wine when palm wine is not in season.

Fishing is also an important activity, and many Brinois are skilled in a variety of fishing methods. As well as using lines, nets, spears or even bare hands, there are many less labour intensive methods of catching fish, using traps and barrages made from fan palm leaves. These are placed strategically in the waters of the mangrove swamps during high tide. When the tide goes down, fish are trapped and easily collected. There are also numerous crafts associated with the production of tools and other resources either for personal use, or to be bartered or sold for a small profit. These include basket-making, rope-making, pottery and brewing of cashew-apple wine. Certain among these activities are in decline in Brin. For example, rope making and pottery are practised less and less with the increased availability of cheap plastic containers and ropes. With the decrease of more traditional activities comes an increase in ‘modern’ economic activities. For example, several among my consultants have been involved in the tourist industry, helping to run the *campement* in Brin or acting as guides to visiting Westerners, although this industry has unfortunately been largely curtailed by the civil unrest which has made tourists reluctant to visit the area. With increased literacy levels and competence with modern technology, people are increasingly seeking more office based work, which inevitably leads to their leaving the village for larger towns (although there are others who commute to Ziguinchor for such work). Other professions represented among the Brinois include teaching, photography, police, automobile mechanics, IT and many others.

1.2.4 Spiritual beliefs and practices

Religion is a pervasive presence in Brin. Generally speaking, it can be said that the people of Brin tread a line between two sets of spiritual beliefs and practices – those prescribed by the Catholic Church, and those belonging to *butin sipaeli* ‘the path of the forebears’. This is something of a misleading dichotomy, however, and it is not intended to imply that the introduction of Catholicism represents a cataclysmic fault line between traditional and modern, indigenous and colonial. While the arrival of the church has without doubt been deeply influential, it is just another episode in a history of development and adaptation that has been ongoing throughout the history of the region. Nevertheless, since the more obscure historical details are less accessible, the discussion in this section will be divided roughly along the division between Catholicism and *butin sipaeli*. In order to avoid the problematic term ‘traditional’, I refer to pre-colonial, or pre-Catholic beliefs when referring to *butin sipaeli* ‘the path of the forebears’.

There has been a Catholic presence in the region since the 16th century (Brooks 1993:241) although the religion did not gain popularity with populations in this part of the Casamance until the 19th century (Baum 1986:8) and did not gain a foothold in Brin until the beginning

of the 20th century (de de Benoist 2008:291). Initially missionaries met with resistance, maybe understandably so - the first deed of evangelist P. Esvan on his arrival in Brin in the early 20th century was to cut down sacred fan palms; this resulted in him being chased from the village (de Benoist 2008:291). Nevertheless, a catechist was installed from 1904-1908, and then again permanently from 1917, a chapel was constructed in 1921 (replaced by the current church in 1930), and the first Brinois were baptised in 1923 (de Benoist 2008:340, 356). Nowadays almost all Brinois are baptised and consider themselves Catholic, although they may also adhere to a greater or lesser degree to pre-Catholic beliefs and practices. The village centres round the church both physically and in many ways socially and culturally as well. Frequent fêtes are held to raise funds for various projects such as the purchase of a ventilation system for the church, or the renovation of its rain damaged tower, or equipping the church run dispensary. Most people's houses contain some form of Catholic iconography such as crucifixes and images of Jesus, Mary, saints and popes. Furthermore, Brin is renowned for being the home of one of two Catholic seminaries in Senegal. As well as training young men for the priesthood the seminary provides schooling for children. The education has a good reputation, and those who can afford the fees are keen to send their children there.

The language of Catholicism is French, and this is used for the main part of the mass. However, some portion of the service in Brin's church is almost always spoken in Kujireray – the (Joola, but non-Brinois) vicar often gives his sermon in Kujireray, and Bible readings by various members of the community are also often given in Kujireray – there are two men in the village who translate sections of the Bible from French. Many songs and parts of the sermon are also said in Joola Fogany.

It is widely accepted that Catholicism is responsible for the decline practices associated with *butin sipaeli*. Benoist (2008:356) claims that a spate of baptisms in 1940 “marque la fin de la résistance d'une bastion de la religion traditionnelle”. When the first members of the community began to be baptised, any ritual behaviour connected to the pre-Catholic religion was dismissed as pagan or unholy (de Jong 2007:7). These days, while the members of the presbytery at Brin do not associate with any non-Catholic practices, nor do they actively contest or prohibit them. Furthermore, while the influence of the church has certainly reduced the prevalence of pre-Catholic practices it cannot be said to have eliminated them entirely – although the entire population would profess to be Catholic, pre-Catholic beliefs, more deeply ingrained in the culture than Catholicism, are still held by the majority of Brinois, in some form or another. For example, funeral rituals are still performed for some deaths (particularly of older people) prior to the Catholic mass at the church. Stories of illness caused by spirit-shrines, and sightings of spirits in the forest are common. Moreover

these parallel belief systems are negotiated without apparent conflict; de Jong (2007) notes that indeed ideas may be appropriated from one to the other. Indeed, this transfer is partly sanctioned by the Catholic Church in Senegal as a process of “inculturation” or the incorporation of Senegalese values (Foucher 2003).

In the following I describe some of the central tenets of the belief system referred to as *butin sipaeli* ‘the path of the forebears’. Although this system of belief and its attendant rituals have been the subject of significant decline in Brin since the introduction of Catholicism, its presence is still evident, and it can by no means be said to have been relinquished entirely. I attempt in the latter part of the section to give an impression of the extent to which practices are still observed, and how they coexist with the more recently adopted Catholic faith. This is necessarily a broad and impressionistic overview – a comprehensive survey of the cosmological beliefs and observances of the population being far beyond the scope of the research. Furthermore, it should be emphasised again that the intention here is not to draw a line between traditional and modern, inviting the inference that Kujireray culture existed in a pure and noble vacuum before the arrival of Europeans and their corrupting ways. As in any part of the world, beliefs and cultural practices are constantly subject to change as the result of outside influences, the requirements of changing situations. The development of the religion of Brin, its similarities and differences with similar systems in other parts of the region is unknown – the purpose of this section is to describe the synchronic situation and how individuals and the general population negotiate and maintain various aspects of supernatural belief systems that are not at first glance mutually compatible.

This belief system is of a kind with that found all over this region and is structured as follows. A creator god - known in Kujireray as *emit* - is acknowledged. The exact form and location of this entity is not known although it may be significant that the term is synonymous with ‘sky’ as well as ‘year.’ Many researchers writing about communities in this area observe that in the traditional religion the god is remote and uninvolved with human affairs (Sagna 2008:40). Baum (1986:4ff), however, disputes this, claiming this entity is in fact actively involved in some aspects of life. Indeed among the Brinois, *e-mit* ‘God’ is frequently evoked in expressions such as *emit eramben* ‘God help you’ (used as thanks, or to wish good fortune on someone) or *emit ekan* ‘God does’. This latter is used when talking about desirable future events, equivalent to the ‘inch allah’ ubiquitous in Muslim society, so it may also indicate linguistic and cultural influence from Muslim societies, as well as Catholicism.

In addition to *e-mit* ‘God’, humans share their physical world with entities who form a liaison between the supreme being and man and are responsible for the regulation of the

natural world (de Benoist 2008:173, Baum 1986:381). These entities have the power to influence events for good and for bad, and tend to be associated with a specific location in the village, either at a natural entity such as a tree, or a house. Linares (1992) and Baum (1986) use the term 'spirit-shrine' to denote these entities to reflect the fact that the spirits and their associated location seem to be inseparable, or that in the languages of the cultures concerned, identical terms are used for both the spirit and its location.

The spirit-shrines are more involved in the everyday lives of people than *e-mit* 'God' and there are different categories of these entities which play different roles. The village level spirit-shrines are the most powerful. These are associated with areas of the forest; common locations for a spirit-shrine include the buttressed stems of the kapok tree or abandoned termite mounds. The areas associated with spirits are considered sacred, may not be destroyed or interfered with, and are subject to taboos such as being out of bounds to one or the other sex, or uninitiated men. These village level spirits have individual names, but are known collectively as *u-cin* (singular: *ba-cin*). They are associated with various types of person or areas of life such as fertility or harvest, and may be consulted for advice or solicited for help in these matters. As well as the village level spirit-shrines, there are also those associated with a certain ward, extended family or individual households, which are responsible for the fortunes of these individuals.

Spirits-shrines help to regulate behaviour as they dictate moral and ethical norms (Palmeri 1995:58) and punish those who violate them by illness or misfortune. For example, spirit-shrines may be represented by special knots tied from palm leaves, which, when left next to personal property, for example fire wood left at the side of a path, act as a powerful deterrent against theft; people dare not steal for fear of retribution from the spirit-shrine concerned. Indeed, bad luck and ill health is often assumed to be a case of a spirit-shrine 'trapping' someone who has misbehaved – the only way to solve the problem is to supplicate the spirit in question with offerings of livestock, rice and palm wine. Such misfortune may also be attributed to witchcraft or black magic carried out by a rival for reasons of jealousy.

Sagna (2008:40-41) and Baum (1986:383-384) cite a type of supernatural being or 'spirit' as separate to the spirit-shrines. These are not directly linked to a shrine but may contact individuals on their own terms. Indeed, several members of the community in Brin have related stories of coming across strange white people in the forest, who seem to belong to such a category. In addition, the ancestors also maintain a respected presence in the collective consciousness. For example, no alcoholic drink (or even soft drink) is taken without pouring a libation to the ancestors. Additionally, certain wild animals are also venerated as totems, although whether this is because they have connections to the ancestors

(de Benoist 2008:172), or because they are considered to be connected to individuals is not clear (Baum 1986:397ff).

There are a large number of sacred groves in the village. These are parts of the forest that are considered sacred as the location of a spirit-shrine. While some of these are considered defunct or abandoned, many are not, and are known and readily identified by members of the community. The extent to which people carry out traditional offering to these spirit-shrines on a day to day basis is hard to ascertain, as the practices are often kept private from outsiders. The presence and role of family-level spirit-shrines is easier to observe. Houses are built with shrines embedded into the veranda, where libations are made, either as a matter of course (one consultant suggested that this needs to be done once every two years) or when the situations demands it, as in times of great misfortune.

In some cases and to varying degrees funeral rituals are observed (although these are also combined with a Catholic mass and burial in the cemetery), as are traditional mourning periods. Taboos are still observed, such as the restriction of certain people from entering sacred forests, and separation of women from men during and immediately after childbirth. One of the most important rituals and one that is still observed is the male circumcision, or initiation, although interestingly the current practice known as *bu-hut* is a relatively recent addition to the culture, having replaced the older practice of *ka-hat* probably sometime in the early 20th century (Roche 1976:39). Roche suggests that this change may have been a reaction to increasing outside influence; one of the main differences is the more secretive character of the *bu-hut*. Initiates remain in seclusion in a sacred part of the forest for several weeks and are instructed in their duties as men as well as their role in society and given special knowledge. Their subsequent rearrival in the village is a time of great celebration, with feasting lasting several days. Excitingly, at the time of writing, the population of Brin is in the process of planning the first ceremony of this type for over thirty years.

1.3 Language context

In the following sections, I describe the current language classification status of Kujireray, and discuss some of the issues surrounding this classification, in particular with regards the subjects of multilingualism and endangerment.

The classification status of languages in the region has been subject to change over the years, and continues to be a matter of some debate. Given the account in the previous section of the tumultuous history of the Casamance, not to mention the fact that many aspects of this history remain unknown, it should not be surprising to learn that the classification of many languages in the region also remains a matter of some uncertainty. The relative dearth of

description of these languages and lack of diachronic written records (Williamson and Blench 2000:12) mean that the comparative method is difficult to apply. Furthermore the contact situation is so intense that it is difficult to claim indisputable common ancestry between languages (see section 1.3.4 below). As it stands at the time of writing, Kujireray is generally accepted to be part of the Joola sub-group, part of the Bak group, which in turn belongs to the North Atlantic branch of the large Niger-Congo macro family.

The Niger-Congo phylum covers a vast geographical area, from Senegal in the north-west, to nearly the southernmost point of the continent and contains many hundreds of diverse, individual languages. Although there does seem to be some convincing evidence for the unity of Niger-Congo as a phylum (Williamson and Blench 2000:12) the relationships between the languages within this phylum are not fully understood or agreed upon. The Atlantic branch of Niger-Congo is typical in this respect (Lüpke 2015:2); indeed its status as a genetically related linguistic group is questioned (Childs 2010:19) – the lexicostatistical methods having been used to posit the relations originally having yielded fairly small correlations (Sapir 1971). The grouping is motivated geographically and on the basis of several similar features phonological and morphological features, as well as their difference from Mande languages. They do, however, represent a highly diverse grouping, and it is even uncertain as to whether similarities can be attributed to genetic inheritance or language contact (Lüpke 2015:3). In situations of intense multilingualism and language contact it “quickly becomes obvious that language contact is indeed one of the driving forces of language evolution and change” (Cobbinah 2010:176). Indeed, Kujireray and its neighbouring language Gubëeher (cf. Cobbinah 2013) display striking structural and lexical similarities, despite the fact that they are supposedly separated genetically to a significant time depth.

Even within the Joola group, caution must be exercised in interpreting various labels assigned to ‘languages.’ As Sagna (2008:29-30) points out, such appellations often refer rather to geographical areas containing dialect continua, rather than strictly individuated varieties. For example, even Fogny, a standardised version of which is one of the official languages of Senegal, actually subsumes a number of varieties spoken from the northern bank of the Casamance river right up to the Gambia. This is also reflected in the fact that Kujireray is not currently recognised in the *Ethnologue* as a language in its own right, but rather as a variant of Banjal, spoken in the adjacent Mof Ëvi. Indeed, even the term Banjal is used to refer to a dialect cluster, which people living in the area, as well as linguistic specialists in these languages, recognise as separate varieties and give separate names to them accordingly. Furthermore, a lack of descriptions means that while Joola can be taken to be a genetic grouping, its internal structure is not fully understood (Sagna 2008:30).

Indeed, given the extent of individual and societal multilingualism in the region, the notion of an individuated language is rather moot. Even to talk of Kujireray as ‘the language of Brin’ is misleading, as it is only one of many to be spoken in the village. It can, however, reasonably be labelled as the identity language of Brin (see Lüpke 2015 for further discussion).

Finally, the prioritization of genetic classification can obscure the extreme levels of diversity represented in these language groups. In the case of Joola, there is significant and non-trivial variation between the many varieties that make up this group, both culturally and linguistically. There are at least a dozen Joola varieties spoken in the Casamance – probably considerably more - and despite the close contact and relatively small distances involved there is considerable divergence between them – for example in two Joola ‘dialects’ there is less lexical convergence (according to the Swadesh list) than there is between Romany and Icelandic (Podzniakov 2007:2). All things being equal (i.e. if no exposure could be assumed) Fogny and Kujireray would not be mutually intelligible – indeed even to assume that the term Fogny refers to one variety is inaccurate. Despite the existence of the standard, codified form, in terms of real language use and repertoires, the term Fogny subsumes a number of varieties spoken in the northern Casamance (Sagna 2008:30). Therefore, while it is possible to comment on general traits of Joola languages, the importance of detailed descriptions of individual languages must be borne in mind. It is worth noting that even within Brin, two varieties are recognised by the inhabitants of the village. The largest ward, Jegele, is recognised by speakers as having its own distinct dialect. Often, when confronted with a query about observed linguistic variation, consultants will report that one form is from Jire, the other from Jegele. Indeed, members of the village sometimes seem to consider Jegele to be a separate village all together, historically at least. Research on this variation is identified as a fruitful topic for future research.

Despite this linguistic diversity, it is possible to comment on some typological features of Atlantic languages, whether these are due to genetic inheritance, contact effects or a combination of both. Kujireray appears to be quite a typical example. Williamson and Blench (2000:30) identify a number of features typical of Atlantic languages, all of which are found in Kujireray³. These are:

³ Although, conversely it does not exhibit consonant mutation as a salient typological feature, unlike many other languages in the region. There are, however, certain features in the morphology that may represent vestiges of consonant mutation, such as the epenthetic nasal consonants in certain agreement patterns for demonstrative forms (Friederike Lüpke, personal communication).

1. Noun class system
2. Widespread verbal extensions
3. Inclusive/exclusive distinction in pronouns
4. SVOA word order, with prepositions
5. N+Gen, N+Num, N+Dem

One of the most pervasive features of Atlantic languages is noun classification, where nouns are classified along “multilateral opposition such as human, animals, plants and liquids” (Williamson and Blench 2000:13) and this is certainly true of Kujireray. These classification systems at their most typical contain around twenty classes, and the classified nouns govern agreement on elements they control within the discourse, such as verbs, adjectives and numbers. This system is one of the central topics of the thesis and is treated in detail in Chapters 4 and 5, as well as being placed in wider typological and theoretical perspective in Chapter 2.

1.3.1 Previous research on Joola languages

Sapir (1971), Wilson (1989), Doneux (1975) and Williamson and Blench (2000) all treat Atlantic languages in terms of their classification. These accounts are necessarily painted in rather broad strokes. In terms of detailed descriptions of individual varieties, the Atlantic languages in general are under-researched, with the Joola group being no exception. Table 2 Previous research on Joola languages summarises the monographs currently available for Joola languages.

Table 2 Previous research on Joola languages

Joola variety	author and year	title
Various	Barry 1987	The Joola languages: subgrouping and reconstruction.
Fogny	Weiss 1940	Grammaire et lexique du diola du Fogny
Fogny	Sapir 1965	A grammar of Diola-Fogny: a language spoken in the Lower Casamance region of Senegal
Fogny	Hopkins 1995	Contribution à une étude de la syntaxe diola-fogny
Banj ⁴	A-C. Bassène 2007	Morphosyntaxe du jóola banj ⁴ : langue atlantique du Sénégal
Eegimaa	Sagna 2008	Formal and semantic properties of the Gujjolaay Eegimaa (a.k.a. Banj ⁴) noun classification system
Gusiilay	Tendeng 2007	Le Gusiilay: un essai de systematisation : une contribution a l'etude du Joola
Banj ⁴	M. Bassène 2012	Morphophonology of Joola Eegimaa
Huluf	Wintz 1909	Dictionnaire francais-dyola et dyola-francais: précédé d'un essai de grammaire
Kwaatay	Coly 2012	Morphosyntaxe du kuwaatay : langue atlantique du Senegal
Kaasa Esuulaalu?	Sambou 1979	Diola Kaasa Esuulaalu?: phonologie, morphophonologie, morphologie

There are also a number of shorter articles on these and other varieties – however it clear that much work remains to be done on the description of this language group.

⁴ It should be noted that labels Eegimaa, Banj⁴ and Gusiilay refer to closely related varieties of a dialect cluster spoken in villages in the Mof Ēvi area, often lumped together under the label ‘Banj⁴’. Throughout the thesis, where data is provided from one of these varieties, I refer to the variety as it is labelled in the source text. Thus, data taken from Sagna (2008) will be labelled as Eegimaa, from Bassène (2007) as Banj⁴, and Tendeng (2007) as Gusiilay, although it may be contended that they all constitute forms of Banj⁴.

1.3.2 Multilingualism and language contact

In keeping with the prevailing situation in West Africa, Kujireray exists in a situation of intense language contact and multilingualism on both individual and societal levels (Lüpke 2010a:1-2). Most adults in Brin can communicate to some degree in around six languages and ability in ten or more is not unusual.⁵ Furthermore, the linguistic repertoire is not uniform across the population; each individual possesses their own unique repertoire which is a product of individual personal history and reflects parentage, friendships, education, employment and past and present domestic situations (see Lüpke and Storch 2013:22ff for a highly relevant case study). Apart from Kujireray, other languages represented in the repertoires of the Brinois include, not exhaustively, Wolof, Manjak, Kreol, many other Joola varieties and French. Nor is this situation of multilingualism anything new – throughout history, trade routes, occupation by various factions both African and European, the slave trade and the spread of new religions (Childs 2010:16-17) have introduced new linguistic practices and contributed to an on-going situation of multilingualism. Contemporary factors include the practice of exogamous marriage, the common occurrence of fostering children out to other households, often in other villages, economic exodus to cities as well as displacement due to civil unrest in the region (cf. Lüpke and Storch 2013:33ff).

Such extreme multilingualism is often associated with the endangerment and death of minority languages. The situation in the Casamance, however, contraindicates this supposition; people have an impressive capacity for managing and maintaining their languages. While multilingualism undoubtedly drives language change, whether it endangers languages is called into doubt. Indeed while patterns of multilingualism may change over time, it seems that the people of the Casamance have a long history of maintaining linguistic diversity (Lüpke and Storch 2013:17). The question of endangerment is discussed below.

1.3.3 Endangerment

The linguistic situation in the Casamance ostensibly exhibits several of the characteristics commonly associated with the endangerment of minority languages. For example, the colonial language – French – has high prestige and is used in education and the media. There is also a lack of literacy in minority languages; printed materials tend to be in French. In addition, Wolof is used increasingly as a language of communication between groups of

⁵ Note also that the typical European concept of ‘proficiency’ in a given language is not directly applicable here. Different languages are used in different domains, with different people and for different purposes.

young people, particularly as more of them travel to Ziguinchor for education, where they will necessarily mix with others from different linguistic background, i.e. not sharing the same minority languages. The minority languages – i.e. those spoken most commonly within individual villages and their immediate environs, and not usually used as languages of wider communication - have relatively small numbers of speakers and exist in a situation of intense individual and societal multilingualism, all factors which are generally cited as contributing to language endangerment.

However, these facts thus stated obscure much of the actual multilingual situation, and it would not be accurate to extrapolate them, via the prevailing rhetoric of language endangerment, to arrive at a diagnosis of endangerment. Lüpke and Storch (2013:275ff) discuss how much of the accepted models of endangerment are either inapplicable, or applied too simplistically to African scenarios such as that in the Casamance, and their analysis certainly applies to the situation in Brin. Kujireray is strongly associated with the identity of the Brinois and is spoken widely and regularly on a day to day basis – the fact that Brinois may switch to French when visiting the bank, or other Joola varieties when shopping in Ziguinchor is immaterial. Furthermore, it is being actively transmitted to younger generations. Despite the complaints of older members of the community that youngsters speak a deficient version of the language, peppered with French and Wolof, contrary observations have been made during my fieldwork. I have made numerous recordings with younger (teenage and early 20s) consultants, which during transcription garnered only minimal complaints from the older speakers with whom I was transcribing. Of course, it is important to note that during these tasks the young people were asked to speak Kujireray – the conclusion reached is that they *can* speak Kujireray; whether or not they *do* speak it, and if so when, why and with who is a topic for future research.

That said, other factors are observed that may be threatening Kujireray; to some degree these can be equated with those threatening the community of Brin in general. The population of Brin is an aging one. The civil conflict that has been waged in the region, in varying degrees of severity over the last thirty years has resulted in many residents leaving their homes and moving away from the area. Economic pressures have also meant that many people have been forced to leave for the towns in order to seek employment. While Kujireray appears to be in continued use in Brin, the degree to which it is kept alive in the diasporas is a topic for further research; it suffices to say that many of these émigrés do not return to live in Brin on a permanent basis. The population of reproductive age who remain in Brin face other economic problems – lack of employment means that men are not an attractive option to the families of potential wives.

In practical terms, Brin and its directly neighbouring communities are undergoing some degree of homogenization in their daily activities. It is much easier to travel between neighbouring villages, and the main town Ziguinchor, than it was twenty years ago, and this may have had some effect on linguistic practices. For example, many children travel the ten kilometres to Ziguinchor for their education – and while the official language of education is French, the main language spoken between heterogeneous groups of students is Wolof. Indeed, while the practice of fostering children out to extended family is not a new one, increased ease of travel may mean that children come from further afield, decreasing the likelihood of a mutually intelligible Casamance language, and thus reinforcing Wolof as the default lingua franca.

1.4 Field situation and consultants

In the following I provide some further details about the village of Brin, with specific reference to my role as a researcher in the village, and the type of arrangements made for data collection. I describe some of the challenges and limitations encountered during the research, and outline the general methodology (details of specialized methods developed for the investigation of verbal nouns are provided in 2.4.4 below).

Data collection for this research project was carried out over four separate field trips, between 2011 and 2014, totalling 13 months altogether. During these trips I lodged with an elderly couple - Damien Sagna and Véronique Mendy - in the village of Brin itself, and spent the majority of my time within the community. I was fortunate in that there was already an established network of researchers in the region prior to my arrival. My supervisor Friederike Lüpke and colleague Alex Cobbinah had already established links with the community in Brin as part of the then on-going DoBeS 3P project, and this was enormously helpful not only with regard to practicalities such as finding accommodation, but also in terms of being accepted into the community. In particular, Alex had already been visiting his field site (in Djibonker, directly adjacent to Brin) for several years before my arrival, so members of the community were all aware of his work and the purpose of his study, and accustomed to unusual questions, recording equipment and other trappings of linguistic fieldwork.

Although there are obviously certain mental, emotional and behavioural adjustments to be made in the context of field work in an unfamiliar community, in general I experienced no great difficulty in establishing relationships with the community and my own position as a researcher. Attitudes towards Kujireray are extremely positive; it is a sign of identity and being able to speak it well is a point of pride. Therefore, outside interest is taken as a compliment and I was made to feel most welcome.

Efforts were made to gather data from as many speakers as possible so that the corpus might be fully representative of language use, revealing individual variation between speakers. The corpus contains linguistic data from a variety of speakers, both male and female, and ranging in age from teens to 70s (see Appendices for metadata on recordings). All are considered, by themselves and others, to be proficient speakers of Kujireray. Much additional data was collected from a wider range of consultants, who would provide vocabulary items and short phrases whilst socialising in an informal setting, as well as me asking about things I heard whilst doing the same. Data gathered in these circumstances is labelled ‘field notes’ throughout the thesis. Data spontaneously produced in such settings is labelled ‘participant observation’.

Inevitably, issues of logistics and rapport mean that I worked more with certain consultants than with others. I had three main consultants in Brin; Urbain Biagui, Raphael Biagui and William Diandy. All are men in their forties and have spoken Kujireray from birth or very early childhood. Urbain is passionate about his language and culture and is knowledgeable in explaining activities such as rice cultivation, fishing and building, and providing associated specialised vocabulary, particularly important for the analysis of the noun classification system. He was also instrumental in identifying suitable consultants for various subjects and making appointments on my behalf. William and Raphael have proved to be talented amateur linguists. When I am, for example, testing a particular hypothesis by asking for examples and using grammaticality judgements, they are quick to understand what I am interested in and provide thoughtful and pertinent examples and comments. In particular I have had invaluable discussions with William about Kujireray verbal nouns.

1.4.1 Social issues

Negotiating ones position as an outsider in any community requires some care. While the overwhelming majority of Brinois were extremely welcoming and receptive to my presence and what I hoped to achieve, it is of course quite a different society to the one I come from, with its own particular conventions and mores that need to be learnt and adhered to. One issue I found to be particularly important was to try not to be seen as favouritizing any one person over another. In a small close-knit community such as this news travels fast, and it can be startling to learn how your relationships with various people have been interpreted, particularly as a woman spending significant amounts of time with men. It is also important to be suitably respectful to members of the community regarded as authority figures in various areas, devoting time to visiting with them and seeking their knowledge, which is of course also beneficial in increasing one’s own knowledge. The maintenance of social ties is paramount, and it is essential from time to time to pay social visits to one’s acquaintances in

the village, even if only briefly, to exchange greetings, and enquire after the wellbeing of them and their family.

1.4.2 Technical challenges

Technically speaking, several issues were encountered. The first was background noise during data collection. Daily life, including most data collection, is conducted out of doors. Birdsong, pigs, goats, cockerels, children, vehicles and wind all make their contribution to the general cacophony of the forest. This situation could be mitigated to a satisfactory degree by using a tripod to position the audio recorder close to the speaker's mouth, or in the case of video, positioning microphones close to the speaker or using a shotgun microphone when longer distances were involved. Recordings made for the purpose of analysis of phonetic and phonological phenomena were held inside speaker's houses.

1.4.3 Linguistic limitations

French was the contact language used throughout my research, and since neither I nor my consultants speak French as a first language this results in some limitations and frustrations. If, for example a consultant was providing a detailed explanation of something in French, there may have been elements I missed or misheard. This problem was mitigated by recording all sessions and listening back if something was unclear.

The challenges presented by translation are also significant. Kujireray and French are in many ways typologically dissimilar, so it would be up to the consultant to make a judgement on how best to convey the meaning in French expressed in the original text. As my Kujireray became more proficient this was less of a problem – I could carry out morpheme by morpheme analysis and understand the meaning without the need for translation into French, although translation into English is still necessary for the presentation of the data. In all examples throughout the text effort has been made to provide the best, natural, translation of the Kujireray construction. Where the Kujireray is particularly idiomatic, a literal translation is provided in brackets next to the free translation.

Transcription was also a task that was problematic at the outset and became less so as my knowledge of Kujireray advanced and I was better attuned to the spoken language and therefore able to parse. Initially, despite my exhortations to the contrary, transcription assistants would massively 'clean up' the texts we transcribed together. Speech errors, hesitations, code-switching and mixing that are all clearly audible in the recording are quite absent in the written transcription. In extreme cases extra material has been added. As I became better able to parse the language in the recordings, I was able to query whether a

consultant had actually provided me with a correct transcription, which in turn led them to understand that I was more interested in a full transcription than one in 'correct' Kujireray.

1.5 Data collection and management

The data used in the thesis come from three main types of data collection: elicitation for general vocabulary and grammar, staged communicative events, and specialized tasks designed specifically to investigate verbal nouns. I comment in the following on more general data collection methods (a more detailed description of specially designed elicitation tasks for the investigation of verbal nouns can be found in 2.5 below). I also outline data management methods. A full list of the recordings from which the data were taken can be found in Appendix 1 which includes details of the speaker or speakers involved, the type of data collection and a brief description of the purpose and/or subject matter of the session. Appendix 2 contains a list of all the speakers represented in the thesis with details of their approximate age, sex and other languages spoken (self reported) and the number of years they have spoken Kujireray.

1.5.1 Data management

All elicitation sessions were recorded on a Zoom H4N digital audio recorder, and all staged communicative events on a Canon HD video camera with an external microphone. Immediately after each session the data would be copied onto a laptop, given a unique file name and metadata for the recording entered into a separate document (namely information on the file name, speaker, location and subject matter of the recording, and any additional comments on issues such as quality of the recording). All data was regularly backed up onto multiple external hard drives.

For the purposes of analysis, all data was transcribed into FLEx. A subset of the staged communicative events were also transcribed in ELAN providing a time aligned transcription, translation and in some case morpheme by morpheme glossing. ELAN files were deposited in the Endangered Languages Archive (ELAR) which is part of the Hans Rausing Endangered Languages Project at SOAS.

1.5.2 Elicitation

Much of the initial data collection was done through elicitation. As Kujireray is hitherto virtually undescribed, this was necessary to gain a comprehensive overview of the main points of the grammar. The two hundred word Swadesh list and Dahl's (1985) tense aspect mood questionnaire were used as starting points, and I subsequently formulated my own questionnaires, leaning on the typological literature to ensure comprehensive testing of the

aspect of grammar in question.

In order to collect data, I would visit the home of the consultant with whom I had arranged to work. Each expression from the relevant questionnaire would be provided in French, and the consultant would be asked to translate it into Kujireray, repeating as necessary (and often more slowly) in order for me to note it down as accurately as possible. The sessions were audio recorded, and all responses were also written in a field notebook. Where possible I ran each questionnaire with at least two consultants, in order to account for variation.

As well as translation tasks, acceptability judgements are included under the title of elicitation. While there are many problems with acceptability judgements (cf. Lüpke 2009), particularly in marginal areas, they certainly have a role to play in descriptive linguistics. Where a phrase is disregarded as completely unacceptable, especially by several speakers, one can be relatively confident that this is due to constraints of the grammar, rather than not providing the right context, or the expression being somewhat marginal. For example, the demoted Agent in the passive construction may not be expressed in Kujireray (see Chapter 3); no consultant would under any circumstances accept such a construction. This is in contrast to the situation when a verbal noun was presented with a determiner. Consultants were often hesitant about their decision, would often change their mind, and spent time searching for a suitable context. This suggests that such an expression is perhaps possible, but somewhat uncommon and marginal, and warrants further investigation.

Acceptability judgements would sometimes be requested spontaneously during translation task elicitation sessions. Occasionally, having processed sessions, I would return with a whole list of possible sentences whose acceptability I wished to check. Even more than with translation elicitation, it was considered essential to check acceptability judgements with more than one consultant.

1.5.3 Staged communicative events

As well as data from elicitation, it is desirable to gather less structured, more spontaneous examples of language use, in order to be able to comment on what *is* said, as well as what *may* be said. The corpus on which the present analysis is based contains recordings where consultants were invited to speak freely on a variety of different topics. There are several recordings of traditional fables, and others of speakers describing various activities such as rice cultivation, fishing, building and commerce. A detailed list of these recordings can be found in Appendix 1. This part of the corpus has the additional benefit of providing information about the life and culture of the people of Brin. While it cannot be claimed that these data are fully naturalistic (hence the choice of the label ‘staged,’ rather than

‘observed’), as they consist primarily of speakers delivering monologues in front of a video camera, as well as attempting to speak exclusively in Kujireray (something that does not often happen in natural discourse), it certainly has significant value in providing examples of less self-conscious language use, information structure, idioms and the like that are difficult to obtain through elicitation. The fact that the data is in video format means that it has the potential to be explored in the future for studies of gesture.

To make recordings of this nature, I would again make an appointment with the person or people I wished to record and visit their home, or another agreed upon location, with my equipment. I would spend some time discussing the topic, and possible content of the recording with them, in order that they would not feel anxious and that when the recording session began, they would be able to speak relatively freely and fluently. When recording was finished we would play it back together to ensure they were happy with it.

Following the production of such a recording it was of course necessary to transcribe and translate the spoken language. My level of Kujireray is not such as I am able to carry out this task unassisted, and so worked with my three main consultants to complete the task. After opening the file in question in ELAN, we would together listen to each phrase in turn, and transcribe and translate either long hand in a field notebook, or directly into ELAN when I was more confident in my analysis of the vocabulary and morphosyntax.

1.6 Summary of Chapter 1

In this chapter I provided the background for the study. I motivated the research and provided empirical research questions, as well as identifying an appropriate theoretical framework for the study. I provided salient contextual information about the geographical and societal situation in which Kujireray is spoken, and an overview of the literature on classification of Niger-Congo, Atlantic, and specifically Joola languages. The extensive multilingualism observed in the region was also highlighted. Finally, I gave specific details of the field setting, and methodological processes and challenges.

In the following chapter, I present some of the theoretical issues concerning the analysis of noun classification systems and verbal nouns, introduce in detail the Cognitive Linguistics framework that is adopted in the thesis, and provide details of the specialized method that were designed for the investigation of verbal nouns in Kujireray.

Chapter 2 Theoretical framework

In this chapter I present the three major themes of the thesis; namely categorization, noun classification systems, and verbal nouns. I give an overview of the literature on these topics, and focus particularly on the relevant approaches to meaning. It is shown that the theoretical tenets and analytical apparatus developed by various researchers in the Cognitive Linguistics movement can be effectively applied to the analysis and understanding of these phenomena.

2.1 Approaches to categorization

Categorization is a human cognitive function that necessarily underlies any linguistic classification system. It is a process essential to survival and as such human beings “classify consciously, unconsciously and even subconsciously in all situations” (Senft 2000:11). The process of categorization involves grouping certain entities based on judgements about similarities between members of a class, and differences between them and members of other classes. Although natural categories do exist in the real world in terms of “perceptual and functional attributes ... that form natural discontinuities” such as the habitual co-occurrence of feathers and wings on the same organism (Rosch 1978:6), and classificatory judgements reflect properties of the physical world, the classification systems of found in languages exhibit organizational structures that cannot be predicted a priori; they are determined not by only the structure of the physical world, but shaped by our perception of the world, and thus give a window onto our conceptual organization (Berlin, Breedlove et al. 1973: 214) Many commonalities observed in the classification systems of the world’s languages cannot in any principled way be claimed to fall out from properties of the world, but rather patterns of conceptual structure common to humans (Evans and Green 2006:68).

In 2.1.1 below, I present and critique the classical view of categorization, with particular reference to the way in which its principles are applied to the analysis of noun classification systems. I argue that the debate over whether noun classification systems are semantically motivated or not is largely due to an erroneous application of this approach to such systems, and present further evidence from the literature that shows not only that noun classification systems are semantically motivated, but also that a radically different understanding of categorization is required in order to properly comprehend this motivation. In 2.1.2 I present the prototype approach to categorization, as pioneered by Rosch and her colleagues, that challenges the classical view and has been influential in the Cognitive Linguistics movement. I introduce concepts underpinning the Cognitive Linguistics approach to the understanding of meaning and show how they are particularly appropriate for the study of noun classification systems, and are able to account for the data more satisfactorily than the

classical view.

2.1.1 Motivated or arbitrary?

Whether or not noun classification systems are semantically based is a topic of debate in the literature, with some researchers more or less rejecting the idea that systems of a comparable type to that found in Kujireray are semantically based (see Richardson 1967), while many others accept at best a partial semantic motivation (Allan 1977:292, Aikhenvald 2000:21 Denny and Creider 1986:217). Notably, many researchers make the assumption that while such systems may have historically have had a semantic basis, this structure has become corrupted over time so that in the modern day descendants of languages such as Proto-Bantu, classification has become largely formal, and arbitrary from a semantic point of view (Aikhenvald 2000:24, Batibo 1987). Arguments that noun classification systems are arbitrary rather than motivated are in large part based on “the diversity and apparent unrelatedness of the semantic categories characterising the nouns in a particular class” (Hendrikse 1997:196). Researchers comment on the impossibility of determining the semantic features required for membership of a given class (Grinevald and Seifart 2004:252) and state that even where a “semantic core” (Crisma, Marten and Sybesma 2011:254) can be established for a given noun class, many nouns will fall outside this core.

This debate hinges largely on the model of categorization adopted. Those who argue that such systems are structured arbitrarily do so from an objectivist standpoint, based on the classical model of categorization that is unable to make significant generalizations about class membership. The position is inevitable due to the impossibility of capturing the semantic bases of noun class systems using a necessary and sufficient conditions model of categorization and of defining semantic coherence on the basis of such an understanding of categorization. It is argued that it is adherence to a classical view of categorization that has led researchers to state that noun classification systems cannot be semantically motivated, when in fact it is the inadequacy of the classical view that is unable to account for the way in which they are.

The classical view of categorization is attributed to Aristotle and has proved remarkably durable in terms of its influence. It is a feature based model that purports that a given category can be defined in terms of a list of conditions, or features, that an entity must possess in order to be considered a member of a category. For example the category BIRD may be associated with features such as [has wings], [has two legs], [can fly] and so on. Such feature lists are known as necessary and sufficient conditions in that an entity either possesses a feature or does not and therefore is either a member of a category or not. Categories therefore have clearly defined boundaries, and no internal structure – all

members of a category are equally good exemplars of that category possessing as they do all necessary and sufficient conditions (Taylor 2008:39).

To attempt to account for the nature of noun classification systems using the classical view of categorization is bound to be unsatisfactory for a number of reasons. As an objectivist construct, it views a category as an objective entity that not only can be isolated from its 'natural environment' for purposes of examination and analysis, but also operates independently of this environment. It will be shown below that since categorization is a human cognitive process, then categories, and linguistic reflexes of categories such as noun classification systems, will necessarily be influenced by and therefore reflect human cognitive processes and lived experience. There are many properties of noun classification systems that cannot be explained using an objectivist approach. For example, an approach based on necessary and sufficient conditions cannot cope with exceptional or outlying members of categories, whereas in reality it is in fact very difficult to think of a category whose necessary conditions are not negotiable – a flightless penguin or a pigeon with one leg is still a bird. Furthermore, not only do humans have no difficulty in identifying atypical members of a category as belonging to that category, they also have very definite judgements about typical or atypical members (Rosch 1973), showing that categories have internal structure which, again, an objectivist view is not equipped to deal with.

It is argued that a cognitive perspective is better able to account for the structure of these human categories, and thus noun classification systems. If one adopts a model that appeals to cognitive processes in the explanation of linguistic structure then the impossibility of finding necessary and sufficient conditions for class membership becomes irrelevant. Instead notions such as encyclopaedic knowledge and metaphorical thought can be recruited to understand why seemingly unrelated entities are found in the same noun classes. Under such an approach, a class within a noun classification system, "far from being an arbitrary collection of semantic categories classified by a homonymous class prefix [...] represents a remarkably integrated and complex cognitive construal of some or other domain(s) of reality" (Hendrikse 1997:196). Particularly relevant is the model of radial category networks proposed by Lakoff (1987). The cognitive approach to the structure of noun classification systems will be discussed in greater detail in 2.1.2 below.

Furthermore, it should be noted that if one accepts that encyclopaedic and socio-cultural knowledge plays a role in the structure of noun classification systems, it may well be the case that this includes knowledge systems that are inaccessible to the researcher, either synchronically or diachronically. This points not to the fact that the relevant features are difficult to determine, therefore supporting the position that systems are arbitrary, but rather

describes the challenge of the linguist in unravelling the systems. It also reveals as fatuous the supposition that a system should be diachronically transparent and coherent in order to be analysed as semantically motivated.

While language change may have made the system less coherent, this does not mean that class membership has not been assigned in a motivated fashion, merely that these motivations are no longer accessible to us, or are not currently available due to a lack of relevant socio-cultural knowledge. Allan (1977:296) makes the important point that “the imposition of convention over perception must qualify any claim that noun classification operates freely according to the salient characteristic of the referent. It may be true that most noun classes have been established on a perceptual basis; but presumably most classification is fossilized by conventions that restrict innovation”. Indeed, the observation that noun class systems are not fully transparent is not problematic, but rather should be self-evident, when one takes into account the length of time that such systems have been in existence, subject to constant reanalysis and semantic change. Indeed, recognizing the fact that languages change may in fact be a help rather than a hindrance in the analysis of noun classification systems.

However, there is also a growing body of work on a variety of African noun class systems that not only provides empirical evidence for the semantic motivation of the structure of noun classification systems, but also suggests that this semantic structure may be rather more active in the minds of speakers than has previously been supposed. This includes psycholinguistic work by Sagna (2008, for Joola Eegimaa) and Selvik (1997, for Swahili), evidence from databases presented by Contini-Morava (1997, for Swahili) and Palmer and Woodman (2000, for Bantu) and Zawada and Ngcobo (2008 for Zulu) and Demuth (2000 on Swahili) who also provides acquisition data. Results from psycholinguistic experiments “suggest that speakers do indeed establish semantic associations between prototype schemas and noun class prefixes, and hence the proposed meanings of the prototypical schemas are cognitive units” (Selvik 1997:178). Indeed, Allan (1977:290) asserts that “the strongest evidence of semantic classification is the ability of native speakers to classify new objects consistently and easily on the basis of their observed characteristics”. This is observed both in the type of psycholinguistic investigations described above, and in the integration of loanwords into various classes. While such evidence is not definitive, since speakers may recruit noun classes in novel word tests on the basis of extrapolation from existing nouns, rather than from the underlying semantic of the noun class itself, the very fact that classification systems persist suggests that they retain at least some cognitive function (Delplanque 1995:6).

2.1.2 A cognitive approach to categorization

One of the most influential alternative accounts to the classical approach to categorization, and one adopted in various forms by cognitive linguists, is **prototype theory** as developed by Eleanor Rosch and her colleagues (1973, 1975, 1976, 1978). These studies demonstrate experimentally that human categories have an internal structure that is explicitly counter to the predictions of the classical view, and that this is due to prototype effects. For example, Rosch and Mervis (1975) show that for a category BIRD, subjects are able to identify certain entities, such as robins, as being members of this category more quickly than others, such as penguins, and that furthermore there is a consensus that a robin is a ‘better’ example of the category BIRD than a penguin.

These facts are attributed to prototype effects in the human process of categorization. A prototype is characterized as a “schematic representation of the conceptual core of a category” (Taylor 1995:59), or a “relatively abstract mental representation that assembles the key attributes or features that best represent instances of a given category” (Evans and Green 2006:249). There need be no one entity that actually instantiates the prototype; rather, a category can be modelled as a network, with more central and more peripheral members, according to how closely the entity in question comes to this “abstract mental representation”.⁶

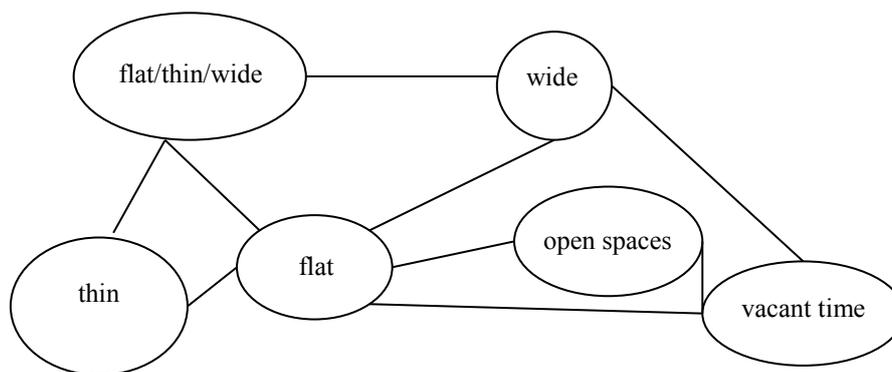
George Lakoff (1987) applies this principle to instances of overt linguistic categorization such as classification systems in his model of **radial category networks**, which represent “the most radical” of prototype phenomena (Lakoff 1987:153). While categories based on a prototype can be represented as networks where members are connected to a notional prototype to greater or lesser degree, radial categories constitute a kind of macro-category, networks of connected models whereby “[t]he non-central models are not predictable from the central model, but they are motivated by the central model and other models that characterise the links to the centre” (Lakoff 1987:153). This notion of a network is

⁶ This model is not uncontested in the psychological literature. However, much of the debate concerns the exact nature of the representation, and is theoretical rather than empirical (Posner 1986:56). It is not certain what lies behind these prototype effects; although it is often stated in the literature (and indeed in the present thesis) that prototypes reflect ‘conceptual structure’; what exactly is meant by this term, and where conceptual structure itself comes from remains a rather vague area. Taylor (2008) gives a review of various interpretations of prototype effects from researchers who cite factors such as frequency of encounter, and social and cultural factors as affecting the way we form categories.

important to an understanding of the structure of noun classification systems as it is able to account for the fact that for a given category it “may be the case that there is not one single feature shared by all members. It is enough to share some attributes, possibly metaphorically speaking, with some members of the category which in turn might share different attributes with still other members of that category” (Cobbinah 2013:90). Because of this, radial category models are highly relevant to any semantically based study of noun classification systems as they are able to represent the fluid and organic nature of noun class systems, and have been adopted by researchers in this area, including Sagna (2008) for the Joola language Eegimaa as well as Palmer and Woodman (2000:229) who account for the structure of noun classes in Bantu languages in terms of a “a network of radial categories based on a cross section of the cosmos, including physical experience, domestic scenarios, ritual scenarios and world view”, also explicitly accounting for the role that encyclopaedic knowledge and embodiment play in the formation of linguistic structure (see below).

Sagna (2008) uses a radial category model effectively in his analysis of the semantic properties of the noun class system of Eegimaa. This model and his analysis thereof can be used to illustrate some of the cognitive principles that underlie the type of categorization processes that form the basis of noun classification systems. Figure 1 shows a simplified semantic network from Sagna’s analysis of the noun class *ga-* (Sagna 2008:225).

Figure 1 Semantic network for Eegimaa noun class *ga-*



In order to understand the structure of this model, one must appeal to some of the theoretical notions invoked in the Cognitive Linguistics literature, namely **embodiment**, **encyclopaedic knowledge**, and **metaphor**. For example, there is no a priori, objective reason why the semantic domain of “flat, thin, wide” should form the basis of a noun class. However, from a cognitive perspective “reality is in large part constructed by the nature of our unique human embodiment” (Evans and Green 2006:47). Since language is directly related to conceptual structure, which in turn is influenced by our experience as embodied, physical beings,

existing in a social and cultural environment (Lakoff and Johnson 1980:24), it is natural to assume that noun classification systems are based on our lived experience. The notion of embodiment, as central to a cognitive view of language and an understanding of noun classification systems, can account for the fact that certain categories occur time and again in noun classification systems, whereas others are unattested – something that is impossible for an objectivist point of view that does not recognize the contribution of human cognition. In principle, “any facet of our knowledge of an entity is capable of playing a role in determining the linguistic behaviour of an expression that designates it” (Langacker 1991 :4) and we could expect to find encoded any number of physical properties – triangular, fluffy, sticky. In reality, this is not the case, and very similar categories occur in classification systems in unrelated languages across the world. For example, since language is created and used by humans, it is unsurprising that a human class is ubiquitous in African noun class systems; the natural egocentricity of humans is reflected in the language. We also see that it is qualities of spatial configuration such as roundness (like pots and fruits) and elongation (like many tools) that turn out to be salient enough to be encoded in the language. Returning to Sagna’s radial network above, since we experience the world physically, the placement of the category of spatial configuration “flat/thin/wide” at a central point in the radial network is therefore principled.

Closely related to the notion of embodiment is that of encyclopaedic knowledge. This pertains to the fact that “[c]oncepts[...] can only be comprehended[...] in a context of presupposed, background knowledge” (Croft and Clausner 1999:2). The meaning of a given word is not simply a list of features, but serves as a “point of access to vast repositories of knowledge” relating to that particular concept and reflecting the fact that “concepts relate to lived experience” (Evans and Green 2006:160). In an example pertaining particularly to verbs and verbal nouns, Delplanque (1995:6-7) uses the concept SEMER (English: SOW), to point out that correct interpretation of the associated linguistic expression requires not only grammatical or semantic information such as subcategorization frame and the like, but a whole complex of richly detailed information - with whom? where? why? - as well as attendant socio-cultural knowledge, such as the fact that certain work is done by women of a certain age. Such encyclopaedic knowledge, gleaned from our lived experience, can be seen as directly relevant to the way that prototypes are formed – our most common and recurring experiences with exemplars of a given category will contribute to the mental prototype developed. The concept of encyclopaedic knowledge can be used to account for another node in Sagna’s network, namely “vacant time”. He states that noun class *ga-* contains terms for periods of time that are “characterized by the lack of activity in the community” (2008:238) such as *gá-elo* ‘rest’, *ga-robo-ro* ‘literally staying at home /on a

holiday', *ga-ttaw* 'lunch' and *gá-jjimmel* 'dinner'. Without socio-cultural knowledge of what these terms entail, there would be no reason to propose that they form a category.

The final notion to be evoked as necessary for an understanding of categorization is that of **metaphor**. Lakoff and Johnson (1980) show that metaphor – i.e. when “one conceptual domain is systematically structured in terms of another” (Evans and Green 2006:35) – is central to human cognition and therefore to the way we use language. Indeed, the very notion of category, which is indisputably central to human cognition (Evans and Green 2006:168) depends on the ability and indeed propensity to abstract general properties and qualities away from individual instantiations. Cognitive semanticists posit that we use metaphor to map “rich and detailed structure from concrete domains of experience onto more abstract concepts and conceptual domains” (Evans and Green 2006:164) and this is how we are ultimately able to understand these more abstract ideas. Cognitive Linguistics approaches are based on such a premise – the grammar comprises abstract underspecified schemata that are elaborated by lexical material in conjunction with contextual evidence. With respect to the structure of noun classification systems, metaphorical thought can be appealed to in order to understand how smaller categories within the wider radial network come to be associated with each other. Take again Sagna's analysis of the semantic structure of noun class *ga-* in Eegimaa, as illustrated in Figure 1 above.

“Flatness is attributed to open spaces [...] which also include the feature of 'width'. These spaces can be considered flat when compared to the forests which dominate the Eegimaa people's environment. The spatial features of flatness and width which account for the semantic classification of concrete entities are also applied to nouns which refer to periods of time [...] time concepts in class 9 *ga-* contrast with those assigned to class 7 *fu-* [...] The former include periods of rest, conceived as flat like concrete objects because they are characterised by a lack of activities in the community.”

(Sagna 2008:147)

The connection that Sagna proposes between the first two semantic domains is easy to grasp – open areas are generally flat and wide. To understand the connection between flatness and the periods of rest, one must appeal to metaphor. There is no way, under a componential approach that we can motivate the existence of times of inactivity in this class by means of a feature such as [+wide]. However, by applying a spatialization metaphor such as TIME IS SPACE, extremely common cross-linguistically (cf. Lakoff and Johnson 2008), a possible

motivation is found. These periods of inactivity extend in time, rather than space; the idea of unlimited visibility maps onto the impression that they are not clearly delineated at start or finish by any particular event. This analysis is supported by the common cross-linguistic application of such a metaphor. Indeed the extension is represented in other areas of Joola languages, such as the appropriation of the verb of motion *jaw* ‘go’ in a periphrastic future construction. In other words, this is a conceptual extension that appears to be present in the minds of speakers of Joola languages.

2.2 Classification systems

Keeping in mind the cognitive view of categorization delineated in the sections above, I now provide a review of some of the literature on noun classification systems. There are many types of overt classification system in the world’s languages, such as numeral classifiers, verb classifiers and gender systems of the type found in Indo-European languages (cf. Grinevald 2000). Although I focus here on the type of noun classification systems that are broadly comparable to that found in Kujireray, a very broad overview of the types of classification systems and their areal distribution is shown in Table 3.

Table 3 Typology of classification systems

type	subtype	prototype
measure terms	/	widespread
class terms	/	widespread
classifiers	numeral classifiers	SE Asia: Thai, Burmese
	noun classifiers	Mesoamerica
	genitive classifiers	Micronesia
	verbal classifiers	North America: Cayuga Australia
noun class	noun class	Africa: Bantu
	gender	Indo-European

(adapted from Cobbinah 2013:101)

Generally speaking, these types of classification are situated on a cline of

grammaticalization. The types at the top of the table are least likely to be grammaticalized, and are encoded lexically, as in the English phrase ‘a glass of beer’ or ‘a pound of potatoes’, while those at the bottom represent fully grammaticalized systems, such as that found in Kujireray, where noun classification manifests in the morphosyntax as obligatory prefixation and agreement patterns. The intermediary types may exhibit varying levels of grammaticalization. Of course, even the creation of a typology of classification systems itself involves a process of classification. While it is useful to recognise different types of classification system it must be borne in mind that the same principles regarding Aristotelian versus prototype approaches to classification also hold here. That is to say, classification systems may be better or worse examples of the traditionally recognised types of system, and may exhibit properties of more than one. When one considers that such systems may often be in the process of grammaticalization and change, this seems quite obvious. Just as for the items classified within these systems, a prototype approach is more adequate for describing this dynamicity and crossover between systems.

That said, the system in Kujireray represents a fairly prototypical example of a noun class system. That is, the classes consist of a set of prefixes and their corresponding agreement markers on modifiers and predicate. The system is fully grammaticalized; class prefixes and agreement on appropriate targets are obligatory. A full treatment of the Kujireray noun classification system is provided in Chapter 4. The following consists of a discussion of some of the issues surrounding noun class systems. These include the question of what is actually being classified in such a system, whether the system is inflectional or derivational, and which sort of semantic domains are represented in the system.

2.2.1 What is being categorized in noun classification systems?

One of the debates in the literature on noun classification systems is whether it is the noun itself that is classified, or the referent of that noun (cf. Senft 2000:2). Indeed, many studies do not appear to make a distinction between the two. For example, Aikhenvald (2000:17) states that noun classes “usually contain reference to inherent properties of nouns, such as animacy and sex, and sometimes also shape and structure etc.”. It is clear that nouns themselves are linguistic items, with no properties at all regarding sex or shape. Either Aikhenvald is using the term ‘noun’ as a shorthand for ‘referent of noun’ or she is failing to draw a distinction – in fact the latter seems likely, as the terms ‘noun’ and ‘referent’ are used interchangeably throughout the text. While this may seem trivial, in fact it has important implications for the analysis. It will be shown below that both a noun categorization and a referent categorization analysis are problematic. For Kujireray at least, and other languages like it, neither position is wholly commensurate with the data. In this section I briefly outline

the arguments for either position, and then propose an alternative view.

Proponents of the position that it is nouns themselves, rather than referents that are being classified argue that every noun in the language obligatorily participates in the system (Grinevald and Seifart 2004:246). The system is highly grammaticalized – it is therefore a linguistic item which participates in the system. However, as Sagna (2008:223) points out, in many cases one lexical stem can occur with a number of different noun class prefixes (see also Allan 1977:290, Corbett 1991:44), yielding a number of related but distinct meanings. Indeed, *all* count nouns in such systems can occur with at least two noun class markers (and see 2.3.1 below for a discussion of number as a non-inflectional category), and additionally there are many stems which have the potential to form both verbs and nouns depending on the morphology with which they combine, whose meaning *and* word class are fully elaborated only when combined with a noun class prefix (or verbal morphology). These observations are illustrated in Table 4 using the Kujireray stem *tep* which, in combination with various noun classes prefixes, and without additional morphology, can convey a range of related but distinct meanings.

Table 4 Nouns formed from stem *tep* BUILD

	NCP	stem	gloss
a	<i>bu-</i>	<i>tep</i>	‘wall’
b	<i>u-</i>		‘walls’
c	<i>fu-</i>		‘wall, layer of wall’ ⁷
d	<i>ku-</i>		‘walls, layers of wall’
e	<i>e-</i>		‘build’
f	<i>ka-</i>		‘build’ ⁸

⁷ The second item in the gloss refers to way in which walls are built up incrementally, by laying down a full layer of clay bricks onto which another is placed and so on. *fu-/ku-tep* may denote these layers as well as the finished wall itself. Structures built in this way typically have five or six layers in a complete wall.

⁸ The fact that there are forms in two different noun classes, both of which can be glossed as ‘build’ is a major topic of investigation of this thesis and will be fully explored in Chapter 5.

These observations do not sit entirely comfortably with the position that it is the noun or lexical stem that is classified, since the same stem may be ‘classified’ in six different noun class prefixes. It is in fact more appropriate to say that noun class prefixes *create* nouns, rather than simply classifying them post facto. I follow Lucy (2000:330) in arguing that the noun class prefix and the lexical stem jointly contribute meaning (see also Kihm 2000, Sagna 2008, Cobbinah 2013); in other words meaning is constructional – see 2.2.4 below for discussion.

In concluding that it is not nouns that are classified, it may be assumed that it must be the real world referents of nouns. However, this view also has shortcomings which in fact parallel the criticisms of the opposing analysis as described above. That is, through the use of productive derivation operations and/or creative language use, one and the same referent can be referred to using forms in a number of different noun class prefixes. Indeed, lexical stems must combine with a noun class prefix in order to refer. Take, for example the lexical stem *nuh* ‘palm wine.’ Unlike *tep*, this stem does not have the potential to refer to a number of related concepts; its meaning is always ‘palm wine.’ However, the following two utterances are both acceptable in the same situation i.e. the speaker is offering the addressee some palm wine.

- (1) *nu-maŋ-e* *bu-nuh?*
 2S-want-PERF CL:bu-palm.wine

‘Do you want some palm wine?’

- (2) *nu-maŋ-e* *ji-nuh*
 2S-want-PERF CL:bu-palm.wine

‘Do you want a little palm wine?’

participant observation

In (1) the regular citation form in class *bu-* is used whereas in (2) the prefix *ji-* is used in its diminutive function (see 4.3.20 below). However, this does not imply that the portion of palm wine is particularly small; rather the diminutive is employed here with a pragmatic function, to downplay any notion of extravagance. In other words, the referent may be the same, but a different noun class may be chosen to represent a different conceptualization or

construal of that referent. Further this conceptualization is realized at the morphosyntactic level only in combination with the appropriate noun class.

This last observation is important because it implies that noun class markers and their agreement patterns are not in fact mere post hoc markers of membership in some category, but rather contribute elements of meaning in their own right. In the following I present an approach to meaning based on theoretical tools from the Cognitive Linguistics literature, in particular **constructions, concepts, domains, profiling** and **construal**.

2.2.2 A cognitive approach to noun ‘classification’

It was shown in the previous section that to view a noun classification system as classifying either nouns, or their real world referents, is problematic. It cannot be claimed that it is the real world referent that is classified, since one and the same referent may be referred to by forms using the same stem in various noun classes. Nor may it be the noun that is classified, because in fact a lexical stem is not a noun. It cannot surface in the language in isolation; it does not become a noun until it is combined with a noun class prefix. Together, the prefix and stem form the noun. As per Contini-Morava’s (2002:15) assertion for Swahili, a Kujireray noun “is a combination of a noun class prefix...with a lexical stem”.

So, bearing in mind that a noun in Kujireray is not realized until a lexical stem is combined with a noun class prefix, and that one and the same stem may be combined with several different noun class prefixes to yield differences in meaning along several different parameters – number, augmentative or diminutive, pragmatic effects – it is reasonable to propose that noun class prefixes are involved in the construction of meaning – indeed, that they carry meaning themselves.

The role of the noun class in contributing to meaning has been recognized by researchers, albeit in ways that may differ from the current analysis. For example, Aikhenvald (2000:9) states that “the noun classifier indicates general reference (e.g. ‘person’ for people or ‘animal’ for animates) and the specific noun following it further specifies this reference”. Crisma et al. (2011:261), commenting on Swahili nominals derived from verbs by way of a noun class prefix and the passive marker *-e*, state that “the exact meaning of the derived noun is a function of both the meaning of the suffix and the class to which the noun is assigned”.

This process of noun formation in Kujireray is understood in this thesis through the lens of theoretical apparatus from the Cognitive Linguistics movement – namely **concept, domain, profiling, construal** and **construction**. In the following I introduce these terms as they are

employed in this thesis, and show, using data from Kujireray, how these apparatus may be employed to illustrate the process of noun formation in Kujireray and, potentially, other languages with systems of noun classification.

2.2.3 Theoretical apparatus

The term **concept** is key in Cognitive Linguistics approaches, reflecting the fact that meaning is not generated by some isolated language faculty, but rather “resides in conceptualization” (Langacker 1991:92). Cognitive Linguistics recognizes not only a linguistic and a real-world level, but also an intermediate conceptual level. One of the principles of the framework is that “language refers to concepts in the mind of the speaker rather than to objects in the external world” (Evans and Green 2006:158). The conceptual level is an intermediate level between the referents in the real world and linguistic items used to talk about them; the conceptual realm is where the real world information is received, processed and organised.

A concept is a basic level of meaning; “the meaning of an expression is equated with the concept it expresses” (Croft and Cruse 2004:2). Concepts themselves are mental, not linguistic, but they are “evoked by linguistic expressions” (Langacker 1991:ix). This distinction will be represented in the text using the conventions of small caps to represent a CONCEPT, and inverted commas to represent ‘linguistic expressions’. No concept exists in isolation – it is always understood against a rich backdrop of linguistic and encyclopaedic knowledge, rather than as an isolated list of features. They are inherently related to another level or levels of knowledge, a kind of structure that underpins it, that serves as a base. The background against which a concept is understood is known as a **domain**. For example, the concept of circle cannot be understood without an underlying understanding of two-dimensional space, or the concept of arm without the human body. In these cases, two-dimensional space and the human body serve as the domains for their respective concepts. However, ‘basic level of meaning’ here should not be confused with atomic. Concepts nest within each other and in the majority of cases are semantically complex and may themselves serve as domains for other concepts.

Of course, these examples are rather simple ones; most concepts are supported by a knowledge structure that may reach “indefinite complexity” (Langacker 1987:61)⁹ and “any

⁹ Strictly speaking, most domains are in fact a complex of many domains, or a domain matrix. Conceptually it may be very hard to separate them, we view them as *gestalts*. For the current discussion it will not be necessary to separate domain matrices into their component domains.

cognitive structure – a novel conceptualization, an established concept, a perceptual experience, or an entire knowledge system – can function as the domain for a predication” (Langacker 1987:61). Furthermore, Fillmore states that “[w]hen we understand a linguistic expression of whatever sort, we have simultaneously a background scene and a perspective on that scene” (Fillmore 1968:74), evoking the fact that our conceptualizations are highly subjective not only physically but mentally and even emotionally. Evans and Green describe a domain thus:

“a schematization of experience (a knowledge structure), which is represented at the conceptual level and held in long term memory and which relates elements and entities associated with a particular culturally embedded scene, situation or event from human experience”

(Evans and Green 2006:211)

In essence the relation between concept and domain is a meronymic part-whole relation, distinct from taxonomic, schematic relation, although domains may enter into taxonomic relations (Croft and Clausner 1999:6). The selection of a given concept within a domain for particular attention (for example by invoking it linguistically) is known as **profiling**. The profiled concept is brought into focus, or “elevated to a distinctive level of prominence as the entity which the expression designates” (Langacker 1987:56), while the domain (or domain matrix) against which it is understood is backgrounded, although still essentially present in the cognitive representation evoked by the expression; indeed the profiled element cannot be understood without it.

An example of how concepts are profiled against domains is readily available in the way that stems in Kujireray combine with noun class markers to form nouns. Take, for example, the Kujireray lexical stem *sana* which can combine with various prefixes to create nouns such as *bu-sana* ‘kapok tree’ *u-sana* ‘kapok trees’ *fu-sana* ‘kapok fruit’ and *ku-sana* ‘kapok fruits’. Under such an analysis we can say that the lexical stem *sana* profiles a concept KAPOK (against a complex domain serving as a base for all sorts of knowledge about this plant – its size, shape, general location, uses etc.). The present analysis contends that *sana* does not, on its own, refer to just the tree, but rather profiles the concept of entire plant – its fruit, its leaves and all encyclopaedic knowledge associated with it – the lexical root itself is

underspecified in comparison to the various nouns it can form. It is only when this stem is combined with, say, the class marker *bu-* that the full interpretation ‘kapok tree’ can be retrieved. It follows then that, since all the meanings listed above may be associated with one and the same lexical stem, then the noun class prefixes must bear some of the semantic load. Since this stem is underspecified, in order to refer it requires additional semantic input. Taking the example of *bu-sana* ‘kapok tree’, it is then assumed under this constructional analysis that the class prefix *bu-* itself encodes some concept, that in combination with the concept expressed by *sana*, profiles the appropriate portion of that concept. If this is indeed the case it is pertinent to enquire what form this contributed meaning takes. It may be tempting to infer that *bu-* is associated with a concept such as TREE. However, there are many Kujireray nouns in *bu-* which do not denote types of tree, such as *bu-rotoŋ* ‘ash’¹⁰ and *bu-hina* ‘path’. Just as we do not wish to claim that the stem *sana* means kapok tree, or fruit etc. in its isolated form, we wish to assert that the noun class is also underspecified until it comes into contact with a lexical stem. It has meaning, to be sure, but this meaning is rather schematic. This implies a level of abstraction that is not compatible only with, say, the concept TREE, but with other concepts as well.

Underspecification and schematic meaning are central to an understanding of constructional meaning. Goldberg (1995) argues that “the meaning of an expression is the result of integrating the meanings of the lexical items into the meanings of constructions”. Constructional meaning is not compositional, with one concept stacking onto another until the desired interpretation is achieved. Rather it is a two-way process, where two or more concepts are superimposed on each other, and **elaborate** or instantiate each other, working in an interdependent way to yield the correct interpretation. In order for this to occur the meaning of individual items must necessarily be less than fixed.

Many accounts of classifier systems allude to these facts without taking an explicit underspecification or polysemy¹¹ approach. “Many systems allow variable choice of

¹⁰ Although the form *bu-rotoŋ* ‘ash’ is motivated in this noun class prefix on the strength of its semantic connection with trees, since ash most usually comes from charcoal, which in turn is produced from trees (see 4.3.17 below). This exemplifies the network structure of noun classes and paradigms.

¹¹ It is recognized that there are differences between analysing linguistic items as polysemous or underspecified. It is beyond the scope of this thesis to enter into debate as to whether noun formation in Kujireray constitutes one or the other. The crucial commonality in the two analyses is that linguistic items represent a broad domain, the correct concept within must be selected using the

classifiers; then classifiers may specify the meaning of a polysemous noun.” (Aikhenvald 2000:271) and “it often happens that a noun may be used with different classifiers, either to focus deliberately on some characteristic of its referent or simply because the referent happens to bear characteristics that are compatible with more than one classification” (Allan 1977:295). However, even when the significant semantic contribution of noun classes is recognized, the generally accepted picture of noun classes and classifiers is that they are a “superordinate term which indicates a larger class of prototypical referents to which the noun belongs as a subordinate member” (Aikhenvald 2000:275). The position taken here is rather that the noun class (or more accurately a combination of noun class prefix, noun class paradigm, and agreement pattern) are items with highly schematic semantics which profile the required portion of the domain evoked by the lexical stem.

Not all lexical expressions may be used in all noun class constructions of course; the semantics of the expression constrains this – for example *sana* could not be used with the noun class *a-* which is associated almost exclusively with humans, because there is no entity in the conceptual domain of *sana* that is compatible with this noun class. Conversely, many lexical stems are compatible with a number of different noun classes (or more precisely, noun class paradigms - see 2.3.3 below). This clusters of noun classes with which a given stem may be compatible have been referred to by Cobbinah as paradigmatic networks, and are discussed in detail in 4.3.29 below. Just as “the use of a verb in a particular syntactic frame indicates that the verb has a particular component of meaning, one associated with that syntactic frame” (Goldberg 1995:19), the domain evoked by a given stem in Kujireray restricts its distribution. Furthermore, the meaning of the stem, i.e. the domain that it evokes “remains constant across constructions; differences in the meaning of full expressions are in large part attributable directly to the different constructions involved”.

If an underspecification account is accepted, however, a small but non-trivial amendment to be made to Cobbinah’s assertion is that roots are not *unspecified* but *underspecified*. This evokes the fact that while roots may often occur in many different noun classes, they are at the same time constrained by their “essential conceptual content” (Langacker 1991:75) as to which constructions they may fall into. For example, Hopkins (1995) shows that roots in Joola Fogny can be classified according to the types of word class they may form. There are many roots that may only ever be used in nominal constructions (additional verbalizing morphology notwithstanding) or verbal ones, just as there are many, referred to by Hopkins

morphosyntactic context as well as contextual and pragmatic cues.

as “verbo-nominal” that may appear in either.¹² So while roots are flexible in the types of context they may appear, they are not unconstrained. The availability of various morphosyntactic slots to a given root may be referred to as its **categorial potential**. Delplanque (1995:19) describes such potentiality thus; “un radical possède certes un format propre qui le prédispose à designer un état ou un processus, un object comtable ou un object incomtable”.

Finally, the notion of **construal** is in turn closely connected to that of profiling – construal relates to the fact that, since we can conceive of one and the same, truth conditionally equivalent, entity or situation in different ways, so we can use different linguistic expressions to refer to them. This is illustrated in Kujireray in the alternation in (1) and (2) above, repeated here for ease of reference.

(3) *nu-maŋ-e* *bu-nuh?*

2S-want-PERF CL:bu-palm.wine

‘Do you want some palm wine?’

(4) *nu-maŋ-e* *ji-nuh*

2S-want-PERF CL:bu-palm.wine

‘Do you want a little palm wine?’

participant observation

The real world referent of both expressions may be the same, but the alternation serves to construe that referent differently, altering its cognitive presentation, in this case for pragmatic reasons. Indeed this is implicitly recognized in the literature; “Variability in

¹² In fact, all verbal roots must in principle be verbo-nominal, as all may form verbal nouns. It is assumed that Hopkins is referring to roots that may be used both verbally to denote events, and nominally to denote prototypical concrete nouns associated with the event, such as the Kujireray lexeme *tep* which can be used to denote an event of building *kutepe yaŋ* ‘they built a house’ and an entity that is the result of building: *fu-tep/ku-tep* ‘wall/s.’

‘overt’ noun class marking on the same root is the way of creating new words. In Bantu languages [...] prefixes can be substituted to mark a characteristic of an object” (Aikhenvald 2000:44). Aikhenvald (2000:43-44) also notes that for Bantu languages “manipulation of noun class realised in agreement has pragmatic as well as semantic effect...[and] choice of noun class agreement depends on what aspect of the noun is highlighted”. It may therefore be surprising that researchers continue to adhere to the fact that noun classification systems are involved in the categorization of either nouns or referents.

Construal is a particular type of profiling the term that refers specifically to the fact that speakers can choose to profile truth-conditionally equivalent states or situations in different ways. An example of alternating construals at the lexical level can be illustrated by the existence of the terms ‘leaves’ and ‘foliage.’ Both terms can be used to denote the same entity (Croft and Cruse 2004:64), but each term draws attention to different aspects of that entity. When ‘leaves’ is used, each individual leaf is profiled and individuated, whereas ‘foliage’ construes the leaves as a mass, with the individuality of the leaves that it is made up of backgrounded. This alternation is then reflected in the grammar – ‘leaf’ is a count noun and ‘foliage’ a mass noun. This example also illustrates a notion of grainedness. ‘Leaves’ evokes a more fine-grained construal of the entity in question, where we have zoomed in on the individual leaves. ‘Foliage’ on the other hand is more ‘coarse-grained’ – we have zoomed out to see the leaves as a homogenous mass.

The noun class system in Kujireray can be said to directly encode different construals of the same real world entity. For example, there is a noun class paradigm *e-/si-/ba-* which encodes singular, plural and collective semantics respectively. This paradigm is associated with stems denoting entities that are small and often found collectively, rather than individually, such as *halanga* LOUSE, *nuh*, BEAD and *sah* BEAN. Indeed, the citation form of these stems tends to be the collective form in *ba-*, suggesting that this is the default cognitive representation of such entities. Crucially, with respect to construal, while the *e-* form may be used to denote only a singular instance of the entity, *ba-* and *si-* could both in theory be used to denote the exact same number, the difference being a matter of construal rather than objective facts about the configuration of the entity. Taking for purposes of illustration the stem *halanga* LOUSE, the plural class *si-* will be selected when the number of lice is important, the collective class *ba-* when lice as a mass of entities is the desired construal. In fact this manifests in the grammar insofar as nouns in *ba-* (in this paradigm at least) are not compatible with numeral expressions. The difference in construal is represented graphically in Figure 2.

Figure 2 Alternating plural construals of *halanga* LOUSE

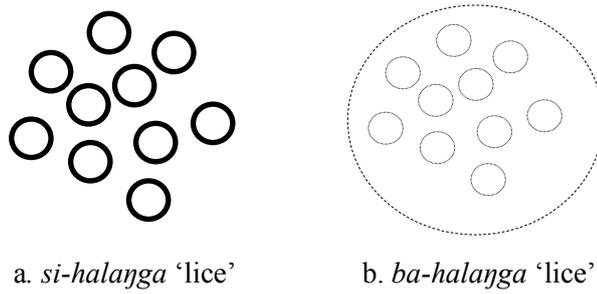


Figure 2a shows that the linguistic expression evokes a number of entities – in this case lice – and that the boundary of each individual entity is foregrounded in the cognitive representation, consistent with the observation that they may be counted. In Figure 2b, while the actual number of individual entities may be exactly the same, the expression does not focus on each individual, but rather construes the entities collectively, as a mass, as represented by the dashed outer circle. Indeed, in other paradigms prefix *ba-* has mass semantics - see chapters 4 and 5 for full discussion.

2.2.4 Constructional meaning

A constructional analysis entails that neither lexical stem, nor noun class have a fixed meaning, but that each has the potential to encode a variety of meanings depending on the construction in which it is realized. In this thesis the position is taken that these items are underspecified. Such an analysis has direct implications for a theoretical position on the nature of noun classes from a linguistic point of view - specifically whether noun classification systems are inflectional or derivational. In fact it is argued here that, under a constructional analysis, such a distinction becomes less relevant. Indeed the general observation prevails in Cognitive Linguistics approaches that there is not necessarily a sharp distinction between the lexical and the grammatical (Goldberg 1995:7). In the following, I present some of the relevant opinions in the literature, and argue that a constructional approach removes the onus of declaring the noun classification system as categorically inflectional or derivational. These ideas are also elaborated in 2.3, where I discuss the type of meaning that is associated with noun classification systems.

Noun classification systems of the type found throughout Africa are usually treated as inflectional – obligatoriness, high frequency, and small closed systems are all features associated with inflectional systems. However, it is well documented that noun classification systems of this type can also be appropriated for more derivational uses, particularly augmentative and diminutive, although these functions are treated as somehow separate, falling outside the inflectional system proper (Aikhenvald 2000:30, Allan 1977:290).

Mufwene (1980:247) also observes that despite the fact that the derivational role of noun classes (in Bantu languages) are often commented on, they are seldom treated as central, and to a large extent disregarded as secondary. Contini-Morava (2002:18) comments on the fact that Swahili noun classes tend to be divided into two sets – inflectional and derivational – although there is no formal motivation for this. Aikhenvald argues that while noun classification systems show features of both inflectional and derivation systems, “by virtue of being realised as agreement markers, noun classes have to be treated as an inflectional category” (2000:30). While such an obligatory nature is associated with a purely grammatical function, it is a somewhat arbitrary argument, falling out from a theoretical standpoint that makes an absolute distinction between inflection and derivation, grammatical and lexical. As mentioned above, within a Cognitive Linguistic approach, a principled distinction between grammatical and lexical is not drawn – grammatical structures, or constructions, may also carry meaning as well as nouns and verbs (Goldberg 1995).

Indeed, a distinction between derivational and inflectional function of noun classes does not appear to be entirely principled. Cobbinah (2013:92) observes of Baïnouk Gubëeher, a language spoken in Brin’s neighbouring village, that “this division is of doubtful usefulness considering that virtually all class markers can be used for derivational purpose”; a statement that holds equally of Kujireray (see Chapter 4 for discussion). In fact, in invoking the notions of underspecification and constructional meaning, as introduced in the previous section, it is possible to reduce the importance of making an absolute distinction between inflectional and derivational functions of noun classes. Cobbinah (2013:355) states that “[t]he derivation of nouns from unspecified¹³ roots is the main function of noun class prefixes in Gubëeher [...] so that in Gubëeher a distinction between derived and non-derived nouns is not viable”. Similar observations have been made for Bantu (Mufwene 1980) and Manjaku (Kihm 2000). In fact, in light of the view that “[n]ouns are the *result* of the classification and not the target” (Cobbinah 2013:118) it is deemed preferable for the purposes of the present discussion to adopt the terms **construction** or **formation** in favour of derivation.

¹³ A small but non-trivial amendment to be made to Cobbinah’s assertion is that roots are not *unspecified* but *underspecified*. This evokes the fact that while roots may often occur in many different noun classes, they are at the same time constrained by their “essential conceptual content” (Langacker 1991:75) as to which constructions they may fall into. See also 2.2.1 above.

2.3 Meaning in noun classification systems

Further evidence of the cognitive basis of noun classification systems are the fact that there are many cross-linguistic commonalities to be observed across systems. Niger-Congo noun classification systems in particular show striking similarities in the way their noun classification demarcates conceptual space, but comparable parameters can be observed in classification and classifier systems in many parts of the world. In the following I give an overview of some of the semantic domains that are commonly found cross linguistically in noun classification systems, and discuss in more detail two of these domains that are of particular relevance to the analysis of Kujireray data – number and physical configuration.

Number is the most frequently cited, and ostensibly uncontroversial semantic category associated with noun classification (although see 2.3.1 below for a discussion of the actual nature of this category). In addition, Aikhenvald (2000:271) identifies “three large classes: animacy, physical properties and function”. Selvik (1997:177) distinguishes degree of animacy, shape and degree of individuation (which correlate with physical properties) and participants (or semantic roles) in an action chain (which has parallels with the notion of function). Schadeberg (2001:8) states that “noun classification found in Swahili (and in some other Niger-Congo languages inside and outside Bantu) is historically based on cognitive distinctions such as human, plant, animal, congregation, size shape etc”. As well as physical properties and function, Cobbinah (2013:94) cites cultural concepts (e.g. maternity, fertility) and taxonomical domains as relevant to the noun classification system in Baïnounk Gubëeher. Lakoff (1987) and Dixon (1986:108) also speak about socio-cultural categories specific to the speakers of a given language. Under a Cognitive Linguistics analysis all these properties are motivated. Animacy, as a defining property of the human condition is maximally salient. Indeed many noun classification systems, including that in Kujireray, exhibit classification specifically for humans. Physical properties of objects are also based on embodied experience, and socio-cultural categories on encyclopaedic knowledge.

2.3.1 Number

Talmy (2000:28) notes that in general, “grammatical elements tend to specify topological notions such as linear extent, locatedness, singularity and plurality”. The grouping of these concepts together reflects the fact that number should in fact be thought of as more than a mere inflectional category. This is further supported by the fact that such semantic features as number and physical configuration are commonly found in classification systems. The fact that such notions are grouped together supports the argument that these semantic features may in fact represent facets of the same cognitive domain, namely space.

It can be easy to forget that “[s]uch features are not predetermined a priori semantic universals ...but a set of common patterns in human conceptualization of space” (Evans and Green 2006:68). Rather, the most prototypical nouns being concrete entities, existing and defined within the basic domain of space, means that noun classes are representations of our conceptualization of space, hence why most semantic analyses seem to be based on these types of spatial category

The most widely accepted function of noun classes is that they encode number. This is indeed the case in Kujireray. A lexical stem may form nouns with three different number values purely on the basis of the noun classes in which the nouns are formed – there is no additional number-marking morphology. However, like the noun classes themselves (see 2.2.4 above) number in noun classification systems is generally treated as an inflectional category (Schadeberg 2001:7). Other researchers argue that the complexity of the category strongly suggests that Niger-Congo number systems do not “fit neatly into the traditional distinction between ‘derivation’ and ‘inflection’” (Contini-Morava 2000:23).

Taking the position that language is a reflection of conceptual structure, then number, rather than being a purely grammatical category, reflects the cognitive construal of quantity in spatial terms (Hendrikse 1997:205). Many researchers have appealed to a notion of individuation in this area. This refers to “whether or not entities are individuated (boundedness) and if so, their unity and relation to their parts, and their multiplicity if more than one individual is construed” (Croft and Cruse 2004:64). Mufwene (1980) proposes the treatment of count and non-count distinctions in Bantu noun class systems such as Lingala as an opposition between individuation and non-individuation. Contini-Morava, too, proposes, using Swahili data, a continuum ranging from most individuated to the least individuated (2000:18). Crisma, Marten and Sybesma (2011:257) posit that what may actually be involved is semantics of “individuals and groups” rather than plain grammatical number. Indeed this is supported by the fact that ‘mass’ is a salient semantic parameter for class membership in many noun class languages. The semantics of mass, which has a clear physical basis, is incongruous with the idea of grammatical number. Furthermore, claims such as those in Sagna (2010:15) that the category of number (presumably singular/plural) is inflectional whereas collective is derivational seem to draw a somewhat artificial distinction. These categories do after all form paradigms together as evidenced by the singular/plural/collective triads found for many noun roots. Furthermore, as demonstrated in 2.2.3 above, in real world terms, the plural and collective may be used to denote identical numbers of a given entity – the difference is a matter of construal. The plural is used if the speaker wishes to individuate each individual entity, to count them for example. The collective is used when individuation is not relevant. The status of each entity as an

individual is implied – it is not the same as a mass noun – but not foregrounded.

Furthermore, under the present analysis number is not understood as a value associated with an individual noun class, but one with rich semantic value and realized at the level of the paradigm - that is the oppositions that obtain within sets of noun classes that form singular/plural dyads, singular/plural/collective triads or mass monads (Cobbinah and Lüpke 2014) (see 2.3.3 below). Schadeberg (2001) puts it concisely when he states that, for Swahili “number distinctions are typically *intertwined* [italics RW] with nominal classes”. Indeed, it is typical of noun classification systems that there is more than one noun class associated with singular, or plural, or so on semantics. For example, *e-*, *fu-*, *ka-*, *bu-* are all noun classes which may be associated with singular semantic in Kujireray (as part of a singular/plural paradigm pair). The class into which a root falls depends not only on its construal as individuated or not, but on other semantic aspects such as physical configuration.

2.3.2 Physical configuration

Physical configuration, or shape, is an important cross-linguistic parameter of semantic classification in nominal categorization systems (Aikhenvald 2000, Sagna 2008:222). Indeed it is posited that the semantically transparent Proto-Bantu noun class system was “based mainly on shape and configurational meaning” (Grinevald and Seifart 2004:252, also Denny and Creider 1986). It is interesting to note, and provides support for a cognitive reality to the semantic structure of noun classification system, that similar features are found in languages with other systems of classification. For example, Cantabrian Spanish assigns nouns to masculine or feminine gender according to the physical configuration of the referents (Holmquist 1991).

If one accepts that, as argued above, the category of number is a reflection of the “cognitive construal of quantity in spatial terms” (Hendrikse 1997:205), it is unsurprising that physical configuration should play a role in the structure of noun class systems; prototypical nouns denoting concrete entities refer to objects which possess spatial dimensions (Denny and Creider 1986:221). Furthermore, this observation adds weight to the argument that number itself is based on conceptual notions of individuation and boundedness rather than being a purely grammatical category.

The types of physical configuration often cited as visible to noun classification systems are round, long and thin, and extended. Denny and Creider (1986) also posit “outline” and “solid shape” in their discussion of the Proto-Bantu noun classification system. Sagna (2010:143) also asserts the primacy of shape in the noun classification system of Eegimaa. For example animals such as fish and birds are classified based on their perceived physical shape and the

interactions humans have with them, rather than on their membership in a category of animals.

Importantly, physical configuration can be understood as an embodied concept – physical properties of entities are perceived according to how they define our interaction with them (Contini-Morava 1994). Indeed, as argued above, classification according to physical properties cannot be motivated without appealing to lived embodied experience of the world. While there is a tendency in the literature, and indeed in this thesis is to argue for the highest possible level of abstraction in assigning semantic values to noun classes and paradigms, it is important to remember that these abstract concepts too are not a priori and are grounded in the real world and, moreover, our experience of it. Thus it is worth keeping in mind Berlin's (1977) assertion that, for example, classes associate with roundness, may have their origins in terms for fruits, real world entities, highly salient to humans, and that their most salient physical characteristics then carried over to other items as the classification systems became more grammaticalized.

Also clearly related to the notion of physical configuration is the often cited function of certain noun classes in such systems to be used with augmentative or diminutive function. While the position taken in this thesis is that a strictly defined distinction between inflectional and derivational function is fallacious, this function of noun classes is worth considering separately since such noun classes are used in this way for pragmatic effect – that is the lexical item in question is used in a different class to that in which it is usually found to focus on certain (real or perceived) characteristics of the entity (Sagna 2008:224) (see Chapter 4 for further discussion of this function of noun classes in Kujireray).

2.3.3 Paradigms

The final notion to be introduced with respect to the analysis of the Kujireray noun classification system is that of the **paradigm** – that is monadic, dyadic and triadic groupings of noun classes. Using the paradigm, rather than the individual noun class, as the basic unit of analysis in an examination of the noun classification system can be valuable in two respects – firstly it handles easily the one-to-many and many-to-one relations observed in these groupings; secondly it accounts for the fact that identical noun classes can encode different number values with different stems.

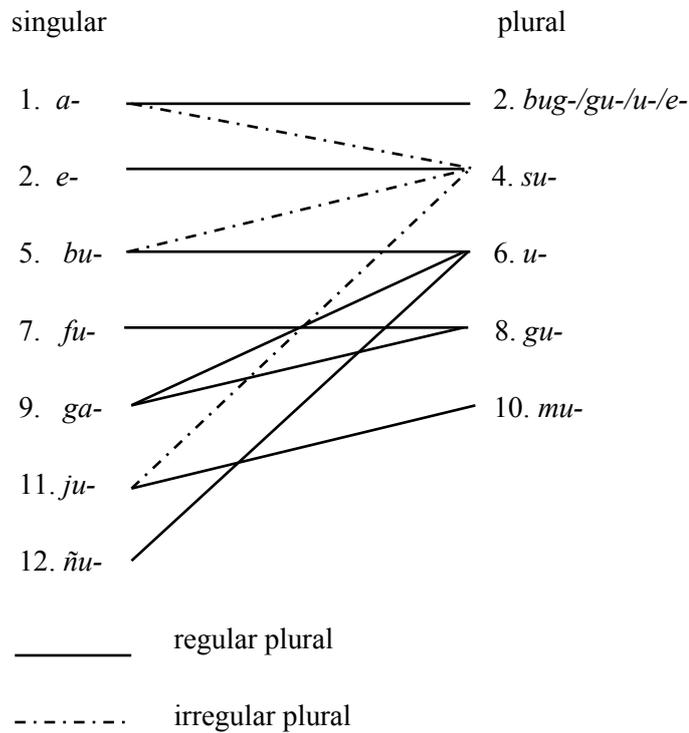
The majority of the literature on noun classification systems treats the individual noun class as the basic unit of analysis. That is to say, the system is still described on the basis of each individual class with respect to its semantic content, agreement patterns and so on. Such an approach persists in the literature despite the fact that it has long been recognized that these

individual noun classes exist in paradigmatic relationships, either in singular/plural pairs, singular/plural/collective triads, or mass monads, and that one and the same noun class can be associated with different number values in different contexts. In fact, it is not only individual noun classes that carry meaning, but also the oppositions between them whether this be the paradigms they form, or the distinctions between paradigms. Many researchers have noted that it is becoming more and more apparent that it may be more fruitful “to look at the [noun classification] system as a whole, not just class by class” Hendrikse (1997:186), and that the class prefixes may form a system expressing “intercategorical relations between the classes” Hendrikse (1997:196). “Some of the functions of the noun class system are partly lying outside the scope of the single noun class markers and have to be located on the level of the complete classification system they are part of and the paradigmatic relationships between noun class markers” (Hendrikse 1997:197). Podzniakov (2010) observes that while there tend to be multiple classes associated with either singular and plural semantics in noun class systems, these classes do not form one-to-one correspondences (2010:89-90). This is not a new observation in the study of noun class systems, but Podzniakov, rather than treating these facts as somewhat troublesome exceptions recognizes that in fact these crossed paradigms can be most instructive in an examination of the semantic structure of noun class systems.

In the following I explain some of the shortcoming of the conventional class by class method of analysis, and present some of the arguments for adopting a paradigm based analysis. I present the apparatus that has been developed in an attempt to capture the semantic structure of the Kujireray noun class system in a more meaningful way.

Figure 3 is adapted from Sagna (2008:196) illustrating the prevalent convention in modelling noun classification systems. It represents the noun classification system of Eegimaa, one of the most closely related Joola varieties to Kujireray, so a discussion of the appropriateness of this approach is directly applicable.

Figure 3 Model of the Eegimaa noun classification system



This illustration captures some of the broad generalizations about the Eegimaa noun class systems, namely that certain noun classes are generally associated with singular semantics, others with plural semantics, and that certain of these classes form regular or less regular pairs with a singular/plural opposition between them. However, there are important facts about the system that are obscured by such a model. Indeed Sagna subsequently gives a detailed account of the semantic basis of the noun class system, giving many details that are either obscured or directly contradicted by a visual representation of this type.

The diagram shows that there is not a one-to-one correspondence between singular and plural classes. Furthermore, Sagna (2008:213) recognizes that “one-to-many” and “many-to-one” relations between singular and plural classes have a semantic base. Podzniakov (2010) attributes this to the fact that these types of stems have a number of semantic features that are relevant to the noun class system, but since nouns are formed with only one affix, they are in competition with each other. While such observations are not directly contradicted by the class by class approach, adopting the paradigm as the basic unit of analysis means that such facts are made explicit and are thus necessarily at the heart of the analysis. Taking the class as the starting point of the analysis requires positing a common semantic base for all items that form a singular in a given noun class, which may then be differentiated on the

basis of the prefix they form a plural in. Under a paradigm approach, the semantic distinctions are first observed, and then any commonalities cross paradigm (due to the same noun class occurring in more than one paradigm) can be commented on subsequently. Furthermore, for the dyads and triads, it is observed that some of these are regular and productive, while others are more marginal. However, these exceptions are often glossed over; Sagna (2010 1414) states that “unproductive correlations can be seen as exceptions to the regular and productive singular-plural formations”. In fact, it is posited here that such exceptions, rather than being problematic, can in fact be instrumental in understanding the true structure of the system (Podzniakov 2010:89). We can see that such an approach not only aids in understanding exceptions to more regular or productive singular/plural pairings, but also has “greater explanatory power” (Cobbinah 2013:107) with regards to the semantic structure of the noun class system. If semantic motivations can be identified for marginal paradigms, this may in turn be illuminating with respect to the semantic structure of the regular and productive paradigms (Goldberg 2003:219). It is also posited that it is important to include the frequency of occurrence of paradigms in the language. In doing so, not only the classes and paradigms, but the overall structure of the system itself can be viewed in terms of prototypes.

The paradigm approach is particularly useful when a given noun class may be associated with more than one number value, a fact that is obscured by a model such as the one in Figure 3, even while the researcher recognizes the fact in his analysis. For example, Sagna (2008:220) states that, as well as its very common function as a singular noun class, class *e-* is also “used as a collective for...nouns denoting plants” (which form an individual, or singular noun in *ga-* or *fu-*). In this case it is clearly erroneous to call *e-* a purely singular class. In addition, *mu-*, as well as its function as the plural correspondent to diminutive singular *ju-*, “encompasses nouns for which singular/plural pairing is irrelevant [such as] liquids and abstract terms” (2008:259). The model does not indicate that *mu-* can occur as a singleton paradigm, apparently carrying semantics of mass. Sagna (2008:265ff) also acknowledges the existence of singular/plural/collective triads, where the noun class representing collective meaning is ostensibly a singular marker according to the model. If one added additional nodes to signal these additional functions, However, it may appear as if they were separate linguistic entities, and it is not certain that this is desirable.

These observations indicate that such traditional approaches often fail to account for, or sideline, important facts about noun classification systems. The noun classes appear to interact in a way that requires another level of complexity in the description. More specifically, a model is called for that can explicitly capture the fact that the number value of a given noun class is not attached to that class per se, but falls out from the oppositions that

noun class may occur in. For example, it would be more accurate to state for Eegimaa, that when a given stem may form a noun in both *ju-* and *mu-*, these classes form a singular and plural noun respectively. When a stem may form a noun in *mu-* only, this noun will be interpreted as having mass semantics.

Cobbinah (2013) provides an extensive analysis of the Bāinounk Gubēeher noun class system using a paradigm approach. With respect to observations such as those made in the previous paragraph, he provides the metaphor of atoms within a molecule; the individual noun classes are the atoms which combine to make up the molecular paradigm. While it is important to understand the nature of the atomic components, the nature of the bonds between them is equally important to understand (Cobbinah 2013:107). That is to say, it is not only the noun class, but also the noun class paradigm with which a given lexical stem combines that carries meaning. Like Podzniakov, Cobbinah (2013:108) shows that in Bāinounk Gubēeher, phonologically identical noun class prefixes can combine with various lexical stems to produce nouns with a variety of semantic features.

Table 5 Gubēeher nouns in noun class prefix *ba-*

	noun	gloss	number value
a	<i>ba-taata</i>	‘sweet potatoes’	unlimited plural
b	<i>ba-goori</i>	‘cowrie shells’	unlimited plural
c	<i>ba-xon</i>	‘ronier palm’	singular
d	<i>ba-rahi</i>	‘black’	property/mass

The terms in the right hand column show that the four items, all in *ba-*, have quite different number values. The forms in (a-b) are unlimited¹⁴ (as opposed to count) plurals, (c) is singular, and (d), being a property can be interpreted as possessing mass semantics (see Chapter 5 for discussion). However, taking the first items *ba-taata* ‘sweet potatoes’ and *ba-xon* ‘ronier palm’, which have plural and singular semantics respectively, this seemingly confusing mismatch becomes less problematic when one examines the noun class paradigms into which they fall. The lexical stem *taata* forms its singular, count plural and unlimited plural in *bu-*, *i-* and *ba-* respectively; these noun classes constituting a paradigm which

¹⁴ Cobbinah’s term ‘unlimited plural’ (following Sauvaot 1967) is not adopted in this thesis and corresponds to the term ‘collective’.

contains many lexical items that may denote tubers. The stem *xon* on the other hand forms its plural using the productive plural suffix *oy* suffixed to the singular form *ba-xon*. Similarly, *ba-rahi* ‘black’ belongs to a one-class paradigm that contains many property terms derived from states.

It is immediately apparent that an examination of the paradigms, rather than the individual noun classes, removes many of problems associated with a semantic analysis of noun classification systems of this type. Indeed, not only does this approach solve issues that are problematic under a class by class analysis, but it can capture significant facts about the system that would otherwise be overlooked. This is illustrated by an examination of the two forms denoting unlimited plural items – *ba-taata* ‘sweet potatoes’ and *ba-goori* ‘cowrie shells.’ While it is true that these forms share the semantic feature of unlimited plural, when one examines the paradigms into which they fall, distinctions can be made between the two. As mentioned above the stem *taata* participates in a singular/count plural/unlimited triad associated with tubers. On the other hand *goori* falls into the *gu/ha/ba-* triad, which is associated with grains, kernels and other small organic items.

Although a paradigm approach is rather more subtle than the traditional approach treating singular/plural pairings together, Schadeberg (2001:10) makes a criticism of the latter – which he terms the gender-plus-number approach – that may also be applied to a paradigm analysis:

“there is no way to express the identity of forms occurring in two genders; such identical sets of class-and-agreement markers become inexplicable coincidences [...] It is only when we recognize the nominal classes as the primary building blocks of the Swahili (Bantu) system that we can identify, for example, a single class [...] which then functions in two different class pairings [...]. What is problematic about this (rather traditional) noun class analysis is the precise status of these singular plural class pairings, or genders. These pairings are clearly part of the grammar.”

It is recognised in the thesis that individual noun classes have a semantic reality of their own – meaning does not reside purely at the level of the paradigm. However, it is argued that much of the meaning associated with the noun classification system – in particular that of number values - is a product of oppositions between paradigms, and this observation is sufficient to justify the paradigm as the starting point of analysis. It is not entirely true that “there is no way to express the identity of forms occurring in two genders [paradigms]”.

Wherever two paradigms share a phonetically related class marker or agreement pattern, this is noted and discussed, without making a priori judgements about the identity of the class marker.

In the following I present a new model that aims to capture some of this complexity and interaction. I use Kujireray data, and while I do not model the full system (see Chapter 4 for a full discussion) I use data comparable to the Eegimaa facts discussed in the previous paragraph.

Table 6 Noun formation in Kujireray

stem	concept	paradigm			forms		
		1	2	3	1	2	3
<i>hem</i>	WATER	<i>mu-</i>			<i>mu-hem</i>		
					'water'		
<i>et</i>	BAG	<i>ba-</i>	<i>u-</i>		<i>ba-et</i>	<i>u-et</i>	
					'bag'	bags	
<i>siho</i>	CAT	<i>e-</i>	<i>si-</i>		<i>e-siho</i>	<i>si-siho</i>	
					'cat'	'cats'	
<i>halanga</i>	LOUSE	<i>e-</i>	<i>si-</i>	<i>ba-</i>	<i>e-halanga</i>	<i>si-halanga</i>	<i>ba-halanga</i>
					'louse'	'lice' (count)	'lice' (coll.)
<i>ndofij</i>	BRAID	<i>ji-</i>	<i>mu-</i>	<i>ba-</i>	<i>ji-ndofij</i>	<i>mu-ndofij</i>	<i>ba-ndofij</i>
					'braid'	'braids' (count)	'braids' (coll.)

The column **stem** contains the lexical items that are used to illustrate the paradigms. Each item in this column is a lexical item that forms nouns in a different paradigm. The column **concept** represents the analytical position that noun formation in Kujireray is constructional – the stem itself does not refer but represents an underspecified conceptual item which must be further elaborated (see 2.2.3 above). Perceived characteristics of this concept determine its compatibility with a paradigm, in which it consequently forms nouns. The triple column **paradigm** shows that noun classes do not exist in isolation, but combine with each other into paradigms. These paradigms may be monadic (e.g. *mu-*), dyadic (e.g. *ba-/u-* and *e-/si-*)

or triadic (e.g. *e-/si-/ba-* and *ji-/mu-/ba-*). It is the shape of the paradigm that determines the number value associated with the noun class. In other words, a noun class does not have a number value outside the paradigm, this meaning arises only in oppositions. The shape of the paradigm (i.e. monadic, dyadic or triadic) is systematic in determining the number values, as shown in Table 7.

Table 7 Number distinctions associated with paradigms

shape of paradigm	number distinction
monadic	mass
dyadic	singular/plural
triadic	singular/plural/collective

These oppositions are represented in the data in Table 6. For example, the stem *hem*, which represents the concept WATER forms a noun in the monadic paradigm *mu-*, thus the interpretation of *mu-hem* ‘water’ is necessarily as a mass noun. Since the stem *siho*, representing the concept CAT, forms nouns in the paradigm *e-/si-*, the resultant nouns are singular and plural respectively viz. *e-siho* ‘cat’ and *si-siho* ‘cats’. Table 6 also uses colour to help capture the multidimensionality of the Kujireray noun class system. The colours are used to highlight the fact that a formally identical noun class marker may appear in more than one paradigm, and that furthermore where it appears in a paradigm of a different shape, or in a different ‘slot’ in a paradigm, its value in the formed noun will be differently interpreted.

A final observation, implicit in the examples above is that one and the same number distinction can be encoded with two different pairs of noun class prefixes. It follows therefore that these classes are associated with some sort of meaning beyond the singular plural distinction; otherwise these alternations would be redundant. While expression of number is an important function of the noun class system, there is no one to one correspondence between a given number value and a particular noun class. Singularity, for example, may be associated with several different noun classes. It is argued that for Kujireray these alternations are based on perceived properties of the concepts represented by the stems.

2.4 Verbal nouns

In addition to the analysis of the structure of the noun classification system in Kujireray,

particular attention is paid to verbal nouns in this language. Having argued at length that the system is semantically motivated, it is pertinent to enquire how items denoting situations are integrated, and whether or not comparisons can be drawn with more prototypical nouns denoting concrete time stable entities. In the following sections, I define what is understood by the term verbal noun and discuss some of the literature on the topic with particular reference to the issues relevant to the Kujireray data, and to the Cognitive Linguistics approach adopted in the thesis.

The term **nominalization** essentially means “turning something into a noun” (Comrie and Thompson 1985:349). A verbal noun is therefore usually understood as a verb that has turned into a noun – a canonical derivational process. However, as discussed in 2.2.4 above, while the notions of inflection and derivation are not globally rejected, they are not considered particularly useful in a discussion of noun formation in Kujireray. Especially when there is a proliferation of lexical stems that can have nominal or verbal interpretation according to the morphosyntactic context in which they surface, to posit a base meaning from which the other meanings are derived goes directly against the position that these stems (and the elements with which they combine) are underspecified and that meaning is formed constructionally. Verbal nouns are therefore understood in this thesis therefore not as nouns that are derived from verbs, but as nouns formed from lexical stems that have verbal potential, and which, even in a nominal morphosyntactic context, continue to denote a situation, as opposed to (or quite possibly as well as) a concrete entity.

Since, under a functional analysis grammatical behaviour is “regarded as SYMPTOMATIC of its semantic value, not the sole or final basis for a criterial definition” (Langacker 1987:61), placing such a stem into a nominal rather than a verbal construction must have a cognitive motivation. Such a process “involves some type of conceptual reification” (Langacker 1987:63). As such the situation (whether state or event) denoted by a verbal root “becomes conceptualized as an object or a mass, one that can participate in many of the same actions – such as being given or gotten – a physical quantity” (Talmy 2000:43). Greenberg (1978:78) observes that “as soon as we wish to talk about an action as such, we nominalize it”. More specifically, it is suggested by Talmy (2000:45) that the “reified representation of an action would seem overall to permit a greater range of conceptual manipulations” such as pluralization, modification, quantification” (Talmy 2000:44). Naming an object categorizes it, or puts it into an equivalence class (Tversky 1986:63) – an observation that is particularly relevant to a study of verbal nouns in a noun classification system.

Cognitive Linguistics approaches characterize linguistic phenomena as semantic phenomena (Szawerna 2004:147) which in turn reflect conceptual structure. It is therefore appropriate

first to show how such approaches model the conceptual processes underlying nominalization. “Conceptualization of dependent states of affairs as things originates from a number of cognitive similarities between dependent states of affairs and things. Like things, dependent states of affairs are scanned **summarily** rather than **sequentially**” (Cristofaro 2007:102). These notions were first introduced by Langacker (1987) to explicate the differences between our conceptualizations of entities and situations; broadly speaking, actions are conceptualized as progressing through time – sequentially – whereas things, which are time stable, are conceptualized as a whole, without a time element – summarily.

These notions are instrumental in explicating the difference between verbs and verbal nouns – while an situation denoted by a verb in full verbal context, with tense-aspect-mood morphology and other typically verbal categories, the event is sequentially scanned; when the event is denoted by a verbal noun, the event is reified and thus summarily scanned. This is illustrated in Figure 4 using diagrams from Langacker (1987, 1991) using sentences containing the English verb *examine*, and its nominal counterpart *examination* both of which can be understood as belonging to the concept EXAMINE (the examples are based on Grimshaw 1990:47ff).

Figure 4 Sequential and summary scanning



- a. ‘The doctor examined the patient.’ b. ‘The doctor’s examination of the patient’

In Figure 4a, the circle-square pairs represent the evolution of a process through time, with the passage of time itself represented by the arrow beneath (cf. Langacker 1991:80). When *examine* is used in a verbal context, such as ‘the doctor examined the patient’ it is the process itself, and its development through time that is profiled. This is represented above in Figure 4a by the heavy arrow. It is the process of examination itself and its dynamic nature that is profiled in this case. Each of the component states and actions that make up the event are viewed – conceptually speaking – sequentially. If the form *examination* is used, however, as in Figure 4b, the speaker still wishes to view the event, but this time it is viewed as a whole. Rather than describing an event and focusing on its development through time,

she wishes to name it. The dynamic nature is backgrounded (but still retrievable) and all component parts of the process are viewed simultaneously – or summarily scanned – as is represented by the heavy circle surrounded the process in Figure 4b. Note that this is essentially a difference in construal. The two constructions may refer to one and the same event, but this event is represented differently, conceptually speaking.

The form representing sequential scanning in *the doctor examined the patient* the verb is combined with the past tense morpheme *-ed* and occurs in an argument structure construction containing a subject and object which correspond to the Agent and Patient roles at the semantic level. In the form representing summary scanning in *the doctor's examination of the patient*, not only does the stem combine with the nominal suffix *-ation*, but the Agent and Patient are encoded using a *'s* genitive and *of* genitive respectively, both of which are typically associated with nouns.

However, in a detailed analysis of verbal nouns in a language it is necessary to supplement this model. The examples in Figure 4 show different points on a scale between verbal and nominal realization of a stem. However, many languages, Kujireray among them, have more than one type of verbal noun, with different functions and morphosyntactic behaviour. “[T]he functions and forms of nominalizers and nominalization constructions are diverse and extended” (Yap et al. 2011:2). Many of these forms exist between these canonical verbal and nominal poles exhibiting semantic properties somewhere between summary and sequential scanning, and a mixture of nominal and verbal syntactic properties accordingly. For example, in English exists the additional structure *the doctor's examining the patient*. This construction exhibits elements of both verbal and nominal morphosyntax. The Agent participant is encoded as an *'s* genitive possessor, as per the nominal structure, but the Patient participant is a direct object retaining the argument structure of the verbal construction. In addition, the form ‘examination’ can be used in constructions such as ‘the examination was on the desk’. In this case the form denotes an entity, contained within the domain represented by the concept EXAMINE. Despite the fact that it is homophonous with the form in Figure 4b, as this is a concrete entity, it has no argument structure. A form in a construction such as ‘the doctor's examination of the patient’ must necessarily be interpreted as denoting the event of examination, rather than the concrete paper examination.

As per the observation above, it is argued that different types of verbal noun denote different construals of the situation represented by the stem. While all nominalizations of this type are motivated by the wish to reify the situation, the situation may be reified in more than one way. Specifically, these conceptualizations may differ in the relative cognitive prominence they afford to the structure of the situation, in terms of the participants, individual subevents

and so on. In the following sections, I review some of the literature on the function of and syntax of verbal nouns, with particular focus on research into verbal nouns in noun classification languages.

2.4.1 Function of verbal nouns

There are a wide range of functions associated with verbal nominalization. If nominalization entails the reification of an event in order that speakers may conceptually manipulate it, it is important to realise that there is more than one motivation for this reification; “[w]hile all nominalization kinds share a nominal profile, they vary as to which elements of the underlying process [...] become recognised as a region and profiled” (Szawerna 2004:149). As mentioned in 2.1.2 above, Delplanque (1995:7) asserts that a particular concept may be nominalized in different ways according to discourse aims. For example, a speaker may wish to recruit a concept, such as SEMER (SOW) to express either a process – *il faut semer* – or a quality – *mon champ est semé* – or an agent, patient, time period and the like. All of these concepts are part of the rich, encyclopaedically informed domain that is represented by the form SEMER. He states (1995:22) that “on peut envisager le même verbe comme un processus en cours, ou comme la fin spécifique d’un processus ou au contraire comme un bilan plus ou moins apprécié par l’énonciateur”. These observations are commensurate with the theoretical position that a given stem represents a conceptual domain, of which various parts may be profiled, and that linguistically this is done by placing the stem in various morphosyntactic contexts.

There is no definitive or exhaustive list of the types of functions that verbal nouns may fulfil. Researchers such as Koptjevskaja-Tamm (1993) make a fine-grained distinction between proposition, fact, event, manner, act and result nominals, whereas others like Grimshaw (1990) differentiate only between event and result. Under both fine and coarse-grained analyses these categories are not well defined; there are fuzzy boundaries between certain among them, and distinctions between categories may be drawn more or less broadly or narrowly. Semantic functions of verbal nouns (or any category for that matter) are not cross-linguistic universals. Rather, semantic functions exist along a cline determined by conceptual structure, and a language will carve up this continuum as it sees fit. Which forms exist for which function is a language-specific empirical question.

Indeed, many languages would not have separate forms to encode all of the meanings identified by Koptjevskaja-Tamm, but would recruit one form for several functions. Nor is there a strict one to one correspondence between non-finite forms and their functions (Ylikoski 2003:187), and “[l]anguages may possess a single versatile nominalizer with multiple functions; or[...] multiple nominalizers each with specialised functions” (Yap,

Grunow-Harsta et al. 2011). “Some languages may choose the same strategy for act and result nominals, some not” (Koptjevskaja-Tamm 1993:18ff). A full exploration of the functions of verbal nouns is beyond the scope of this thesis. The main distinctions considered relevant to a discussion of verbal nouns in Kujireray are those between event/state, manner and result (see Chapter 5). Event/state verbal nouns are those that directly denote the situation associated with the stem, like both examine and examination in the context of Figure 4 above. As demonstrated by those forms, event/state verbal nouns are not presented as a single, homogenous class, but rather may subsume a variety of verbal noun types, retaining or abandoning elements of their event structure with attendant effects on their morphosyntactic distribution; they share the unifying feature that they all denote a situation. Manner verbal nouns refer not to the actual situation per se, but to a person’s (or other participant’s) way of carrying out that situation. Finally, a result noun is one that denotes not the situation itself, but an entity produced or effected as a result of the situation.

In addition, type of reference is highly salient to this discussion, particularly with regards event/state nominals. Given that one of the chief motivations for creating a verbal noun is to refer to the situation that that verbal noun denotes, it is important to consider that there is more than one type of reference. A distinction recognized as being particularly relevant in this study is the difference between **specific** and **non-specific** reference. I follow Krifka et al. (1995:15) in adopting the term non-specific as a catch-all term that subsumes other notions such as **generic** and **habitual**. If a verbal noun has non-specific reference, it does not denote some particular instance of the situation, but rather refers to the kind of that situation in general (Krifka et al 1995:2). It is known that nominalization, particularly, where event structure is removed, has a “compacting function” (Blecke 2012), which has parallels to the idea of reducing argument structure and giving a name to the situation. Once a situation is named, this allows us to refer to it as a type – i.e. generically. If a verbal noun is used to refer specifically to one particular instance of that situation, it is more likely to retain its event structure, as the participants of the action are necessarily specified and more prominently profiled in the cognitive representation of the situation.

2.4.2 Syntax of verbal nouns

The semantic properties of verbal nouns are reflected in the syntax. As shown in the previous section, many verbal nouns, as constituting a mixed category, exhibit features of both nouns and verbs, according to the prominence of features such as event and participant structure in the conceptual representation. One language may have two or more nominalization strategies with different forms and functions and moreover “[t]he exact categorial status of [verbal nouns] can vary greatly in different languages” (Kopstevskaya-

Tamm 1993:6). That said, mirroring the functional aspect of verbal nouns, a broad two way distinction tends to be drawn between more nominal nominalizations and more verbal. Where the situation is more fully reified, with event and participant structure significantly backgrounded, a form will be used with more nominal properties. When the speaker wishes to reify a situation, but nevertheless continue to profile aspects of its sequential nature, more verbal properties are retained. Several morphosyntactic categories are identified in the literature that are particularly relevant to verbal nouns; where a language has two strategies for verbal nominalization, these are the sort of distinctions that are observed between the two (cf. Koptjevskaja-Tamm 1993:25, Rathert and Alexiadou 2010). These are illustrated in Table 8 using forms associated with the concept DESTROY. The form ‘destruction’ in the left-hand columns, exhibits more nominal properties, the forms ‘to destroy’ and ‘destroying’ in the right hand columns are more verbal.

Table 8 Syntactic properties of verbal nouns

nominal		verbal	
property	example	property	example
associative relation between subject and predicate	<i>John's destruction</i>	cannot form constituent with subject	<i>*John's to destroy</i>
possessive relation with object	<i>John's destruction of the city</i>	relations with object same as indicative	<i>John's destroying the city</i>
no obligatory arguments	<i>the destruction took two hours</i>	obligatory arguments	<i>?the destroying took two hours</i>
adjectival modification	<i>complete destruction</i>	adverbial modification	<i>completely destroying</i>

Again, these are not absolute and clearly defined categories, but prototypes based on typologically informed generalizations. Languages will likely have forms that exhibit both verbal and nominal properties. The characterization of a verbal noun as nominal or verbal is not an absolute decision, but rather should be thought of as a position along a cline. Malchukov (2004), adopting an Optimality Theory approach, provides a cross-linguistic analysis of the types of nominal and verbal properties that are lost first and last in nominalization in terms of a hierarchy, thus providing a more flexible model of the typology

of verbal nouns. In other words, while each type of nominalization is unique both within and across languages, there are robust cross-linguistic tendencies that can be made with respect to order in which verbal categories are lost, and nominal ones gained in the process of nominalization. This is related to the “semantic relevance” of these categories (cf. Bybee 1985), that is, the contribution that the category can be said to make the meaning of the word. For example, subject agreement on a verb does not greatly affect the overall meaning of the verb, whereas a valence operation makes a significant contribution by adding or removing a participant or semantics of causation. Thus, the latter is more “semantically relevant” and thus would be expected to be lost later than subject agreement in a process of nominalization. Malchukov’s model – the Generalized Scale Model – is represented in Figure 5 below.

Figure 5 Malchukov’s (2004) Generalized Scale Model

[[[[[N]CL]NB]POS]DET] Case

←-----[[[[[[[V]VAL]ASP]Tense]Mood]AGR]IF]

←-----

The upper row represents categories associated with the noun [N] and the lower row categories associated with the [V].¹⁵ The closer to the [N] or [V] a particular category is, the more closely associated with the nominal or verbal domain respectively it is assumed to be. The more closely associated a category is with the verbal domain, the less likely it is to be lost in a process of nominalization, and the more loosely associated it is, the more likely it is to be lost. The converse holds for the nominal categories

In Cognitive Grammar, Langacker (1987, 1991), also proposes a typology of verbal nominalization unifying semantic and syntactic elements. He differentiates between Action Nominalizations and Factive Nominalizations.¹⁶ The former nominalizes a verb with no

¹⁵ CL=classifier, NB=Number, POS=possession, DET=determiner, VAL=valence, ASP=aspect, AGR=agreement, IF=illocutionary force

¹⁶ A third type – sentential nominalization – is also proposed, where a verb is nominalized along with all of its actants including the subject. It is not relevant to the analysis here, which focuses only on lexical nominalizations.

accompanying arguments creating a new lexical item which designates a generic type of action or event, whereas the latter nominalizes a verb along with all of its actants except the subject. This creates an instance of an event not “uniquely identified or located in conceptual space”. This typology is consistent with the observations made above that a verbal noun designating a generic type of action of event (or, of course, a state) will not exhibit argument structure, since its event structure – in particular its participant structure – is necessarily backgrounded. Since the reference is non specific, there cannot be specific referents for the participants.

2.4.3 Verbal nouns in noun classification systems

Discussion of the semantic motivation for noun classification systems tend to focus primarily on the realm of concrete time stable entities that tend to be represented by prototypical nouns. Spatial notions such as physical configuration are evoked, and indeed it is argued here that even number is a category that has its basis in the spatial domain, pertaining to properties of boundedness and individuation. In an investigation of verbal nouns in a noun classification language, the question must therefore be how situations, conceptual items that are not concrete, are conceived of not spatially but temporally, and are integrated into such a semantically motivated system. In considering how verbal nouns may be situated in the noun classification system it is useful to ask what equivalences or similarities may be drawn between the nominal domain, namely that of time stable concrete entities, and the verbal, that of stative or dynamic situations obtaining over or located in time. Under a Cognitive Linguistics analysis this is unproblematic. It is proposed that since the meaning associated with noun classes is schematic and underspecified until placed in combination with likewise underspecified lexical stems. It is necessary then only to posit a level of abstraction that can apply equally to the spatial and temporal domains to account for the behaviour of both prototypical nouns and verbal nouns in the noun classification system.

While discussion on the semantic structure of noun class systems abounds, there is comparatively little in the literature concerning verbal nouns. For example, many accounts of Bantu languages assert that there is just one noun class (typically class 15) involved in the formation of infinitives (Aikhenvald 2000:271, Mufwene 1980:246), with some other classes associated with abstract nouns (which may also be linked to verbal roots). In fact it seems that such an observation is probably taking a rather narrow view of deverbal nominalization – indeed it would arguably be possible to say that *e-* is the only class in Kujireray involved in making infinitives. Of note is Mufwene (1980) which draws attention to many systematic uses of noun classes in Bantu languages in forming various types of nominalization from verbal, as well as nominal and adjectival, roots. In recognizing that

noun classes in Bantu languages “often play a role similar to that of derivational suffixes -ity, -ment, -er, -hood, -ness, -ation etc in English” (1980:248). He shows that noun classes (albeit sometimes in conjunction with items such as tone) can be used to derive meanings from verbal stems such as “MANNER of V-ing”, result/effected entity, agent and so on. Unfortunately he does not comment in detail about the other functions of the noun classes in question in their respective language in order to draw parallels between their semantic values in the prototypical nominal domain and that of the derivational function.

Sagna (2008:312) draws attention to the use of noun classes in the formation of verbal nouns in Eegimaa, and suggests that this is an example of “overt verb classification”. I concur with his analysis that “the formation of infinitives with different noun class markers [...] has semantic motivation which in some cases mirrors those underlying the noun classification”. Indeed this is taken further, albeit in a parallel direction. It is asserted that there are always semantic relations between classification in the verbal and nominal domains, (whether these occur at a higher, schematic level, or are extrapolated by way of metaphor – although it is not the case that metaphor is only available as a function of our ability for abstract thought).

These observations suggest that a fruitful area of investigation is the relationship between number in the nominal domain and aspect in the verbal. Number and aspect have well documented equivalences – “basic structural properties of entities are manifested in the choice of a count noun, mass noun or *pluralia tantum* form for nouns, and aspectual inflection for verbs” (Croft and Cruse 2004:65). Langacker proposes an analysis that accounts for this conceptual analogy between spatial and temporal domains. One of the most thoroughly and robustly treated topics in his work on Cognitive Grammar is the analogy between notions of count/mass in the concrete domains and perfective/imperfective in the temporal. In seeking a notional definition of the categories noun and verb, Langacker rejects an objectivist semantic definition and appeals to schema – while the prototypical noun may be a physical, individuated, object – the schematic characterization of a noun does not depend on the physical domain, just as the characterization of a verb does not appeal to the temporal one. At such a level of abstraction such notions as **boundedness** come into play. Since these apply equally well to both nouns and verbs, the analogies between linguistic treatments of the two come into focus. Indeed, the notion of boundedness in the physical domain is well documented; ‘interiority’, or a distinction between inside and outside, is recognized as a value represented in noun class systems (Aikhenvald 2000:271).

Sagna (2008:312) identifies a number of commonalities between the nominal and verbal domains for Eegimaa. He asserts that the noun class marker *su-*, strongly associated with plural semantics in the domain of prototypical nouns, can be used to encode pluractional

semantics when combined with certain lexical stems with situational meaning. He also asserts (as discussed in 2.1.2 above) that class *ga-* is associated with stems denoting flat, thin or wide entities in the spatial domain, and vacant periods of time in the temporal domain. This is motivated by a process of metaphor between the two domains, where both spatial and temporal entities are conceptualized as EXTENDED.

Hendrikse (1997) also observes for Bantu that both “spatial and temporal schemas may be abstracted from any substantive concept”. For example in finding verbal nouns denoting actions conceptualized as repetitive or extended in duration she states: “The pole or stick provides the abstraction of a solid cylinder or extended solid object. From the pounding of the pestle it is an easy step to repetition and to duration of time” (1997:196). Similarly, “length (extension in space) [is] metaphorically reinterpreted as (i) degree of proximity or remoteness in kinship relations and (ii) as patterns of behaviour” (1997:202). As such, noun classes are analysed as being polysemous between meaning connected to configuration in three-dimensional space, and extension in the temporal dimension. Selvik (1997:173) makes a similar observation for the Bantu language Setswana, noting that in the semantic domain of linguistic items, “the striking difference between... language related items [in class 5] and those in other classes is that the class 5 group mostly contains concepts for single words or sounds (of a short duration) whereas the latter contains concepts referring to more enduring language e.g [...] a tale [...] a prayer[...] a fairy-tale [...] the link between this group of concepts and the other concepts in class 5 could be based on a metaphorical extension from the shape opposition rounding (non-extended) vs. long (extended) in the three-dimensional domain to the opposition ‘short duration’ vs. ‘endurance’ in the domain of time”.¹⁷

Delplanque (1995) performs an in depth analysis of the formation of verbal nouns by way of noun class affixation in Mooré, a West African noun class language from the Gur family. He uses a topological analysis and explicitly states that “le nombre est au substantif ce que

¹⁷ Selvik’s and Hendrikse’s analyses seem to assume that the three-dimensional meaning is the central one, linked metaphorically to the temporal one. Intuitively this is appealing – it has been observed that concrete entities seem to have some sort of basic cognitive salience, and indeed as the terminology would suggest, lexemes denoting concrete time-stable entities seem to interact in a more involved and complex way than those denoting situations. Interestingly, Delplanque, in his study on the topology of verbal nouns in Gur, another language family with a noun class system, notes that “on peut notamment considérer qu’une notion concrète est, elle aussi, structurée par la relation entre une ‘source’ et un ‘but’” (Delplanque 1995:33).

l'aspectualité est au verbe" (1995:16). His is one of the most detailed attempts to unify the semantics of noun classes in the nominal and verbal domains, using a topological approach which has certain similarities to the framework adopted in this thesis. Indeed, he goes so far as to suggest that concrete entities themselves can be understood in terms of the source, goal etc. that he utilizes in his analysis. In effect, he is alluding to the fact, that at a more schematic level entities and situations share properties, such as boundedness or non-boundedness. Indeed he conflates in one phrase terms usually reserved to describe verbal and nominal properties respectively; "une occurrence [of an event] discrete et d'ailleurs comptable".

Cobbinah (2013:462) focuses less on the significance of individual noun classes in verbal noun formation, and more on the existence of multiple forms for any given stem. He identifies transitivity as a relevant parameter motivating noun class paradigm assignment, while recognizing that further research is needed in the area.

2.4.4 Specialized methodology

In this section I elaborate on the more specialised methodology that was developed in order to investigate the distribution and function of verbal nouns in Kujireray, informed by the literature on the topic as presented in the previous sections. Specifically these involve syntactic tests, and a specially designed questionnaire task.

2.4.4.1 Syntactic tests

A central aim of the study is to investigate not only the formal properties of verbal nouns in general, but also the properties of one verbal noun for a given root with respect to its counterpart (i.e. the *e-* vs. the non *e-* form). Specifically it is hypothesised, based on Sagna's (2008:310) proposal for Eegimaa that *e-* forms have more verbal properties and non *e-* forms more nominal properties. A number of criteria were identified that can be used to ascertain to what extent a verbal noun has retained nominal properties or gained verbal ones (cf. Koptjevskaya-Tamm 1993, Grimshaw 1990, Malchukov 2004); constituency with subject, retention of argument structure, compatibility with verbal/nominal categories. The tests used to test these are described below.

2.4.4.1.1 Constituency with subject

Constituency with the notional subject of the event denoted by a verbal noun is considered to be a more nominal property, whereas forms that may not form constituents with their subject tends to be associated more verbal structure. In order to test this for Kujireray, a subset of verbal stems, known to form verbal nouns in both *e-* and non *e-* noun classes, were selected

and tested in constructions with a human participant juxtaposed. Consultants were informed that the desired interpretation was that this human participant was the one carrying out the action denoted by the verbal noun, and asked whether under this condition the construction would be acceptable in providing the desired meaning. This process is exemplified below using the verb stem *jiŋ* ‘climb’ which forms verbal nouns in *e-* and *bu-*.

- a. ‘If I say “*bu-jiŋ Jo*”, is it Jo who is climbing?’
- b. ‘If I say “*e-jiŋ Jo*”, is it Jo who is climbing?’

There are four possible outcomes concerning the respective grammaticality of the two constructions (where Jo is interpreted as the Agent of the climbing rather than, say, the Theme). These are represented in Table 9 below.

Table 9 Possible outcomes of subject constituency test

outcome	<i>bu-jiŋ Jo</i>	<i>e-jiŋ Jo</i>
1	√	√
2	X	X
3	√	X
4	X	√

The first two outcomes in the table – namely both constructions are grammatical, or neither of them are – would be inconclusive with respect to the hypothesis. Just because neither type of construction exhibits more or less nominal behaviour on this particular parameter does not allow us to comment on its categorical status. The third outcome, where the *bu-* construction is grammatical i.e. can form a constituent with the notional subject but the *e-* construction may not, would support the hypothesis, and the fourth outcome, where the *e-* form is grammatical and the *bu-* form is not, would provide counter-evidence.

2.4.4.1.2 Retention of argument structure

Parallel to constituency with subject being a more nominal property, it is purported that

verbal nouns (for transitive stems) that retain their object (i.e. their argument structure) can be considered to be more verbal. While the questionnaire task described in section 2.4.4.2 below was designed to investigate whether the valence of a syntactic frame can influence the choice of *e-* or non *e-* verbal noun, it is also necessary to test whether a given verbal noun (for a transitive stem) is grammatical without (or with) an object. To this end, a subset of transitive stems, known to form verbal nouns in both *e-* and non *e-* noun classes were selected, and inserted in the Kujireray progressive construction *umu ni VN*, to investigate whether or not they were considered grammatical without an overt object.

2.4.4.1.3 Compatibility with verbal/nominal categories

As well as the argument structure criteria detailed in the two sections above, it is necessary to investigate whether verbal nouns combine with other nominal or verbal categories such as negation or adverbial modifiers on the verbal side, and possession or adjectival modifiers on the nominal.

2.4.4.2 Questionnaire task

The purpose of the questionnaire task was to investigate, where two verbal nouns exist for a given stem, what might influence speakers' choice of one or the other. The frames were designed to test a number of specific hypotheses.

First, it was hypothesised that syntactic valence may determine the choice of verbal noun. Cobbinah (2013) investigates verbal nouns in Bañounk Gubëeher, a language which although only distantly related genetically, is spoken in the village immediately adjacent to Brin, and exhibits very similar grammatical features, including an alternation between verbal nouns in the default class, and those in other classes. He proposes in his thesis that the alternation is determined by the valence of the clause in which it occurs; for transitive, i.e. two participant verbal stems, where both a default (equivalent to *e-* here) and a non-default (equivalent to non *e-*) verbal noun are available, speakers will select the default in a bivalent construction and a non-default in an monovalent construction (i.e. one where the second participant is not expressed in the syntax for one reason or another). In order to test this hypothesis, data were obtained through the systematic testing of a number of verbs in a number of simple frames. For this portion of the investigation, these frames can be divided into four pairs, each pair differing only in the overt expression, or not, of a nominal object encoding a Theme participant. The French equivalent of each verb in the sample was inserted into the frames, also in French, and speakers were asked to translate into Kujireray. Table 10 shows the frames, exemplified with the verb 'eat'.

Table 10 Elicitation frames designed to test effects of valence

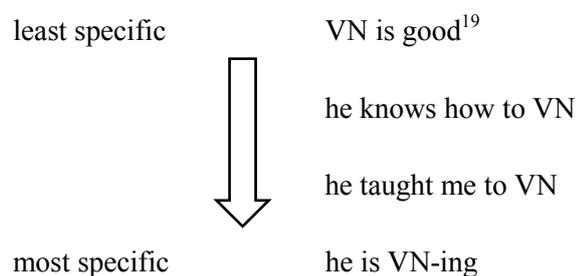
monovalent	example	bivalent	example
VN is good	‘eating is good’	VN O is good	eating rice is good
he taught me to VN	he taught me to eat	he taught me toVN O	he taught me to eat rice
he is VN-ing	he is eating	he is VN-ing O	he is eating rice
he knows how to VN	he knows how to eat	he knows how toVN O	he knows how to eat rice

The frames consist of four pairs that differ only in the presence or absence of an object¹⁸ i.e. a difference in valence. If the choice of verbal noun is influenced by the valence of the clause in the same way as in Baïnounk Gubêeher, it would be expected that the monovalent frames would yield translations using the non *e-* form, and the bivalent using the *e-* form.

A second hypothesis was formulated on the basis of native speaker intuitions. This is a strong intuition found throughout the linguistic community – very similar ideas were expressed independently by a large number of speakers – that the verbal noun in *e-* denotes a specific instance of the event denoted by the verbal stem, an action that unfolds in real time. A non *e-* verbal noun by contrast is more like a generic name for a given activity. With this in mind, the frames were also selected to test for various levels of specificity. This is rather less of a precise science than the valence parameter, since the type of reference interpreted in any given utterance is open to a certain level of interpretation, as well as being influenced by discourse-pragmatic factors, which are largely absent in such an elicitation task (although context for each frame was provided). It is proposed that the frames exist on a cline from least specific to most specific, illustrated in Figure 6.

¹⁸ The object chosen obviously depended on the verb in question. In each case a non-specific mass or plural object was chosen in order to control for additional effects that may be brought about by the number status of the object.

Figure 6 Elicitation frames, designed to test effects of specificity



To test this parameter an additional explanation as to what sort of reference was desired. For example, for the frame ‘VN is good’, consultants were told that the meaning in question was that the activity or state was good (in the sense of pleasurable or commendable) in a general sense, it is something that is good to do on a regular basis. For the frame ‘he is VN-ing’, there is less room for misinterpretation, the progressive construction invites an interpretation of a specific instance of the event or state denoted. Nevertheless consultants were informed that this was the intended meaning (as opposed to, for example, something equivalent to ‘he is eating a lot these days’). The frame ‘he taught me to VN’ is somewhat harder to disambiguate between specific and non-specific reference. While it could be interpreted as non-specific in the sense that it is a general activity that is being taught, in order that it might be carried out on numerous subsequent occasions, one could also consider that at the time of the teaching, it is a specific instance that is being referred to. The results obtained from these elicitation frames are discussed in detail in Chapter 5.

2.5 Summary of Chapter 2

In this chapter I introduced the notions of categorization and classification that constitute a central focus of the present study. In 2.1, I showed that the nature of human categorization can be better understood from a perspective that places importance on language as a cognitive category, influenced by humans’ lived experience in the world, and capacity for retaining vast knowledge structures, based partly on metaphorical thought. Furthermore, it was demonstrated in 2.2 that theoretical notions and apparatus from the Cognitive linguistics

¹⁹ Only monovalent constructions were included in this part of the analysis since it was judged that presence of an overt object – a factor often associated with more specific reference (Hopper and Thompson 1980) would confuse the issue

literature can be effectively recruited to model noun classification systems and understand their nature. In particular I argued that noun formation in Kujireray is constructional, with both lexical stem and noun class prefix associated with underspecified meaning, which in combination elaborate each other to yield the required meaning.

In 2.3 I reviewed the literature on noun classification systems and identified the semantic domains of number and physical configuration as central to their organization. In addition I showed that an approach that takes the noun class paradigm, rather than the individual noun class, as the basic unit of analysis, can facilitate a more detailed commentary on the structure of the system.

In 2.4, I reviewed the literature on the form and function of verbal nouns, maintaining the cognitively-influenced position that conceptual and semantic properties of verbal nominalizations affect their morphosyntactic distribution. I discussed previous research into verbal nouns in noun classification systems, with particular reference to analogies that can be drawn between semantic domains motivation class membership in the nominal and verbal domains. Finally, I described the elicitation methods devised to investigate verbal nouns in Kujireray.

3 Grammatical sketch

The following is an overview of some aspects of Kujireray phonology, morphology and syntax. In 3.1 I show the consonant and vowel inventory and describe some of the phonological processes that are observed in the language. In 3.2 I present a preliminary account of the syntax-semantics interface in Kujireray, including an inventory of grammatical relations, thematic roles and verb classes. In 3.3 and 3.4 the focus is on the formation of nouns and verbs respectively, and morphology and constructions associated with these categories. In 3.5 I give an overview of the structure of various clause types. Given that this constitutes the first description of Kujireray, and the limitations of space, this grammar is necessarily selective. Its aim is to give an impression of the main typological features of the language, with closer attention paid to aspects of the morphosyntax that are relevant to the discussion of noun classification and verbal nouns that follows in the subsequent chapters. There are many areas of the grammar that require further investigation and analysis – where relevant these will be identified as such throughout the text.

3.1 Phonology

In the following I provide a very brief sketch of the phonology of Kujireray, comprising a description of the phonemic inventory and some of the more prevalent phonological processes observed, with commentary on problematic issues in the analysis thereof. Although there exists a fairly comprehensive description of the phonology of Kujireray (Diandy 2005), no detailed phonetic analysis has been yet carried out on this, or indeed any closely related languages, and so any claims made in the following sections are necessarily approximate and require further research.

3.1.1 Consonants

Table 11 shows the consonant inventory proposed for Kujireray.

Table 11 Consonant inventory of Kujireray

	bilabial	labio-dental	alveolar	palatal	velar	glottal
plosive	p b		t d	c ʝ	k g	
nasal	m		n	ɲ	ŋ	
flap			(r)			
fricative		f v	s			h
approximant	w			j		
lateral			l			

The following consonant clusters consisting of a nasal followed by its homorganic non-nasal counterpart are also attested. These may occur only post vocally.

- (5) /nd/ *kaand* ‘branch’
 (6) /mb/ *ambaala* ‘fisherman’
 (7) /ŋg/ *niŋgule* ‘I am able’

Diandy (2005:16ff) claims both long and short consonants for Kujireray, stating that “long consonants always appear after a short vowel although short consonants appear after both short and long vowels”. Geminate consonants are also attested in neighbouring Joola varieties of Mof Èvi. However, no strong claims regarding either the existence or status of gemination in Kujireray are put forward here. They are not readily perceived in connected speech and no forms have been found that contrast purely for single vs. geminate consonants.

The majority of the consonants in Table 11 are posited non-controversially – minimal or quasi-minimal pairs can readily be found to illustrate contrasts (cf. Diandy 2005). However, there are a number of cases that warrant some discussion.

/v/ is tentatively posited as a phonemic consonant, although it is attested in very few items, and furthermore [v] and [w] appear to be in free variation in several items (e.g. *ka-wox/ka-vox* ‘given name.’) However, although no true minimal pairs have yet been found, it does

occur in near identical contexts to other segments for which it may feasibly be an allophone, such as /w/ and /f/. This three-way contrast is shown in (8) to (10).

(8) *ë-vi* ‘king’

(9) *e-wiji* ‘be jealous’

(10) *e-fi* ‘to sew’

In addition, (r) appears in brackets on the table as its phonemic status is unclear – there is a case for it being an allophone of /d/, as it seems that underlying /d/ is realised [r] in certain contexts. For example, there is a verb *bu-roy* ‘live, remain’ which surfaces in the impersonal form (crucially, without a prefix, rendering the first segment word-initial) as *doye* ‘it remains.’ Similarly, there are instances in the corpus of the stem *robo* ‘sit’ being pronounced *dobo* in impersonal constructions. However, it cannot be claimed at this time that the context for this allophony is intervocalic, as there are many forms in the lexicon with intervocalic [r] and [d]. Diandy 2005 analyses surface [d] and [r] as allophones of phoneme /d/ where [r] surfaces before a long vowel, and [d] before a short vowel. Word-final realisation is not specified. Without a full understanding of vowel length in Kujireray it is not possible to support or refute this claim.

However, Diandy does not specify distribution word-finally. One possible piece of evidence for contrastive as opposed to complementary distribution is the occurrence of both segments word-finally, as illustrated by the forms in Table 12. There is no obvious phonological context distinguishing between the pairs of forms, apart from in (a) and (e), a possible distinction between long and short vowels.

Table 12 Word final [d] and [r]

	[d] final		[r] final	
a	<i>bu-buud</i>	‘type of vine’	<i>e-bur</i>	‘lose’
b	<i>e-pad</i>	‘break’	<i>e-car</i>	‘limp’
c	<i>fu-lad</i>	‘root’	<i>ka-lar</i>	‘slap’
d	<i>e-yëd</i>	‘lift’	<i>ka-war</i>	‘ronier leaf’
e	<i>fu-hiid</i>	‘tornado’	<i>e-lir</i>	‘weave’

However, word-final [d] is quite rare; if indeed surface [r] word finally is really an allophone of underlying /d/, it is possible that there is some feature of the surface [d] word finally that blocks the process of allophony, although the exact identity of this feature is a topic for future research. Furthermore, there are certain contexts where [d] and [r] appear to be in free variation. For example, when the locative class prefix is used with the pronominal stem *o*, speakers accept both *do* and *ro* to express ‘place inside’. This suggests there may be a process of change occurring synchronically.

The status and distribution of posited /k/, /x/ and /h/ are also controversial (this is also the case in Eegimaa (Sagna 2008:88f). All three forms occur word finally, as shown in (11) to (13) respectively.

- (11) *bu-pok* ‘fig tree’
- (12) *ka-vox* ‘name’
- (13) *ba-sah* ‘beans’

/x/ and /h/ are sometimes difficult to distinguish, particularly in connected speech, and appear to be subject to inter-speaker variation. However, these segments are posited on the basis of differential behaviour intervocally. The examples in (14) to (16) below show the same forms with the addition of the first person singular possessive suffix *-om*.

- (14) *ba-sah-om* ‘my beans’
- (15) *ka-vog-om* ‘my name’
- (16) *bu-pok-om* ‘fig tree’

The process of word final consonant lenition (see 3.1.3 below) further clouds the question of the true identity of these segments. For example, Diandy (2005) does not posit two separate phonemes /k/ and /x/. He posits that [x] is an allophone of /k/ that surfaces before a short vowel (and implicitly from his transcriptions word finally). This analysis would entail that the [x] of *ka-vox* in (12) and the [g] of *ka-wog-om* in (15) above are underlyingly /k/, with the former undergoing a process of word final lenition, and the latter a process of

intervocalic voicing. This in turn would raise the question of why the [k] in *bu-pok* neither lenites nor voices. This is, again, an area for future research.

3.1.2 Consonant lenition

Word-final and intervocalic lenition (spirantization and/or devoicing) of certain plosive segments is a process attested in Mof Èvi varieties (cf. Bassène 2007:11f, Sagna 2008:95ff) and indeed in Kujireray (Diandy 2005:49ff). The following processes are observed in Kujireray.

Table 13 Processes of consonantal lenition

process	context	
	word final	intervocalic
b → β	yes	yes
p → φ	yes	yes
t → l	no	sometimes
n → Ø	yes	no

Diandy (2005:49) claims the first two processes of plosive to fricative occur before a short vowel, but not a long one (he does not comment on the word-final slot). However, the claims made regarding this are somewhat less strong in this analysis. These processes in particular appear to be subject to wide variation, both inter- and intra-speaker.

The case of t → l is worth commenting on briefly as it is interesting from the point of view of language contact. In some cases the coronal stop /t/ surfaces as [l] intervocalically, but not in all. Thus, the root *lat* ‘refuse’ surfaces in the perfective construction at *nilale* ‘I refused’ while there is a homophonous root form *lat* ‘hang’ for which the final consonant does not undergo lenition in the same context – *nilate uañom* ‘I hung my clothes’. It is suggested by Alain-Christian Bassène (personal communication) that this may be accounted for by the fact that these stems come from different origins. In Banjal, the form *e-lat* ‘hang’ is cognate, but the form *e-ccen* ‘refuse’ is distinct. This suggests that the Kujireray form may have come from another linguistic source, thus presenting the hypothesis that /t/ final forms from Banjal lenite intervocalically, whereas those from other sources may not.

3.1.3 Vowels

It is widely accepted in the literature that Joola languages, as well as other languages in this region, have vowel inventories consisting of two sets showing oppositions for a feature +/- [ATR], or tense/lax. However, as Cobbinah (2013:162) points out, both these features may also be epiphenomenal to features of height and backness. Abbie Hantgan (personal communication) also suggests that length may play a part in vowel quality. That said, like other languages in the region, Kujireray does have a vocalic inventory consisting of two paired sets of five vowels each which are relevant to various processes such as harmony. As mentioned, the majority of researchers into languages of this region use the terms +/-[ATR], or tense/lax to distinguish between these sets. Indeed in the absence of any robust phonetic analysis I make no claims as to the exact character of the distinction, I follow Cobbinah (2013) in labelling the two sets of vowels Set 1 and Set 2 to correspond with the putative +[ATR] and -[ATR] sets respectively. Furthermore, in the absence of robust phonetic evidence regarding the precise identity of the vowels, I henceforth avoid the use of IPA symbols, which would imply a greater level of analysis than has actually been carried out. Table 14 shows the orthographic symbols proposed for these segments.

Table 14 Kujireray vocalic inventory

set 1 [+atr]	set 2 [-atr]
< í >	< i >
< é >	< e >
< a >	< ě >
< ó >	< o >
< ú >	< u >

Set 1, on the left of the table, are the vowels that would traditionally be referred to in the literature as +[ATR], or tense; set 2 are the -[ATR] or lax counterparts. In fact, the difference between several of the pairs is difficult for me to distinguish in many cases, particularly in connected speech the only really clear-cut case being the difference between the low vowels *a* and *ě*. To a certain extent vowel harmony on prefixes (see 3.1.4 below) can be used to try and determine which set a stems vowel belongs to. This is not fool proof though, as harmony is not strictly adhered to and inter-speaker variation is observed.

Both long and short vowels occur in Kujireray words. In many cases long vowels occur at

morpheme boundaries (cf. Bassène (2007:16) and Sagna (2008:76) for Eegimaa) and can in fact be interpreted as two successive short vowels, phonologically speaking. However, long vowels also occur within roots, presenting the possibility that both long and short vowels may be part of the vocalic phoneme inventory. That said, only one pair has been found that seem to contrast solely for vowel length – shown in (17) - and it is clear that the phonetic and phonological nature of vowels in Kujireray remains a topic for extensive research in the future.

(17) *e-jix* ‘to sauce’ *e-jiix* ‘to limp’

3.1.4 ‘[ATR]’ harmony

The inverted commas in the title of this section allude to the fact that the phonetic feature of ATR is not yet confirmed for Kujireray (see 3.1.2 above) However, whatever the actual facts about the contrast between the two sets of vowels, it is clear that this distinction plays a role in various processes of vowel harmony observed in Kujireray. These are discussed in the following sections.

In this process of vowel harmony, the harmony is leftward and set 1 is dominant. It is attested from both root to prefix, and suffix to root. In the case of root to prefix harmony, therefore, if the root contains a set 2 vowel, the vowel of the prefix will also be realised as the set 1 counterpart of the underlying vowel. In the cases where the vowel harmony applies the process can be described using the following formula:

$$\text{prefix [set 2]} + \text{root [set 1]} \rightarrow \text{prefix + root [set 1]}$$

Indeed, even this process of vowel harmony is to some extent assumed, since without precise acoustic measurements of the controller and target vowels of the harmony, it is difficult to distinguish the two sets of vowels by the naked ear, particularly in fast connected speech. The easiest pair to distinguish between is *ɛ* and *a*, and so the effects of harmony are most easily identified when the prefix that is subject to harmony contains this segment (underlying /a/). For example, there is a nominalization strategy where prefixing a verbal stem with the morpheme *ba-* (and suffixing it with *-er*) results in a nominal form with the

meaning ‘manner of doing V’ as exemplified in (18).

(18) *tiñ* ‘eat’ → *ba-tiñ-er* ‘manner of eating’

In (18) the stem’s vowel is a set 2 vowel, so according harmony is not triggered and there is no change in the prefix’s vowel. However, where the stem vowel is a set 1 vowel, the prefix vowel will harmonize and become set 1 as well. A number of verb stems were tested in this nominalization construction; in some cases the prefix vowel surfaced as [a], in which case the root vowel/s are assumed to be from set 2, in other cases the prefixal vowel surfaced as [ē] in which case the root vowel/s are assumed to be from set 2. This is shown in Table 15.

Table 15 Vowel harmony

Set 1 forms			Set 2 forms		
stem	gloss	‘manner of’	stem	gloss	‘manner of’
<i>júl</i>	‘blow nose’	<i>bě-júl-er</i>	<i>tiñ</i>	‘eat’	<i>ba-tiñ-er</i>
<i>ñěj</i>	‘do laundry’	<i>bě-ñěj-er</i>	<i>lob</i>	‘speak’	<i>ba-lob-er</i>
<i>ji</i>	‘offer’	<i>bě-ji-er</i>	<i>fî</i>	‘sew’	<i>ba-fî-er</i>

Sagna (2008:82) claims that in Eegimaa certain suffixes such as directional *-ul* and instrumental *-um* are specified as set 1 and control a process of harmony for this feature to the root vowels on their left. However, he also states that this is not observed in all forms and that further research is required into this phenomenon. Such a process is indeed attested in Kujireray, although it is by no means obligatory. Indeed one and the same speaker is observed using the same verb *bañ* ‘return’ with the directional suffix *-ul* both with and without harmony in the same recording.

3.1.5 Height harmony?

Sagna (2008:83) describes a process of height harmony in Eegimaa whereby in certain noun class prefixes, the vowel alternates between high front vowels, when the root vowel is front, and high back vowels when the root vowel is back (when the root vowel is central the vowel on the prefix depends on the quality of the prefix initial consonant: coronals → front, labials → back). This is illustrated in Table 16, where the cells show the realization of the prefix vowel for the various permutations of root vowel and prefix consonant.

Table 16 Height harmony alternations for Eegimaa

	stem vowel = front	stem vowel = back	stem vowel = central
prefix consonant = coronal	i	u	i
prefix consonant = labial	i	u	u

This is not a productive process in Kujireray; in the vast majority of cases the vowels of noun class prefix do not alternate for this feature regardless of the status of the root vowel/s. For example, the forms in (19) and (20) exhibit back prefix vowels and front root vowels and examples (21) and (22) have front vowels in the prefix and back vowels in the stem. Forms of this type are commonplace, rather than exceptions, in Kujireray.

Back prefix, front root

(19) *mu-il* ‘milk’ (cf. Eegimaa *mi-i*)

(20) *bu-cin* ‘concession’

Front prefix, back root

(21) *si-ul* ‘flies’

(22) *ji-roŋ* ‘hut’

There are some forms that appear to exhibit this type of vowel harmony, exemplified in (23) to (25) below. However, as this process is not productive in Kujireray, it is assumed that these are forms that have either been borrowed from neighbouring varieties, or are vestiges of a process of vowel harmony that has since been abandoned.

(23) *bi-eb* ‘hunger’

(24) *su-ol* ‘fishes’

(25) *su- or* ‘stars’

3.1.6 Assimilation/deletion

In certain contexts morpheme final vowels are deleted when followed by a vowel, for example in the cases of the negative future marker *mati* or the purposive morpheme *bu-*.

(26) *mati* *a-tiñ* \longrightarrow *mat* *atiñ*
 NEG.FUT 3S-eat NEG.FUT 3S-eat
 ‘He will not eat.’

(27) *waf* *u-ce* *bu* *e-sen-i* \longrightarrow *b-e-sen-i*
 CL:w-thing AGR:u-INDEF to CL:e-give-2S to-CL:e-give-2S
 ‘Something to give you.’

field notes

3.1.3 Orthography

An orthography has been developed over the course of the fieldwork, which is in line with the codification of other languages such as Joola-Fogny, and Bāïnouk varieties. The correspondences are noted in the tables below.

For consonants, in the majority of cases the orthographical representation corresponds to the IPA symbol. The divergences are shown in Table 17.

Table 17 Orthographical representations of consonants

IPA	orthography
ʃ	< j >
j	< y >
ɲ	< ñ >

For vowels, conventional Roman alphabet symbols are used. In the case of the high and mid vowels, the set 1 distinction is marked with an acute accent (e.g. í (set 1) vs. i (set 2)) as illustrated in Table 14 above. The exception to this is the low vowel which is represented < a > for the set 2 vowel, and < ě > for its set 1 counterpart.

In addition, an orthographical convention is in place whereby only the first vowel of a word need be marked with the acute accent to denote a set 1 vowel. This is because processes of vowel harmony as described above dictate that all vowels within a word will necessarily belong to the same harmonic set. The exception to this is again the low vowel < a/ě >, where the set 1 version is represented as < ě > in all cases. This is because this is the only vowel that may in some cases not be susceptible to vowel harmony, therefore to represent it as < a >, even in cases where a preceding vowel is demarked as belonging to set 1, may be ambiguous.

Where names and French expressions appear in the examples they are codified using the standard French orthography.

3.2 Syntax-semantics interface

Before examining the morphosyntactic categories of a language, it is necessary to provide some sort of background on which to frame the analysis in terms of the basic structure, that is in terms of the types of grammatical relation that exist between verbs and arguments, and the range of thematic roles that are encoded, as well as the classes of verbs that exist. The following sections contain proposals for inventories of these categories in Kujireray.

At this point it is important to clarify some of the terminology that will be used throughout the thesis. Where a distinction is drawn between three different levels of representation – conceptual, semantic and syntactic – it is essential to be clear about which terms apply to which levels. There are many terms that are used in the literature either interchangeably, or with different meanings by different authors, in discussing the semantic and syntactic properties of language, as well as associated conceptual categories. An example of these are the terms ‘transitivity’ and ‘valence’ which exhibit an enormous amount of variation throughout the literature in terms of linguistic categories to which they refer. Both have been used in the semantic domain to describe participant structure and in the syntactic domain to describe argument structure. While these two are inarguably closely related to each other, they are not equivalent. Table 18 details some of the main terms that are used throughout this thesis to describe phenomena at different levels of representation.

Table 18 Terminology relating to different levels of representation

	level of representation		
	conceptual	semantic	syntactic
term used in the thesis	situation/scene	state/event	verb
	force-dynamic relation	transitivity	valence
	entity	participant	argument
	frame-semantic role	thematic role	grammatical relation

Note also that many of the labels for frame semantic and thematic roles in the literature are homophonous. Throughout the current thesis the terms will be disambiguated through the use of initial capitals for thematic roles - Agent, Theme, etc. - and lower case for frame-semantic roles - agent, theme etc.

3.2.1 Grammatical relations

Grammatical relations are the relations that obtain between verbs and their arguments. The grammatical relations posited for Kujireray are subject, object, indirect object and oblique object. These are discussed in turn in the following sections.

3.2.1.1 Subject

Kujireray is an accusative language structured along a clear subject/non-subject distinction. Subject is the most easily identifiable and non-controversial grammatical relation, posited on the criteria of word order and agreement on the verb. In both monovalent and bi- and trivalent constructions, for unmarked word order, the subject occurs before the verb, and there is obligatory agreement marking on the verb in the form of a prefix which agrees with the noun class of its subject. Although an overt subject is not obligatory in many contexts, agreement on the verb is obligatory except in the case of impersonal constructions in which a small number of verbs such as *baj* ‘have’ and *pjo* ‘take time’ participate and take no subject.²⁰

The following examples show constructions with both overt subject and agreement on the

²⁰ These verbs are not ‘impersonal verbs’ per se, since they may also be used in personal constructions in which case they take agreement marking.

verb (28), subject agreement but no overt subject (29) and an impersonal construction with no agreement (30).

- (28) *si-jamen s-e si-rem-e mu-hem*
 CL:si-goat AGR:s-DEF.DET AGR:si-drink-PERF CL:mu-water
 ‘The goats drank water.’

field notes

- (29) *fu-tiñ-e-tiñ ku-maŋgo*
 AGR:fu-eat-HAB-REDUP CL:ku-mango
 ‘It eats mangos.’ (agreement controller is *fú-bëgër* ‘rat’)

field notes

- (30) *pio-e i-jug-ut-ol*
 take.time-PERF 1S-see-NEG-3S
 ‘It’s a long time since I saw you.’ (‘I have not seen you in a long time.’)

participant observation

In addition, subjects may be distinguished from non-subjects on the grounds of the relativization strategy they employ. Unlike other grammatical relations, they are relativized without the need for a relative pronoun. The verb in the relative clause is marked with subject agreement and the relative morpheme *-a*, (as well as additional morphology such as, in this case, the subordinating particle *me* – see 3.5.10 below on relative clauses). This is in contrast to the strategy for relativization of other grammatical relations, which requires a pronoun, and no relativizer on the verb.

(31)	<i>a-pal-om</i>	<i>a-cin</i>	<i>me</i>	<i>Jegele</i>	<i>a-muse</i>
	3S-friend-1S.POSS	AGR:Ø-REL-live	SUBORD	Jegele	CL:a-teacher

‘My friend who lives in Jegele is a teacher.’

BRIN111130RWb

3.2.1.2 Object

The grammatical relation of object is also posited on the grounds of word order. In an unmarked bivalent construction the object follows the verb. There is also a paradigm of object pronoun clitics which also occur post-verbally (see section 3.3.8 below). Note that syntactically, the verb-object construction is of the same form as the possessed-possessor construction; in both constructions the two items are juxtaposed without morphological marking. Indeed it has been observed that possessive constructions may be a common source for transitive constructions (Allen 1964). In clauses containing an inflected verb this is unproblematic as the verb is easily identifiable from subject marking and TAM morphology and thus the postposed object interpretable as such. However, in the case of verbal nouns this can create ambiguity as both subject and object argument are encoded in this way (see Chapter 5 for a detailed discussion).

In addition, an object may be distinguished from a subject on the grounds of its behaviour in relative clauses; object relativization requires a relative pronoun as illustrated in (32).

(32)	<i>mu-kumb</i>	<i>m-o</i>	<i>ni-nom-e</i>	<i>mu-sum-e</i>
	CL:mu-honey	AGR:m-PN	1S-buy-PERF	AGR-be.good-PERF

‘The honey I bought is delicious.’

BRIN111130RWb

3.2.1.3 Indirect object

A distinction between direct and indirect object is not readily apparent in unmarked declarative clauses. In trivalent clauses, the two objects may occur in either order, and neither object receives any morphological marking; that is both behave as the bivalent

object.

(33) *Jo na-sen-e ji-liba Fabien*

Jo 3S-give-PERF CL:ji-knife Fabien

‘Jo gave the knife to Fabien.’

(34) *Jo na-sen-e Fabien ji-liba*

Jo 3S-give-PERF Fabien CL:ji-knife

‘Jo gave the knife to Fabien.’

BRIN120301RW

Nor can a distinction between direct and indirect object be posited on the grounds of relativization; for a trivalent clause of the type in (35), both non-subject arguments may be relativized using the same construction type as in (36) and (37).

(35) *ni-sen-e e-liw y-a-y-u a-are*

1S-give-PERF CL:e-meat AGR:y-DEF-AGR:y-MED CL:a-woman

a-h-u

DEF-AGR:h-MED

‘I gave the meat to the woman.’

(41) *Véronique na-boñ-ulo ni Damien Hélène*

Véronique 3S-send-DIR. PERF LOC Damien Hélène

‘Véronique sent Damien Hélène.’

BRIN120316RWa

Although the evidence above supports the positing of separate direct and indirect objects, there is not a large amount of difference between the behaviour of these two grammatical relations. The following examples (42) and (43) show that either object may be pronominalized and expressed using the pronominal object suffixes, and in these constructions the recipient participant, and mooted indirect object, does not require the preposition, although it may be used optionally. Apparently, recourse to context is used to disambiguate in such circumstances.

(42) *na-sen-ol (ni) Damien*

3S-give-3S (LOC) Damien

‘She gave her to Damien.’

(43) *na-sen-ol Hélène*

3S-give-3S Hélène

‘She gave him Hélène.’

BRIN120316RWa

Bassène (2010) also observes that in Banjal, when both objects are pronominalized, the order will always be recipient-theme, regardless of animacy. It is not possible to test this in Kujireray, since speakers do not accept ditransitive constructions with both objects pronominalized. One object must either be expressed with a full noun, or omitted altogether.

3.2.1.4 Oblique argument

As well as subject and object, certain arguments may be marked with a preposition, as in (44) to (46), with the prepositions marked in bold.

(44) *e-siho* *uyu* *fatia* *e-tabul*

CL:e-cat COP: AGR:y on CL:e-table

‘The cat is on the table’

BRIN111116RW

(45) *ni-ɲar-i* *bu* *sindo*

1S-take-2S to home

‘I will take you home.’

BRIN120227RWb

(46) *pan* *u-ɲar* *e-simend* *u-kan* *ni* *ba-homar*

FUT 2S-take CL:e-stone 2S-put LOC CL:ba-slingshot

b-a-b-u

AGR:b-DEF-AGR:b-MED

‘You will take a stone, you put [it] in the slingshot.’

BRIN121029RWe

At this time no claim is made for a distinction between oblique arguments and adjuncts. Since Kujireray does not have morphological case, they cannot be distinguished morphologically. Another common diagnostic for establishing the difference between oblique arguments and adjuncts is that the former are obligatory in the clause while the latter may be dispensed with without loss of grammaticality – this is also of limited use in a language like Kujireray, where ellipsis of arguments, even of direct objects, is so common. Further research must be carried out as to whether a distinction between oblique arguments and adjuncts can be made on the basis of their behaviour in morphosyntactic contexts such as relative and passive constructions.

3.2.2 Thematic roles

While grammatical relations hold at the syntactic level, thematic roles pertain to the

semantic level. A participant receives a thematic role according to the relations that hold between it and the other participants in the event, taking into account the semantic properties of the verb (as well as those of the other participants). An important distinction must be made here between conceptual categories of participant and thematic roles. Thematic roles are linguistic realities. It seems clear that they are mapped onto conceptual categories, but this mapping is language particular, although cross-linguistic tendencies do exist. While the number of conceptual categories of entity type is potentially unlimited since each situation is different to a lesser or smaller degree, the conceptual relations between its involved entities is unique (Dowty 1991:553ff). Linguistically, there are limited resources for differentiating between different types of entity, and since the human mind must also form categories to avoid dealing with ‘infinite variability’ (Payne 1997:51), it seems inevitable therefore that certain types of entity that share semantic commonalities in terms of their role in the situation display similar morphosyntactic distribution. Indeed, thematic roles can provide evidence for the existence of and distinctions between conceptual categories.

Therefore, while it may be intuitively very tempting to posit a range of thematic roles that express what we feel we ‘know’ about a situation and the entities involved in it and what they are going through, a thematic role can only be posited on the grounds of language-particular linguistic evidence (such as access to various grammatical relations, volitionally, control etc.). Note also that the inventory of thematic roles provided here for Kujireray errs on the side of caution; where no linguistic evidence is known of to distinguish two thematic roles only one is posited. It is entirely possible, however, that further detailed research may yield additional distinctions.

3.2.2.1 Agent

For activity verbs and transitive change of state verbs (see 3.2.3 on verb classes below) in an unmarked active clause, the argument in subject position will correspond to the participant that causes or effects the event denoted by the verb. When this participant is animate and volitional, it fulfils the thematic role of Agent.

(47) *Jerome na-tiñ-e si-nan-om*

Jerome 3S-eat-PERF AGR:si-rice-1.POSS

‘Jerome ate my rice.’

participant observation

(48) *na-bog-e-box* *n-anosan* *ni-fox*
 3S-dance-HAB-REDUP AGR:n-QUANT CL:ni-night

‘He always dances at night.’

BRIN121029RWa

Kujireray does not allow the Agent participant of transitive verbs to be encoded as an oblique object in the passive construction (in contrast to the Effector – see 3.2.2.2 below). A phrase such as (49), where the intended meaning is ‘The meat was eaten by us’ is ungrammatical.

(49) **e-liw* *e-tiñ-i* *ni* *ela*
 CL:e-meat AGR:e-eat-PASS LOC 1P.INCL

intended: ‘The meat was eaten by us.’

BRIN120301RW

3.2.2.2. Effector

The argument in subject position for activity verbs and transitive change of state verbs may also be inanimate, and thus non-volitional. For example the sun can effect the drying of clothes.

(50) *bu-nah* *bu-way-en-e* *w-añ*
 CL:bu-sun AGR-dry-CAUS-PERF CL:w-clothes

‘The sun dried the clothes.’

BRIN120301RW

A distinction between Agent and Effector is posited on the basis of their respective behaviour in the passive construction. While an Agent participant may not be encoded in a passive construction, an Effector may be, where it takes on the thematic role of Location as in (52).

- (51) *sa-mbul si-way-en-e w-añ*
 CL:sa-fire AGR:si-dry-CAUS-PERF CL:w-clothes

‘The fire dried the clothes.’

- (52) *w-añ u-way-en-i ni sa-mbul*
 CL:w-clothes AGR:w-dry-PASS LOC CL:sa-fire

‘The clothes were dried in the fire.’

BRIN120301RW

3.2.2.3 Theme

Since the language makes no morphosyntactic distinction between the affected participant of change of state events and those of change of location events, a broad thematic role of Theme is posited. Indeed, Dowty (1991:577) comments on the difficulty of differentiating between different types of proto-patient and “regarding this role in particular as a cluster concept instead.” This role can be filled by animate or inanimate participants.

- (53) *Véronique na-boñ-ulo Hélène*
 Véronique 3S-send-DIR.MID Hélène

‘Véronique sent Hélène.’

BRIN120316RWa

- (54) *nu-iken si-naŋ*
 2S-cook CL:si-rice

‘You cook rice.’

BRIN120331RW

The object participants of verbs that do not, intuitively, seem to be physically affected by the event denoted by the verb, such as *maŋ* ‘love’ or *jux* ‘see’ are also provisionally placed in

(57) *na-je ni kë-fëlum k-a-h-u*
 3S-go LOC CL:ka-old.person AGR:k-DEF-AGR:k-MED

‘He went with the old woman.’

BRIN120124RW

(58) *u-y-e ni ji-liba e-paden-i*
 PRES-AGR:y-PROX LOC CL:ji-knife AGR:e-harvest-PASS

‘This is harvested with the knife.’

BRIN120217RWb

This particle is also used in a progressive construction in conjunction with a copula (see 3.4.1.1 below).

3.2.2.5 Goal

Oblique arguments encoded with the preposition *bu* alone or in combination with locative particle *ni* are given the thematic role Goal. While participants denoted by arguments marked with *ni* take the thematic role Location, with additional information about movement with respect to the Location provided by the verb, *bu* and *bu ni* invariably encode arguments corresponding to participants that can physically or metaphorically be described as being the central locus of an event towards which there is some kind of motion, act of transfer etc.²² In addition to the physical locations, as in (59), participants in this role may include animate participants that are the recipient or beneficiary of an event, as in (60).

(59) *ku-jaw bu ni yaŋ-ol*
 3P-go PURP LOC house-3S.POSS

‘They went to her house.’

BRIN120124RWb

²² Although note that one and the same conceptual goal can be encoded as a Theme (no preposition), a Location (preposed with *ni*) or a Goal (preposed with *bu* or *bu ni*). Semantic and/or pragmatic differences between the three options are a promising topic for future research

(60) *na-nom-e waf bu ni a-lin-ol*
 3S-buy-PERF thing PURP LOC CL:a-sibling-3S.POSS

‘He bought something for his sister.’ BRIN111125RW

In addition these prepositions may mark verbal nouns in purposive clauses such as in(61).²³

(61) *u-log-a u-pul-a ma bu*
 1P.INCL-speak-1P.INCL 1P.INCL-go.out-DIR-1P .INCL thus PURP
bu-lër
 CL:bu-work

‘When we say that they come out to work.’ BRIN121106RW

Although there are clear differences in the semantics of these various types of participant, they are subsumed under the thematic role of Goal, as they are marked in the same way and furthermore they can all be conceptualized as being the object of a ‘motion toward’ physically or metaphorically.

3.2.2.6 Beneficiary

The thematic role of Beneficiary is tentatively proposed on the basis of limited occurrences of nominal arguments marked with *mata* ‘for’ as in (62).

²³ Indeed, another function of this particle, when preposed to a verbal noun, seems to be future marking, as in *au b-e-nax?* ‘Will you wait?’

(62) *na-sup-en-e* *mu-hem* *mata* *a-pemb-ol*
 3S-heat-CAUS-PERF CL:mu-water for CL:a-child-3S.POSS

‘He heated water for his child.’

field notes

The more commonly occurring use of this particle is to mark clausal arguments, with a meaning of ‘for’ or ‘because’ (see also 3.3.5 below).

3.2.3 Verb classes

Just as thematic roles represent classes of participants whose semantic commonalities manifest in the syntax, different classes of verb can be posited on the basis of morphosyntactic behaviour that fall out from semantic properties of these verbs (which are in turn linked to their extra-linguistic conceptual structure). Also like thematic roles, these classes are language-specific, albeit with some more or less robust cross linguistic generalizations indicating universal conceptualizations. The fundamental question that concerns researchers in this field is which semantic criteria affect the morphosyntactic contexts in which a given verb can occur, and which commonalities can place verbs in the same class. A full review of the extensive literature on verb classes is beyond the scope of this thesis; a broad overview of some of the main issues is given here.

Verb classes are determined on several parameters, although there is much variation in how these are understood and treated by researchers. Broadly speaking, the parameters used to determine verb classes are lexical aspect, change of state/location and causation. The notion of lexical aspect, first proposed by Vendler (1967), subsumes a number of binary semantic features that contribute to a verb’s morphosyntactic behaviour namely stativity vs. durativity, durativity vs. punctuality and telicity vs. atelicity. Various combinations of these features in a verb’s semantic makeup result in different morphosyntactic behaviour, and this behaviour can therefore be used diagnostically to determine a verb’s class. Verb classes are often understood to be lexical categories, inherently belonging to a verb’s meaning. However, it has been amply demonstrated that the argument structure and aspectual properties of the clause as well as the lexical semantics of the verb itself all contribute to the interpretation of the clause with respect to these features. For example the telicity of a clause containing a transitive verb may be affected by the direct object; a quantized direct object results in telicity, whereas a mass noun or bare plural gives an atelic interpretation (cf. Verkuyl 1972, Krifka 1989, Dowty 1979).

Furthermore, while it is clear that both the verb and the morphosyntax contribute to the overall aspect of a clause, researchers differ as to which of the features they attribute to the clause level and which inherently belong to verbal semantics (cf. Lüpke 2005:72). Additional features have been proposed by researchers to account for distinctions not captured by the Vendlerian aspectual features, including presence or absence of change of state or location, and external or internal causation. This is a highly complex area of investigation, depending on a fine-grained examination of the meaning of individual verbs, and will not be extensively discussed here. No particular commitment is made to any one account of the semantic features and syntactic-semantic interactions underlying verb classes. However, in line with the underspecification hypothesis underpinning much of the analysis in the thesis (see 2.2 above), verb classes in Kujireray are proposed in terms of their **aspectual potential**, rather than in absolute terms, following Croft (2012 3737). That is to say, verbs are classed according to their aspectual properties in the various constructions in which they may occur, and indeed the range of constructions with which they are compatible. Furthermore, the view is adopted here that since one cannot isolate any linguistic item from its context, the concept of a ‘basic’ extra-contextual meaning is fallacious (Croft 2012:37).

What follows is a broad rather than a narrow sketch of some of the verb classes found in Kujireray. While such distinctions undoubtedly exist and are observable in the morphosyntactic behaviour of various classes, a more fine-grained analysis of subclasses is beyond the scope of the thesis. These verb classes are illustrated using the geometric representations put forward in Croft (2012) to capture and illustrate the relevant semantic features associated with a given verb class. The horizontal axis represents the unfolding of time, the vertical axis represents a qualitative state associated with the situation. Thus the development and changing qualitative state of the relevant participants can be represented. It is important to point out that while some of the appellations chosen for Kujireray verb classes in the following sections are ostensibly similar to the traditional Vendlerian categories of state, activity etc., they are not directly equivalent, and are chosen primarily as descriptive labels reflecting the morpho-syntactic behaviour of those classes.

3.2.3.1 Intransitive gradable (change of state) verbs

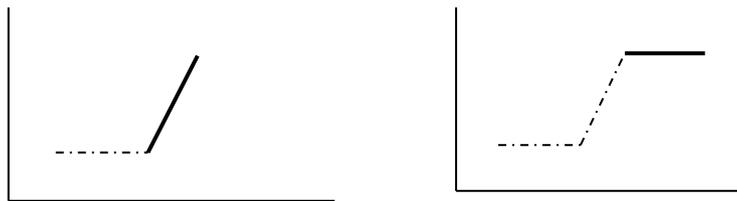
This class of verbs is proposed on the basis of its members’ particular behaviour in perfective and progressive constructions. In the progressive, illustrated in (63), the interpretation is of a process of change of state. In the perfective, illustrated in (64), there is an ambiguity in the perfective between a state, and a result of a change of state. The same construction is used whether one wishes to convey that someone is deaf (and may have been

since birth) or whether they have become deaf.²⁴

(63) *umu ni bu-topo*
 COP.AGR :m LOC CL:bu-deaf
 ‘He is going deaf.’

(64) *na-topo-e*
 3S-deaf-PERF
 ‘He is deaf / he has gone deaf.’

Figure 7 Construals of intransitive gradable (change of) state verbs in Kujireray



a. progressive: incremental activity

b. perfective: (result) state

umu ni bu-topo
 COP.AGR:m LOC CL:bu-deaf
 ‘He is going deaf.’

na-topo-e
 3S-deaf-PERF
 ‘He has gone deaf/He is deaf.’

The representations in Figure 7 illustrate the two alternate construals of these situations in the two morphosyntactic contexts progressive and perfective. In Figure 7a, the representation of the progressive construction, it is the change of state that is profiled, as indicated by the heavy line. It is also entailed that there was an initial state (not-deaf – indicated by the dashed line but this is not profiled). By contrast, in the perfective

²⁴ It is speculated that such a distinction may be conveyed depending on the perfective construction employed (see 3.4.8 below).

construction in Figure 7b, it is the result of the change of state (i.e. the state) that is profiled. Again a beginning state is implied and the change that brought about the state, but these are not profiled in the construction. Furthermore, these two phases can be cancelled, in the case where the interpretation is that the person has been deaf from birth, without becoming deaf. This class of verbs is labelled gradable because the associated state exists on a cline. A person can become more deaf than before, without becoming completely deaf – it is not an all or nothing state.

3.2.3.2 Intransitive absolute (change of) state verbs

While the class of gradable state verbs can denote states that are the result of change, they cannot be said to have a categorical endpoint – they are atelic. Intransitive absolute (change of) state verbs also involve state change semantics, but can be distinguished from gradable states on the basis of their behaviour in the realization-under-cessation test (Dowty 1979). This test is designed to test whether predicates denote telic or atelic events. A native speaker is provided with a progressive construction containing the verb to be tested. They are then asked: ‘If the action were interrupted, can it still be said that the action has occurred?’ If the answer is yes, then the construction does not denote an absolute change of state; if the answer is no, it it does. This is illustrated for English clauses below.

Atelic

(65) ‘He is snoring. He is interrupted. Can we say that he has snored?’

Answer: ‘Yes.’

Telic

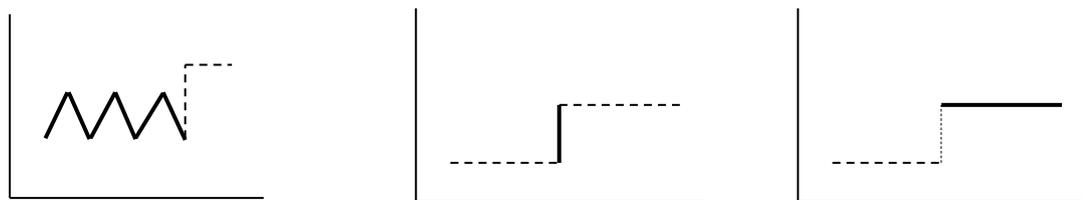
(66) ‘He is standing up. He is interrupted. Can we say that he has stood up?’

Answer: ‘No’

If a person who is going deaf ceases to go deaf after a given time, it can be said he is deafer than before, whereas if someone who is dying ceases to die, we cannot say he is deader than before. It can be concluded from this observation that while gradable states denote incremental change in the progressive aspect, for absolute state verbs, the construal

obtaining in the progressive construction can be likened to an activity. However, unlike activities, none of the subparts of dying actually involve becoming dead, until the very instant when one passes away, although it is presumed that this event is, if not inevitable, then the way that things are heading. This construal is represented in Figure 8a. The undirected activity is profiled; the final quantum leap from one state to another (in this case, alive to dead) and the resulting state are indicated with vertical and horizontal dashed lines respectively, and thus distinguish this from an activity verb. Figure 8b represents the one of the two construals obtaining from the perfective construction, where it is the instantaneous change of state that is profiled. The dashed lines in this representation pertain to the fact that both a starting state and a result state are entailed. Finally Figure 8c represents the construal, for verbs of this class in the perfective construction that profiles only the state, although the previous phases are entailed.

Figure 8 Construals of intransitive absolute (change of) state verbs in Kujireray



a. progressive: runup achievement	b. perfective 1: achievement	c. perfective 2: state
<i>umu</i> <i>n-e-cet</i>	<i>na-cel-e</i>	<i>na-cel-e</i>
COP:AGR:m LOC-C:e-die	3S-die-PERF	3S-die-PERF
‘He is dying.’	‘He died.’	‘He is dead.’

3.2.3.3 Quality Verbs

A second class of intransitive gradable (change of) state verbs is attested in Kujireray, which are labelled quality verbs. They pattern with the verbs described in 3.2.3.1 above, but are differentiated on the basis of their morphological behaviour. When quality verbs are inflected they take either the middle voice suffix *-o*, as in (67), or *-ie*, as in (68). The same situation obtains in Eegimaa, where the latter is analysed by Sagna (2008:164) as a combination of the passive marker *-i* and perfective marker *-e*.

(67) *na-jël-o*

3S-beautiful-MID

‘She is beautiful.’

(68) *na-jël-i-e*

3S-beautiful-PASS-PERF

‘She is beautiful.’

The exact nature of the distinction between the two is not known at this time. Sagna (2008:164) states that for Eegimaa the difference is one of emphasis; his analysis (assuming that the same analysis is valid for Eegimaa and Kujireray) would consider that the form in (68) is a neutral observation of the state of affairs, whereas the one in (67) means something like, ‘She really is beautiful.’ This would perhaps be consistent with the observation that the middle voice is associated with an internal cause, as if the speaker wishes to communicate that her beauty is truly an inherent quality.

Nominalized quality verbs are prefixed with a noun class marker and take the suffix *-i*. Furthermore, most quality verbs are nominalized with non-default noun class markers, making them particularly interesting for an investigation of verbal nouns (see chapter 5 for a detailed discussion).

3.2.3.4 Activity verbs

Activity verbs encode dynamic events that are atelic, i.e. without an inherent endpoint, and that do not denote a change of state. A diagnostic for activity verbs is the realization-under-cessation test. Manner verbs may be transitive or intransitive. Examples of intransitive manner verbs in Kujireray are *pib* ‘shout’, *ber* ‘laugh’ and *kofen* ‘sleep’. Examples of transitive manner verbs are *bif* ‘fan’ and *giren* ‘tickle’. The geometric representation for activities in progressive and perfective constructions respectively are shown in Figure 9, although the distinction between transitive and intransitive (i.e. an entity acting, and an entity acting on another entity) is not represented here. The progressive aspect (i.e. *umu n-e-box* ‘she is dancing’) profiles only the activity, although the vertical dashed lines represent the presupposition that the activity has both a start and end point. The perfective aspect (i.e. *na-bog-e* ‘she danced’) denotes that the activity occurred; the only

difference in construal from the progressive form is that an end to the activity (without any concomitant change of state) is profiled, as illustrated by the heavy vertical line on the right of the diagram.

Figure 9 Representation of Kujireray activity verbs



a. progressive: activity

umu n-e-box

COP.AGR:m LOC-CL:e-dance

‘He is dancing.’

b. perfective: ended activity

na-bog-e

3S-dance-PERF

‘He danced.’

3.2.3.5 Transitive change of state verbs

These verbs denote a change of state where one entity acts on another to bring about the change. In contrast to the intransitive (change of) state verbs described in sections 3.2.3.1 and 3.2.3.2 above, the perfective aspect does not encode a state pertaining to the subject argument, but a completed action, effected by the subject (although this of course may entail a result state pertaining to the participant denoted by the object argument). As per the difference between intransitive gradable and absolute (change of) state verbs, the change of state denoted by these verbs can be incremental or non-incremental. For example a verb like *mux* ‘kill’ has an inherent endpoint, a negative result is obtained in the realisation under cessation test, so this change of state is absolute. By contrast, a verb like *supen* ‘heat’ behaves like the intransitive gradable verbs. It is posited that this may therefore represent a difference in the feature of punctuality; transitive gradable changes of state (e.g. *supen* ‘heat’) are durative (corresponding to accomplishments in the perfective construction) whereas transitive absolute changes of state (e.g. *mux* ‘kill’) involve a punctual element (corresponding to an achievement in the perfective construction). Figure 10 below illustrates

the various construals of verbs in this class (although at this point the transitive element is not shown in the diagrams).²⁵

Figure 10 Construals of transitive gradable change of state verbs in Kujireray



a. progressive: incremental activity

umu *n-e-sup-en* *mu-hem*
 COP.AGR:m LOC-C:e-heat-CAUS CL:mu-water

‘He is heating water.’

b. perfective: accomplishment

na-sup-en-e *mu-hem*
 3S-heat-CAUS-PERF CL:mu-water

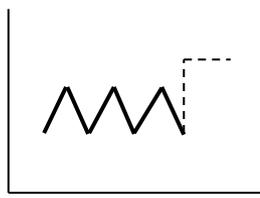
‘He heated water.’

In Figure 10a, only the action of heating water is profiled, with the inclined line indicating that this is an incremental process involving a monotonic change of state on the part of the participant denoted by the object (here, the water). A result state (the water being hot) is presupposed, as indicated by the upper right hand dashed line. In the perfective construction, represented in Figure 10b, both process and result are profiled – if the subject participant has heated the water it is assumed that it is at least slightly hotter than before.

Figure 11 shows the progressive and perfective construals for transitive absolute change of state verbs in Kujireray (note that these representations are simplified insofar as they do not contain the element of causation entailed by their transitivity).

²⁵ Note that transitive events are prime candidates for the sort of effects outlined at the beginning of the section where the properties of the object (and indeed optionality thereof) can significantly affect the semantic properties of the clause as a whole (see Chapter 5 for a detailed discussion). The examples given here pertain to bivalent clauses where both participants are realised and specific.

Figure 11 Construals of transitive absolute change of state verbs in Kujireray

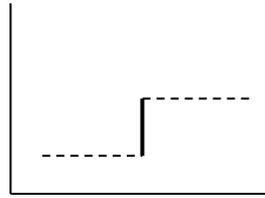


a. progressive: run-up achievement

umu n-e-mux e-jamen

COP:AGR:m LOC-CL:e-kill CL:e-goat

‘He is killing a goat.’



b. perfective: achievement

na-mug-e e-jamen

3S-kill-PERF CL:e-goat

‘He killed a goat.’

As in Figure 10a, showing the progressive aspect for a gradable change of state, Figure 11a profiles only the actual killing process. However, unlike the gradable change of state, the profiled section is tantamount to an activity. Until the one definitive moment that the goat is killed, it cannot be said that the goat is getting progressively deader. The vertical dotted line shows this final definitive action which actual kills the goat is implied, leading to the result state represented by the horizontal dotted line, although these are both cancellable – one could stop killing a goat before actually killing it. In Figure 11b, the definitive moment is profiled, which therefore entails the result state.

3.3 Nouns and nominal categories

Common nouns in Kujireray consist minimally of a root with a prefixed noun class marker.²⁶ Syntactically, nouns can appear as arguments of verbs, or be used to predicate when juxtaposed to another noun or pronoun (see 3.5.1 below). In the following sections I present an overview of some of the morphological processes associated with the nominal domain in Kujireray. While the noun classification system is sufficiently powerful that a wide variety of nouns can be formed without additional morphology, there is nevertheless a small inventory of nominalizing morphology that can be used, in conjunction with noun class prefixes, to form different types of noun. These are described in 3.3.1 to 3.3.4 below. In the subsequent sections I describe the system of independent pronouns and clitics, possession marking, quantifiers, numerals and prepositions.

²⁶ There are a few items which do not have an overt class marker (apart from proper names); for example, *biñu* ‘wine’. In the majority of cases this is due to direct borrowing, in this case from Kriolu.

3.3.1 Agent nominalizer *-a*

Agent nominalizations are formed by suffixing a verbal stem with the agent nominalizer *-a*. This process is fully productive for all verbs denoting activities, transitive change of states (for intransitive (change of) state verbs see below). It is used most commonly to form expressions denoting human agents of the action associated with the stem.²⁷ Accordingly, all forms are classified either in the *a-/u-* or *a-/ku-* paradigms, i.e. the human paradigms (see Chapter 4). Table 19 illustrates some of these agent nominalizations with their corresponding verbal roots.

Table 19 Agent nominalizations

stem	concept	agent nominal		gloss
		singular	plural	
<i>wa</i>	HARVEST PALM WINE	<i>a-wa-a</i>	<i>u-wa-a</i>	‘palm wine harvester/s’
<i>bulen</i>	STEAL	<i>a-bulen-a</i>	<i>u-bulen-a</i>	‘thief/thieves’
<i>rem</i>	DRINK	<i>a-rem-a</i>	<i>u-rem-a</i>	‘drinker/s’

The process above cannot be applied to verb roots which denote intransitive change of states or qualities. In these cases, a relative construction is used with the free form *an* ‘person’ or *bug-an* ‘people,’ placed before to the stem, which is itself prefixed with the relativizer morpheme *-a-*, and which agrees with the preposed item (in the singular the agreement is marked by \emptyset ²⁸). This could be translated equivalently as ‘person who is wise’ and so on (see 3.5.10 on relative constructions below).

²⁷ It is also present in some animal names – see section 3.3.3.6 below on compounds.

²⁸ The word initial agreement is marked as \emptyset here as a placeholder, since it is not realised phonetically, though it is likely that the agreement is a prefix *a-* that is either deleted or assimilated because of the relative marker *-a-* which follows it.

(69) *an* *a-lib-e*
CL:Ø-person Ø-REL-wise-PERF
‘wise person’

(70) *bug-an* *k-a-lib-e*
CL:bug-person AGR:k-REL-wise-PERF
‘wise people’

This construction can also be used with the negative marker *-ut* to express a person who does not possess the quality in question.

(71) *an* *a-jag-ut*
CL:Ø-person AGR:Ø-REL-intelligent-NEG
‘stupid person’

3.3.2 Instrument nominalizer *-um*

There is a semi-productive process for creating forms denoting tools or instruments associated with a particular situation. The morpheme *-um* is suffixed to the stem that represents that situation, and a noun is formed in a noun class paradigm determined by the semantic properties of the denoted instrument (see Chapter 4). The vowel of this suffix is a set 1 vowel (see section 3.1 above) and governs rightward vowel harmony accordingly (see also Sagna (2008:82) and Bassène (2007:108)).

Below are some examples of items formed by this process, with singular and plural prefixes shown, and the stem in the left hand column.

Table 20 Instrument nominalizations in *-um*

stem	concept	instrument nominal		gloss
		singular	plural	
<i>pac</i>	CARVE	<i>é-pěc-um</i>	<i>si-pěc-um</i>	‘carving tool/s’
<i>if</i>	BREATHE	<i>é-if-um</i>	<i>si-if-um</i>	‘breathing apparatus/nostril/s’
<i>tun</i>	RAKE	<i>kě-tun-um</i>	<i>ú-tun-um</i>	‘rake/s’
<i>bif</i>	FAN	<i>kě-bif-or-um</i> ²⁹	<i>ú-bif-or-um</i>	‘fan/s’
<i>toj</i>	CLOSE	<i>fú-toj-um</i>	<i>kú-toj-um</i>	‘lid/s’

The noun class paradigm in which these nouns are formed is semantically motivated. The first two examples, in paradigm *e-/si-*, are not conceived of as exhibiting particular features beyond individuation. The entities denoted by the nouns in paradigm *ka-/u-* are conceived as saliently extended (long in the case of the rake, and wide and flat in the case of the fan) thus motivating their formation in this paradigm. The final example in *fu-/ku-* is motivated in this paradigm on account of its round configuration.

Despite the nomenclature selected for this morpheme, forms also exist which denote a person associated with the state or event denoted by the stem, as shown in Table 21 below. The precise range of functions associated with this suffix is a topic for future research (see Sagna 2008:157).

²⁹ The morpheme *-or* in these forms is the reflexive morpheme, corresponding to the fact that fans are generally used to cool one’s own self. See 3.4.13 for a description of this morpheme.

Table 21 ‘Person’ nominalizations in *-úm*

stem	concept	‘person’ nominal		gloss
		singular	plural	
<i>car</i>	LIMP	<i>kě-cěr-um</i>	<i>ú-cěr-um</i>	‘limper/s’
<i>fěl</i>	OLD	<i>kě-fěl-um</i>	<i>ú-fěl-um</i>	‘old person/people’
<i>gib</i>	GREED	<i>a-gib-um</i>	<i>u-gib-um</i>	‘glutton/s’

3.3.3 Associative nominalizer *-ay*

When suffixed to a verb or noun stem, the morpheme *-ay* creates a form denoting ‘something to do’ with the concept associated with that stem. This can be something abstract, such as peace or friendship, or something more concrete with an association with the stem, such as a drink. Some examples are shown in Table 22 below. The noun class prefix in which the noun is formed is determined by perceived properties of the denoted concept. For example, the abstract concepts in (a-b) are denoted by nouns in *ba-* since this noun class is associated with semantics of unboundedness, which is compatible with the conceptualization of abstract entities are unbounded. A similar case obtains for (d), the form in *mu-*. This noun class prefix is also associated with semantics of unboundedness and particularly with liquids, thus motivating the formation of this noun. In the case of (c), *ku-olof-ay*, the noun class prefix *ku-* profiles the Wolof people; the associative suffix thus profiles an entity associated with the Wolof people i.e. their language. See Chapter 4 for a full discussion of noun class semantics.

Table 22 Associative nominalizations in *-ay*

	stem	concept	abstract nominal	gloss
a	<i>pal</i>	FRIEND	<i>ba-pal-ay</i>	‘friendship’
b	<i>bel</i>	CO-WIFE	<i>ba-bel-ay</i>	‘co-wifehood’
c	<i>olof</i>	WOLOF	<i>ku-olof-ay</i>	‘Wolof language’
d	<i>rem</i>	DRINK	<i>mu-rem-ay</i>	‘drink’

3.3.4 Compounding

Compounding is not a productive process in Kujireray, a fact which is unsurprising given the considerable power of the noun classification system in the formation of nouns. However, a number of compounds are attested, mostly denoting animals, and other natural phenomena.

(72) *e-humba f-al*

CL:e-pig CL:f-river

‘dolphin’ (lit: river pig)

(73) *ka-moj-a mu-lo*

CL:ka-dive-AGT CL:mu-salt.water

‘cormorant’ (lit: water diver)

(74) *ka-po-a si-riga*

CL:ka-watch-AGT CL:si-crocodile

‘goliath heron’ (lit: crocodile watcher)

(75) *ka-liba e-mit*

CL:ka-knife CL:e-sky

‘rainbow’ (lit: sky knife)

(76) *bě-gě e-fol*

CL:ba-drum CL:e-toad

‘type of fungus’ (lit: toad’s tom-tom)

- (77) *fu-ñ ñ e-joba*
 CL:fu-tooth CL:e-dog
 ‘incisor’ (lit: dog’s tooth)

These compounds are left-headed, as per the usual pattern of noun modification in Kujireray. Some are fully endocentric, as in (77) *fu-ñ ñ e-joba* ‘incisor’ which denotes a type of tooth. Some (75) and (76) (*bëgë e-fol* ‘toad’s drum’, *ka-liba e-mit* ‘sky knife’), are exocentric in that they are not hyponyms of their own heads (Bauer 2001:70). Rather than creating a metonymical or possessive relation between the compound head and the referent (there is no part of a rainbow that could be said to be represented by a knife), the relation is metaphorical.

Many of the expressions above straddle the line between endo- and exo-centric. While it may be assumed that (74) *kapoa siriga* ‘goliath heron’ watches crocodiles as a salient activity and therefore it is valid to say that it is a type of watcher, this is rather obtuse. It is fair to say that bird is a more salient category than watcher. All the compounds of this type consist of an agent nominal as the head, with the patient or theme as the modifier. However, note the identity between the compounding strategy and the possessive juxtaposition construction (3.3.15 below).

3.3.5 Nominal inactualis suffix -en

The inactualis morpheme, *-en*, can be used in the nominal domain as well as the verbal domain (see section 3.4.1.9). In the nominal domain it is used in conjunction with possessive constructions; either with possessive suffixes, or full noun phrases in juxtaposition to express the meaning that something was once possessed, but is no longer.

- (78) *a-pal-en-om*
 CL:a-friend-INACT-1.POSS
 ‘My ex-friend’

(79) *a-pal-en* *Rachel*³⁰

CL:a-friend-INACT Rachel

‘Rachel’s ex-friend’

Sagna (2008:108) states that in Eegimaa this morpheme is only possible in the case of alienable possession and not with things that are inalienably possessed such as family members and body parts. This assumption appears to fall out logically; if something is inalienably possessed, the possession relation cannot come to an end. However, when a suitable situation can be contrived, such as amputation of a limb, or rejection of a family member, this morpheme was also accepted with such items.

3.3.6 Independent pronouns

There is a paradigm of free pronouns which may be used in place of a full noun. This is shown in Table 23 .

Table 23 Independent pronouns

person	independent pronoun	person	independent pronoun
1S	<i>inje</i>	1P.EXCL	<i>eli</i>
		1P.INCL	<i>ela</i>
2S	<i>au</i>	2P	<i>burul</i>
3S/P	AGR(V)- <i>sila</i> / AGR- <i>o</i>	3P (human)	<i>bug</i> -PROX/MED/DIST

The PROX-MED-DIST in third person plural form indicates that this form takes one suffix of the demonstrative paradigm *-e/-u/-a* which encodes the distance of the referent from the speaker (i.e. proximal, medial or distal respectively). This form is used exclusively with human referents – when a speaker wishes to refer pronominally to plural non-human entities, they must use one of the two forms AGR-*sila* or AGR-*o*. The AGR in these forms corresponds to the fact that these forms are prefixed to agree with their antecedent. Since

³⁰ This is in contrast to Sagna’s (2008:108) description of the comparable morpheme in Eegimaa. He states that it can only be used with possessive suffixes, and not full noun possessors.

plurality in Kujireray is marked by a noun class prefix (as part of a paradigm) without additional morphology, agreement with a plural noun class indicates plurality on controlled forms (thus this form is glossed in examples simply as 3). The functional distinction between these two forms is unclear and a topic for future research. In many contexts they are interchangeable. These forms are illustrated for a selection of agreement patterns in Table 24.

Table 24 Independent third person pronouns

antecedent noun	gloss	AGR-sila	AGR-o
<i>e-joba</i>	‘dog’	<i>e-sila</i>	<i>y-o</i>
<i>si-siho</i>	‘cats’	<i>si-sila</i>	<i>s-o</i>
<i>fu-mango</i>	‘mango’	<i>fu-sila</i>	<i>f-o</i>
<i>ji-liba</i>	‘knife’	<i>ji-sila</i>	<i>j-o</i>

These forms are fully independent; they stand alone and can function as both subject and object of a verb as well as adjuncts/obliques. Under a typology such as Creissels (2005), these are Stage I pronominal markers, that is, they are fully independent and in complementary distribution with full NPs (except in certain pragmatic contexts such as dislocation). Kujireray does not require overt arguments in many contexts (subject is obligatorily marked on the verb, and object may be omitted, or marked by affixation on the verb), and these pronouns are not used obligatorily in the absence of nominal arguments, but rather are generally employed pragmatically to express emphasis or focus. For example, (80) is pragmatically neutral, whereas (81) expresses the fact that the speaker saw him/her rather than someone else, and (82) that it was the speaker who saw him, rather than someone else. This appears to be a case of focus (object and subject respectively), although a full investigation of topic and focus constructions in Kujireray is a subject for future research.

(80) *ni-jug-ol*

1S-see-3S

‘I saw him.’³¹

(81) *a-sila ni-jug-ol*

AGR:a-3 1S-see-3S

‘It was *him/her* I saw.’

(82) *inje ni-jug-ol*

1S 1S-see-3S

‘I saw him/her’

Note that in these constructions the free pronoun is not necessarily in complementary distribution with the object clitic; in (81) they appear together in the same utterance. Also, the free pronoun precedes the verbal construction, regardless of whether it is associated with the subject or object of the verb, supporting the hypothesis that these are focus constructions; the leftmost item is put in focus.

These pronouns may also occur in oblique object/adjunct position, in which case they are preceded by a preposition as in (83).

³¹ Although the gloss does not contain an explicit perfective/completive marker to express that the action happened in the past, this is nonetheless the correct interpretation. It seems that the relevant morpheme is not realised when other morphology, such as the object suffix in this example takes precedence.

(83) *Andre na-nom-e ka-tegel mata a-sila*

Andre 3S-buy-PERF CL:ka-basket for AGR:a-3S

‘Andre bought a basket for him/himself.’

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Free pronouns are also used in non-verbal predicates, where there is no verbal agreement to indicate the subject of the verb. For example, they appear in introductions or existential constructions such as the following, where the predicate is a nominal form.

(84) *inje Urbain* ‘I’m Urbain’

(85) *a-sila aligena* ‘He/she is a teacher/student’

Indeed examples have also been observed of independent pronouns being used with verbal nouns (see also 3.5.1 below on non-verbal predication).

(86) *inje bu-ot*

1S CL:bu-go.home

‘I am going home.’

participant observation

3.3.7 Subject markers

With the exception of impersonal constructions, all verbs must be marked for their subject, using a prefix that agrees with the subject (although the subject is not obligatorily expressed). For morphemes marking certain human participants, a contrast exists between subject agreement markers in positive and negative (and irrealis) construction types. These are illustrated in Table 25.

Table 25 Personal subject agreement markers

person	paradigm 1 positive	example person-eat-PERF	paradigm 2 negative/irrealis	example person-eat-NEG
1S	<i>ni-</i>	<i>ni-tiñ-e</i> 'I ate.'	<i>i-</i>	<i>i-tiñ-ut</i> 'I did not eat.'
2S	<i>nu-</i>	<i>nu-tiñ-e</i> 'You ate.'	<i>u-</i>	<i>u-tiñ-ut</i> 'You did not eat.'
3S	<i>na-</i>	<i>na-tiñ-e</i> 'He/she ate.'	<i>a-</i>	<i>a-tiñ-ut</i> 'He did not eat.'
1P.INCL	<i>nu-...-a</i>	<i>nu-tiñ-a-l-e</i> ³² 'We ate.'	<i>u-...-a</i>	<i>u-tiñ-ut-a</i> 'We did not eat.'
1P.EXCL	<i>ji-</i>	<i>ji-tiñ-e</i> 'We ate.'	<i>ji-</i>	<i>ji-tiñ-ut</i> 'We did not eat.'
2P	<i>ji-</i>	<i>ji-tiñ-e</i> 'You ate.'	<i>ji-</i>	<i>ji-tiñ-ut</i> 'You did not eat.'
3P	<i>ku-</i>	<i>ku-tiñ-e</i> 'They ate.'	<i>ku-</i>	<i>ku-tiñ-ut</i> 'They did not eat.'

Notably, for all singular forms, and the first person plural inclusive, there is a difference between the positive and negative forms, namely that the word initial *n-* is omitted in the latter. Sagna (2008:144) ascribes this to the fact that in the case of the positive paradigm, the marker can be analysed as consisting, diachronically at least, of the locative marker *ni*, prefixed to the personal agreement markers.

For non-human subjects, subject marking is also determined by the antecedent noun. In most cases the subject marker is alliterative, showing phonological similarity with the noun class prefix of the antecedent noun. In certain cases, it may be less predictable, determined by additional semantic factors. This reflects the complex nature of the noun classification system and is exemplified and discussed in detail in Chapter 4.

3.3.8 Personal object markers

Objects may be marked by independent pronouns (see 3.3.6 above). In addition, there is a paradigm of object clitics used only when the object of the verb is human. They affix after

³² The *l* in this form is apparently an epenthetic segment inserted to avoid the juxtaposition of two vowels. Note that it is not present in the negative form where the possibility of two adjacent heteromorphemic vowels does not arise.

other verbal morphology such as the negative marker *-ut*. They are shown in Table 26 and examples are provided in (87) and (88).

Table 26 Personal object suffixes

person	suffix	person	suffix
1S	<i>-om</i>	1P.INCL	<i>-ela</i>
		1P.EXCL	<i>-eli</i>
2S	<i>-i</i>	2P	<i>-ul</i>
3S	<i>-ol</i>	3P	<i>-il</i>

(87) *ni-saaf-ul*

1S-greet-2P

‘I greet you.’

formulaic greeting

(88) *u-fas-ut-ol*

2S-know-NEG-3S

‘You do not know him.’

participant observation

Note that these markers are identical to the personal possession markers (see 3.3.16 below) – this fact is highly relevant to the discussion of verbal nouns in Chapter 5.

3.3.9 Non-specific pronoun AGR-nde

The form *nde* acts in Kujireray as a non-specific pro-form (see also Sagna 2008:123). An equivalent form in Gubëeher is labelled omniclass by Cobbinah (2013:328). It may be used with all agreement prefixes, to encode a meaning something akin to ‘so and so’ or ‘thingummy’. It is often heard in speech when the speaker is mentally searching for the

correct name of the desired referent.

- (89) *y-o* *n-e-hot* *ni* *e-nde*
AGR:y-pn LOC-CL:e-adhere LOC AGR:e-so.and.so

‘It’s stuck to the thing.’ (antecedent is *e-chaise* ‘chair’)

MSRWBC22

The form *u-nde*, consisting of a presentative morpheme *u-*, followed by the stem *nde*, is used in a non-verbal construction as a neutral (i.e. unaffected by concord) demonstrative, or presentative with a meaning comparable to ‘Voilà!’

- (90) *u-nde* *Hélène*
PRES-so.and.so Hélène

‘This is Hélène.’

BRIN120316RWa

While in general this form is fixed, there is one instance in the corpus of the form *undu*.

- (91) *nu-kan* *nan* *u-nd-u*
2S-do like PRES-so.and.so-MED

‘You do like this one.’

BRIN120227RWb

This form is not widespread in language use – it is rejected as ungrammatical by speakers, and this judgement is supported by the fact that the pro-form AGR-*nde* never varies its final vowel. Nevertheless, this is evidence that the final vowel of the neutral demonstrative comes from the paradigm of demonstrative suffixes, so that that, diachronically at least, *u-nd-e* would be used to present an entity or action near to the speaker, and *u-nd-u* for an entity or action at a medial distance. The scarcity of the latter form is taken as evidence that the form

has grammaticalized to *unde* and the deictic alternations unproductive synchronically.

3.3.10 Demonstrative pronoun *u* -(C) -AGR -DEM

This pronoun has exophoric meaning; it refers to the position of its antecedent in spatial terms. The position of the entity can be specified for proximal, medial or distal position according to the final vowel (the exact nature of these distinctions are not fully understood – whether it is a spatial relation that holds only between the speaker and the object, or between both interlocutors and the object remains a topic for future research).

- (92) *na-gol u-ɲar u-y-u u-pos u-kan*
 3S-say 2S-take PRES-AGR:y-MED 2S-wash 2S-do
n-e-nde
 LOC-CL:e-so.and.so
 ‘She said, take this, wash it and put it in something.’ BRIN120124RWb

- (93) *fu-cak nan u-f-e nu-hox*
 CL:fu-bunch like PRES-AGR-PROX 2S-tie
 ‘A bunch like this, you tie this up.’ BRIN120227RWb

The demonstrative pronoun has the structure: *u*-(C)-AGR-PROX/MED/DIST. This is analysed as follows. In equivalent constructions in Eegima, Sagna (2008:117) analyses the initial segment *u* as having presentative function. This is supported by the fact that the form *unde* ‘Voilà (this person/thing)!’ consists of the segment *u* plus the pro-form *nde*, as described in section 3.3.9 above. In the demonstrative pronoun this is followed by an agreement marker determined by the class of the antecedent noun. The (C) in the structure represents the fact that in some cases the agreement marker is preceded by a homorganic nasal consonant. Following the agreement morpheme is a demonstrative marker which is one of a three way paradigm *-e/-u/-a* which encode, respectively, proximal, medial and distal. Examples for selected agreement patterns are shown in Table 27 below, using the medial marker *-u* for purposes of illustration (which creates the form identical to the copula which originates in this demonstrative form – see section 3.4.1.1 below). The first and last examples in the table

exemplify the homorganic consonant insertion.

Table 27 Demonstrative pronoun *u* -(C) -AGR -DEM

	noun class prefix	example	gloss	demonstrative pronoun <i>u</i> -(C) -AGR -DEM
a	<i>bug-</i>	<i>bug-an</i>	‘people’	<i>u-m-bug-u</i>
b	<i>e-</i>	<i>e-joba</i>	‘dog’	<i>u-y-u</i>
c	<i>si-</i>	<i>si-siho</i>	‘cats’	<i>u-s-u</i>
d	<i>fu-</i>	<i>fu-mango</i>	‘mango’	<i>u-f-u</i>
e	<i>ji-</i>	<i>jiliba</i>	‘knife’	<i>u-n-j-u</i>

3.3.11 Demonstrative determiner AGR-*a*-AGR-*u*

This form is analysed as consisting of the agreement marker, followed by definiteness marker *a-*, presentative *-u-*, a second concord marker, and finally an affix from the demonstrative paradigm *-e/-u/-a*. Again, the presence of these spatial demonstrative markers is indicative of the exophoric function of this form. This form is used deictically to ‘point out’ the referent in physical space, as well as indicating its distance from the speaker, which is effected by the *-e/-u/-a* PROX/MED/DIST affix.

- (94) *ni-man-e* *fu-mango* ***f-a-u-f-u***
 1S-want-PERF CL:fu-mango AGR:f-DEF-PRES-AGR:f-MED
 ‘I want that mango.’

BRIN111124RW

3.3.12 Definite determiner AGR-*a*-AGR-*u*

This determiner has the following structure: AGR-*a*-AGR-*u*. The agreement is determined by the antecedent noun. The word-final *u* is analysed as originating in the demonstrative paradigm. However, the fact that it is invariable (i.e. it does not alternate with *e* and *a* to distinguish different spatial positions) reflects the fact that this form has grammaticalized to fulfil endophoric discourse function only. In addition it contrasts with the demonstrative

form in section 3.3.11 above in its lack of the presentative morpheme *u*, further supporting the analysis that it does not have exophoric function. This is consistent with the fact that it is used in discourse to mark recently introduced and central participants. In this case the burden of expressing definiteness falls to the remaining segment *a-*.

- (95) *ku-teb ku-ñen a-fan a-h-u ku-tiñen*
 3P-take CL:ku-hand CL:a-elder AGR:Ø-DEF-AGR:h-MED 3P-smell

‘They took the old woman's hands and smelt them.’

BRIN120124RWb

- (96) *na-alen t-o ju-ol j-a-j-u jon*
 3S-put.down AGR:t-pn CL:ji-fish AGR:j-DEF-AGR:j-MED well

‘He put the fish down there delicately.’

BRIN120124RWb

3.3.13 Definite determiner AGR-e

This form has structure: AGR-*e*. It is analysed as a concord marker plus the proximal demonstrative marker *e*.

- (97) *e-liw y-e ni-pos-e y-o*
 CL:e-meat AGR:y-PROX 1S-wash-PERF AGR:y-pn

‘The meat, I washed it.’

BRIN120124RWb

The difference in function between the two definite determiners is as yet unascertained. It is interesting to note that they contrast in the member of the demonstrative paradigm retained; one uses medial *-u*, the other proximal *-e*.

3.3.14. Indefinite determiner/ pronoun

The form AGR-*ce* may be used pre-, post-, or pronominally to mark a number of related meanings. It is subject to agreement with its controlling noun – the paradigm is exemplified for a selection of noun classes in Table 28.

Table 28 Indefinite determiner/pronoun AGR-*ce*

noun class prefix	example	gloss	indefinite determiner/pronoun AGR- <i>ce</i>
<i>e-</i>	<i>e-joba</i>	‘dog’	<i>e-ce</i>
<i>si-</i>	<i>si-siho</i>	‘cats’	<i>si-ce</i>
<i>fu-</i>	<i>fumango</i>	‘mango’	<i>fu-ce</i>
<i>ji-</i>	<i>jiliba</i>	‘knife’	<i>ji-ce</i>

One of the functions of this form is to mark new participants in the discourse.

- (98) *na-tox an afana a-ce ni e-holon*
 3S-find person AGR:a-elder AGR:a-INDEF LOC CL:e-well
 ‘He found an elder by a well.’

BRIN120124RWb

- (99) *ni-baj-e waf u-ce b-e-mig-i*
 1S-have-PERF CL:w-thing AGR:u-INDEF to-CL:e-ask-2S
 ‘I have something to ask you.’

BRIN111117RW

This form may also be used pronominally to express an indefinite entity. In this case there is no overt controlling noun with which to agree, but the agreement morphology signals what type of entity is being referred to. In other words such forms used pronominally can be paraphrased as ‘an indefinite/unknown entity belonging to class X’.

(100) *nu-manj-e fu-ce*
 2S-want-PERF AGR:fu-INDEF
 ‘You want one.’ (antecedent is *fu-logum* ‘fable’) BRIN120124RWb

(101) *Andre na-nom-e ka-tegel bu ni a-ce*
 Andre 3S-buy-PERF CL:ka-basket to LOC AGR:a-INDEF
 ‘Andre bought a basket for someone.’
 BRIN111214RW

In (100) *fu-ce* refers to *fu-logum* ‘fable’. While entities associated with agreement marker *fu-* are a large homogeneous class, the correct referent here is retrievable from context; this example comes from a session the purpose of which was to record local folk tales (*fu-logum/ku-logum*). In (101) *a-ce* is readily interpretable since the class of entities associated with agreement marker *a-*, exclusively denote humans, to the extent that *a-ce* in this function can be said to be lexicalized as ‘someone’.

The indefinite form AGR-*ce* may also be used in existential expressions equivalent to ‘there is/are/was/were,’ although this function may also be filled by *baje* ‘(it) has’. Note that in this function the indefinite form is preposed to its controller noun, rather than postposed as in the examples above.

(102) *yo si-ce si-mbot*
 yes AGR:si-INDEF CL:si-boy
 ‘Yes, there were some boys.’ BRIN111205RWb

(103) *ji-ce ji-felum fafunax*
 AGR:ji-INDEF CL:ji-old.person other.day

‘There was a little old man the other day.’

BRIN111205RWc

When used postnominally or pronominally where the referent is known, it may be interpreted as ‘another/others’.

- (104) *ni-bañ-e* *i-baj* *a-ti-om* ***a-ce***
1S-repeat-PERF 1S-have CL:a-sibling-1S.POSS AGR:a-INDEF

a-cin-e *Jegele*
3S-live-PERF Jegele

‘I have another brother who lives in Jegele.’

BRIN111117RW

- (105) *ni* *ku-tinen-il* ***a-ce*** *o* *na-lat*
and 3P-accompany-3P AGR:a-INDEF AGR:Ø:pn 3S-refuse
‘And they followed them / the other (she) refused.’

BRIN120117RWc

3.3.15 Possessive constructions

The relation between two nouns that stand in a possessor-possessee relation can be encoded in two ways. The first is direct juxtaposition, with the possessee preceding the possessor as in (106)-(107).

- (106) *e-jamen* *Thomas*
CL:e-goat Thomas
‘Thomas’s goat’

(107) *ka-at* *e-be*
 CL:ka-foot CL:e-cow

‘cow’s foot’

BRIN120224RWb

A possessive relation can also be marked with the connector AGR-*a*, which appears between the possessed and possessor, and where AGR corresponds to agreement with the possessee.

(108) *au* *u-m-u* *ni* *ka-ñen* ***k-a*** *pa-i*
 2S COP.AGR:m LOC CL:ka-hand AGR:k-CONN father-2S.POSS

‘You are at your father’s house.’ (literally: ‘You are in the hand of your father.’)

BRIN120124RWb

In many cases, both constructions are acceptable for a given relation, and the exact nature of the semantic distinction is unclear at this time. However, it is observed that where a possession relation could be conceived as inalienable, or inherent (as in the case of body parts or family members) only the juxtaposition construction is acceptable, whereas when the relation weaker, such as possession of objects, both constructions are acceptable. This asymmetry is illustrated in Table 29.

Table 29 Assymetry between the two possessive constructions

	‘inherent’³³ possession relation	‘non-inherent’ possession relation
juxtaposition construction	<i>fu-how Damien</i> ‘Damien’s head’	<i>yaŋ Damien</i> ‘Damien’s house’
connective AGR-<i>a</i> construction	<i>*fu-how f-a Damien</i> intended: ‘Damien’s head’	<i>yaŋ y-a Damien</i> ‘Damien’s house’

Where both constructions are available in the case of non-inherent possession, it is unclear at this time whether this is a case of free variation between the two constructions, or whether a crucial semantic distinction exists between the two (this question is also relevant to issue of the syntax of verbal nouns; see 5.1.3 for detailed discussion). Indeed, the AGR-*a* connector construction may express more varied semantic relations, unlike the juxtaposition construction which appears to be limited to strictly possessive relations.

- (109) *pan i-iken-i e-iken y-a Senegal*
 FUT 1S-cook-2S CL:e-food AGR:y-CONN Senegal

‘I will make you some Senegalese food.’

BRIN111209RWb

- (110) *e-jaw y-a kē-sum-ay*
 CL:e-go AGR:y-CONN CL:ka-good-ASSOC

‘a happy journey’ (lit: ‘a journey of peace’)

participant observation

³³ The term ‘inherent’ is chosen here deliberately to highlight the fact that the possession relation referred to is a conceptual one, not a grammatical one.

This form can also be used pronominally to express a meaning ‘that of the X’

- (111) *y-a* *ka-jala* *pan* *u-tex*
AGR :y-CONN CL:ka-sickle FUT 2S-beat

‘That of the sickle you will beat.’ (antecedent: *e-haŋa* ‘rice’, lit: ‘that cut with a sickle’)

BRIN120227RWb

- (112) *nu-tiñ-e* *s-a* *kë-rusa* *fugen*
2S-eat-PERF AGR:s-CONN CL:ka-evening yesterday

‘You ate dinner yesterday.’ (antecedent: *si-naŋ* ‘rice,’ lit: ‘rice of the evening’)³⁴

BRIN111118RW

This item is also significant to the discussion of the syntax and semantics of verbal nouns – see Chapter 5 for discussion.

3.3.16 Personal possessive suffixes

When the possessor is human, the possessive relationship may be encoded by means of a suffix on the noun denoting the possessee. The paradigm is shown in Table 30.

³⁴ This is a fossilized expression, as are *sa kabujom* ‘breakfast’ (morning rice) and *sa tifunax* ‘lunch’ (afternoon rice).

Table 30 Personal possessive suffixes

person	suffix	example	gloss
1S	<i>-om</i>	<i>apal-om</i>	‘my friend’
2S	<i>-i</i>	<i>apal-i</i>	‘your friend’
3S	<i>-ol</i>	<i>apal-ol</i>	‘his/her friend’
1P.EXCL	<i>-eli</i>	<i>apal-eli</i>	‘our friend’ (excl. addressee)
1P.INCL	<i>-ela</i>	<i>apal-ela</i>	‘our friend’ (incl. addressee)
2P	<i>-ul</i>	<i>apal-ul</i>	‘your friend’
3P	<i>-il</i>	<i>apal-il</i>	‘their friend’

Note that this is identical to the paradigm for personal object suffixes. Furthermore the same function can be fulfilled for non-human entities using the pronouns of form AGR-*o* (see 3.3.6 above).

3.3.17 Personal possessive pronouns

These pronouns may be used to express a possessed item that is not explicitly named. They are subject to agreement with the controlling noun i.e. the possessee. Like the suffixes described in the previous section they are available only for human possessors.

Table 31 Independent possessive pronoun paradigm

person	possessive pronoun	gloss
1S	<i>AGR-umbam</i>	‘mine’
2S	<i>AGR-iya</i>	‘yours’
3S	<i>AGR-la</i>	‘his/hers’
1P.EXCL	<i>AGR-oleli</i>	‘ours’ (excl. addressee)
1P.INCL	<i>AGR-olela</i>	‘ours’ (incl. addressee)
2P	<i>AGR-olul</i>	‘yours’
3P	<i>AGR-olil</i>	‘theirs’

3.3.18 Universal quantifier

This quantifier may occur both with and without an antecedent noun to function as determiner and pronoun respectively. All examples in the corpus are of the form *AGR-anosan*, although in elicitation speakers accept a form with two agreement elements *AGR-ano-AGR-an* – which is also attested in Eegimaa (Sagna 2008:120). The universal quantifier is illustrated in Table 32 for a selection of noun classes.

Table 32 Agreement paradigms for the universal quantifier

NCP	example	gloss	form 1 <i>AGR-anosan</i>	form 2 <i>AGR-ano-AGR-an</i>
<i>e-</i>	<i>e-joba</i>	‘dog’	<i>y-anosan</i>	<i>y-ano-y-an</i>
<i>si-</i>	<i>si-siho</i>	‘cats’	<i>s-anosan</i>	<i>s-ano-s-an</i>
<i>fu-</i>	<i>fu-mango</i>	‘mango’	<i>f-anosan</i>	<i>f-ano-f-an</i>
<i>ji-</i>	<i>ji-liba</i>	‘knife’	<i>j-anosan</i>	<i>j-ano-j-an</i>

The construction in which the quantifier occurs determines whether the meaning expressed is negative or positive. For example when used with a positive verb it expresses the meaning

- (116) *ku-nehela k-anosan ku-tiñ-e-tiñ e-haŋa*
 CL:ku-bird AGR:k-QUANT AGR:ku-eat-HAB-REDUP CL:e-rice

‘Every (type of) bird eats rice.’

- (117) **ku-bögër k-anosan ku-tiñ-e-tiñ e-haŋa*
 CL:ku-rat AGR:k-QUANT AGR-eat-HAB-REDUP CL:e-rice

intended: ‘Every rat eats rice.’

field notes

3.3.19 Quantifier AGR-man ‘a few/such’

The form AGR-man is a quantifier that can express two meanings with respect to the antecedent entity; either – ‘a few’, as in (118) or ‘such a thing’, as in (119) and (120).

- (118) *ni-nom-e mu-liño mu-man*
 1S-buy-PERF CL:mu-onion AGR:mu-few

‘I bought a few onions.’

BRIN111129RWa/b

- (119) *ni-sen-ol ka-wox ku-man*
 1S-give-3S.POSS CL:ka-name AGR:ku-such

‘I gave him such a name’

BRIN111130RWa

(120) *w-af* ***wu-man***

CL:w-thing AGR:wu-man

‘such a thing’

field notes

The agreement patterns for a selected number of noun classes are shown in Table 33.

Table 33 Agreement paradigms for quantifier AGR-*man*

NCP	example	gloss	quantifier
<i>e-</i>	<i>e-joba</i>	‘dog’	<i>e-man</i>
<i>si-</i>	<i>si-siho</i>	‘cats’	<i>si-man</i>
<i>fu-</i>	<i>fu-mango</i>	‘mango’	<i>fu-man</i>
<i>ji-</i>	<i>ji-liba</i>	‘knife’	<i>ji-man</i>

3.3.20 Quantifier *pe* ‘all’

The quantifier *pe* can also be used as pronominally or as a determiner. It expresses the meaning ‘all.’ It is an invariant form and is not subject to agreement with its antecedent. When used with an overt antecedent, it comes after the noun phrase.

(121) *ner* *bu-caŋ* *babu* ***pe***

now CL:bu-sorcery AGR:bu-DEF-AGR:bu-MED all

e-box *n-asila*

CL:e-dance LOC-AGR :a-3S

‘Now, the community of sorcerers all dance with him.’

BRIN111205RWa

(122) *na-ŋar-ul* *a-pos* *pe* *a-kan* *ni* *ka-riloŋ*
 3S-bring-DIR 3S-wash all 3S-put LOC CL:ka-pot

‘He bought it, he washed it all, he put it in the pot.’

BRIN120124RWb

This quantifier is also attested with negative meaning when used in conjunction with a negative verb form.

(123) *na-g-il* *inje* *pe* *mat* *i-tiñ*
 3S-say-3P 1S all NEG.FUT 1S-eat

‘She told them, I will not eat anything.’

BRIN111205RWc

3.3.21 Numerals

As is typical for languages of this region, Kujireray has a number system based on five. The words for numerals 1 to 5, 10, 15 and 20 are unique; other numerals are formed using these expressions in various combinations of multiplication and addition. For example, 6 = 5 + 1, 7 = 5 + 2, and so on. The following table shows the first twenty cardinal numerals in citation form, i.e. when used simply to count, rather than to count something particular, which would trigger agreement on the terms for 1 to 4 (*yanu*, *siruba*, *sifoji*, *sibagir*). Note that in citation form those expressions follow the agreement pattern for the default singular-plural paradigm *e-/si-*.

Table 34 Numerals 1-20 in citation form

numeral	citation form	numeral	citation form
1	<i>yanu</i>	11	<i>kuñen ni yanu</i>
2	<i>siruba</i>	12	<i>kuñen ni siruba</i>
3	<i>sifoji</i>	13	<i>kuñen ni sifoji</i>
4	<i>sibagir</i>	14	<i>kuñen ni sibagir</i>
5	<i>futox</i>	15	<i>kuñen kaat</i>
6	<i>futox ni yanu</i>	16	<i>kuñen kaat ni yanu</i>
7	<i>futox ni siruba</i>	17	<i>kuñen kaat ni siruba</i>
8	<i>futox ni sifoji</i>	18	<i>kuñen kaat ni sifoji</i>
9	<i>futox ni sibagir</i>	19	<i>kuñen kaat ni sibagir</i>
10	<i>kuñen</i>	20	<i>ëvi</i>

Some of the terms used in the numeral system are derived from other lexical items. For example, *kuñen* ‘10’ is the plural for hand, evidently representing metonymically the ten fingers of two hands. The term for ‘15’ *kuñen kaat* consists of the aforementioned word for hands, and the singular expression for ‘foot,’ to denote the five toes of the foot. The word for ‘five’ itself is not at this time known to be related to the body. The term *ëvi* ‘20’ also means ‘king’ (the plural *uvi* is used for multiples of 20). It is not known definitively what the semantic link is between the person and the number is although it seems plausible that the king stands archetypally for a person, whose full complement of digits number 20. This is particularly feasible in light of the fact that the word for ten is *kuñen* – ‘hands’.³⁵

As mentioned above, the only unique expressions in the Kujireray number system are 1, 2, 3, 4, 5, 10, 15, and 20. All other expressions consist of different combinations of these using rules of addition and multiplication. For example, since *ëvi* ‘20’ is the highest multiple of 10 with its own particular label, all subsequent multiples of 10 are expressed as either a

³⁵ Sagna (2008:130) asserts that the connection between the king and this numeral is the length of his reign – twenty years.

multiple of 20 (i.e. 40, 60, 80), or a multiple of 20, plus 10 (30, 50, 70, 90). Where the number is the product of more than one times 20, the plural *uvi* is used. The examples in (124) and (125) show how the terms for 60 and 50 are built.

$$\begin{array}{rcll}
 (124) & 60 & = & u-vi & ku-foji \\
 & & & CL:u-twenty & CL:ku-three \\
 & & & 20 & \times & 3
 \end{array}$$

$$\begin{array}{rclll}
 (125) & 50 & = & u-vi & ku-ruba & ni & kuñen \\
 & & & CL:u-twenty & CL:ku-two & \text{and} & \text{ten} \\
 & & & 20 & \times & 2 & + & 10
 \end{array}$$

Numbers that are a multiple of 20 plus 5 follow the rule exemplified above and simply affix *ni futox* ‘and five.’ The formula for 45 is shown in (126) .

$$\begin{array}{rclll}
 (126) & 45 & = & u-vi & ku-ruba & ni & futox \\
 & & & CL:u-twenty & CL:ku-two & \text{and} & \text{five} \\
 & & & 20 & \times & 2 & + & 5
 \end{array}$$

For numbers that consist of a multiple of 20, plus 15 (ie 35, 55, 75, 95) the speaker has two options: they first multiply 20 to the nearest possible number that is lower than the target and then either add 10 and 5, as in (127), or add 15, as in (128). As shown by the brackets in (128) below, in this case the *kuñen* may even be omitted; since *kaat* occurs only in the expression for 15, it is able to stand alone to represent this number.

(127) 55 = *u-vi ku-ruba ni kuñen ni futox*

CL:u-twenty CL:ku-two and ten and five

20 x 2 + 10 + 5

(128) 55 = *u-vi ku-ruba ni (kuñen) ka-at*

CL:u-twenty CL:ku-two and ten five

20 x 2 + 15

For 100, Kujireray seems to have borrowed the Wolof term. It is not clear where the numeral expression for 1000 comes from (the Wolof term is provided here for comparison). Both terms are fully integrated into the noun class system (in class paradigm *e-/si*) as evidenced by the change of class marker on the plural and the agreement on the multiplier.

Table 35 Large number terms

number	numeral term	
100	<i>e-teemir</i>	cf. Wolof <i>téeméer</i>
200	<i>si-teemir si-ruba</i>	
1000	<i>e-uli</i>	cf. Wolof <i>junni</i>
2000	<i>si-uli siruba</i>	

Numerals appear after the noun that they modify, and numerals 1-4 are subject to agreement as controlled by that noun.

(129) *na-ŋar-ul ka-haŋa k-anu*
 3S-bring-DIR CL:ka-rice AGR:k-one

‘She brought one grain of rice.’

BRIN120124RWb

They may also be used pronominally, still showing agreement with the antecedent noun.

(130) *mun i-cam-i u-ruba*
 so 1S-pay-2S AGR:u-two

‘So I will pay for two [bottles]’

participant observation

They can even be used nominally, to refer to a group of a particular number. The example in (131) shows the numeral *sifoji* ‘4’ being used with a determiner.

(131) *si-foji s-e bu-lër*
 CL:si-four AGR:s-PROX CL:bu-work

‘The four are working.’

BRIN130109RWc

Only the first four integers are subject to agreement; the others are invariable. When a numeral consists of one variable and one invariable element, the variable element continues to exhibit agreement.

(132) *ni-nom-e u-tegel futox ni u-ruba*

1S-buy-PERF CL:u-basket five and AGR:u-two

‘I bought seven baskets.’

BRIN111129RWa

The situation is somewhat complicated when counting money. Instead of each numeral expression denoting the equivalent number of CFA francs, the currency is counted in multiples of five. That is to say, 5 CFA francs is called *yanu* ‘1’, 10 is *siruba* ‘2’, 100 is *ëvi* ‘20’ and so on. This is a common feature in West Africa and falls out from colonial times when the smallest unit of currency was a 5 franc piece.

Table 36 Numeral expressions for counting money

Kujireray expression	number value	value in CFA	Kujireray expression	number value	value in CFA
<i>yanu</i>	1	5	<i>ëvi</i>	20	100
<i>siruba</i>	2	10	<i>eteemir</i>	100	500
<i>sifoji</i>	3	15	<i>siteemir siruba</i>	200	1000
<i>sibagir</i>	4	20	<i>siteemir sifoji</i>	300	1500
<i>futox</i>	5	25	<i>siteemir sibagir</i>	400	2000
<i>futox ni yanu</i>	6	30	<i>siteemir futox ni yanu</i>	600	3000
<i>futox ni siruba</i>	7	35	<i>siteemir futox ni sifoji</i>	800	4000
<i>futox ni sifoji</i>	8	40	<i>euli</i>	1000	5000
<i>futox ni sibagir</i>	9	45	<i>euli ni siteemir siruba</i>	1200	6000
<i>kuñen</i>	10	50	<i>siuli siruba</i>	2000	10000

The ordinal numbers are based on the cardinal numbers with suffixation and some phonological changes.

Table 37 Ordinal numbers

ordinal number	Kujireray term
1 st	AGR- <i>yañ</i>
2 nd	AGR- <i>ruten</i>
3 rd	AGR- <i>fojiten</i>
4 th	AGR- <i>bagiren</i>
5 th	AGR- <i>togen</i>

In the ordinals 2nd to 5th the suffix *-en* can be clearly observed. Sagna (2008:133) purports that this is the causative suffix such that the expressions could be translated as ‘makes two, makes three’ and so on. It is also feasible that the same suffixation has occurred with the numeral *yanu* ‘1’ but that the original form has reduced from *yanu-en* to *yañ*. Some reduction is observed in *ruten* ‘2nd’ since the syllable *-ba* from the cardinal number *si-ruba* ‘two’ is not present. In *fojiten* ‘third’ there is an epenthetic *t* between the root final and suffix initial vowels, and in *togen* ‘fifth’ the root final *x* becomes a vowel medial *g*.

Only the terms for ‘first’ to ‘fifth’ are shown in Table 37, as there is significant variation in the forms provided for all subsequent ordinal numbers. Specifically, since all numerals after five are composed of two or more numeral terms there is variation in where speakers place the ordinal marker *-en*, on the first or second numeral term or both. Indeed, speakers often admit their own uncertainty in this area, often preferring to use the equivalent French expressions.

By definition, ordinal numbers do not have a citation form in Kujireray. Since they must always relate to a thing or things to whose order the speaker is referring, they must necessarily show agreement according to the noun class of their antecedent.

(133)	<i>mu-hem</i>	<i>mu-yan</i>	<i>mu-ruten</i>	<i>mu-fojiten</i>
	CL:mu-water	AGR:mu-first	AGR:mu-second	AGR:mu-third
	<i>mu-bagiren</i>			
	AGR:mu-fourth			
	‘The first rain, the second, the third, the fourth...’			BRIN120217RWb

3.3.22 Prepositions

Prepositions are used to mark relations between entities. Most commonly these relations are spatial, although they can also be temporal. It is also observed that they can take on more abstract functions such as encoding purposive meaning, although it is assumed that such functions originate in spatial uses of the form, which have been extended through analogy (see 3.2.2 on thematic roles above).

There are two types of preposition in Kujireray. The first class consists of invariable particles that occur before the noun they modify and do not interact with any morphology. The second class consists of forms derived from nouns and may take possessive morphology to mark spatial relations. Often, these nouns are the terms for body parts which are used meronymically to express spatial location. They retain nominal properties in that they can combine with pronominal possessive morphology to express spatial relations. They are distinct from their full nominal counterparts in they do not have singular and plural forms and may not be modified. For this reason I follow Bassène (2007:160ff) in according these items a separate gloss for their prepositional use, as opposed to Sagna (2008:139ff) who retains the same gloss as for nominal use. A selection of Kujireray prepositions are described in the following sections.

3.3.22.1 Invariable preposition *ni*

The most common preposition in Kujireray is the particle *ni*. This is analysed as a locative particle, although it is used to encode several meanings. These include static location, goal, source, instrument, and means; indeed, the fact that all these conceptual categories are treated the same by the language is evidence that the language subsumes them all within a thematic role of Location (with the conceptual differences between them, such as static

location, or movement from or toward, contributed by the verb meaning and context). These uses are illustrated in the examples below. While this particle encodes a wide range of meaning, I follow Sagna (2008:138) in analysing it as a single morpheme with general meaning rather than several homophonous ones – all its uses can be generalised to some form of locational relation. For this reason it is glossed throughout as LOC.

Static location³⁶

- (134) *a-baŋ-ol* *b-o* ***ni*** *ka-rem*
 3S-keep-3S AGR:b-pn LOC AGR:ka-water

‘He kept her there at the pond.’

BRIN111205RWc

Movement towards location (goal)

- (135) *na-ñēg* *me* ***ni*** *ku-boŋ* *je-ol*
 3S-jump SUBORD LOC CL:ku-thigh mother-3S.POSS

‘There he jumped onto his mother’s thighs.’

BRIN111205RWa

Movement from location (source)

- (136) *u-juul* *u-puren* *e-liw* ***n-e-nin-om***
 2S-come 2S-remove CL:e-meat LOC-CL:e-body-1S.POSS

‘Come and take some flesh from my body.’

BRIN120124RWb

³⁶ Note that the headings indicating the spatial relations illustrated in the examples refer to frame semantic roles, not thematic roles.

Instrumental

(137) *umu ni ma-rem ni ka-tokond*

COP.AGR:m LOC CL:ma-drink LOC CL:ka-palm.wine.spoon

‘He is drinking with a palm wine spoon.’

BRIN130208RWc

Means

(138) *u-ban nu-giten ni ku-jire-r-ay*

2S-finish 2S-explain LOC CL:ku-jire-ABSTR

‘When you finish you explain in Kujireray.’

BRIN120227RWb

As Sagna (2008:138) points out, analysing *ni* as encoding general location also accounts for its use as a coordinating conjunction as in (139).

Coordination

(139) *u-m-bug-u Hélène ni Véronique*

3P-C-AGR:bug-MED Hélène LOC Véronique

‘They are Hélène and Véronique.’

BRIN120316RWa

The particle *ni* is also used in conjunction with the copula (itself derived from a demonstrative pronoun – see 3.3.10 above) to encode progressive aspect. The use of a locative preposition in this context is common cross linguistically, particularly in African languages (Bybee et al. 1994:129). For this reason it seems reasonable to consider the coordination as a polysemous usage rather than a homonym.

Progressive

(140) *usu ni ma-rem mu-hem*

COP.AGR:s LOC CL:ma-drink CL:mu-water

‘They are drinking water.’

participant observation

3.3.22.2 Invariable preposition *bu* ‘to’

The particle *bu* can be used to express motion towards a place. It is glossed as ‘to’.

(141) *inje e-jaw bu ka-tama*

1S CL:e-go to CL:ka-tama

‘Me, I go to the rice fields.’

BRIN120331RW

It can also be used before a verbal noun to express a purposive meaning.

(142) *u-log-a u-pu-l-a ma bu bu-lër*

1P-say-1P 1P-exit-DIR-1P thus to CL:bu-work

‘We say we came out like this to work.’

BRIN121106RW

It can be used together with *ni* to express a benefactive meaning, that something is being done for someone else.

- (143) *Andre na-nom-e ka-tegel bu ni a-ce*
 Andre 3S-buy-PERF CL:ka-basket to LOC AGR:a-INDEF

‘Andre bought a basket for someone.’

BRIN111214RW

This *bu ni* construction can also encode motion towards a location. It is not yet certain if there is a difference between this and using *bu* on its own.

- (144) *pan si-lagen-i bu ni yan pa-i*
 FUT AGR:si-follow-2S to LOC house father-2S.POSS

‘They will follow you to your father’s house.’

BRIN120124RWb

3.3.22.3 Invariable preposition *fatia* ‘up’

The particle *fatia* is a slightly anomalous member of the class of invariable prepositions. Like the other prepositions it cannot combine with possessive morphology. However, it is the only invariable preposition in Kujireray that can stand alone to encode a position ‘up there, on high’. Furthermore, unlike the variable prepositions it does not have a readily apparent nominal origin.

- (145) *e-siho u-y-u fatia bu-nunihen*
 CL:e-cat COP.AGR:y up CL:bu-tree

‘The cat is in the tree.’

BRIN111116RW

(146) *na-tox ju-ol ju-ol fatia*

3S-find CL:ju-fish CL:ju-fish up

‘He found a fish, a fish up there.’

BRIN120124RWb

3.3.22.4 Variable preposition *fëcil* ‘in front of’

The form *fëcil* ‘in front of’ also exists in the Joola varieties spoken in the Mof Èvi area. Bassène (2007:111) states that it derives from the form *ji-cil* ‘eye’ (which also exists in Kujireray) whereas Sagna states that it is form the word for ‘male genitals’. Such a form has not been discovered in Kujireray, however, and Bassène’s analysis is the one accepted here, particularly in light of the fact that the plural of eye is *ku-cil* is in *ku-* which forms a common singular plural paradigm with *fu-* (although the synchronic singular term for ‘eye’ in Kujireray is *ji-cil*. See Chapter 4 for discussion of divergences from regular paradigm patterns).

(147) *Marie na-jug-e e-libur fëcil-ol*

Marie 3S-see-PERF CL:e-book in.front-3S

‘Marie saw the book in front of her.’

BRIN111214RW

This form may also be used independently to mean ‘forward, to the front’.

(148) *ku-jaw fëcil n-anosan*

3P-go in.front AGR:n-QUANT

‘They always move forward.’

BRIN121106RW

3.3.22.5 Variable preposition *busol* ‘behind’

This preposition derives from the word for ‘back’.

(149) *u-jux busol-i*

2S-see behind-2S.POSS

‘Look behind you.’

field notes

3.3.22.6 Variable preposition *këlin* ‘beside’

This form is derived from the noun denoting ‘side of body’. The example in (150) shows its prepositional usage, that in its nominal usage.

(150) *e-siho uyu këlin sindo*

CL:e-cat COP:AGR:y beside CL:Ø-home

‘The cat is next to the house.’

BRIN111116RW

(151) *këlin-om k-a-may*

CL:ka-side-1S.POSS AGR:k-REL-left

‘my left side’

field notes

3.4 Verbal categories

Some of the semantic features of Kujireray verbs were described in 3.2.3 on verb classes above. In the following sections, I provide further description of tense-aspect-mood

constructions in Kujireray, as well as verbal categories such as valence changing morphology and adverbs. Like the vast majority of languages in the area – both closely and distantly related - Kujireray can be described as predominantly aspectual, rather than temporal. This means that it tends to encode more information about the internal temporal structure of an event, than about the absolute location of that event on a timeline. Temporal location of events tends to be encoded by use of adverbial expressions, or interpreted through context.

3.4.1. Progressive aspect

The progressive aspect is used to express events that are ongoing, i.e. whose beginning and/or end are not relevant to the discourse. It may be expressed periphrastically using a copula form plus locative *ni* and a nominalised form of the verb. This type of construction is a common way of expressing progressive aspect (Bybee et al. 1994:129).

(152) *uyu ni ka-bet*

COP.AGR:y LOC CL:ka-lay

‘It is laying [an egg].’

participant observation

(153) *umu ni ka-kofen para*

COP.AGR:m LOC CL:ka-sleep now

‘He is sleeping at the moment.’

BRIN111122RW

Note that the form that is analysed here as a copula has identical form to the medial version of the demonstrative pronoun (see 3.3.10 above). Indeed, Sagna (2008) continues to label it as such in his analysis of Eegimaa, although Bassène (2007), for Banjal, analyses it as a distinct form. In this context its predicative function justifies its analysis as a copula. Indeed, demonstratives are a common source for copulas cross-linguistically (Diessel 1999:1). Further evidence for this is found in the fact that this construction is compatible with independent pronouns and full nouns, and that the proximal-medial-distal distinction

observed in the pronominal form is not attested in progressive constructions, apart from the word-medial consonant marking agreement it is invariable.

- (154) *a-sila* *umu* *ni* *ka-kofen*
 CL:a-PN COP.AGR:m LOC CL:ka-sleep

‘He is sleeping.’ [subject emphasised]

participant observation

When this construction is used with verbs denoting dynamic events, it encodes the prototypical meaning of on-going action. However, when used with verbs denoting states, the interpretation is inceptive, i.e. encoding a process of becoming. To express stative meaning, the verb stem is used in a perfective construction – see 3.4.1.8 below on perfective aspect, and 3.2.3 above on verb classes.

- (155) *umu* *ni* *bě-jěl-i*
 COP.AGR:m LOC CL:ba-big-PASS

‘She is getting fat.’

BRIN120227RWa

There is a second strategy for encoding progressive aspect. This is a form of the shape *oma* or *ama*, prefixed by a subject agreement marker controlled by the antecedent noun (see 3.3.7 above). Like the construction described in the previous section, it combines with the locative particle *ni* and a verbal noun to create a progressive construction. However, it differs from the former in that it may also enter into an alternation where the word order is reversed i.e the verbal noun precedes it – in this case locative *ni* is not present, as in (157).

(156) *na-ama* *n-e-jaw* *bu-ot*
 3S-COP LOC-CL:e-go CL:bu-go.home

‘She is going to go home.’

BRIN111123RW

(157) *e-kec* *e-letar* *ni-oma*
 CL:e-write CL:e-letter 1S-COP

‘I am writing a letter.’

BRIN111123RW

Like the other progressive construction described in the previous section, this may also be used with purely locational meaning providing further support for analysing it as a copula.

(158) *i-fas-ut* *t-o* *ni-oma*
 1S-know-NEG AGR:t-PN 1S-COP

‘I don’t know where I am.’

field notes

The semantic distinction between this construction and the one described at the start of the section is unclear. Bassène (2007:138) contends that the equivalent copula – *om* – in Banjar is used when the subject of the copula is in focus, or in interrogative constructions where it is the identity of a referent that is in question. Whether this is also the case in Kujireray remains a topic for future research.

Progressive meaning can also be encoded using the auxiliary *taaj*, in perfective aspect, inflected for person, followed by a verbal noun.

(159) *bě-ñěj* *ni-taaĵ-e*
 CL:ba-do.laundry 1S-AUX-PERF

‘I’m doing laundry.’

participant observation

3.4.2 Negative progressive aspect

While the previous section describes three different ways to encode progressive semantics, only one construction is observed for negative progressive meaning – whatever semantic contrasts may be expressed by the various progressive constructions described above are neutralized in the negative. This consists of the negative copula *let* prefixed by the appropriate subject marker.

(160) *i-let* *n-e-lar* *wafwaf*
 1S-NEG.COP LOC-CL:e-do nothing

‘I am not doing anything.’

BRIN111129RWa

3.4.3 Habitual aspect

Two constructions have been identified that encode habitual aspect as at least one of their functions. The first of these consists of the morpheme *nax* before a verb stem inflected for subject, as in (161) and (162) (note that the reduced paradigm is used for human subjects – see 3.3.7).

(161) *funahfunah* *si-naŋ* *nax* *a-tiñ*
 everyday CL:si-rice HAB 3S-eat

‘Everyday he eats rice.’

BRIN111116RW

(162) *nax u-kan ma*

HAB 2S-do thus

‘You do it like this.’

BRIN120217RWb

The second strategy for encoding habitual aspect involves full reduplication of the verbal stem, with *-e-* inserted between the reduplicants. Sagna (2008:148) identifies the equivalent form in Eegimaa as the perfective morpheme. However, it is hypothesized that it may in fact be a distinct form carrying habitual semantics – related to the morpheme *-er* in the negative habitual construction (see 3.4.4 below) and in the verbal noun construction *ba-V-er* (see 5.3.3). It will therefore be glossed HAB in habitual reduplication constructions, although the exact identity of this morpheme remains a topic for future research.

(163) *e-joba e-hit-e-hit*

CL:e-dog AGR:e-growl-HAB-REDUP

‘A dog growls.’

BRIN111123RW

(164) *e-lir ka-tegel pio-e-pio?*

CL:e-weave CL:ka-basket take.time-HAB-REDUP

‘Does weaving a basket take a long time?’

BRIN111125RW

Tendeng (2007:172) identifies equivalent constructions in the Mof Evi variety Gusiilay. She labels the first type (Kujireray *nax* + verb, Gusiilay *nak* + verb) “*l’habituel repetitif*” and the second type (reduplication) “*l’habituel discontinu*”. The former refers to an action that is repeated over time and that can be construed as a habit, a predictable action. The latter refers in a generic manner to an action that is carried out regularly but which cannot be assumed to have occurred in the past or to continue into the future. Although further investigation is

required, the facts in Kujireray appear to support this analysis. The examples in (161) and (162) in the previous section refer to a given individuals habitual behaviour. Those in (163) and (164) make generic reference to an activity, without referring to a specific person.

3.4.4 Negative habitual aspect

In order to express negative habituality, the morpheme *-erit* is suffixed to the verbal stem, and for singular human subjects, the reduced form (without initial *n-*: see 3.3.7 above) of the subject marker is used. It is posited that this suffix is complex, diachronically at least, and consists of a habitual marker *-er* followed by the negative marker *-it*.

(165) *Loik a-nomen-er-it biñu*

Loik 3S-sell-HAB-NEG CL:Ø-wine

‘Loik does not sell wine.’

field notes

(166) *pio-er-it*

take.time-HAB-NEG

‘It doesn’t take long.’

participant observation

3.4.5 Perfective aspect

There are two strategies for encoding positive perfective aspect in Kujireray – reduplication, and suffixation of the marker *-e*.

For the reduplication construction, when the stem ends in a vowel, full reduplication takes place, as in (167); when it ends in a consonant, the final consonant is omitted from the first reduplicant, as in (168).

(167) *na-lëëti-lëëti*

3S-nonchalant-PERF.REDUP

‘He is nonchalant.’

BRIN120301RW

(168) *ni-gai-e* *mata* ***ni-la-lar*** *m-ëëmëh*

1S-tired-PERF for 1S-work-PERF.REDUP AGR:m-big

‘I’m tired because I worked a lot.’

BRIN111129RWa

Perfective aspect may also be encoded by affixing the morpheme *-e* to a verbal stem.

(169) *a-ti-om* ***na-lob-e*** *mu-lo* *mu-ni-nif*

CL:a-sibling-1S.POSS 3S-say-PERF CL:mu-salt.water AGR:mu-cold-PERF.REDUP

‘My brother said the water is cold.’

BRIN111125RW (from Dahl 1985)

Tending (2007:170) suggests for Gusiilay that the latter construction differs from the reduplication strategy in that it emphasises the subject (puts it in focus). There is a contrast in meaning as illustrated by the following:

Gusiilay (in Tendeng 2007:170).

(170) *na-ja-jow*

3S-go-PERF.REDUP

‘He left.’

(171) *na-ja-e*

3S-go-PERF

‘It’s him who left.’

Sagna (2008) does not posit the same difference in meaning for Eegimaa. He suggests (2008:149) that in Eegimaa, the suffix “attaches to a verbal stem to indicate completion of an event...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. The reduplicated form on the other hand focuses more on the fact, or result, rather than the event. The semantic difference between the reduplicated form and that suffixed with *-e* is that “in the use of reduplication, the event is not considered in its entirety” (2008:150). This would be compatible with the fact that it seems to be a particularly common strategy with stative verbs, where the entirety of the event is a less valid notion. However, a full analysis of this distinction in Kujireray remains a topic for future research.

Negative perfective meaning is encoded with the morpheme *-ut*. See 3.5.3 below for examples.

3.4.6 Inactualis

Sagna (2008:108) describes the inactualis morpheme in Eegimaa encoding “a perfective in the past or ... an event that failed to take place”. In Kujireray too, this observation seems to be accurate. While the perfective encodes a completed action, the addition of the inactualis morpheme may encode either a completed action whose entailed result no longer holds, as in the distinction between (172) and (173), or a counterfactual statement as in (174).

(172) *na-je* *t-o?*

3S-go.PERF AGRt-PN

‘Where has she gone?’ [she has departed]

(173) *na-je-en-e* *t-o?*

3S-go-INACT-PERF AGRt-PN

‘Where did she go?’ [she has returned]

participant observation

(174) *ni-bo-bog-en-e*

1S –dance-PERF.REDUP-INACT-PERF

‘I tried to dance [but failed].’

BRIN111129RWa

3.4.7 Future

Two sets of morphemes are attested that may be used to express positive futurity – *pan(V)* and *kin(V)/kun(V)*. The final (V) represents a vowel which may be present or not. In most cases this is *i*, although *u* is also attested. These morphemes enter into constructions whereby they precede a verb that is inflected for subject. Singular human subjects are marked with the reduced subject marker paradigm (see 3.3.7 above), providing evidence for the hypothesis that these reduced forms are associated with irrealis semantics.

(175) *pan* *a-tiñ*

FUT 3S-eat

‘He/she will eat.’

(176) *kini* *a-tiñ*
 FUT 3S-eat
 ‘He/she will eat.’

The future morphemes vary minimally according to person or number. The subject agreement on the verb takes most of the burden in this respect. The only exception observed is that *kuni*, rather than *kini*, is preferred when the subject is second person singular or third person plural (whose subject markers also contain the segment *u*). With respect to the morpheme-final vowels, there is some degree of variation in the form of *pan(V)*. It occurs as *pan*, *pani* and *panu*. To an extent, this variation appears to be quite free, although some broad generalizations can be made. The form *panu* is attested only before 2S forms, i.e. those with an initial *u*. However, both *pan* and *pani* are also found in this context suggesting quite free variation between *pan* and *pani*.

It has not yet been possible to discover what, if any, is the difference in meaning between the two morphemes. One consultant has suggested that *pani* expresses a more immediate future than *kin(V)/kun(V)*, but testing has not confirmed this – consultants seem satisfied with either form in a range of contexts requiring different levels of immediateness.

There is also a periphrastic construction that expresses futurity formed using the auxiliary verb *e-jaw* with a verbal noun. *E-jaw* is itself a verbal noun meaning ‘go, walk.’ This has not been observed with the initial verbal form *e-jaw* in an inflected form. Indeed all constructions of this type appear to be non-finite. If the discourse requires a person to be specified this is done by way of a noun or pronoun.

(177) *au* *ner* *e-jaw* *fu-lip*
 2S now CL:e-go CL:fu-search

‘You are going on a quest now.’

BRIN120124RWb

(178) *inje e-jaw bu-ot*

1S CL:e-go CL:bu-ot

‘I am going home.’

participant observation

3.4.8 Negative future

Negative futurity is expressed by the morpheme *mat* preposed to a verb marked for subject.

(179) *bug-o mat ku-nogen*

AGR:bug-PN NEG.FUT AGR:ku-return

‘They will not return.’

BRIN111205RWb

(180) *mat a-iken*

NEG.FUT 3S-cook

‘They will not return.’

BRIN111116RW

3.4.9 Imperative mood

The imperative is simply the verbal stem suffixed by the short form of the 2S or 2P marker, namely *u-* or *ji-*.

(181) *u-tiñ*

2S-eat

‘Eat!’

(182) *ji-robo*

2P-sit

‘Sit down!’

participant observation

Two negative imperatives have been observed – *tan* and *san* – both of which precede the inflected verb form. Several consultants attest that the variation is dialectal. The morpheme *tan* is used in the Kujireray spoken in the majority of Brin, *san* is typically used in Jegele (the largest district in Brin, and also somewhat separate physically) a district whose inhabitants’ language purportedly displays a number of linguistic differences from those of the rest of Brin.

3.4.10 Causative suffix

The morpheme *-en*, when suffixed to a verbal stem encodes causation. According to Alsina (1992), there are two main variants of causative crosslinguistically, both of which appear to be applicable to this morpheme in Kujireray. In the first type of causative, “the causer, in order to bring about an event, acts on an individual who is the participant most in control of that event” (Alsina 1992:522). This is an operation whereby for a given event-denoting predicate, the valence is increased by one participant, such that its event structure now contains a causative sub-event. An additional participant is introduced who is conceived of as acting in such a way (usually unspecified) that a causee carries out the action denoted by the verb (Payne 1997:175:ff). The pairs in Table 38 illustrate the alternation between the simplex verb form (in the left-hand column) and causative version (on the right). In all these cases this reflects a shift in participant structure from one participant to two, with a

particular causal relationship between the two.³⁷

Table 38 Type 1 causativized verb forms

simplex form	gloss	causative form	gloss
<i>e-nom</i>	‘buy’	<i>e-nomen</i>	‘sell’
<i>e-hot</i>	‘adhere’	<i>e-hoten</i>	‘stick TR’
<i>e-pax</i>	‘survive’	<i>e-pagen</i>	‘save’
<i>e-gic</i>	‘melt INTR’	<i>e-gicen</i>	‘melt TR’
<i>e-sa</i>	‘burn INTR’	<i>e-saen</i>	‘burn TR’
<i>e-sup</i>	‘be hot’	<i>e-supen</i>	‘heat’
<i>e-jax</i>	‘be red’	<i>e-jagen</i>	‘make red’

The following are examples of the second type of causative whereby “the causer acts on an individual by causing an event that affects that individual” (Alsina 1992:522).

³⁷ It could be argued that Alsina’s definition does not apply exactly to this process, as in the majority of the alternations shown below it is of course rather questionable to claim that the causee is the participant most “in control of the event”. However, it can certainly be argued that it is the causee that in some sense effects the event denoted by the verb. It is not the causer that becomes red or melts, for example. It may be a more accurate observation that the unmarked forms can be conceived of as either uncaused or internally caused (exactly which is a topic for future research) while the causative form introduces an external cause (although this cause is still indirect).

Table 39 Type 2 causative forms

simplex form	gloss	causative form	gloss
<i>e-fox</i>	‘dig’	<i>e-fogen</i>	‘bury’
<i>e-pad</i>	‘cut’	<i>e-paden</i>	‘harvest’
<i>bu-rip</i>	‘plant rice’	<i>bu-rifen</i>	‘transplant rice’
<i>e-fum</i>	‘break’	<i>e-fumen</i>	‘crush’

These are in opposition to type 1 in that the causee is affected by the event, rather than being in some way a protagonist of it. This does not necessarily encode an increase in valence of the verb. Indeed from these examples it is not exactly clear what differentiates the causative form from the regular transitive form, other than the addition of some sort of idiosyncratic meaning. Bybee’s description may be more illuminating: “it is used to express the occurrence of an agent, instrument, reason or purpose in the sentence” (Bybee 1985:18). For example, ‘to harvest’ could be conceptualized as to cut with a particular instrument (knife or sickle), or for a special purpose; ‘to crush something’ could be seen as a special case of breaking with a particular instrument (pestle and mortar). According to Alsina’s analysis of this type of operation it may be possible to add an oblique argument to encode the ‘subject’ of the caused predicate. This has not yet been investigated.

As Bybee (1985:18) points out, a causative operation has a significant semantic effect on the base verb (as opposed to, say, tense) and in turn the meaning of the base verb determines the exact interpretation of the causative notion and “[t]his can easily lead to a situation in which the products of a morphological causative process could become unpredictable semantically and therefore lexicalised.” (183) and (184) are examples of morphological causatives that have taken on idiosyncratic meaning.

(183) *e-simen* ‘sacrifice’ < *e-sim* ‘bleed’

(184) *e-galen* ‘spoil, destroy’ < *e-gat* ‘mix’

3.4.11 Periphrastic causatives

Periphrastic causatives are also attested in Kujireray. They are formed using the stem *kan* ‘to do, to make.’ *kan* is marked with subject agreement for the causer, while the base verb denoting the caused event has subject agreement for the causee.

- (185) *pan i-kan-i u-ηopo mat ku-jug-i*
FUT 1S-do-2S 2S-hide NEG.FUT 3P-see-2S

‘I’m going to hide you, they will not see you.’

BRIN120124RWb

- (186) *na-kan-e a-lin_r-ol a_r-koη³⁸*
3S-do-PERF CL:a-sibling-3S.POSS 3S-cry

‘He made his sister cry.’

BRIN111214RW

3.4.12 Middle voice suffix

Bybee (1985:20) considers the middle voice to be of a class with reflexives and reciprocals insofar that “the subject both performs the action and is affected by the action”. Kemmer (1993:3) also evokes the notion of “subject-affectedness”. This definition is useful in understanding why the Kujireray middle voice morpheme is often used with stative verbs – although strictly speaking there is no action being carried out, we can reasonably say that the single participant of the state is also affected by that state.

³⁸ The coreferential subscripts indicate that the 3S subject agreement marker affixed to *koη* ‘cry’ agrees with ‘sibling’, i.e. it is the sibling that cries, not the ‘he’ subject of the whole clause.

3.4.13 Reflexive/reciprocal suffix

The verbal morpheme *-or* signals that the denoted event is either reflexive or reciprocal. Reflexive refers to a singular participant event in which the participant is both the effector and the undergoer of the event. For reciprocals the interpretation is that plural participants carry out the event on each other. Examples of forms are shown in Table 42.

Table 42 Reflexive and reciprocal forms in *-or*

	reflexives	gloss	reciprocals	gloss
a	<i>e-bolor</i>	‘transform oneself’	<i>si-ceḡor</i>	‘disagree’
b	<i>e-cikolor</i>	‘pick one’s teeth’	<i>e-nogor</i>	‘resemble’
c	<i>e-husor</i>	‘pick one’s ear’	<i>e-cocor</i>	‘kiss’
d	<i>e-jogor</i>	‘hang oneself’	<i>e-gator</i>	‘mingle’
e	<i>ka-tegor</i>	‘tremble’	<i>e-jaor</i>	‘accompany’

It is assumed that the correct interpretation between reflexive and reciprocal falls out largely from the specific meaning associated with the verbal stem. For example, discussion and kissing are inherently multiple participant events, and so *si-ceḡor* ‘disagree’ and *e-cocor* ‘kiss’ receive reciprocal interpretation. Ear-picking on the other hand tends to be carried out by oneself, so the interpretation is reflexive. It is unclear at this time what distinguishes stems that form a reflexive form in *-or* and those that form one in middle *-o* (see 3.4.12 and 3.4.13 above).

Some of the forms in Table 42 have a transitive counterpart in either the bare stem, or the causative morpheme *-en*. Related to those in the reciprocal column, *e-coc* ‘kiss’ *e-gat* ‘mix,’ *e-jaw* ‘go’ and *e-mayen* ‘touch’ all denote two-participant events, where an Agent acts on a Patient participant in a transitive event. Of the reflexive forms, *e-jogor* ‘hang’ and *kategor* ‘tremble’ appear to be related respectively to the forms *e-jox* ‘catch, hold’ and *ka-tex* ‘separate’ although the interpretation is more idiosyncratic rather than a simple valence changing operation. It is feasible that the term meaning to hang (from something) could derive from an idea of holding oneself onto something, and that trembling could be conceptualized as separating from oneself.

(192) *na-pur a-jaw ni bu-caŋ*

3S-exit 3S-go LOC CL:bu-black.magic

'He went out, he went to do black magic.'

BRIN121030RW

(193) *a-lamba a-h-u na-pur-ul na-gol u-pur-ul*

3S-young.boy CL:Ø-DEF-AGR:h-MED 3S-exit-DIR 3S-say 2S-exit-DIR

The young boy came out, she said come out [toward me].'

BRIN120124RWb

The 'action towards the speaker' does not need to refer to the speaker's location at the time of the speech event, but may also refer to the direction of a point of reference on which the discourse is centred. For instance, in (194) the speaker is discussing a situation in the past where everybody brought a bottle to an event which is conceptualized as central to the current narrative.

(194) *a-nosan na-ŋar-ul ka-rafa-ol*

CL:a-QUANT 3S-take-DIR CL:ka-bottle-3S.POSS

'Everyone brought their bottle.'

field notes

The perfective form of this verbal category is *-ulo*. Sagna 2008:160 analyses this for Eegimaa as the directional [venitive] morpheme with the middle morpheme *-o*, although he does not elaborate on why this morpheme might be used to mark perfective forms in this directional morpheme, as opposed to the regular perfective marker *-e*. It is tentatively suggested that the type of verb that very commonly occur with the venitive suffix are verbs of motion, such as *jaw* 'go', *juul* 'come', *bañ* 'return', *bañul* 'return here', which are compatible with the semantics of the middle voice in Kujireray i.e. that the subject both performs and is affected by the action (see section 3.4.12 above). However, further research

into verb class semantics is required to substantiate this hypothesis.

Both Bassène (2007:105, for Banjal) and Sagna (2008:160, for Eegimaa) state that this suffix has the feature [+ATR]. While the existence of [ATR] as a phonemic feature is not categorically claimed for Kujireray (see section 3.1) it is observed that forms in this morpheme *may* exhibit regressive vowel harmony to set 1 vowels (i.e those to which Bassène and Sagna attribute the feature [+ATR]). However, this is not a fully obligatory process. For example for the verb stem *bañ* ‘return’, venitive forms are attested in both set 1 and set 2 vowels i.e. *é-bën-úl/e-bañ-ul/* ‘return here.’ Bassène also notes that this is the case in Banjal – an [+ATR] suffix which does not trigger regressive [ATR] harmony in the root vowels being otherwise unheard of.

3.4.16 Reversative suffix

The reversative suffix is identical in form to the venitive suffix *-ul* described above, but distinct from it in its semantic and morphosyntactic behaviour. It is a derivational morpheme encoding a reversal of the action denoted by the root verb. This suffix is less productive than the venitive morpheme – its more specialised semantics mean it is not compatible with all verb roots. Furthermore, several items exist in word-final *-ul* that do not have a non-reversative counterpart, but that nevertheless have semantics of removing one entity from a given area.

Table 43 shows some of the forms attested in this morpheme, with their non-derived non-reversative counterpart shown where applicable. In some cases these latter do not seem to have a straightforward reversative/non-reversative relation.

Table 43 Forms in reversative morpheme *-ul*

reversative form	gloss	non-reversative counterpart	gloss
<i>tojul</i>	‘unstop (bottle)’	<i>toj</i>	‘stop’
<i>pegul</i>	‘open’	<i>pex</i>	‘close’
<i>hoful</i>	‘remove’[e.g. roof]	<i>hof</i>	‘scratch’
<i>texul</i>	‘clear land’	<i>tex</i>	‘hit’
<i>mumul</i>	‘wipe’		
<i>fēsul</i>	‘clear land’		
<i>ņirul</i>	‘despine (leaf)’		
<i>ferul</i>	‘debark’		
<i>erul</i>	‘descale’	<i>ka-/u-er</i>	‘scale/s’

As well as clear semantic differences, the directional and reversative suffixes can be distinguished on the basis of their respective morphological behaviour in reduplicated forms such as the perfective (cf. also Bassène 2007:105). The reversative affixes to each of the reduplicated roots, whereas the directional is infixes between the two roots only. This suggests that the former has more relevance to the meaning of the derived form (Bybee 1985), indeed it is reduplicated because it has ‘become’ part of the word. Intuitively the reversative morpheme changes the meaning of the root to a greater degree. Actions of opening and closing, while related are intuitively quite different, whereas an act of throwing is the same, whichever direction it happens in.

3.4.17 Temporal adverbials

There are a number of invariable independent adverbs that denote a point in time at which an event or situation takes place. Generally, they occupy clause final position but can also occur in topic/focus position at the beginning of the clause.

There are two different forms that encode the notion ‘now.’ These are shown in the examples below.

(195) *yo ner nu-tex*

yes now 2S-beat

‘Yes now you beat [it].’

BRIN120217RWb

(196) *mat u-tiñ-a balama kini u-tiñ-a*

NEG.FUT 1P.INCL-eat-1P.EXCL now FUT 1P.INCL-eat-1P.EXCL

kërusa

evening

‘We won’t eat now, we’ll eat in the evening.’

BRIN120224RWa

It is hypothesized that *ner* denotes that something occurs in sequence from a previous action whereas the *balama* denotes something closer to ‘at this moment’ or even ‘immediately before this moment’. For example, the interpretation in (197) would be that the meeting event occurred just before the speech event. This analysis is supported by the fact that *balama* appear to be a complex construction formed from *bala* ‘before’ and *ma* ‘thus’.

(197) *balama ji-fas-or-e*

now 1P.EXCL-know-RECIP-PERF

‘We just met.’

BRIN111118RW

The following table shows some of the temporal adverbs attested in Kujireray.

Table 44 Temporal adverbs

adverb	gloss
<i>balama</i>	‘now’
<i>ner</i>	‘now, next’
<i>bala</i>	‘before’
<i>fugen</i>	‘yesterday’
<i>jaman/jan</i>	‘today’
<i>kajom</i>	‘tomorrow’
<i>amaata</i>	‘next year’
<i>fulim</i>	‘last year’
<i>fafunax</i>	‘previously, the other day’

It seems clear that in addition to *balama* ‘now’ there are others among these forms that are morphologically complex. An investigation into their lexical origins is identified as a topic for future research

Some of the temporal adverbials described above can combine with the suffix *-enum* to displace the temporal reference by one unit. For example, the form *kajom-enum* is glossed as ‘after tomorrow’. Only four adverbials are attested with this suffix, as illustrated in the table below. Note that the underlying form *fugen-enum* ‘before yesterday’ undergoes syllable deletion presumably as there are two identical syllables *en* adjacent to each other. Similarly the form *amaata-enum* ‘after next year’ undergoes deletion of the root final *a*.

Table 45 Forms in temporal adverbial suffix *-enum*

adverb	gloss
<i>fugenum</i>	‘before yesterday’
<i>kajomenum</i>	‘after tomorrow’
<i>fulimenum</i>	‘before last year’
<i>ammatenum</i>	‘after next year’

3.4.18 Locational adverbials

Kujireray has deictic locational adverbs of the form AGR-*e-u*-(C)-AGR-PROX-MED-DIST, where AGR corresponds to locational noun class prefixes *t-*, *b-* and *d-* which denote precise location, imprecise location and interior location respectively (see also 4.3.27 on absolutive use of noun class markers). (C) refers to the epenthetic homorganic consonant that occurs before the markers *d-* and *b-* post-vocally.

- (198) *t-e-u-t-e* *nu-jug-al-e* *si-jamen*
 AGR:t-e-PRES-AGR:t-PROX 1P.INCL-see-1P.INCL-PERF CL:si-goat
 ‘Here we saw goats.’

BRIN130208RWc

- (199) *Hélène* *ku-meŋ-e* *d-e-u-n-d-u*
 Hélène 3P-be.full-PERF AGR:d-e-PRES-C-AGR:d-MED
 ‘There are many Hélénes here.’

BRIN120316RWa

A detailed morphological analysis of this form is not definitely presented at this time. It

seems clear that it is related to the demonstrative determiner of form AGR-*a-u*-AGR- *e/u/a* (see 3.3.11 above). Indeed, Sagna (2008:142) shows that in the Mof Eëvi variety Eegimaa, locational adverbs expressing deictic meaning are the same in form as the demonstrative pronoun/determiner construction, with locational noun class markers. In Kujireray, however, there is some divergence between demonstrative forms and locational adverbs. First, the first vowel is not *-a-* (analysed by Sagna in Eegimaa as the definite determiner morpheme) but *-e-*. It is hypothesized that this may be the proximal morpheme, particularly in light of the fact that the same morpheme has extended its function to encode definiteness in the definite determiner AGR-*e* (see 3.3.13 above). In addition it seems that the final vowel is invariable in Kujireray – it does not vary for the proximal-medial-distal distinction.

There is invariable locational adverb *baaba* which encodes a meaning of ‘there, far away’ which uses the general location concord marker.

(200) *baaba* *na-cin-e*

over.there 3S-live-PERF

‘He lives there’.

participant observation

It is uncertain why this latter adverbial, encoding a meaning ‘far away’ [out of sight] has a slightly different form. Sagna (2008:142) analyses the equivalent form in Eegimaa as an ‘extra lengthening of the definite determiner morpheme.’ The presentative morpheme *u* is perhaps not felicitous in this context since the location denoted is so far away as to be out of sight.

3.4.19 Degree and manner adverbials

Some forms in Kujireray specify the degree or manner in which a situation or event takes place. These can be invariable particles as in (201) and (202) or formed by affixing the absolutive manner prefix *m-* to stems to adjectival stems in (203).

(201) *si-jamen s-e si-tiñ-e-tiñ nër*
 CL:si-goat AGR:s-PROX AGR:si-eat-HAB-REDUP much

The goats are greedy.’ (lit: ‘the goats eat a lot’) BRIN121107RW

(202) *na-alen t-o ju-ol j-a-j-u jon*
 3S-put.down AGR:t-PN CL:ju-fish AGR:j-DEF-AGR:j-MED well

‘He put down the fish delicately there.’

BRIN120124RWb

(203) *na-kofen-e-kofen m-ëëmëx*
 3S-sleep-HAB-HAB.REDUP AGR:m-big

‘He sleeps a lot.’

BRIN121204RWa

Certain other degree and manner adverbs are related to verbal forms. Compare (204) and (205), and (206) and (207).

(204) *u-are bug-a-g-u ku-p-ulo*
 CL:u-woman AGR:bug-DEF-AGR:g-MED AGR:ku-exit-DIR.PERF

me fafunah meŋ

SUBORD previously much

‘The women who came out that day *en masse*.’

BRIN121106RW

(205) *e-supā ni-ce e-meŋ-e-meŋ ni jaŋgo*
 CL:e-heat AGR:n-INDEF AGR:e-much-HAB-REDUP LOC CL: Ø-church
 ‘Sometimes it gets very hot in the church.’

BRIN121106RW

(206) *na-ju-e faŋ ka-tep si-birik*
 3S-be.able-PERF much CL:ka-build CL:si-brick
 ‘He knows how to make bricks very well.’ video translation: UB

(207) *ni-maŋ-e i-faŋ w-o ni-baj me*
 1S-want-PERF 1S-exceed AGR:w-PN 1S-have SUBORD
 ‘I want more than I have.’ (lit: I want to exceed what I have) field notes

3.4.20 Ideophones

Several items are attested in Kujireray which can be classed as ideophones. In Kujireray these have adverbial function in that they denote the manner or degree of a given event. Morphosyntactically, ideophones do not differ from invariable adverbials of manner and degree. They come at the end of the sentence and tend to have slightly atypical CVC syllabic form. They are identified as a subclass of degree and manner adverbs since unlike regular degree and manner adverbs, they are restricted as to the verbs they can modify. Indeed it seems that many ideophones are used with just one verb. In some cases, they express something about the manner in which the event encoded by the verb occurs – for example in (208) and (209) two different ideophones are used to express different types of falling – these seem to be symbolic. In other cases, they serve more as intensifiers, as in (210).

Table 46 Ideophones and their associated verbs

ideophone phrase	gloss
<i>e-tuen peretet</i>	‘be white like ash’
<i>e-meje tip</i>	‘be very full’
<i>e-ɲuet taw</i>	‘be very ugly’
<i>bě-ñ g dól</i>	‘jump like a frog’
<i>e-lo bē̄</i>	‘fall heavily like a fan palm fruit’
<i>e-lo bab</i>	‘fall like a monitor lizard’
<i>e-len tem</i>	‘be black like charcoal’

3.4.21 Universal quantifier: adverbial function

Adverbial quantifiers are formed by combining the universal quantifier form AGR-*ano*-AGR-*an* or AGR-*anosan* (see 3.3.18 above) with the appropriate locative or temporal noun class marker to express meaning such as ‘everywhere’ or ‘every time/always’. Note that there is greater variation between the two available formulæ (single or double concord) in this function. Table 47 shows the adverbial quantifiers for each class that appear in the corpus. For example *only* the double concord *manoman* ‘although/anyway’ is as yet attested for noun class marker *m-*, whereas only the single concord *nanosan* is attested for temporal class *n-*. It has not yet been ascertained whether the two forms are in free variation (i.e. would *manosan* and *nanonan* also be acceptable) or whether these forms are fully lexicalised using the alternate forms. There are still some gaps in the paradigm, and in some cases (*tiñotiñ* and *biñobiñ*) the form of the quantifier has undergone phonological change, suggesting that the phonology of these class markers is more complex than has previously been supposed and is a salient topic for future research.

Table 47 Universal quantifier in adverbial function

NCP	function	quantifier 1 AGR- <i>anosan</i>	quantifier 2 AGR- <i>ano</i> -AGR- <i>an</i>
<i>m-</i>	manner	<i>m-anosan</i> ‘although/anyway’	<i>m-ano-m-an</i> ‘although/anyway’
<i>n-</i>	temporal	<i>n-anosan</i> ‘always/everytime’	<i>n-ano-n-an</i> ‘always/everytime’
<i>t-</i>	locative (precise)	<i>t-anosan</i> ‘everywhere’ (precise)	<i>tiñotiñ</i> ‘everywhere’ (precise)
<i>b-</i>	locative (general)	-	<i>biñobin</i> ‘everywhere’ (imprecise)
<i>d-</i>	locative (interior)	-	<i>dinodin/danodan</i> ‘everywhere’ (inside)

(211) *m-an-o-m-an* *ma-lagen* *ji-baj-ut*

QUANT.AGR:m CL:ma-truth 1P.EXCL-have-NEG

‘Although, it is true, we have nothing.’

BRIN121106RWd

(212) *ku-jaw* *fē il* *n-anosan*

3P-go forward AGR:n-QUANT

‘They move forward always.’

RW6 BRIN1211

back to the relevant sections of the grammar.

3.5.1 Non-verbal predication

Non-verbal predication in Kujireray can be used to encode relations such as equation and possession between two entities.

If speakers wish to express a state of equation between two entities, they may simply juxtapose the two nouns.

(216) *Jo a-wa-a*

Jo Jo CL:a-harvest.palm.wine-AGT

‘Jo is a palm wine harvester.’

participant observation

(217) *asila Rachel*

3S Rachel

‘She is Rachel.’

field notes

In fact, Bassène (2007:182) makes a distinction in Banjal between equation and non-verbal predication constructions. In the non-verbal predication, the second term in the construction behaves as the predicate with the first as an argument. That is to say, the first term is categorised or identified as an instance of the second, as in (216). An equation construction expresses the fact that the two terms are exactly identical, or equal. The first term is not only categorised as an example of the second, but as the *only* example of it, as in (217). There is an asymmetry in this distinction, whereby equation constructions are a type of non-verbal predication but not vice versa. The semantic difference is observed in the fact that the terms in equation constructions can be reversed, whereas regular non-verbal predication constructions cannot. This is of course to be predicted – if the referents of both nouns are exclusively and symmetrically identical, then they can be predicated of one another.

Independent possessive pronouns may also be used to predicate, expressing a possessive

relation obtaining over the noun in construction initial position.

(218) *a-are* *a-h-u* *umbam*

CL:a-woman AGR:Ø-DEF-AGR:h-MED AGR:Ø-1S.POSS

‘That woman is mine.’

BRIN120316RWa

Importantly for the research on verbal nouns, a verbal noun can be predicated of a noun or pronoun, to express progressive semantics. Indeed in the right context, where the subject is understood through context, a verbal noun may appear in isolation. For example, the construction in (220) below is the response to a question *wa nu-taaj-e?* ‘What are you doing?’

(219) *inje* *bu-ot*

1S CL:bu-go.home

‘I’m going home.’

participant observation

(220) *ma-rem* *mu-hem*

CL:ma-drink CL:mu-water

‘(I’m) drinking water.’

participant observation

Questions that would be answered with a non-verbal predicative construction, are non-verbal themselves. (221) and (222) show a common question and its response.

(221) *ka-wog-i* *bu*
 CL:ka-name-2S.POSS how
 ‘What is your name?’ participant observation

(222) *ka-wog-om* *Clara*
 CL:ka-name-1S.POSS Clara
 ‘My name is Clara.’ participant observation

3.5.2 Copula constructions

As discussed in 3.4.1. above on the progressive construction, I follow Bassène (2007:137) in regarding the copula as a form ultimately originating from, but diachronically distinct from the demonstrative pronoun. This is a common process cross-linguistically, and is facilitated by the existence of non-verbal predication in Kujireray. As well as progressive constructions using verbal nouns, the copula can be used to express location, either with the locational particle LOC where the location is explicitly expressed, or without when a preposition or locational pronominal form in one of the absolutive noun classes is used.

(223) *fu-rim* *f-a-f-u* *ufu* *ni*
 CL:fu-word AGR:F-DEF-AGR:f-MED COP.AGR:f LOC

bu-inom-om
 CL:bu-mind-1.POSS
 ‘That word is in my mind.’ (i.e. ‘I am thinking about it.’) BRIN111129RWa

(224) *au umu t-o?*

2S COP.AGR.m AGR:t-PN

‘Are you there?’

BRIN111117RW

The differences in form of all the non-verbal and copula constructions described above are neutralised in the negative, where the negative copula AGR-*let* is utilised.

(225) *i-let a-mbal-a*

1S-NEG.COP CL:a-fish-AGT

‘I am not a fisherman.’

participant observation

(226) *a-let t-o na-cel-e*

3S-NEG.COP AGR:t-PN 3S-die-PERF

‘He is not there, he is dead.’

BRIN111118RW

3.5.3 Verbal clauses

In clauses containing a verb, the verb is obligatorily inflected for subject where relevant although a syntactic subject itself is not necessary for grammaticality (see 3.3.7 on subject marking). There is a small class of verbs that may be used in impersonal constructions without subject marking. These include *baj* ‘have’ (when used existential meaning) and *pio* ‘take.time’.

(227) *pio-e* *i-jug-ut-i*
 take.time-PERF 1S-see-NEG-2S
 ‘I haven’t seen you for a long time.’ participant observation

(228) *baj-e* *w-af* *w-o* *na-guben-e* *nan* *karton*
 have-PERF CL:w-thing AGR:w-pn 3S-cover-PERF as CL:Ø-box
 ‘There is something covered like a box.’

BRIN120124RWb

In certain contexts, negation is marked on the verb using various suffixes. The suffix *-ut* is used in perfective aspect as in (229) and *-er-it* in habitual aspect as in (230).

(229) *an* *anu* *a-aŋgul-ut* *a-kan* *ka-ñe -ol*
 person AGR:Ø-one AGR:a-be.able-NEG AGR:a-do CL:ka-hand-3S.POSS
 ‘One person cannot act alone.’ (lit: ‘One person cannot do his hand.’)

BRIN121106RW

(230) *i-maŋ-er-it* *e-box* *n-e-sux*
 1S-want-HAB-NEG CL:e-dance LOC-CL:e-village
 ‘I do not like dancing in public.’ field notes

In other contexts negation is marked by way of a pre-verbal suffix. Negative futurity is marked by the particle *mat* or *mati*. The former appears to be a contracted version of the latter and is far more common in fluent connected speech (see 3.4.7 above)

(231) *ja-ol* ***mat*** *a-jaw* *bu-lẽ*
 mother-3S.POSS NEG.FUT 3S-go CL:bu-work

‘His mother won’t go to work.’

BRIN111205RWa

3.5.4 Yes/no questions

The word order for yes/no questions is the same as for declarative clauses – the interrogative function is marked by upwards intonation at the end of the clause (as opposed to slight downwards intonation at the end of a declarative phrase), and optionally by using the French borrowing *est-ce que* ‘is it?’

3.5.5 WH questions

WH questions are marked by two classes of markers; the interrogative determiner/pronoun AGR-*ei*, and invariable interrogative particles.

The interrogative determiner/pronoun has the form AGR-*ei* where AGR represents agreement with a controller noun. It may serve as a post nominal determiner when the controller noun is present in the clause as in (232), or a pronoun if it is not, as in example (233) where the antecedent noun in the discourse is *fu-mango* ‘mango’.

(232) *a-are* ***ei*** *a-gai-e?*
 CL:a-woman AGR:Ø-INTERROG 3S-be.tired-PERF

‘Which woman is tired?’

BRIN121106RW

(236) *wa nu-taj-e*

what 2S-AUX-PERF

‘What are you doing?’

participant observation

(237) *bu nax ku-lob ... ni kujireray*

how HAB 3P-say ... LOC kujireray

‘How do you say ... in Kujireray?’

participant observation

An interrogative form meaning ‘why’ is formed by combining *wa* with the particle *mata* ‘for’ (in affirmative sentences this construction is glossed as ‘because.’).

(238) *mata wa mat u-rem*

for what NEG.FUT 2S-drink

‘Why won’t you drink?’

BRIN111123RW

3.5.6 Verb serialization

When two events in a complex clause occur simultaneously or successively this may be encoded using a serial verb construction. Sagna (2008:177) states that this is a marginal strategy in Eegimaa. In such constructions the first verb is fully inflected for subject and TAM, whereas the second does not receive TAM marking, and, for human referents, is marked with the restricted rather than the full subject marker. That it lacks the word initial *n-* analysed by Sagna as the locative marker, and which is associated with realis semantics. In this context, its absence indicates that the second verb is dependent.

(239) *feera naje-en-e a-nom-ul ku-maŋgo*
 market 3S-go-INACT-PERF 3S-buy-DIR CL:ku-maŋgo

‘He went to the market to buy mangoes.’

BRIN111123RW

3.5.7 Contrasting clauses

The particle *bare* can be used to mark contrast between the propositions expressed by two independent clauses.

(240) *ji-nag-ol bare a-fa-ëli-ul-ut*
 1P.EXCL-wait-3S but 3S-arrive-ANTIC-DIR-NEG

‘We are waiting for him but he hasn't arrived yet.’

BRIN111130RWa

(241) *nu-jug-al-e kē-muŋgut bare a-rob-ut ni kē-muŋgut*
 1P-see-1P-PERF CL:ka-seat but 3S-sit-NEG LOC CL:ka-seat

‘We see a seat but she’s not sitting on the seat.’

BRIN130208RWc

Alternatively, when two independent clauses are in contrast (but not disjunctive) they may simply be juxtaposed as the examples below (which are taken from elicitation sessions on Dahl’s (1985) TAM questionnaire).

varieties where the cognate form is more restricted. For example, Bassène (2007:262) states that in Banjal, this complementizer is used only with complement-taking verb *may* ‘want’. In Sagna’s analysis of Mof Èvi variety Eegimaa it is found following ‘verbs of manipulation’ such as *kkan* ‘make’ (2008:180). In Kujireray its distribution is less restricted. Indeed it is found in contexts where Sagna and Bassène attest different complementizers in their varieties, such as after verbs of utterance and cognition.

Furthermore, both Sagna and Bassène attest a complementizer *buox* which has more generalized use, and which is not as yet attested in Kujireray. It seems that *muni* can be recruited to fill all functions attributed to them in the Mof Èvi varieties. In some contexts it can be translated as ‘so that, in order that’ as in (245), in others something more like ‘since, because’ as in (246) and in others yet serves simply to link the two clauses as in (247).

(245) *u-ŋar-ul* *ji-liba-i* ***mun*** *i-puren* *e-liw*
 2S-take-DIR CL:ji-knife-2S.POSS COMP 1S-remove Cl:e-meat

‘Bring your knife in order that I may remove some meat.’

BRIN120124RWb

(246) *ku-lob-ol* ***muni*** *ji-lar* *me* *jan* *mat* *u-tiñ*
 3P-say-3S COMP 2P.EXCL-work SUBORD today NEG.FUT 2S-eat

‘They said to her since we have worked today you won’t eat.’

BRIN111205RWc

(247) *na-maŋ-e* ***muni*** *a-tiñ* *e-liw*
 3S-like-PERF COMP 3S-eat CL:e-meat

‘She wants him to eat the meat.’

BRIN120301RW

A second complementizer of the form *ten/ter* is glossed ‘if/whether’. Complement clauses following this marker take the same form as fully independent clauses.

(248) *a-soldali* *a-h-u* *na-mig-om* ***ter*** *ni-jug-e*
 CL:a-soldier AGR:Ø-DEF-AGR:h-MED 3S-ask-1S if 1S-see-PERF

më-tëëñ *m-a-m-u*
 CL:ma-problem AGR:m-DEF-AGR:m-MED

‘The soldier asked me if I had seen the accident.’

BRIN111213RW

(249) *ni-mater-e* ***ten*** *kuni* *u-juul*
 1S-doubt-PERF if FUT 2S-come

‘I doubt whether you will come.’

BRIN121120RWa

This morpheme can also occur in main clauses to encode interrogative semantics. It could be analysed as a question marker in these contexts.

(250) *na-gol ten e-hotij y-a-y-u y-o*
 3S-say if CL:e-guitar AGR:y-DEF-AGR:y-MED AGR:y-PN
nu-teg-e me
 2S-hit-PERF SUBORD

‘He said, perhaps it’s the guitar that you play?’

BRIN121030RW

In some contexts, no complementizer is required to link the matrix clause and its clausal complement. With verbs of utterance used in the sense of instructing someone to do something for example, the verb with reduced person inflection for human participants follows the main clause directly.

(251) *na-lob-ol a-iken na-iken*
 3S-say-3S 3S-cook 3S-cook

‘She told him to cook, he cooked.’

BRIN120124RWb

A complement clause may follow the verb *maŋ* ‘want’ without a complementizer. In these cases, the subject argument of the complement clause can be implicit or explicit (as in Banjal – cf. Bassène 2007:262) with some semantic and pragmatic restrictions. When the subject of the complement clause is co-referential with that of the matrix clause, it may be either implicit, in which case a verbal noun is used in the complement clause, as in (252), or explicit, in which case the clipped person inflection is used for human participants (or normal agreement for non-human participants whose subject agreement markers do not participate in the full/reduced alternation), as in (253).

(252) *na-maŋ-e* *fu-tiñ* *e-liw*
 3S-like-PERF CL:fu-eat CL:e-meat

‘I want to eat the meat.’

(253) *na-maŋ-e* *a-tiñ* *e-liw*
 3S-want-PERF 3S-eat CL:e-meat

‘He wants to eat the meat.’

BRIN120301RW

Whether the subordinate clause’s subject is implicit or explicit depends to some extent on the semantics of the verb. Some complement taking verbs can only take complements with implicit subjects i.e. nominalised verbs. *ju* ‘know how to’ for example must by definition have the same participant for both verbs, and consequently only takes verbal nouns as complements.

(254) *na-ju-e* *bu-jiŋ*
 3S-know.how-PERF CL:bu-jiŋ

‘He knows how to climb.’

participant observation

Where the subjects are not co-referential, the verb in the complement clause must always be inflected for subject.

(255) *inje ni-maŋ-e u-teb-om bu ni fu-reŋ*
 1S 1S-want-PERF 2S-carry-1S to LOC CL:fu-forest

‘I want you to carry me to the forest.’

BRIN120124RWb

(256) *ni-maŋ-e a-juul*

1S-want-PERF 3S-go-DIR

‘I want him to come.’

BRIN120301RW

3.5.10 Relative clauses³⁹

To relativize the subject of a verb, the verb is prefixed with an agreement marker and the relativizer *-a-*. The verb phrase is also marked with the subordinator *me*. Additional morphology, such as the perfective marker *-e*, may also be marked on the verb, although the exact contexts remain a topic for future research (although see Berndt 2012 for discussion).

(257) *nu-fas-or-e ni pa-om a-cet me fulim ?*
 2S-know-RECIP-PERF LOC father-1S.POSS REL-die SUBORD last.year

‘Did you know my father who died last year?’

BRIN111118RW

³⁹ See also section 3.2.1 on grammatical relations above.

(258)	<i>ka-are</i>	<i>k-a-h-u</i>	<i>k-a-lar-e</i>	<i>me</i>
	CL:ka-woman	AGR:k-DEF-AGR:h-MED	AGR:k-REL-work-PERF	SUBORD
	<i>supermarche</i>	<i>ku-ŋoet-e</i>	<i>taw</i>	
	supermarket	AGR:ku-be.ugly-PERF	IDEO	

‘The big woman who works in the supermarket is really ugly.’

BRIN121220RW

As shown in 3.3.1 above, this construction may also be used with stative or quality verbs to encode attributive meaning.

(259)	<i>bug-arafuhow</i>	<i>k-a-jax</i>	<i>me</i>	<i>ku-tep-e</i>	<i>yaŋ</i>
	CL:bug-person	AGR:k-REL-intelligent	SUBORD	3P-build-PERF	house

‘The intelligent men built a house.’

BRIN120316RWb

For non-subject relativization, the pronoun AGR-*o* is required at the start of the relative clause and the verb receives regular subject agreement (since the subject of the relative clause is not the target of relativization), and the clause is marked by the subordinator *me*. This is illustrated in the following examples. As for subject relativization, the verb may be bare, without TAM marking as in (260), or marked for perfective aspect (261). The semantic factors determining the use or otherwise of TAM morphology remains a topic for future research.

(260) *a-pal-om* *o* *ni-sen* *me* *e-bërihori*

CL:a-friend-1S.POSS AGR:Ø-PN 1S-give SUBORD CL:e-bicycle

Jegele na-cin-e

Jegele 3S-livePERF

‘My friend to whom I gave a bicycle lives in Jegele.’ BRIN111130RWb

(261) *na-jux* *w-o* *a-are* *a-h-u*

3S-see AGR:w-PN CL:a-woman AGR:Ø-DEF-AGR:h-MED

a-lob-e *me*

3S-speak-PERF SUBORD

‘He saw what the old woman had told him.’ BRIN120124RWb

(262) *mu-rumba* *m-o* *nax* *ji-jaw* *me* *karem*

CL:mu-water.jar AGR:m-PN HAB 2P.go SUBORD AGR:ka-draw.water

‘The jar with which you go to draw water.’

BRIN111205RWc

3.5.11 Temporal adverbial clauses

Temporal adverbial clauses are used to qualify the time frame of the event denoted in the main clause. There are a number of strategies that can express different temporal relationships between clauses, including juxtaposition, subordination, temporal pronouns, particles and verbal forms.

Two clauses may simply be juxtaposed to express that the two denoted events occur simultaneously.

- (263) *e-siho e-koŋ-e bi-eb bu-jox y-o*
CL:e-cat CL:e-cry-PERF CL:bi-hunger AGR:bu-catch AGR:y-PN

‘A cat cries when it is hungry.’

BRIN111123RW (from Dahl 1985)

In other cases the subordinating particle *me* follows the verb in the adverbial clause to indicate that the event therein occurs before that of the main verb. Causality may be implied according to context.

- (264) *u-kan me lumiere pan si-jaw*
2S-do SUBORD light FUT AGR:si-go

‘When you turn the light on, they [fish] will go away.’

BRIN120331RW

The adverbial clause may be marked by the pronominal form *o* prefixed by the temporal class marker *n-*. It can be used to express the fact that two events occur at the same time (with or without connotations of causation, which may arise pragmatically) as in (265) or in succession as in (266). The adverbial phrase signalled by *no* is also marked by the subordinator *me*.

(265) *na-ber-e* *n-o* *na-jug-ol* *me* *ni* *e-box*
 3S-laugh-PERF AGR:n-PN 3S-see-3S SUBORD LOC CL:e-dance

‘She laughed when she saw him dancing.’

BRIN111208RW

(266) *nu-tiñ-e* *s-a* *kë-rusa* *n-o* *nu-ban* *me*
 2S-eat-PERF AGR:s-CONN CL:ka-evening AGR:n-PN 2S-finish SUBORD

bu-lër *sindo-i*

CL:bu-work CL:Ø-home-2S.POSS

‘You ate when you finished the house work.’

BRIN111208RW

The adverbial particle *bala* can be used to indicate that the event expressed in the *bala* clause, occurs after that in the main clause. Syntactically the *bala* clause may – as in (267) - or follow – as in (268) - the main clause. Note that *bala* may also encode a meaning of ‘now’ (see 3.3.17 above).

(267) *bala u-le' ka-jandu-i il faut u-ɲar k-o*
 now 2S-make CL:ka-shovel-2S.POSS it.is.necessary 2S-take AGR:k-PN

bu ni a-fañ-a
 to LOC AGR:a-forge-AGT

‘Before making your shovel, you need to take it to the blacksmith.’

BRIN111209RWa

(268) *na-cel-e bala u-fa-ul*
 3S-die-PERF now 2S-arrive-DIR

‘She died before you arrived.’

BRIN111208RW

The verb *e-ban* ‘to finish’ is recruited as an auxiliary to express sequentiality. Inflected for subject, it follows the verb in the adverbial clause, also marked by the subordinator *me*, to denote that once the event denoted therein is finished, the event denoted in the main clause occurs.

(269) *ji-ner* *me* *ji-ban* *ni* *ji-len*
 1P.EXCL-spread.mud SUBORD 1P.EXCL-finish LOC 1P.EXCL-raise

si-juŋ

CL:si-post

‘When we finish spreading mud (on the roof), then we raise the posts.’

BRIN120227RWb

When the preceding event is already provided by context, the verb *ban*, inflected for subject, can occur by itself.

(270) *ni-tiñ-e* *s-a* *ke-rusa* *i-ban* *bala* *a-iken*
 1S-eat-PERF AGR:s-CONN CL:ka-evening 1S-finish now 3S-cook

‘After I finished eating, she cooked.’

BRIN111208RW

The particle *yok* ‘until’ is used to delimit the action denoted by the verb in the main clause, that is, the latter continues until a point specified in the *yok* clause.

(271) *ku-robo t-o n-a-lin-ol yok ku-jaw*

3P-stay AGR:t-PN LOC-CL:a-sibling-3S.POSS until 3P-go

ku-ak

3P-become.adult

‘They stayed there, [he] with his sister, until they became adults.’

BRIN120124RWb

3.5.12 Locational adverbial clauses

Like the temporal adverbial marker *no*, locative pronominal forms *to* and *bo* are used to indicate a locative relation between the two clauses. In this case, however, the subordinating particle *me* is not required in the adverbial clause.

(272) *u-ŋar-om t-o mu-hem mu-baj-e*

2S-take-1S AGR:t-PN CL:mu-water AGR:mu-have-PERF

‘Take me to a place where there is water.’

BRIN120124RWb

3.5.13 Conditional clauses

Conditionality can be expressed simply by marking the protasis (i.e. the *if*-clause, or condition) as subordinate using the subordinate marker *me*.

(273) *u-maŋ-e* *me* *su-ol* *pan* *u-maŋ-e* *e-iken*
 2S-like-PERF SUBORD CL:su-fish FUT 2S-like-PERF CL:e-cook

y-a *Senegal*

AGR:y-CONN Senegal

‘If you like fish, you will like Senegalese food.’

BRIN111209RWb

The forms *ten/ter* and *initer* can be used to mark conditional clauses.

(274) *initer* *u-ine* *ku-pul-en-o* *fafunax* *nan*
 if CL:u-man AGR:ku-exit.DIR-INACT-PERF other.day like

u-aare *ela* *ba-baj-en-e* *faŋ*

CL:u-woman 1P.INCL have-PERF.REDUP-INACT-PERF much

‘If the men had come out the other day like the women we would have had a lot.’

BRIN121106RW

3.6 Summary of chapter 3

In this chapter I identified and described some of the major grammatical features of Kujireray. I proposed a consonant and vowel inventory, and described some of the observed phonological processes, while highlighting that the phonology of the language remains a topic for substantial future research. An overview of the syntax-semantics interface was provided, and a description of some of the principal morphological and syntactic features of the language. In the following chapter I present a detailed analysis of the noun classification system.

4 Kujireray noun classification system

The Kujireray noun classification system can be characterized as a system of categorization that is overt in the morphosyntax of the language. It manifests itself in prefixes on lexical stems, which together form nouns, and in turn control agreement, also marked by affixation. Items which are controlled by the noun, such as verbs (where the controller noun is the subject), adjectives, numerals as well as pronominal forms, must agree with their antecedent in the discourse. This is exemplified in (275) where the noun class prefix and agreement markers are shown in bold type (and see 4.2.2 below for more a detailed account).

(275) ***fu**-mango* ***f**-anosan* ***fu**-jug-ut*
CL:fu-mango AGR:f-QUANT AGR:fu-be.ripe-NEG

‘No mangos are ripe.’ (Each mango is not ripe)

BRIN121106RW

A number of issues arise in the analysis of the Kujireray noun classification system. These were identified and given theoretical background in Chapter 2, and will be explored in greater depth in this chapter. These include whether or not the system is semantically motivated, and if so to what extent and along which parameters. It will be argued that this is indeed the case, and that a more comprehensive analysis of the system can be achieved using the notions of semantic networks and noun class paradigms as the basis for investigation. In addition, assuming a paradigm based analysis, the question is raised as to whether formally identical noun class prefixes occurring in different paradigm should be considered ‘the same’, particularly when they are be associated with different semantic values depending on the paradigm in question. Finally, the fact that certain noun class prefixes control different agreement patterns, is a topic of discussion in the literature. In this thesis, the noun classification system is analysed as operating on three different levels – the level of the paradigm, the level of the noun class, and the level of agreement. It is posited that such a viewpoint can readily account for data that proves problematic for other approaches.

This chapter deals in detail with the Kujireray noun classification system. The first section briefly describes the terminology and glossing conventions that will be used throughout the discussion. In section 4.2 I describe the noun class prefixes and the domain of agreement, and in 4.3 I present the system using the paradigm approach as primary means of analysis. In section 4.4 I focus on the semantics of some of the individual noun class prefixes and how

these account for their appearance in various paradigms. Section 4.5 comprises a discussion of non-semantic motivations for noun class assignment, and in 4.6 I discuss the phenomenon of crossed agreement.

4.1 Terminology and conventions

Researchers differ in the terms they use to describe noun classification systems (indeed these are often used inconsistently even within the same piece of work (Schadeberg 2001:9) so it is necessary to briefly make explicit how the terminology is used here. The prefix attached to the lexical stem, as in *fu-mango* is referred to as the **noun class prefix**. In combination with a lexical stem such as *mango* these two elements form nouns (including verbal nouns), as in *fu-mango*. The resultant noun then controls the agreement affixes on all other dependent items in discourse – as such it may be referred to as the **controller**, or **antecedent**. Each controlled item – determiner, numeral, relative form etc. – shows agreement in different ways depending on their own form (see 4.2.2 below); the group of agreement affixes that are associated with a given noun class prefix will be referred to as the **agreement pattern**. In the majority of cases, the form of the agreement markers is phonologically related to the noun class prefix with which they are associated. Where this is the case, the term **noun class** is used here as a shorthand to refer collectively to the noun class prefix and its associated agreement pattern.

However, it is important to note that while the pairing of noun class prefixes and the agreement patterns they occur with is very often regular and predictable, there are notable exceptions to this rule, where the noun class prefix and the agreement pattern pertaining to a given noun are ostensibly from different noun classes. This is a semantically motivated phenomenon and will be discussed in 4.6.2 below. The term **crossed agreement** will be used to refer to such cases. This concept is important because it represents a crucial difference between the present analysis and some of the more traditional analyses of noun classification system. The traditional approach to noun classification systems is characterized by a desire to categorically assign each noun to one or another class. In such cases where the noun class prefix and agreement pattern do not ‘match’, a decision must be made as to which of these is ultimately criterial for defining class membership, and under traditional analyses “the agreement evidence is what counts” (Corbett 1991). This seemingly arbitrary decision is in fact influenced by gender languages of the European type, where genders are often marked by agreement on targets, not overtly on the noun itself. It obscures the fact that noun classification systems such as those found in Africa have additional resources at their disposal – both agreement patterns and noun class prefixes are available to encode meaning (as well as the paradigm). While the majority of agreement patterns are

formally related to the noun class prefix of their antecedent noun, where this is not the case there is semantic motivation. In recognizing crossed agreement rather than agreement mismatch I avoid the preoccupation with the definitive assignment of noun class by arguing that either noun class prefix or agreement pattern are criterial for class membership. Indeed, the conclusion implicit throughout the analysis is that a noun class is not an atomic value, but one that is subject to prototype effects.

In addition, the practice in the literature of labelling regular singular/plural pairings of noun classes as genders is made obsolete by the adoption of the paradigm approach adopted in this thesis (see Chapter 2). To some degree the notions of gender and paradigm are comparable. All the singular/plural gender pairings present in a noun classification system correspond to a dyadic paradigm – to this extent the terms can be used interchangeably. However, the paradigm approach captures facts that are more awkward under the traditional gender analysis. For example, the gender analysis imposes rigidity on the system. Once a noun class prefix has been identified as a ‘singular’ noun class prefix, by virtue of it forming a regular singular/plural gender with another noun class prefix, it is assumed that this value is inherently associated with the prefix. If a noun exists that is formed only in this ‘singular’ noun, without a plural counterpart in the other half of the gender, this is analysed as *singularia tantum* (Corbett 1991). Under a paradigm-based analysis, it is assumed that number distinctions, rather than being a value inherent attached to a given prefix, arise from the oppositions between the prefixes that make up the paradigm. Under a such an approach, a *singularia tantum* prefix would be analysed as forming a monadic paradigm, and thus be subject to a semantic interpretation independent of any other paradigms in which it may occur.

A paradigm based analysis can capture differences between, say, singular/plural, and singular/plural/collective paradigms, even when the singular and plural components of these paradigms are formed in identical noun class prefixes. Additionally, it treats less productive paradigms on equal standing with more regular and productive ones. That said, while paradigms are treated as the basic unit of analysis in the thesis, their component parts – i.e. noun classes – are also treated as cognitive realities, and a given noun class may participate in more than one paradigm. Furthermore, there are several cases, discussed below, where some less productive or marginal paradigms appear to consist of a singular class from one (larger and more productive) paradigm, and a plural from another. These cases will be referred to as **crossed paradigms**.

It is common in the literature on noun classification systems, particularly in Bantu, but also in Atlantic to assign noun classes numbers and refer to them by those numbers. This system

has the advantage of making data from different languages more easily comparable, for example where a given noun class in two or more languages is cognate but not phonologically identical. However, the position in this thesis is that such a system may be unnecessarily restrictive in necessarily imposing a certain analysis on the system, particularly in terms of conflating or separating noun classes. For example, for Kujireray, the prefix *ku-* may be assigned to two classes on account of its governing two separate agreement patterns. While this analysis may well be valid, the act of numbering for the purpose of discussion automatically reduces the flexibility of that discussion as it forces an position as to whether *ku-* constitutes one or two noun classes. It is posited that this is not necessary – it is sufficient to observe that there are two different agreement patterns associated with a prefix *ku-*, as well as noting which agreement patterns are associated with the prefix in various paradigms. It is subsequent to this that any semantic commonalities between the formally identical prefixes in their various paradigms and agreement patterns can be sought. Furthermore, Creissels (to appear) argue that in the case of Atlantic, systems are so diverse that seeking to compare them by way of regimented numbering systems is not worthwhile – such comparison must be done on a more fine-grained case by case basis.

For these reasons, I follow Cobbinah (2013) in glossing each noun class marker with its phonological form, prefixed with the abbreviation CL (for classifier) as in CL:fu, CL:ka etc (allomorphs due to vowel harmony are not distinguished – for example both *ba-* and *bē-* will be glossed *ba-*, although the distinction is maintained in the transcription). Agreement markers will also be glossed according to their phonological form, but prefixed with the abbreviation AGR. These glossing conventions mirror the fact that so called prefix/agreement ‘mismatches’ in fact pick out different semantic features of the referent (Pozdniakov 2010). These instances of crossed agreement are therefore highly relevant to the analysis and should not be obscured by the glossing (see 4.6.2 below). This method of glossing also has a practical methodological value – as it allows for searches of both particular class prefixes *and* agreement markers in texts using FLEEx. If and when clarification is required between two targets and their respective controllers in a given clause i.e. if two nouns in a phrase control the same agreement, co-indexation is provided by way of subscripts on respective controller and noun.

In keeping with these conventions, paradigms will also be referred to throughout the text using the noun class prefixes associated with those paradigms be they monadic, dyadic or triadic (it is implicit that the term paradigm refers to both the noun class prefixes and the agreement patterns they control – where crossed agreement occurs this will be made explicit). The order of the terms indicates the number semantics associated with the individual noun classes (Cobbinah 2013:267). That is, for a dyadic paradigm the order is

singular/plural, for triadic, singular/plural/collective, and for monadic, mass.

4.2 An overview of the Kujireray noun classification system

The following sections constitute an overview of the way the noun classification system operates in the morphosyntax of Kujireray, to act as a basis for the in depth treatment undertaken in the rest of the chapter. I show the form of the noun class prefixes and exemplify the agreement system.

4.2.1 Shape of the prefixes

The majority of noun class markers in Joola languages have the shape V or CV, although Ø, CVC, and arguably C are also attested in small numbers. These are exemplified in Table 48.

Table 48 Shape of Kujireray noun class prefixes

shape	prefix	example	gloss
Ø	Ø	<i>pai</i>	‘father’
V	<i>e-</i>	<i>e-rabut</i>	‘ant’
CV	<i>fu-</i>	<i>fu-gol</i>	‘stick’
CVC	<i>bug-</i>	<i>bug-an</i>	‘people’
C	<i>f-</i>	<i>f-al</i>	‘river’

Even when a noun displays zero class marking, it still enters into the classification system, as evidenced by agreement marking on controlled items. In general zero class marked control the same agreement pattern as most nouns in *e-*, and when the denoted entity is individuated the stem forms a plural in *si-* controlling regular alliterative agreement. Other zero marked items such as *pai* ‘father’, shown here, as well as *jei* ‘mother’ also form a plural in *si-* (i.e. *si-pai* ‘fathers’, *si-jei* ‘mothers’) but exhibit crossed agreement due to the fact that they denote humans (see 4.6.2 below). CVC is marginal because the only class marker of this shape is *bug-* which in turn is attested in only one form – *bug-an* ‘people.’ C is arguable because evidence from agreement and the semantic structure of the system suggests that cases with a surface C noun class marker are actually cases of a CV prefix that has undergone vowel deletion. However, since this putative deletion is not a regular phonological process and occurs in only a handful of cases its motivation is as yet unclear and remains a subject for ongoing research (see 4.6.1 below for discussion).

4.2.2 Agreement

Once a noun is formed from a lexical stem and noun class prefix, this noun controls an agreement pattern on a variety of items including adjectives, numerals, interrogative markers, demonstratives and pronouns. The system exhibits a high degree of predictability with respect to the agreement pattern associated with a given prefix. In the majority of cases, the agreement pattern is alliterative, with the agreement prefixes exhibiting phonological similarity with the prefixes of the controller, although the exact shape of the agreement markers is also affected by the shape of the agreement target.⁴⁰ For example, for certain vowel initial targets, such as in *ëëmëh* ‘big’, noun class prefix of shape CV will show only a consonantal reflex, as in *fu-mango f-ëëmëh* ‘big mango’, and one with shape V will control a corresponding glide, as in *e-siho y-ëëmeh* ‘big cat.’ When the stem of the target is consonant initial, the agreement marker will be identical to the noun class prefix for V shaped prefixes, or of shape CV for CV shaped prefixes, although in the latter case, while the initial consonant will be alliterative, the vowel will not necessarily be identical – where two CV prefixes have the same initial consonant, but different vowels, this contrast is not preserved in the agreement pattern (indeed this fact forms part of the debate as to whether these noun class pairs should be classed as separate noun classes – see 4.6.1 below). These facts are illustrated in Table 49.

⁴⁰ There are certain cases where the agreement pattern does not follow this pattern of phonological similarity – these are discussed in section 4.6.2 below.

Table 49 Agreement patterns on a selection of targets

NCP	agreement: vowel intial target	agreement: consonant initial target
<i>e-</i>	<i>e-siho y-ëëmëh</i> CL:e-cat AGR:y-big 'big cat'	<i>e-siho e-honet-e</i> CL:e-cat AGR:e-dirty-PERF 'the cat is dirty'
<i>u-</i>	<i>u-juo w-ëëmëh</i> CL:u-shirt AGR:w-big 'big shirt'	<i>u-juo u-honete</i> CL:u-shirt AGR:u-dirty-PERF 'the shirt is dirty'
<i>bu-</i>	<i>bu-maŋgo b-ëëmëh</i> CL:bu-mango AGR:b-big 'big mango'	<i>bu-maŋgo bu-bag-e</i> CL:mango AGR:bu-grow-PERF 'the mango has grown'
<i>ba-</i>	<i>ba-taata b-ëëmëh</i> CL:ba-sweet.potato AGR:b-big 'big sweet potatoes'	<i>ba-taata bu-bag-e</i> CL:ba-sweet.potatoAGR:bu-grow-PERF 'the sweet potatoes have grown'

Agreement occurs on a variety of targets. These are illustrated in Table 50 for the noun *fu-maŋgo* 'mango'.

Table 50 Agreement targets and their agreement patterns

target type	form	example for <i>fu- mango</i>
adjective	AGR-adjective	<i>fu-maŋgo f-ëëmëh</i> CL:fu-mango AGR:f-big 'big mango'
numeral	AGR-numeral	<i>fu-maŋgo f-anu</i> CL:fu-mango AGR:f-one 'one mango'
interrogative	AGR- <i>ei</i>	<i>fumaŋgo f-ei</i> CL:fu-mango AGR:f-INTEROG 'which mango?'
relative prefix	AGR- <i>a-</i>	<i>fu-maŋgo f-a-fir-e</i> CL:fu-mango AGR:f-REL-sour-PERF 'sour mango'
'possessive' connector	AGR- <i>a</i>	<i>fumaŋgo f-a Jean</i> CL:fu-mango AGR:f-CONN Jean 'mango of Jean'
independent possessive	AGR-POSS	<i>fu-maŋgo f-umbam</i> CL:fu-mango AGR:f-1S.POSS 'mango of mine'
demonstrative	AGR-a-AGR-DEM	<i>fumaŋgo f-a-f-u</i> CL:fu-mango AGR:f-DEF-AGR:f-MED 'that mango'

4.3 A paradigm based description of the Kujireray noun class system

It is argued in this thesis that while individual noun classes do carry meaning, a full understanding of the noun class system, and indeed of the semantics of individual noun classes, should be based on an analysis of the oppositions formed between the noun classes

as a result of the paradigms they form (indeed, the oppositions between paradigms and the networks they form are also meaningful – see 4.3.29 below on paradigmatic networks for discussion).

Such an approach, as it is interpreted here, rather than denying the semantics of the noun class on an individual level, actually enables important observations to be made where one noun class participates in more than one paradigm (see 4.4 below). Furthermore, convergences and divergences between noun class prefixes and the agreement patterns they control are in many cases directly linked to the noun class paradigm they belong to (see 4.6 below). In this thesis the paradigms will be referred to by naming their associated noun class prefixes as a label. Their associated agreement patterns will then be discussed.

The inventory of all paradigms attested in Kujireray is shown in Table 51 on the adjacent pages. In the table is listed each paradigm attested in Kujireray, an example of a noun formed in that paradigm with its gloss. Under the heading **semantic domain** I give a brief overview of any particular semantics associated with the paradigm, and in **type count** I show the number of lexical items currently attested in the paradigm. The triple column under the heading **paradigm** represents the fact that paradigms consists of either monadic, dyadic, or triadic groupings of noun class prefixes. A monad fills only slot 1, a dyadic paradigm 1 and 2 and a triadic paradigm 1, 2, and 3, and the number values of the individual classes fall out from the slot occupied (see 2.3.3 for detailed explanation). The colours marking the individual noun classes serve to easily identify where formally identical noun class prefixes occur in more than one paradigm. The implications of this will be discussed in 4.4 below. For reasons of space, I have only provided an example for the noun formed in the noun class occurring in the first slot of the paradigm.

In what follows I provide an analysis of each of these paradigms commenting on their possible semantic motivations, as well as observing semantic links and contrasts between paradigms. They are presented in the same order as they appear in Table 51, which is principled to some extent, but does not have any special significance. I have, where possible grouped paradigms of a similar shape together in order to facilitate coherent comparison. This has the result that some of the larger, regular paradigms are grouped together with significantly smaller ones.

Table 51 Paradigm inventory of Kujireray

paradigm			example	gloss	semantic domain	count
slot						
1	2	3				
a-	u-		<i>a-are</i>	‘woman’	human	50+
a-	ku-		<i>a-pal</i>	‘friend’	human, relation	5
a-	ku-	e-	<i>a-labe</i>	‘priest’	human, group	10+
a-	si-		<i>a-mulo</i>	‘hare’	anthropomorphized animal	1
∅	si-		<i>pai</i>	‘father’	parents, loanwords	6
e-	si-		<i>e-rabut</i>	‘ant’	diverse	186
e-	si-	ba-	<i>e-halanga</i>	‘louse’	small, round	13
ka-	u-		<i>kë-munget</i>	‘door’	diverse, extended, hard	145
ka-	u-	e-	<i>e-jomb</i>	‘black rice’	colonizing plants	6
ka-	u-	ma-	<i>ma-fos</i>	‘grass’	wild grass	1
ka-	u-	ba-	<i>ba-fas</i>	‘prawns’	extended/hard, small	2
ka-	u-	bu-	<i>bu-yolen</i>	‘rice seedlings’		1
ka-	ku-		<i>ka-at</i>	‘leg’	extended, round	8
fu-	ku-		<i>fu-mango</i>	‘mango’	round	141
fu-	ku-	ba-	<i>ba-sah</i>	‘beans’	small, round	12
bu-	u-		<i>bu-sana</i>	‘kapok tree’	trees, assemblages	56
bu-	(u-)		<i>bu-fonay</i>	‘medicine’	tree products,	5
ba-	u-		<i>ba-cin</i>	fetish	tree products, mass	10
ba-	si-		<i>bë-sungutu</i>	‘girl’		1
ji-	mu-		<i>ji-sëbul</i>	‘rabbit’	small	12
ji-	mu-	ba-	<i>basit</i>	‘millet’	small, round	9
ji-	ku-		<i>ji-cil</i>	‘eye’		1

paradigm			example	gloss	semantic domain	count
slot						
1	2	3				
<i>ji-</i>	<i>u-</i>		<i>ji-it</i>	‘oil palm’		1
<i>ji-</i>	<i>si-</i>		<i>ji-muhoor</i>	‘lion’		1
<i>ba-</i>			<i>ba-poc</i>	‘chicken pox’	afflictions	15
<i>mu-</i>			<i>mu-hem</i>	‘water’	liquids	21
<i>ma-</i>			<i>ma-sur</i>	‘urine’	liquids	5
<i>n/ñi</i>			<i>ñi-kul</i>	‘bereavement’	periods of time	3
<i>ti-</i>			<i>ti-nah</i>	‘time of day’	time	2

4.3.1. Paradigm *a-/u-*

In the lexicon there are 50 forms attested in this paradigm. Without exception nouns in this paradigm denote humans; furthermore, the majority of nouns denoting humans are formed in this this paradigm. The figure cited obscures the fact that this paradigm is used highly productively, in combination with the suffix *-a*, in forming agent nouns⁴¹. In theory, there may be as many nouns in this paradigm as there are stems associated with dynamic events as part of their conceptual domain (stems associated with stative situations may not be nominalized in this way – see 3.3.1 above) since this appears to be a fully productive process of noun formation in Kujireray – indeed the majority of items in this paradigm are formed in this way. The examples in Table 52 show both nouns that are formed from a lexical stem that represents a dynamic event – (a-c), this is indicated in the right hand column – and others that are not derived in this way (d-f).

⁴¹ Other than non-derived forms, I have included only agent nouns that are well entrenched in the language and culture such as *a-wa-a* ‘palm wine harvester’ and/or idiosyncratic uses of this construction that are not fully predictable from their composite parts such as *a-lar-a* ‘maid’ (from *lar* ‘work’).

Table 52 Paradigm *a-/u-*

	singular	plural	gloss	stem
a	<i>a-rem-a</i>	<i>u-rem-a</i>	‘drinker/s’	< <i>rem</i> DRINK
b	<i>a-lar-a</i>	<i>u-lar-a</i>	‘maid/s’	< <i>lar</i> DO/WORK
c	<i>a-wa-a</i>	<i>u-wa-a</i>	‘palm wine harvester/s’	< <i>wa</i> HARVEST PALM WINE
d	<i>a-are</i>	<i>u-are</i>	‘woman/women’	
e	<i>ě-ine</i>	<i>ú-ine</i>	‘man/men’	
f	<i>ě-vi</i>	<i>ú-vi</i>	‘king/s’	

Note that as is typical for nouns denoting human entities, plural nouns formed in this paradigm often exhibit crossed agreement, whereby they do not control the regular alliterative agreement pattern for *u-*; speakers prefer in certain contexts to assign agreement on semantic grounds (see 4.6.2 below for a full discussion).

4.3.2 Paradigm *a-/ku-*

Paradigm *a-/ku-* can also be characterized as a human paradigm – all its members attested thus far denote humans. However, the semantic properties of nouns in this paradigm are more particular than those in paradigm *a-/u-*. They all denote humans whose identity is understood in terms of their relationship with others. Indeed the saliency of this aspect of their meaning is evidenced in the fact that during elicitation these forms are often provided with a possessive suffix. For example, if the term for ‘paternal aunt’ was requested, consultants would often offer a form such as *a-som-om* ‘my paternal aunt’ rather than the plain form *a-som* ‘paternal aunt’. There are only five stems attested in this paradigm shown in Table 53.

Table 53 Paradigm *a-/ku-*

	singular	plural	gloss
a	<i>a-som</i>	<i>ku-som</i>	‘paternal aunt/s’
b	<i>a-lin</i>	<i>ku-lin</i>	‘opposite sex sibling/s’
c	<i>a-pal</i>	<i>ku-pal</i>	‘friend/s’
d	<i>a-pemb</i>	<i>ku-pemb</i>	‘offspring/s’
e	<i>a-ti</i>	<i>ku-ti</i>	‘same sex sibling/s’

Like paradigm *a-/u-* in the previous section, this paradigm is of particular interest from the point of view of crossed agreement, given its exclusive association with formation of nouns denoting humans. Furthermore, since *ku-* is a class prefix that also participates in other paradigms (most notably *fu-/ku-* and *ka-/ku-*) in a more productive manner, and equally there is a far more populous and productive paradigm for humans i.e. *a-/u-*, it is possible that this is an example of a crossed paradigm, where the plural marker *ku-* contributes particular semantics, thus singling nouns formed in this paradigm out from those formed in the more regular paradigm *a-/u-*.

4.3.3 Paradigm *a-/ku-/e-*

This paradigm is also associated with nouns denoting humans. It is posited that the types of human falling into this paradigm can be differentiated from those in *a-/ku-* and *a-/u-* in that their identity is understood by virtue of their belonging to a group. It is used for all ethnonyms as well as groups defined by their profession.

Table 54 Paradigm *a-/ku-/e-*

	singular	plural	collective	gloss
a	<i>a-lulum</i>	<i>ku-lulum</i>	<i>e-lulum</i>	‘European person/people’
b	<i>a-joola</i>	<i>ku-joola</i>	<i>e-joola</i>	‘Joola person/people’
c	<i>a-labe</i>	<i>ku-labe</i>	<i>e-labe</i>	‘priest/s’
d	<i>a-olof</i>	<i>ku-olof</i>	<i>e-olof</i>	‘Wolof person/people’
e	<i>a-jirer</i>	<i>ku-jirer</i>	<i>e-jirer</i>	‘Brinois person/people’

This paradigm is essentially an augmented version of paradigm *a-/ku-* as described in the previous section. The forms in *a-* are singular, and those in *ku-* are plural (and countable). The additional forms in *e-* also denote a number of entities greater than one, but these forms contrast with those in *ku-* in that they may not be counted; they are not compatible with numeral expressions. As such they are interpreted as having a semantic value of collective, as opposed to plural. The existence of a contrast between (count) plural and collective is instructive because it signals a difference in construal. While the referent of the *e-* form for stems such as those in Table 54 above is a number (greater than one) of individual, human entities, and as such could easily form a plural in *ku-* (or for that matter in *u-* as part of the *a-/u-* paradigm), for socio-cultural reasons an alternative construal is overtly expressed in the language where these entities are conceptualized as a collective macro entity, a kind of colony. The existence of the component entities is retrievable, but the salient profiled region of the concept is the fact that these entities are defined in large part by their membership in a certain group. The same effect is seen in the botanical domain where grasses and other plants that naturally occur not singly but in ‘colonies’ fall into the paradigm *ka-/u-/e-* (see 4.3.9 below). Furthermore, the use of the noun class *e-* to denote collective semantics here is particularly interesting, because *e-* is also strongly associated with singular semantics in the paradigm *e-/si-*, which is the default singular/plural paradigm in Kujireray (see 4.3.6 below).

4.3.4 Paradigm *a-/si-*

This dyadic paradigm has just one attested member – *a-mulo/si-mulo* ‘hare/s’ and is a clear case of a crossed paradigm. The hare is a common character in regional folk tales, in which it is anthropomorphised. This accounts for the formation of the singular noun in *a-*, where we would expect to see it in *e-*, the prefix most commonly associated with the formation of singular animal nouns, as part of the paradigm *e-/si-*. Indeed, it appears the anthropomorphic effects of this cultural significance of the hare does not extend to the formation of the plural noun – here the process reverts to *si-*.

4.3.5 Paradigm *Ø-/si-*

This paradigm is involved in the formation of two rather disparate classes of noun. The first consists of only the forms *jei/si-jei* ‘mother/s/aunt/s’ and *pai/si-pai* ‘father/s/uncles/s’, and the second of a handful of loanwords that for some reason have not been fully integrated into the system by creating a singular form in noun class prefix *e-*. The two classes can be distinguished on the basis of the agreement patterns they control, providing support for the argument that agreement may make a semantic contribution independent of both the noun class prefix and the paradigm (see 4.6.2 for discussion). *jei/si-jei* ‘mother/s/aunt/s’ and *pai/si-pai* ‘father/s/uncles/s’ control the same agreement patterns as nouns formed in *a-/u-*

(see 4.3.1 above), and the loanwords control the same as those in *e-/si-* (see 4.3.6 below).

4.3.6 Paradigm *e-/si-*

The paradigm *e-/si-* is the largest paradigm in Kujireray (associated with 186 stems to date). It is the default paradigm in that many loan words are assigned to this paradigm unless they have any particularly salient characteristics that may motivate their inclusion in another paradigm (e.g. *fu-bik/ku-bik* ‘biro/s’ which is assigned to paradigm *fu-/ku-* on the basis of its cylindrical shape) (cf. Sagna 2008:230). This paradigm forms nouns denoting entities from a wide variety of semantic domains including animals of different types (mammals, birds, reptiles, fish, domestic animals, insects), artefacts such as jars, baskets, clothing and tools, body parts etc., between which semantic commonalities can be difficult to identify. However, contrary to this common observation about default classes (or under this analysis, default paradigm) it is posited here that the one major semantic commonality that can be observed is that all members of this paradigm are concrete entities, that can be readily individuated. Forms in *e-* invariably denote a single entity, and forms in *si-* invariably denote a number of entities greater than one, that may, moreover, be counted (evidenced by compatibility with numeral expressions). As a semantic parameter this is obviously highly general, although it may be that it is so cognitively basic that it is easily overlooked. Indeed, one of the tenets of this thesis is that meaning of individual components of language is often highly generalized or schematic, elaborated only as part of linguistic constructions.

There are, however, three subclasses within this paradigm that are remarkable in that they represent semantic categories that may be considered good candidates for membership in other paradigms. These are special humans, trees, and fruits and are exemplified in Table 55 by examples (a-d), (e), and (f-h) respectively.

Table 55 Exceptional items in paradigm *e-/si*

	singular	plural	gloss
a	<i>e-firah</i>	<i>si-firah</i>	‘bachelor/s’
b	<i>e-mbilo</i>	<i>si-mbilo</i>	‘zombie/s’
c	<i>e-janjan</i>	<i>si-janjan</i>	‘beautiful person/people’
d	<i>e-mbot</i>	<i>si-mbot</i>	‘boy/s’
e	<i>e-rapay</i>	<i>si-rapay</i>	‘fan palm tree/s’
f	<i>e-hobot</i>	<i>si-hobot</i>	‘fan palm fruit/s’
g	<i>e-hofand</i>	<i>si-hofand</i>	‘fan palm fruit/s’
h	<i>e-indum</i>	<i>si-indum</i>	‘kapok fruit/s’

The humans in (a-d) can be conceived of as in some way extraordinary (cf. Sagna 2008:230), whether in a positive or negative way. While the *e-/si-* paradigm is not considered to have any semantic value beyond singular/plural individuation that could be considered to correlate with this extraordinary characteristics, in fact it is the exclusion of these stems from the regular human paradigms *a-/u-* or *a-/ku-* that marks their exceptional nature, further supporting the need to examine the entire system in terms of the oppositions present therein, rather than of merely noun classes or even paradigms in isolation. Likewise the *e-rapay* ‘fan palm’ can be considered as a somewhat atypical tree, consisting of just one thin trunk, with no branches, but a cluster of leaves (also atypical) and fruit at the top. Not only are fan palms physically distinct from prototypical trees, they also have particular cultural relevance in providing a wide range of food and building materials.

A possible motivation for the inclusion of the fruits in (f-h) is somewhat less apparent. For (f-g) it is possible that they are included by virtue of being in the same domain of experience as their progenitor tree. For (h), however, the motivation is less clear – the name of the tree that produces the fruit is *bu-sana/u-sana* ‘kapok trees’. Trees that form nouns in the paradigm *bu-/u-* generally form the names for their fruits in paradigm *fu-/ku-* as part of a productive paradigmatic network (see 4.3.28 below).

4.3.7 Paradigm *e-/si-/ba-*

The noun classes in this paradigm represent an opposition between singular, count plural,

and collective respectively⁴². In comparison to paradigm *e-/si-*, the membership of this paradigm is quite homogenous. Broadly speaking its members can be divided into three semantic domains – insects, botanical objects, and manmade artefacts – which are united by the fact that they are all small with respect to their physical configuration. Furthermore in the real world, they are generally encountered collectively rather than singly and thus this is the default construal of such entities as evidenced by the fact that for most stems in this paradigm, the *ba-* form tends to be provided as the citation form. That is to say, when eliciting such items from French, even if the French form is provided in the singular, the consultant will provide the Kujireray equivalent in collective *ba-*. Indeed for some items in this paradigm, consultants found the ‘count’ plural *si-* somewhat questionable. Although it was accepted if a context was created where one to be required if one wished to count lice or beans for example (since the collective *ba-* forms are incompatible with numeral terms) it seems that in everyday usage these forms are rarely used. This observation supports the position that encyclopaedic knowledge plays a role in the organization of the noun classification system.

⁴² Cobbinah (2013), following Sauvageot (1967) labels the equivalent opposition between two plurals in Bāinounk Gubēeher count plural vs. unlimited plural. While I adopt his use of the term count plural here, I choose the term collective rather than unlimited plural as it mirrors the fact that for forms in *ba-*, while the denoted entity is plural insofar as it consists of a number of individual entities, the conceptualization is of these entities as an non-individuated mass, as evidenced by the fact that *ba-* forms are not compatible with numeral terms. The boundaries of the individuals are not profiled; it is the boundary of the group of individuals as a whole that is profiled. This distinction is also directly relevant to the analysis of verbal nouns in Chapter 5.

Table 56 Paradigm *e-/si/ba-*

	singular	plural	collective	gloss
a	<i>e-sem</i>	<i>si-sem</i>	<i>ba-sem</i>	‘flea/s’
b	<i>e-halaŋga</i>	<i>si-halaŋga</i>	<i>ba-halaŋga</i>	‘louse/lice’
c	<i>e-kos</i>	<i>si-kos</i>	<i>ba-kos</i>	‘tick/s’
d	<i>e-nipora</i>	<i>si-nipora</i>	<i>ba-nipora</i>	‘tsetze fly/flies’
e	<i>e-baŋgut</i>	<i>si-baŋgut</i>	<i>ba-baŋgut</i>	‘grasshopper/s’
f	<i>e-fuud</i>	<i>si-fuud</i>	<i>ba-fuud</i>	‘maize kernel/s’
g	<i>e-ñil</i>	<i>si-ñil</i>	<i>ba-ñil</i>	‘seed/s’
h	<i>e-tutu</i>	<i>si-tutu</i>	<i>ba-tutu</i>	‘kapok seeds’
i	<i>e-ver</i>	<i>si-ver</i>	<i>bě-ver</i>	‘palm nuts’
j	<i>e-sobole</i>	<i>si-sobole</i>	<i>ba-sobole</i>	‘onions’
k	<i>e-nuh</i>	<i>si-nuh</i>	<i>ba-nuh</i>	‘beads’

4.3.8 Paradigm *ka-/u-*

This paradigm is the second most populous in the lexicon after *e-/si-*, being associated with 145 stems. On first inspection it appears to be equally heterogeneous as the latter, possibly even more so, since while many members denote individuated ‘things’ there are also many that denote more abstract, or at least less concrete or time stable notions such as *ka-lar/u-lar* ‘slap/s’ and *ka-pib/ku-pib* ‘shout/s’.

However, with regards to concrete entities, under closer examination there are a number of semantic domains that seem to be quite well represented in this paradigm and which therefore may warrant further investigation. Firstly there are thirteen terms for body parts (human or otherwise) in *ka-/u-*.

Table 57 Body parts in paradigm *ka-/u-*

	singular	plural	gloss
a	<i>ka-caac</i>	<i>u-caac</i>	‘rib’
b	<i>kë-suat</i>	<i>u-suat</i>	‘armpit’
c	<i>ka-gend</i>	<i>u-gend</i>	‘hair’
d	<i>ka-fokk</i>	<i>u-fokk</i>	‘eyebrow’
e	<i>kë-lin</i>	<i>u-lin</i>	‘side’
f	<i>ka-sand</i>	<i>u-sand</i>	‘skull’
g	<i>kë-hëbëlet</i>	<i>u- hëbëlet</i>	‘jaw’
h	<i>ka-ul</i>	<i>u-ul</i>	‘bone’
i	<i>ka-fal</i>	<i>u-fal</i>	‘body hair, animal hair’
j	<i>kë-sël</i>	<i>u-sël</i>	‘fin’
k	<i>kë-ber</i>	<i>u-ber</i>	‘wing’
l	<i>ka-hof</i>	<i>u-hof</i>	‘claw’
m	<i>kë-siit</i>	<i>u-siit</i>	‘feather’
n	<i>ka-pol</i>	<i>u-pol</i>	‘skin, bark’

That the body parts denoted by the terms in Table 57 belong to this paradigm is consistent with Sapir’s (1965) observations for Fogny that bones, bony objects and limbs are all found in singular noun class *ka-* in that language. They all have some property of being somehow bony or scaly, as long as hair can be regarded as scaly. There are also a number of animals in this paradigm such as *ka-fofor* ‘cockroach’, *ka-maasix* ‘fiddler crab’ and *ka-ñatat* ‘chameleon’, many of which are reptiles or other animals with bony or scaly exteriors, which provides support for Sapir’s hypothesis about boniness.⁴³ There are also many birds

⁴³ While it is true that certain reptiles, fish and other scaly creatures are denoted by nouns formed in paradigm *e-/si-*, an asymmetry exists whereby nouns denoting non-scaly creatures are not formed in *ka-/u-*. The difference between scaly creatures in *e-/si-* and those in *ka-/u-* remains an area for future research.

in this class, which could be included in this paradigm by nature of being feathered.

While the generalizations above appear to be robust, the preference in the present analysis is to seek a more schematic explanation for paradigm membership where possible. As well as being hard to motivate cognitively, ‘limbness’ or ‘featheriness’ are rather idiosyncratic as semantic domains; the notion of underspecified meaning invoked in the analysis requires a more schematic meaning in order to be compatible with the large number of stems that form nouns in this paradigm, and that have not to do specifically with limbs or feathers. Sagna (2008), taking his analysis to a more schematic level, links noun class *ga-* (the Eegimaa cognate of Kujireray *ka-*) closely to physical configuration, specifically the qualities of flatness, wideness and thinness – properties that can all be conflated under the label ‘extendedness’. In fact, the presence of terms for hard or scaly things in this paradigm may fall out from general properties of entities that are extended. In order to maintain an extended configuration, whether it be long and (relatively) thin such as ribs or feathers, or flat and wide such as kapok tree buttresses, some degree of hardness and rigidity is required. Further this inclusion of hard things, on the basis of their being extended, then extends to motivate the inclusion of animals that are covered in hard, extended scales or feathers

Sagna’s generalization can illuminate commonalities between a large number of entities in the equivalent paradigm in Kujireray that would otherwise appear somewhat semantically diverse. Some of these are shown in Table 58 below. Note that while they are separated to show examples of flat, wide, and thin things respectively, some exhibit more than one of these qualities. For example, a mat is both flat and wide. Indeed the physical properties of flatness, thinness and wideness are often mutually dependent. In order for something to be conceived of as flat, it is likely to have a thin cross section. If something is conceived of as long, its width will necessarily be thin in comparison.

Table 58 Flat, wide and thin entities in paradigm *ka-/u-*

	singular	plural	gloss	property
a	<i>ka-komb</i>	<i>u-komb</i>	‘bark’	flat
b	<i>ka-jay</i>	<i>u-jay</i>	‘plank’	flat
c	<i>ka-peh</i>	<i>u-peh</i>	‘mat’	flat
d	<i>kē-njinj</i>	<i>u-njinj</i>	‘kapok buttress’	wide
e.	<i>ka-fat</i>	<i>u-fat</i>	‘fence’	wide
f	<i>ka-tama</i>	<i>u-tama</i>	‘rice field, riverside’	wide
g	<i>ka-coli</i>	<i>u-coli</i>	‘fishing line’	thin
h	<i>ka-bot</i>	<i>u-bot</i>	‘thread’	thin
i	<i>ka-new</i>	<i>u-new</i>	‘cord’	thin

This paradigm also forms many nouns denoting places which are wide, flat and open.

Table 59 Wide, flat and open places in *ka-/u-*

	singular	plural	gloss
a	<i>ka-tama</i>	<i>u-tama</i>	‘rice field, waterside’
b	<i>kē-sih</i>	<i>u-sih</i>	‘quay’
c	<i>ka-lah</i>	<i>u-lah</i>	‘field’
d	<i>ka-kin</i>	<i>u-kin</i>	‘paddy’
e	<i>ka-fiit</i>	<i>u-fiit</i>	‘bare earth’
f	<i>ka-rata</i>	<i>u-rata</i>	‘savannah’
g	<i>ka-pandaŋ</i>	<i>u- pandaŋ</i>	‘glade’
h	<i>kē-ndib</i>	<i>u- ndib</i>	‘veranda’
i	<i>ka-rus</i>	<i>u-rus</i>	‘sandy area’

All of these nouns denote locations that are wide and open. Of particular interest is *ka-*

pandaj/u-pandaj ‘glade/s’, since this illustrates a contrast between the dense forest and the wide open space of the glade within. Also of interest is *ka-rus/u-rus* ‘sandy terrain/s’ since these forms exist in a paradigmatic network with the form *bu-rus* ‘sand’. Thus the stem *rus* represents the broad concept SAND which is elaborated in monadic paradigm *bu-* to denote the mass substance ‘sand’ and in paradigm *ka-/u-* to denote a sandy place, which is inherently wide and open (see section 4.3.29 for further discussion of paradigmatic networks).

A number of containers are also found in this paradigm.

Table 60 Containers in paradigm *ka-/u-*

	singular	plural	gloss
a	<i>ka-tegel</i>	<i>u-tegel</i>	‘type of basket’
b	<i>kë-ërih</i>	<i>u-ërih</i>	‘type of basket’
c	<i>ka-hut</i>	<i>u-hut</i>	‘type of basket’
d	<i>ka-guben</i>	<i>u-guben</i>	‘type of basket’
e	<i>ka-iyolay</i>	<i>u-iolay</i>	‘type of basket’
f	<i>ka-tasa</i>	<i>u-tasa</i>	‘cup’
g	<i>ka-hobot</i>	<i>u-hobot</i>	‘palm wine spoon’
h	<i>ka-tokond</i>	<i>u-tokond</i>	‘palm wine spoon’
i	<i>ka-bium</i>	<i>u-bium</i>	‘calabash’
j	<i>ka-sand</i>	<i>u-sand</i>	‘skull’

This is in some cases surprising, as many of these items also check the semantic features associated with paradigm *fu-/ku-* such as roundness. Indeed, most useful containers have a somewhat bulbous or rounded configuration – long thin things tend not to be efficient at containing a lot. However, the natural conflation of a number of features discussed above can also be observed in the class of containers. A useful container will have a large interior space compared to a relatively thin and flat outer surface. This surface will also necessarily be hard. Alternatively, in following a semantic network approach to the analysis of the semantic structure of noun classification systems, it is fully plausible that not all items in this paradigm are directly associated with a semantic feature of extendedness, but may be associated at one or more levels of remove. For example, the fact that many tools are found

in this paradigm by nature of their being long and thin, may have created a new subclass of tools, whether they are extended or not.

Also in this paradigm are a number of result nouns (see 2.4 above), formed from stems that may also form verbs. These range from fully concrete entities as in *ka-gis/u-gis* ‘part/s, portion/s’ (cf. *e-gis* ‘split’) to less tangible entities such as *ka-ufor/u-ofor* ‘sin/s’.

Table 61 Result nouns in paradigm *ka-/u-*

	singular	plural	gloss	verbal form in <i>e-</i>
a	<i>ka-pib</i>	<i>u-pib</i>	‘shout’	< <i>e-pib</i> ‘shout’
b	<i>ka-gis</i>	<i>u-gis</i>	‘part’	< <i>e-gis</i> ‘split’
c	<i>ka-ofor</i>	<i>u-ofor</i>	‘sin’	< <i>e-ofor</i> ‘sin’
d	<i>ka-buko</i>	<i>u-buko</i>	‘injury’	< <i>e-buko</i> ‘injure oneself’
e	<i>ka-vox</i>	<i>u-vox</i>	‘name’	< <i>e-vox</i> ‘call’
f	<i>ka-tex</i>	<i>u-tex</i>	‘contribution’	< <i>e-tex</i> ‘hit’
g	<i>ka-taf</i>	<i>u-taf</i>	‘stinger’	< <i>e-taf</i> ‘sting’
h	<i>ka-lar</i>	<i>u-lar</i>	‘slap’	< <i>e-lar</i> ‘slap’

Whether a semantic link can be made between these forms and others in this paradigm, as described above is unclear. Hypothetically, it could be argued that semantics of extendedness posited for the spatial domain may extend via a process of metaphor to semantics of duration in the temporal one it would be difficult to argue convincingly that this could apply to an essentially punctual event such as a sting or a slap. It is posited instead, that as well as having positive semantic value of its own, the paradigm *ka-/u-* may in some circumstances be used in opposition to other paradigms to create a contrast. For example, the result nouns in Table 61 are all associated with a stem that may be used in a verbal context to denote an action. That stem therefore forms a verbal noun (in the eventive sense) in *e-*. If the result noun were also to form its singular in this class this would create ambiguity.

4.3.9 Paradigm *ka-/u-/e-*

In parallel to the comparison between *e-/si-* and *e-/si-/ba-*, this is a paradigm whose membership is extremely semantically coherent, in contrast to its dyadic counterpart *ka-/u-*. It is used to form nouns from stems denoting ‘colonizing plants’, that is, plants that grow in

large groups of many individuals to the exclusion of other varieties in that area (Sagna 2008:232).

Table 62 Paradigm *ka-/u-/e-*

	singular	plural	collective	gloss
a	<i>ka-ful</i>	<i>u-ful</i>	<i>e-ful</i>	‘rice stalks’
b	<i>ka-ef</i>	<i>u-ef</i>	<i>e-ef</i>	‘grass’
c	<i>ka-jomb</i>	<i>u-jomb</i>	<i>e-jomb</i>	‘black rice’
d	<i>ka-ɲañ</i>	<i>u-ɲañ</i>	<i>e-ɲañ</i>	‘type of grass’

It is posited that while this paradigm is associated with similar semantic domains as the formally related singular/plural dyad *ka-/u-* – i.e. extendedness – the availability of the collective forms in *e-* represents the facts that the entities denoted by items in this paradigm fall into a special category, pertaining to the way in which these entities are most usually encountered in the world, that is not necessarily shared by the wider membership of *ka-/u-*. While a single piece of grass has long and thin properties, it is part of the nature of these botanical entities that they are found collectively, in colonies (indeed, for all forms in this paradigm, the *e-* form is inarguably the citation form, providing further evidence for the influence of lived experience and encyclopaedic knowledge of language). As noted in the discussion of paradigm *a-/e-*, *e-* is usually associated with singular semantics. It is posited here that the two uses of this class are related, at a more schematic level, where the property in question is boundedness. Just as an individual entity can be conceived of as having well defined boundaries, by way of which it may be individuated from other entities, so it is with colonies of grasses (see 4.4.1 below).

4.3.10 Paradigm *ka-/u-/ma-*

This paradigm forms nouns with just one stem: *fos* GRASS. While the singular and plural forms, *ka-fos* ‘stem of grass’ and *u-fos* ‘stems of grass’ are clearly motivated by the same semantic properties of extendedness as entities denoted by forms in *ka-/u-* and *ka-/u-/e-*, as described in the previous sections, it is unclear why the collective noun is formed in *ma-* rather than *e-* like other colonizing plants. *Ma-*, already a rare noun class, is typically associated with mass semantics. One possible hypothesis is that the entity denoted by *ma-fos* is not a plant that is cultivated, or even naturally contained – it grows wild in great quantity. Thus it could be that in its collective form is is conceptualized as a mass rather than an

individuated colony.

4.3.11 Paradigm *ka-/u-/ba-*

This paradigm has only two stems attested so far, shown in Table 63.

Table 63 Paradigm *ka-/u-/ba-*

singular	plural	collective	gloss
<i>ka-gec</i>	<i>u-gec</i>	<i>ba-gec</i>	‘hibiscus leaf/leaves’
<i>ka-fas</i>	<i>u-fas</i>	<i>ba-fas</i>	‘prawn/s’

Both stems are motivated in forming their singular and plural forms in *ka-/u-* but for different reasons. Hibiscus leaves because of their flat and extended physical configuration, and prawns by nature of being hard, shelled creatures. This illustrates the effect of semantic networks of the structure of the noun classification system. The formation of collective forms in *ba-* is motivated insofar as this is a noun class commonly associated with collective semantics (see 4.4.2 below), although for the stem *gec* ‘hibiscus’ at least, as a colonizing plant a collective form in *e-* would also be motivated. In addition, this paradigm is extremely marginal; it appears to be the result of contact effects from Baïnounk languages and paradigm crossing. There is a cognate collective form in Baïnounk Gubëeher – *ba-geec* ‘hibiscus leaves (collective)’. It is hypothesised that this form has been borrowed into Kujireray, and the stem then integrated into the system such that it forms its singular and plural in a productive and semantically motivated singular/plural dyad (in Gubëeher it forms a singular plural in *gu-/ha-*, which is associated with comparable semantic domains such as length).

4.3.12 Paradigm *ka-/u-/bu-*

There is only one stem attested in this paradigm – *yolen* RICE SEEDLING – of which the form *bu-yolen* is overwhelmingly the citation form. Since rice seedlings have a grass-like configuration (i.e. long and thin), and group in colony-like formation like other grasses one might expect to find this stem forming nouns in paradigm *ka-/u-/e-* as discussed in 4.3.9 above. This type of plant is somewhat exceptional in that the rice seedlings are cultivated in a nursery within the forest, before being removed and transplanted into the rice fields. Exactly why this may motivate a collective form in *bu-* rather than *e-* or otherwise is a topic for future research (see also *ma-*). One possibility is that the form in *bu-* is the word for the nursery itself, which has come to be synonymous for the rice seedling plants that populate it.

This would be commensurate with the fact that *bu-yolen* is by far the preferred form for this stem. It is possible that speakers, when asked to provide a form for one single stem, or a count plural for the same, simply adopted the singular and plural prefixes from the ‘grass’ paradigm.

4.3.13 Paradigm *ka-/ku-*

This is another paradigm with a small membership. The items that form nouns denoting concrete entities are shown in Table 64.

Table 64 Paradigm *ka-/ku-*

	singular	plural	gloss
a	<i>ka-ereh</i>	<i>ku-ereh</i>	‘nail’
b	<i>ka-nu</i>	<i>ku-nu</i>	‘ear’
c	<i>ka-ñen</i>	<i>ku-ñen</i>	‘hand’
d	<i>ka-at</i>	<i>ku-ot</i>	‘leg, foot’
e	<i>ka-finekot</i>	<i>ku-finekot</i>	‘shoe’
f	<i>ka-fon</i>	<i>ku-fon</i>	‘scabbard’
g	<i>ka-puk</i>	<i>ku-puk</i>	‘clay ball’
h	<i>ka-irih</i>	<i>ku-irih</i>	‘hearthstone’

It is asserted here that this is an example of a crossed paradigm. That is, the singular and plural class that form the paradigm are more generally associated with other larger and more productive paradigms, and thus with distinct semantic domains. Noun class prefix *ka-* is more commonly associated with the paradigm *ka-/u-* (see 4.3.8 above), which is associated with semantics of length, thinness or wideness (or more generally, spatial extendedness), as well as more specific instantiations of these properties such as hardness or boniness. Noun class prefix *ku-* by contrast has a far more regular association with the paradigm *ku-/u-* which has strong associations with the semantic domain of roundness. It is asserted that entities denoted by nouns formed in this paradigm exhibit a “conflict of criteria between flatness and roundness” (Sagna 2008:281) The body parts represented in this paradigm contain *ka-ereh* ‘nail’ and *ka-nu* ‘ear’, both of which can be conceived of as both hard, flat and wide (as compared to their depth), thus motivating noun formation in *ka-*, as well as having distinctly circular configuration, thus motivating a plural in *ku-*. Similarly, *ka-at* ‘leg,

foot’ and *ka-ñen* ‘hand’ clearly belong to Sapir’s posited class of bony body parts and limbs as well as being extended in length and width/flatness respectively, while a leg has cylindrical, and a hand circular configuration. *ka-finekot* ‘shoe’ is also both flat and round, although it is also possible that it occurs in this paradigm via association with another item therein i.e. *ka-at* ‘foot’. Indeed it is morphologically related to the latter. The three final items in (f-h) also denote entities whose characteristic properties include being both hard and round.

There are also several stems attested in this paradigm that are associated with situations as well as entities. Indeed the entities with which they are associated form part of the semantic frame of the situation. As such these can be classed as verbal nouns, specifically result nouns. These are shown in Table 65 where the forms on the left are singular/plural nominal forms in *ka-/ku-* and those in the right hand column show the same stems in a verbal context. Note that the nominal forms can also be used in such constructions as the progressive where the line between concrete and eventive semantics is far less clear. These facts will be discussed at length in chapter 5.

Table 65 Result nouns in paradigm *ka-/ku-*

	singular	plural	gloss	verbal use	gloss
a	<i>ka-miñ</i>	<i>ku- miñ</i>	‘slap/s’	<i>na-miñ-om</i>	‘He slapped me.’
b	<i>ka-jel</i>	<i>ku-jel</i>	‘insult/s’	<i>na-jel-om</i>	‘He insulted me.’
c	<i>ka-mas</i>	<i>ku-mas</i>	‘gobbet/s’	<i>na-mas-e</i>	‘He spat.’
d	<i>ka-hax</i>	<i>ku-hax</i>	‘footprint/s’	<i>na-hag-e</i>	‘He trod.’

4.3.14 Paradigm *fu-/ku-*

The singular/plural paradigm *fu-/ku-* exhibits a relatively high degree of semantic coherence. Many items in the paradigm can be broadly characterised by roundness – some of these are exemplified in Table 66. This can be either (approximately) globular shape as in (a-c), circular shape as in (d-e) or cylindrical form (and thus circular cross section) as in (f-i).

Table 66 Round entities in *fu-/ku-*

	singular	plural	gloss	property
a	<i>fu-bah</i>	<i>ku-bah</i>	‘baobab fruit/s’	spherical
b	<i>fu-il</i>	<i>ku-il</i>	‘breast/s’	spherical
c	<i>fu-how</i>	<i>ku-how</i>	‘head/s’	spherical
d	<i>fu-hay</i>	<i>ku-hay</i>	‘circle/s’	circular
e	<i>fu-liñah</i>	<i>ku- liñah</i>	‘bracelet/s’	circular
f	<i>fu-kabul</i>	<i>ku-kabul</i>	‘bamboo cane/s’	cylindrical
g	<i>fu-min</i>	<i>ku-min</i>	‘trunk/s’	cylindrical
h	<i>fu-gol</i>	<i>ku-gol</i>	‘stick/s’	cylindrical
i	<i>fu-boŋ</i>	<i>ku-boŋ</i>	‘thigh/s’	cylindrical

Within this configurational domain, a number of subsets may be identified – fruits, artefacts, and body parts. Fruits are particularly prominent in the membership of this paradigm, and almost all recorded terms for fruits are in this class. Indeed, Berlin (1977) suggests that the association of such a class with semantics of roundness may fall out from the inclusion of fruits therein, rather than the other way round. In addition it is argued by researchers in related languages that the birds and animals may be assigned to classes with semantics of roundness on the strength of being particularly round (Sagna 2008:276). Given the fairly robust semantic basis of this noun class this is a feasible proposal, although a definitive answer on the matter is unavailable at this time.

Incorporation of loanwords provides further evidence that this paradigm is not only semantically motivated diachronically but also that this semantic motivation – i.e. that of round physical configuration – is productive synchronically. Forms such as *fu-mandarin/ku-mandarin* ‘mandarin/s’ *fu-mburu/ku-mburu* ‘loaf/loaves of bread’ (loans from Portuguese and Wolof respectively), which will have entered the language some time ago, suggest that this semantic motivation has been productive for some time. There are also a number of more recently borrowed items that are assigned to this paradigm on the basis of their round configuration, exemplified in table 67.

Table 67 Loanwords in paradigm *fu-/ku-*

	singular	plural	gloss	borrowed form
a	<i>fu-pono</i>	<i>ku-pono</i>	‘tyre’	< Fr. <i>pneu</i>
b	<i>fu-balon</i>	<i>ku-balon</i>	‘ball’	<Fr. <i>balon</i>
c	<i>fu-bik</i>	<i>ku-bik</i>	‘ball point pen’	< Fr. <i>bic</i>

In addition to these loan words, there is evidence from experimental tasks⁴⁴ on novel objects that round items are automatically assigned to class *fu-*. Since *fu-/ku-* is the only paradigm in which *fu-* encodes singular, individuated semantics for concrete entities, it can be reasonably extrapolated that this is the paradigm to which these novel items are being assigned, despite the lack of data concerning how plural instances of these novel objects would be expressed. This observation is directly comparable to psycholinguistic research carried out by (Selvik 1997) and (Sagna 2008) in Setswana (Bantu) and Eegimaa (Joola) respectively.

While this paradigm has a strong association with semantics of roundness, its relatively large size in terms of membership (over 150 stems nouns are attested in this paradigm thus far), means there is a degree of semantic divergence, and some items are arguably less motivated by semantics of physical configuration than others. In the following I discuss some of the possible motivations for membership of some of the other items in this paradigm, invoking notions of semantic networks motivated by prototypes and metaphor, as defined in chapter 2. For example, the paradigm contains items with more metaphorical/abstract connections with circular configuration, such as entities that are not actually circular in themselves, but are associated either with a circular configuration or circular motion.

Table 68 Circular configuration in paradigm *fu-/ku-*

	singular	plural	gloss
a	<i>fú-ëngëho</i>	<i>kú-ëngëho</i>	‘swing’
b	<i>fu-lesa</i>	<i>ku-lesa</i>	‘head scarf’

There are a number of nouns formed in *fu-/ku-* that denote periods of time, shown in Table

⁴⁴ Carried out by myself on behalf of the Mesospace project based at the University of Buffalo, led by Jürgen Bohnemeyer.

Table 69 Periods of time in paradigm *fu-/ku-*

	singular	plural	gloss
a	<i>fu-leñ</i>	<i>ku-leñ</i>	‘month’
b	<i>fu-nah</i>	<i>ku-nah</i>	‘day’
c	<i>fu-nom</i>	<i>ku-nom</i>	‘week’
d	<i>fu-tih</i>	<i>ku-tih</i>	‘war’

A possible source of semantic extension leading to the inclusion of these items in paradigm *fu-/ku-* is the fact that *fu-leñ* is also the word for ‘moon’ on the strength of its physical configuration. This term may have been recruited to express the period of time taken for the moon to complete its cycle, and then further extended to other periods of time.

Aside from semantics of physical configuration, *fu-/ku-* is associated with locations, and indeed is semi-productive in creating forms denoting locations from verbal stems. A correlation between round things and locations is observed in other languages in the region (cf. Sagna 2008:243 for Eegimaa, Cobbinah 2013:272 for Baïnouk Gubëeher, Friederike Lüpke p.c. for Baïnouk Gujaher) and is illustrated for Kujireray in Table 70, where the right hand column shows the stem from which the form in *fu-/ku-* is formed, where one is attested.

Table 70 Locations in paradigm *fu-/ku-*

	singular	plural	gloss	stem
a	<i>fu-lumet</i>	<i>ku-lumet</i>	‘compound’	-
b	<i>fu-reŋ</i>	<i>ku-reŋ</i>	‘forest’	-
c	<i>fu-iken</i>	<i>ku-iken</i>	‘kitchen’	< <i>iken</i> COOK
d	<i>fu-tex</i>	<i>ku-tex</i>	‘chopping block’	< <i>tex</i> HIT
e	<i>fúpələm</i>	<i>kúpələm</i>	‘area associated with group of friends’	< <i>pal</i> FRIEND
f	<i>fu-alen</i>	<i>ku-alen</i>	‘palm wine market’	< <i>alen</i> PUT DOWN
g	<i>fu-robo</i>	<i>ku-robo</i>	‘sitting area’	< <i>robo</i> SIT
h	<i>fu-rovuum</i>	<i>ku-rovuum</i>	‘seat’	< <i>robo</i> SIT
i	<i>fú-gětum</i>	<i>kú-gětum</i>	‘threshold’	< <i>gět</i> ENTER

In fact several of the entities denoted by these forms do in fact have round configuration. A compound is typically organised in circular form, with individual houses arranged around a central area in front of the houses. Both the *fú-pələm* ‘area associated with friendship group’ and the *fu-robo* ‘sitting area’ would typically consist of a number of seats (usually either stools or more likely sections of log – also circular) arranged in a circle to facilitate conversation. While such physical configuration is harder to recognise in some of the other items in Table 70, such as (j) *fú-gětum* ‘threshold’ this is a possible case of semantic extension, whereby the membership of circular locations in this paradigm then motivates the inclusion of other, non-circular locations.

Finally there are a number of lexical stems in *fu-/ku-* that do not immediately seem to fit in any of the major semantic domains delineated (round things, fruit, body parts, animals, locations or periods of time) so far in this section. Some of these are shown in Table 71.

Table 71 Miscellaneous forms in paradigm *fu-/ku-*

	singular	plural	gloss
a	<i>fu-gupulum</i>	<i>ku-gupulum</i>	‘regrowth’
b	<i>fu-rihol</i>	<i>ku-rihol</i>	‘buck goat/s’
c	<i>fu-barah</i>	<i>ku-barah</i>	‘young female goat/s’
d	<i>fu-rim</i>	<i>ku-rim</i>	‘voice/s, word/s’
e	<i>fu-new</i>	<i>ku-new</i>	‘debt/s’
f	<i>fu-puut</i>	<i>ku-puut</i>	‘raspberry/berries’
g	<i>fu-ke</i>	<i>ku-ke</i>	‘head butt/s’
h	<i>fu-rus</i>	<i>ku-rus</i>	‘tornado/es’

The motivation for the inclusion of these stems in this paradigm is identified as a topic for future research.

4.3.15 Paradigm *fu-/ku-/ba-*

The singular/plural dyad *fu-/ku-* also enters onto a triadic, singular/plural/collective paradigm with *ba-*, in which a small number of items are found. These are illustrated in Table 72.

Table 72 Paradigm *fu-/ku-/ba-*

	singular	plural	collective	gloss
a	<i>fu-jahata</i>	<i>ku-jahata</i>	<i>ba-jahata</i>	‘bitter aubergines’
b	<i>fu-taata</i>	<i>ku-taata</i>	<i>ba-taata</i>	‘sweet potatoes’
c	<i>fu-jeh</i>	<i>ku-jeh</i>	<i>ba-jeh</i>	‘charcoal’
d	<i>fu-bujuh</i>	<i>ku-bujuh</i>	<i>ba-bujuh</i>	‘mongoose’
e	<i>fu-ño</i>	<i>ku-ño</i>	<i>ba-ño</i>	‘young animals’
f	<i>fu-furuh</i>	<i>ku-furuh</i>	<i>ba-furuh</i>	‘type of fruit’
g	<i>fu-meteṅ</i>	<i>ku-meteṅ</i>	<i>ba-meteṅ</i>	‘tomatoes’
h	<i>fu-sah</i>	<i>ku-sah</i>	<i>ba-sah</i>	‘beans’

As for the dyadic paradigm *fu-/ku-*, this paradigm contains items that denote round entities – the addition of *ba-* reflects the fact that these entities are of a type that are often encountered collectively (see 4.4.2 below). It is not certain whether the denoted entities can also be classed as small, in the same way as the entities denoted by nouns in paradigm *e-/si/ba-* (4.3.7 above). A mongoose is not particularly small for example. In fact, in either paradigm, any semantics of smallness may be epiphenomenal, falling out from the fact that the type of entities that are often encountered collectively, in sufficient numbers to reduce their individuation in the perception, will necessarily be small. Note also, that for the majority of these items, *ba-* is the citation form.

4.3.16 Paradigm *bu-/u-*

A significant proportion of items in this paradigm denote trees, vines or shrubs, and almost all trees fall into this paradigm (notable exceptions being *ji-it* ‘oil palm’ and *e-rapay* ‘fan palm’). Other items include those that are made of wood, or other products made from trees. For example the words for ‘cotton plant/s’ and ‘cotton thread/s’ are identical – *bu-biña /u-biñan* – as are the terms for ‘kapok tree’ and ‘canoe’ (which are made from kapok trees) – *bu-sana/u-sana*. Other forms that can be analysed as belonging to this paradigm by virtue of their association with trees, plants and/or wood are shown in Table 73. This follows Cobbinah’s (2013:277) analysis of an equivalent paradigm in Baïnouk Gubëeher.

Table 73 Wooden assemblages in *bu-/u-*

	singular	plural	gloss
a	<i>bu-ner</i>	<i>u-ner</i>	‘ceiling’
b	<i>bu-lef</i>	<i>u-lef</i>	‘nest’
c	<i>bu-talay</i>	<i>u-talay</i>	‘bed’
d	<i>bu-feh</i>	<i>u-feh</i>	‘barrage’ (for fishing)
e	<i>bu-sigan</i>	<i>u-sigan</i>	‘mortar’
f	<i>bu-lënd</i>	<i>u-lënd</i>	‘forked stick’

Sagna (2008:236) asserts that the concept of TREE that is salient in Eegimaa noun class *bu-* (implicitly equivalent to this paradigm – most trees in Eegimaa form their plural in *u-*) can be further abstracted to one of ASSEMBLAGE – “a collection of elements that together form a unit” - which may account for much of the membership of this class. He claims that in fact trees are a prime example of such an assemblage, with their “inherent composition of

different elements such as branches, leaves etc.” (2008:236). Indeed, under his analysis, at least items (a-d) in Table 73 could be included in the paradigm on the grounds of their assemblage-like characteristics, rather than the fact that they are made of wood. Of course all these items are both assemblages *and* made of wood, making it difficult to identify the core motivation. Indeed, many manmade artefacts consisting of numerous assembled components would historically have been made from wood and other products collected from trees. Support for the ASSEMBLAGE hypothesis is provided by several stems that form a verbal noun in *bu-* to denote events or actions involving groups of people while the same stems, in another noun class paradigm, or in a verbal context, have a related meaning, but without the connotation of an event involving a group – see chapter 5 for further discussion. That said, according to the semantic network model, there is no reason to reject the possibility that some items are motivated on the strength of being wooden, and others on the basis of being assemblages, or indeed of both.

There are also several body parts in this paradigm.

Table 74 Body parts in paradigm *bu-/u-*

	singular	plural	gloss
a	<i>bu-sol</i>	<i>u-sol</i>	‘back’
b	<i>bu-lefej</i>	<i>u-lefej</i>	‘palm/sole’
c	<i>bu-tum</i>	<i>u-tum</i>	‘mouth’
d	<i>bu-ul</i>	<i>u-ul</i>	‘face’
e	<i>bu-huk</i>	<i>u-huk</i>	‘top of back’

Sagna (2008:238) proposes that there is a sub-domain within paradigm *bu-/u-* represented by entities conceived of as “bounded spaces that have an interior” that may account for these forms. However, this is a rather post hoc analysis. A more plausible explanation is that these forms are the result of contact with Baïnouk varieties such as neighbouring Gubëeher where *bu-* is a common, semantically diverse class.

4.3.17 Paradigm *bu-/(u-)*

The bracketed (*u-*) in the heading of this section represents the fact that there are several items that stems that form a noun in *bu-*, for which a potential plural counterpart in *u-* is somewhat contentious, and not accepted by all speakers. Stems forming nouns in this

paradigm denote entities that are unbounded and non-individuated such as liquids and are thus not necessarily good candidates for pluralisation, but rather membership in a monadic paradigm with mass semantics. Indeed, where speakers do accept a plural in *u-*, this form refers to plural types of the entity associated with the stem, in the same way that plural *wines* or *cheeses* do in English. One exception to this rule is (g) *bu-nah* ‘sun’. While this entity is individuated, speakers are reluctant to provide a plural form as part of the encyclopaedic knowledge of this entity is that there is only one (contact phenomena are also relevant to this form – see 4.5.2 below). Some of the items in this small paradigm are shown in Table 75.

Table 75 Paradigm *bu-/u-*

a	<i>bu-nuh</i>	‘palm wine’
b	<i>bu-sih</i>	‘poison’
c	<i>bu-fonay</i>	‘medicine’
d	<i>bu-rotoŋ</i>	‘ash’
e	<i>bu-roŋ</i>	‘life’
f	<i>bu-jit</i>	‘whitlow’
g	<i>bu-nah</i>	‘sun’

In fact, (a-d) are metonymically related to trees, being products of the sap, leaves, bark and wood, which could motivate their membership in this paradigm, related as it is to paradigm *bu-/u-*. The fact that the use of a ‘plural’ form in *u-* is questionable for these stems is then due to the fact that these entities, unlike the trees from which they are produced, do not lend themselves readily to being counted. The fact that some speakers *do* allow forms in *u-* is a sign of the pervasiveness of the paradigms – if one wishes to pluralize a form in *bu-* even if such a plural is marginal, the class chosen will be *u-*.

4.3.18 Paradigm *ba-/u-*

The position taken in this thesis is that where noun class prefixes have distinct shapes they should be treated as distinct from one another, at least until evidence is found to support the hypothesis that they are the same (see 4.6.1 for a discussion of some arguments pertaining to this issue). However, the premise is accepted that even if two noun class prefixes may have distinct identity synchronically, they may have diverged from the same historical source. A comparison of the paradigms *bu-/u-* and *ba-/u-* provides some of the strongest evidence that these may have once converged. This paradigm has a small membership, forming nouns

with only nine stems.

Table 76 Paradigm *ba-/u-*

	singular	plural	gloss
a	<i>ba-ha</i>	<i>u-ha</i>	‘bushland/s’
b	<i>ba-jojoj</i>	<i>u-jojoj</i>	‘double tooth/teeth’
c	<i>ba-leiray</i>	<i>u-leiray</i>	‘manatee/s’
d	<i>ba-cin</i>	<i>u-cin</i>	‘fetish/es’
e	<i>ba-gam</i>	<i>u-gam</i>	‘tribunal/s’
f	<i>bë-gër</i>	<i>ú-gër</i>	‘tom-tom/s’
g	<i>ba-et</i>	<i>u-et</i>	‘bag/s’
h	<i>ba-humar</i>	<i>u-humar</i>	‘slingshot/s’
i	<i>ba-tipand</i>	<i>u-tipand</i> ⁴⁵	‘sap’

Most of them can be seen to share some of the semantic domains represented by *bu-/u-* and *bu-/(u-)*, as detailed in 4.3.16 Paradigm *bu-/u-* and 4.3.17 above. For example *ba-tipand* ‘sap’ has clear commonalities with *bu-nuh* ‘palm wine’ *bu-sih* ‘poison’ and *bu-fonay* ‘medicine’ in being an entity that is produced by a tree. *bëgër* ‘tom tom’ is also an item made from wood, and *ba-et* ‘bag’ is an item historically in zero class prefix with default agreement marking, but that over time the word initial *ba-* has ade from the leaves of the fan palm. *Ba-ha* ‘bush’ is almost like a hypernym for trees, itself consisting of an assemblage of many trees. *Ba-gam* ‘tribunal’ is of particular interest as this stem may also be used as a verb (e.g. *na-gam-e* ‘He told’) and thus this nominal form may be analysed as a verbal noun – see Chapter 5 for further discussion. Finally *ba-humar* ‘slingshot’ is of interest since although it is placed in this paradigm by many speakers, it has also been observed governing agreement markers of the shape normally associated with class *e-*. This suggests that it may have been introduced into Kujireray as a loanword, and thus assigned a been reanalysed as a noun class prefix, and the form integrated into the classification system accordingly. The motivation for

⁴⁵ This plural is similar to the marginal plurals formed in paradigm *bu-/(u-)* (see 4.3.17 above) insofar as it denotes plural types of the entity rather than plural instances of the entity, again due to the unbounded mass nature of sap.

the forms in (c) and (d) are unclear at this time. It is possible that they are motivated in this paradigm due to its association with large size (see 4.3.29).

4.3.19 Paradigm *ba-/si-*

This one-member paradigm is an example of a crossed paradigm that has come about as the result of language contact in conjunction with the already existing semantic structure of the noun classification system. The forms *bë-sunɟutu/si-sunɟutu* ‘girl/s’ appear to derive ultimately from the Mandinka form *sunkutoo* ‘girl’. Some related Joola varieties also have forms based on such a borrowing – in Kaasa the singular form ‘girl’ is *e-sunɟute* and in Bayot Kuhiŋe *a-sunɟutu*. The element of particular interest is the choice of noun class prefix in the formation of the singular. Kaasa uses noun class prefix *e-*, which is a predictable choice for both loanwords, and remarkable humans, a class to which girls belong on the basis of their not being fully-fledged members of society (cf. Kujireray *e-mbot/si-mbot* ‘boy’, and indeed there is one instance in the corpus of a singular form *e-sunɟutu* ‘girl’). Bayot Kuhiŋe uses noun class *a-*, which as the human class is also clearly semantically motivated. The use of the prefix *ba-* in the Kujireray form seems somewhat anomalous, associated as it is with semantics of mass, and products from trees. However, an examination of other languages that are in contact with Kujireray can provide at least a partial explanation for these facts. Many varieties of Baïnounk, including Baïnounk Gubëeher spoken in the neighbouring village to Brin, have a form for girl which forms a singular noun in a noun class of shape *ba-*. The Gubëeher form, for example, is *bë-jid* ‘girl’ and a plural is formed in the plural suffix *-Vŋ – bë-jid-eŋ* ‘girls’. It is posited that while Kujireray borrowed the stem *sunɟutu* from Mandinka, the use of the noun class prefix *ba-* in the singular form is motivated by influence from Baïnounk varieties. Since Kujireray does not have a plural suffix, a plural must then be formed using an available strategy – hence *si-sunɟutu* ‘girls’. For further discussion of the effects of language contact on the noun classification system see 4.5.2 below.

4.3.20 Paradigm *ji-/mu-*

This is one of the most semantically coherent paradigms in Kujireray – both as a highly productive derivational paradigm, and one containing a number of stems in its own right, it is associated with diminutive semantics. Nouns denoting several types of animal are formed in this paradigm.

Table 77 Paradigm *ji-/mu-*

	singular	plural	gloss
a	<i>ji-kilibadoh</i>	<i>mu-kilibadoh</i>	‘donkey/s’
b	<i>ji-sēbul</i>	<i>mú-sēbul</i>	‘rabbit/s’
c	<i>ji-gidoloh</i>	<i>mu-gidoloh</i>	‘pigeon/s’
e	<i>ji-lililili</i>	<i>mu-lililili</i>	‘type of bird’
f	<i>ji-fui</i>	<i>mu-fui</i>	‘type of snake’
g	<i>ji-tohoña u il</i>	<i>mu-tohoña ubil</i>	‘type of salamander’

All these animals are small compared to other similar species. However, it should be noted there is some difficulty in claiming that this paradigm is the ‘basic’ paradigm for some of the stems shown above cases, since some of these forms are also attested in other paradigms. Since it is asserted that is the concept and not the noun that is classified in the process of noun formation this is unproblematic. We can simply say that certain entities have properties that are compatible with more than one paradigm and therefore demonstrate greater lability in the forms speakers choose to refer to them. In addition, this paradigm is highly productive in entering into paradigmatic networks with other paradigms in order to encode diminutive semantics (see 4.3.29 below).

4.3.21 Paradigm *ji-/mu-/ba-*

Table 78 shows some of the forms attested in paradigm *ji-/mu-/ba-*.

Table 78 Paradigm *ji-/mu-/ba-*

	singular	plural	collective	gloss
a	<i>ji-nuh</i>	<i>mu-nuh</i>	<i>ba-nuh</i>	‘bead/s’
b	<i>ji-dofij</i>	<i>mu-ndofij</i>	<i>ba-ndofij</i>	‘thin braid/s’
c	<i>ji-ño</i>	<i>mu-ño</i>	<i>ba-ño</i>	‘young animal/s’
d	<i>ji-sit</i>	<i>mu-sit</i>	<i>ba-sit</i>	‘grain/s of millet’
e	<i>ji-gundufend</i>	<i>mu-gundufend</i>	<i>ba-gundufend</i>	‘small fish/es’
f	<i>ji-tapatap</i>	<i>mu-tapatap</i>	<i>ba-tapatap</i>	‘droplet/s’
g	<i>ji-bujuh</i>	<i>mu-bujuh</i>	<i>ba-bujuh</i>	‘mongoose/s’

As for the dyadic paradigm *ji-/mu-* described above, this triadic paradigm also has strong associations with smallness. The addition of collective plural *ba-* reflects the fact that the entities denoted by nouns in this paradigm are often encountered collectively, as is the case in the paradigms *e-/si-/ba-* and *fu-/ku-/ba-* (see 4.3.7 and 4.3.15 above). In fact several of the stems in Table 78 are also acceptable in one of these other paradigms (eg *bujuh* ‘mongoose’ and *ño* ‘young animal’ in *fu-/ku-/ba-*, and *nuh* ‘bead’ and *rol* ‘termite’ in *e-/si-/ba-*. Indeed since most of these items form their citation form in *ba-*, reflecting the fact that such entities tend to occur, and thus be conceptualized, in non-individuated collections, the singular and count plural may be less used and thus conventionalized in the language, with speakers using their knowledge of the semantic properties of the noun class system and productivity of paradigms combined with the physical configuration of the entities involved to justify a choice of singular/count plural.

4.3.22 Paradigm *ji-/u-*

There is one form in *ji-/u-*: *ji-it/u-it* ‘oil palm’. This is evidently an example of a crossed paradigm, since the plural is formed in *u-* in common with almost every other tree in the language. The motivation for forming the singular in *ji-* is rather less clear. This prefix (as part of the paradigms *ji-/mu-* and *ji-/mu-/ba-*) is strongly associated with diminutive semantics. Note also that some speakers would accept *mu-it* ‘oil palms’ as the plural for this stem. Although the noun class prefix *ji-* is also present in the noun class systems of other languages (such as Gubëeher) there does not seem to be any semantic motivation for its transfer into this particular form in Kujireray – that is to say they are no semantic generalizations that can be made about a noun class *ji-* in other languages which would be

obvious motivations for its use in this form.

4.3.23 Paradigm *ba-*

As well as participating in several dyadic and triadic paradigms, *ba-* also occurs in a monadic paradigm (for discussion of the relationships between noun class prefix *ba-* in various paradigms see 4.4.2 below). Nouns formed in this paradigm form several different subclasses. Several terms for diseases are found in this paradigm.

Table 79 Diseases in paradigm *ba-*

a	<i>ba-ridigena</i>	‘disease’
b	<i>ba-bud</i>	‘measles’
c	<i>ba-tiŋgilit</i>	‘mumps’
d	<i>ba-ñoka</i>	‘pins and needles’
e	<i>ba-poc</i>	‘chicken pox’
f	<i>ba-toŋ efol</i>	‘cramp’
g	<i>ba-jjih</i>	‘tooth itch’

Several terms for fluids are formed in this paradigm.

Table 80 Fluids in paradigm *ba-*

a	<i>ba-pucen</i>	‘lemon juice’
b	<i>ba-tobay</i>	‘rice wash water’
c	<i>ba-raj</i>	‘rice gruel’
d	<i>ba-jufen</i>	‘powder of rice husks’

Ba-jufen ‘rice husk powder’ is not a liquid, although it is mixed with water to make food. It is included in this paradigm, whereas other powders are included in liquid paradigm *mu-*. What these fluids have in common is that they are all processed products. The exact motivation for distinguishing them from other fluids in *mu-* remains a topic for future research, although it is suggested by Friederike Lüpke (personal communication) that the liquids in Table 80 are united insofar as they all contain suspended particles of matter.

4.3.24 Paradigm *mu-*

The noun class *mu-* also forms a monadic paradigm, in which 21 items are thus far attested. All items in this paradigm denote liquids or other substances that can be poured as exemplified in

Table 81.

Table 81 Paradigm *mu-*

a	<i>mu-hem</i>	‘water’
b	<i>mu-pul</i>	‘pus’
c	<i>mu-il</i>	‘milk’
d	<i>mu-lo</i>	‘salt water’
e	<i>mu-kumb</i>	‘honey’
f	<i>mu-fu</i>	‘tears’
g	<i>mu-losorumay</i>	‘pommade’
h	<i>mu-losora</i>	‘pommade, perfume’
i	<i>mu-sis</i>	‘salt’
j	<i>mu-cow</i>	‘pork fat’
k	<i>mu-fat</i>	‘fat’

At a higher level of abstraction, the unifying feature of these entities is that they are conceptualized as non-individuated and unbounded. This is supported by the fact that these nouns are incompatible with numeral terms. This analysis also makes it easy to see why terms for colours (when used to name the colours themselves, rather than in an attributive use when the colour term will agree with the antecedent) are also formed in *mu-* (see 5.1.6 below), although this may also be motivated by the fact that dyes are encountered in liquid form.

4.3.25 Paradigm *ma-*

Only four items are so far attested in this monadic paradigm.

Table 82 Paradigm *ma-*

a	<i>ma-boy</i>	‘excrement’
b	<i>ma-sur</i>	‘urine’
c.	<i>më-tëëño</i>	‘danger’
d	<i>ma-lagen</i>	‘truth’

Forms (a-b) are the products of bodily functions, while (c-d) denote abstract concepts. All four items would be suitable candidates for membership in paradigm *mu-* as they are all non-individuated entities. The small membership of this paradigm, and the formal similarity of the noun class prefixes *mu-* and *ma-* suggest that this may be an instance – either historically or synchronically, of a phonological process of vowel change, such as that proposed by advocates of the post-prefix (see 4.6.1 below). Whether or not *mu-* and *ma-* constitute one or two paradigms in the minds of speakers remains unclear and is identified as a topic for future research, possibly using psycholinguistic methods such as novel word tasks.

4.3.26 Paradigm *ni-*

There are only three forms attested in this paradigm, shown in Table 83. Note that in the form *ñ-uruh*, the underlying /n/ has undergone palatalization due to being juxtaposed to the stem initial vowel.

Table 83 Paradigm *ni-*

a	<i>ni-kul</i>	‘bereavement’
b	<i>ni-fuh</i>	‘night’
c	<i>ñ-uruh</i>	‘cold’

Further research is required to discover more forms in this paradigm and thus enable semantic motivations for its membership. Sagna (2008:257) shows that an equivalent class in Eegimaa is organized around social organization and economy, which connects via a radial network to the ideas of emotional and physical pain (since mourning periods are associated with the reallocation of economic assets). This analysis seems also applicable to the small number of nouns forms in paradigm *ni-* in Kujireray. A bereavement is a time of

emotional pain, and night and cold are associated with physical discomfort. Table 1

4.3.27 Paradigm *ti-*

This paradigm is related to the precise location marker *t-* (see 4.3.28 below) Only two forms are attested in this paradigm, namely *ti-nah* ‘time of day’ and *ti-funah* ‘afternoon’. The use of a class with locative function in these forms is unsurprising as in this region, the time of day is expressed using an extended arm indicating the position of the sun at that time. The stem *nah* represents the concept SUN, in the case of *ti-nah* ‘time of day’, the class prefix *ti-* elaborates the concept SUN to yield a meaning akin to ‘location of sun’, hence, ‘time of day’. A similar situation no doubt holds for *ti-funah* ‘afternoon’, although this case is rather more complex, since it appears to be a case of double marking. The form *fu-nah* ‘day’ is also attested in Kujireray, so in this case *ti-* is prefixed to a noun that is already formed in another noun class prefix, with any attendant semantics. These forms are also relevant to the issue of the effect of language contact on the shape of the noun classification system (see 4.5.2 below).

4.3.28 Absolute use of noun class markers

There are a number of classes in Kujireray that are remarkable in that they do not form nouns with lexical stems, only with grammatical items. In this sense they can be thought of as being used in an absolute way (cf. Cobbinah 2013:345). These prefixes are not used to form lexical nouns, but combine with grammatical elements to create items such as pronouns and quantifiers as illustrated in Table 84.

Table 84 Absolute use of prefixes

prefix	pronoun AGR- <i>o</i>	universal quantifier AGR- <i>anosan</i>
<i>t-</i>	<i>t-o</i> 'there (precise)'	<i>t-anosan</i> 'anywhere/everywhere (precise)'
<i>b-</i>	<i>b-o</i> 'there (general)'	<i>b-anosan</i> 'anywhere/everywhere (general)'
<i>d-</i>	<i>d-o</i> 'there (inside)'	<i>d-anosan</i> 'anywhere/everywhere (inside)'
<i>n-</i>	<i>n-o</i> 'then'	<i>n-anosan</i> 'anytime/always'
<i>m-</i>	<i>m-o</i> 'that way'	<i>m-anosan</i> 'anyway/everyway'

Some of these items resemble noun class markers associated with the nominal domain. For example, Sagna (2008:261) analyses the equivalent class *b-* in Eegimaa as related to class *bu-*. When used to form nouns this class is associated with semantics of assemblages and large size – in its locative function he analyses it as referring to “a wide or large area that is conceived of as including a collection [or assemblage] of multiple precise locations”. Sagna (2008:261) also analyses the temporal location marker *n-* as being related to the preposition *ni*. This is plausible considering the variation between *n* and *ñ* – the original *i* may have become fused with the initial consonant.

4.3.29 Paradigmatic networks

It has been shown above that examining the noun classification system of Kujireray in terms of the paradigms formed by various noun classes has greater explanatory value is better suited than an analysis that takes the individual noun classes as the basic unit of analysis. This is because it facilitates a more fine-grained and detailed examination of the function of the organization of the system. Where a given noun class can participate in more than one paradigm, it is necessary to examine the semantics associated with each of those paradigms, and the function of the given noun class therein. An important additional observation made by Cobbinah (2013) in his paradigm analysis of the noun classification system in Bainouk Gubëher is that there are also relationships holding between paradigms; he terms this

phenomenon **paradigmatic network**. Although productive paradigmatic networks in Kujireray are not as complex or extensive as those found in Baïnouk Gubëeher, such relations do exist. This phenomenon has been alluded to in previous sections (4.3.8, 4.3.20) and will be elaborated in the following.

The most striking example of a paradigmatic network exists in the botanical domain. It was shown in 4.3.16 and 4.3.14 respectively that paradigm *bu-/u-* is used in the formation of nouns denoting trees, and *fu-/ku-* is used to form nouns denoting fruits. Without any additional derivational morphology, one and the same stem may be used in both of these paradigms to denote the tree/s and the fruit/s of that tree.

Table 85 Paradigmatic network for *fu-/ku-* and *bu-/u-* in the botanical domain

paradigm	stem	gloss
<i>fu-/ku-</i>	<i>bah</i>	‘baobab fruit/s’
<i>bu-/u-</i>		‘baobab tree/s’
<i>fu-/ku-</i>	<i>mango</i>	‘mango/es’
<i>bu-/u-</i>		‘mango tree/s’

A similar effect is seen in paradigms that have augmentative and diminutive function. For example, the paradigm *ji-/mu-* can enter into a network with almost any stem that usually exists in a singular/plural dyadic paradigm. While *ji-/mu-* is a paradigm in its own right that forms many citation form nouns (with a strong association with semantics of smallness) it may also be used to form nouns with stems that usually form nouns in other paradigms.

Table 86 Paradigm *ji-/mu-* in network relation with other paradigms

paradigm	stem	gloss
<i>e-/si-</i>	<i>siho</i>	‘cat/s’
<i>ji-/mu-</i>		‘little cat/s’
<i>fu-/ku-</i>	<i>rukand</i>	‘palm rat/s’
<i>ji-/mu-</i>		‘little palm rat/s’

In most accounts this would be analysed as a case of pure derivation. Here it is analysed as a process of noun formation, whereby this paradigm is available, as part of a paradigmatic network, to express semantics of smallness. This is not merely smallness in actual spatial terms, but may be used with connotations of endearment, or modesty. Note also, that for stems with mass semantics, that form nouns in a monadic paradigm such as *mu-* or *bu-*, the noun class *ji-* may be used to encode semantics of smallness. Under a class by class analysis this would be somewhat problematic as it would require saying that a ‘mass’ noun class prefix alternates with a ‘mass’ noun class prefix. Under the paradigm approach we can simply assert that *ji-* in these cases forms a special monadic paradigm, which by nature of being monadic is automatically associated with mass semantics and therefore has a direct correspondence with the more usual monadic paradigm in which these stems form a noun.

Noun class prefixes *fu-*, *ka-* and *bu-* are all attested in augmentative function. This function is restricted by the existence of conventionalized expressions. For example, *bu-* cannot be used in augmentative function with a lexical stem associated with a fruit (which would normally be in *fu-*) as this form already exists to denote the tree which bears that fruit. This again supports the fact that such nouns are associated with networks.

4.4 Classes across paradigms

The approach taken in this thesis is to treat the paradigm as the main basis for the semantic analysis of the noun classification system, and it has been shown in the sections above that such an approach can capture facts that are sometimes missed by approaches that consider the noun class to be primary. Since many semantic distinctions occur at the level of the paradigm, by examining classes individually these distinctions are not necessarily captured. For example, in Kujireray, *e-* would be analysed as one monolithic class, whereas in fact it participates in number of paradigms – including *e-/si-*, *a-/e-*, and *ka-/u-/e-* – in each one of which *e-* is associated with distinct and particular semantic values. However, while the paradigm approach is undoubtedly better adapted to capturing the nuances of noun classification systems, a potential side effect of such an approach is that in leaving the analysis *purely* at the level of the paradigm, the converse problem may hold, i.e more general observations at the level of the individual noun class may be missed. As discussed in 2.3.3 above, I differ from Cobbinah (2013), whose analytical methods formed the main basis of the present study, in explicitly acknowledging other levels of the noun classification system apart from the paradigm as relevant to the analysis. Specifically these levels are the noun class prefix, and the agreement patterns controlled by nouns. Agreement will be discussed below in 4.6; in the following I explore the identity and semantic content of noun class prefixes that occur in more than one paradigm.

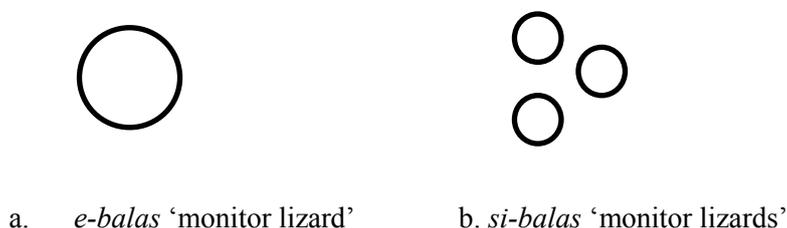
There are many instances in which the same noun class ostensibly (insofar as it has an identical prefix and agreement pattern) occurs in more than more paradigm. For example, the noun class *e-* occurs in paradigms *a-/e-*, *e-/si-*, *e-/si-/ba-*, *ka-/u-/e-*. In recognising crossed paradigms as a phenomenon, it is implicit in the analysis that the formally identical noun classes (i.e. the prefixes and agreement patterns are the same) in, say *ka-/ku-* and *fu-/ku-*, may share an identity at some level.

While it is possible that these are merely homophonous classes, it is important to explore the possibility that such noun classes may exhibit equivalences across the paradigms that they participate in. If this is the case, then it follows that individual noun classes carry some semantic information that is independent of the paradigms into which they fall. In the following it is argued that this is indeed the case, and that noun classes are associated with schematic semantics, which may be elaborated in various but related ways according to the paradigm in which they appear. The schematic nature of this meaning also accounts for the formation of various verbal nouns in different classes –see chapter 5.

4.4.1 Noun class prefix *e-*

Noun class prefix *e-* is associated with four paradigms: *e-/si-*, *e-/si-/ba-*, *ka-/u-/e-* and *a-/e-*. The first two of these do not constitute a meaningful distinction with regards to the behaviour of *e-*, since it fulfils the same function in both. The crucial distinction between these two paradigms resides in the alternation between the occurrence and non-occurrence of *ba-*. For this reason comparisons in this section will be confined to those between *e-/si-*, *ka-/u-/e-* and *a-/e-*, where any observation made for *e-/si-* can be taken to apply to *e-/si-/ba-* as well.

Figure 12 Singular/plural opposition of the paradigm *e-/si-*

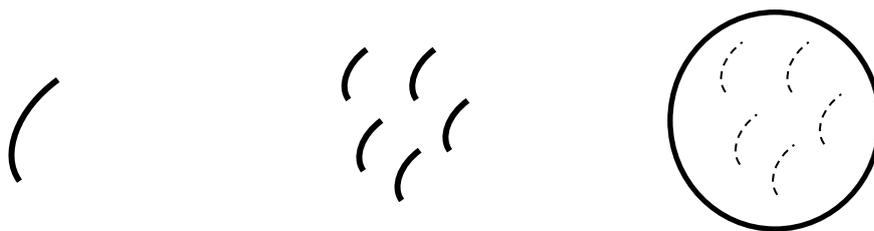


The diagrams in Figure 12 illustrate the fact that at a high level of schematization, nouns in the *e-/si-* paradigm all denote entities that are fully individuated and bounded, as represented by the heavy black lines. The only opposition is that *e-* encodes singularity in this paradigm, while *si-* encodes plurality. In *e-/si-/ba-* plurality is distinct from the collectivity encoded by

ba- since in *si-*, the entities remain fully individuated, whereas in *ba-* the individuation is less strong, as evidenced by the fact that forms in *ba-*, (for this paradigm) cannot occur with numeral expressions.

If one takes the singular/plural opposition to be the ultimate level of abstraction for this paradigm, it is difficult to see how comparable semantics could apply to the *e-* forms in the other two paradigms under consideration (namely *a-/ku-/e-* and *ka-/u-/e-*). The defining function of paradigm *e-/si-* is to form nouns denoting entities that are bounded and individuated. Singular and plural semantics occur only in the opposition between noun classes in the paradigm, and the slots that they occupy. Therefore, generalizations can be made over the semantics of *e-* across paradigms. As described in 4.3.9 Paradigm *ka-/u-/e-* above, stems forming nouns in *ka-/u-/e-*, exclusively denote grasses and colonizing plants. While the individual blades of grass may be referred to using *ka-* (for singular) and (*u-* for count plural), the citation form provided by speakers tends to the form in *e-*, which denotes the entire colony of grasses. That this should be the default conceptualization of such plants is natural, since this is how they are encountered in the world (indeed the existence of a specialized paradigm for such plants provides evidence for the cultural importance of rice crops in the region). While the fact that such colonies do in fact consist of a number of smaller, effectively identical entities is retrievable (as evidenced by the existence of a singular and count plural within the paradigm) to some extent this is irrelevant.

Figure 13 *ka-/u-/e-* paradigm



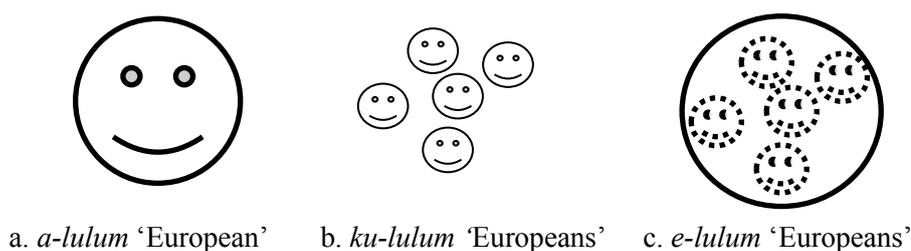
a. *ka-ef* ‘one blade of grass’ b. *u-ef* ‘blades of grass’ c. *e-ef* ‘colony of grass’

In Figure 13a, the term *ka-ef* denotes a single blade of grass. It is bounded and individuated as evidenced by the fact that nouns in *ka-* in this paradigm are compatible with the numeral expression *anu* ‘one’ viz *ka-ef k-anu* ‘one blade of grass’. In Figure 13b, the entities denoted – i.e. plural blades of grass – are still bounded and individuated, there are simply more than one of them. The noun formed in *e-*, and represented graphically in Figure 13c, the entity denoted by the verb still consists, in real world terms, of a number of blades of grass greater

than one. Indeed, the two terms *u-ef* and *e-ef* could theoretically be used to denote identical numbers of blades of grass. However, the two terms differ in the construal they evoke. Unlike the plural form *u-ef*, these individual blades of grass are not profiled in *e-ef*, as represented by the dashed lines in Figure 13c. The conceptually salient feature of the entity denoted by this expression is that it occupies a continuous yet bounded area in space. One of the most salient features of such plants is that they occupy an area of space that has distinct boundaries from the areas surrounding it. Conceptually speaking, no other botanical entities impinge on these boundaries.

A very similar parallel can be drawn for the paradigm *a-/ku-/e-*, which is a special human paradigm comprising humans that can be conceived of as forming a particular group, particularly groups that have a rather exclusive membership, that can be thought of as particularly homogenous. Note that nouns in this paradigm all refer to groups that are inherently exclusive – one is either a European or not.

Figure 14 Paradigm *a-/ku-/e-*



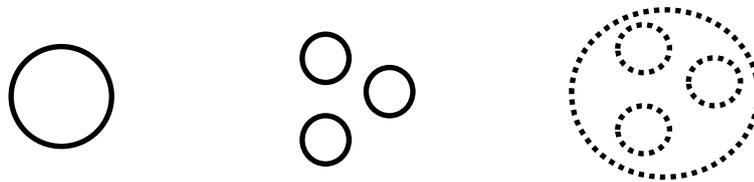
In direct analogy to the analysis for the grass paradigm *ka-/u-/e-*, the form in *ku-* denotes a countable plural number of humans, whereas the form in *e-*, while in truth conditional terms it also denotes a number of humans greater than one, does not profile the individuals, but rather foregrounds the fact that these humans are conceived of as a bounded contiguous group, the boundaries of which (i.e. membership of or otherwise) are more cognitively salient than the individuation status of the component entities. While rather more abstract than the example of grasses, which physically occupy a contiguous, bounded area of physical space.

4.4.2 Noun class prefix *ba-*

Noun class prefix *ba-* occurs in a number of paradigms, namely *e-/si-/ba-*, *ka-/u-/ba-*, *fu-/ku-/ba-*, *ji-mu-ba-* and *ba-/u-*. In the triadic paradigms in which it appears (*e-/si-/ba-*, *ka-/u-/ba-*, *fu-/ku-/ba-*) this class is in opposition with classes marking singular and (count) plural and encodes semantics of collectivity. This opposition is illustrated in Figure 15 for the stem

halanga LOUSE.

Figure 15 Paradigm *e-/si-/ba-*



a. *e-halanga* ‘louse’

b. *si-halanga* ‘lice’

c. *ba-halanga* ‘lice’

As has been shown above, *e-* and *si-* are associated with singular and count plural respectively, and the entities denoted are fully bounded and individuated. For the collective form in *ba-* the identity of the individual entities is not profiled, as for the collective forms in *e-* described in the sections above. However, the collective in *ba-* differs from those in *e-* as even the entities in their collective configuration are not conceptually bounded – this is represented by the dashed circle surrounding the individuals in Figure 15c. In addition, note *ba-* forms a monadic paradigm with mass semantics. Mass is a semantic value that is not specifically bounded (Langacker 1987:63). Therefore it is posited that collective nouns in *ba-* and mass nouns in *ba-* share a value of unboundedness. The specific number value (i.e. collective or mass) falls out from the position of the noun class in the various paradigms.

Furthermore, the fact that *ba-* has a one-to-many relation with a number of triadic paradigms, which each correspond to a singular plural dyad, suggests that the collective construal neutralizes any semantic features that may be encoded by the singular and plural classes of these paradigms. This is commensurate with observations that in the collective the entities cease to be well defined – in fact they appear almost mass-like and their individual physical configurations are backgrounded. Hence we see only one class associated with collective semantics rather than a separate one for each paradigm.

4.4.3 Noun class prefix *u-*

Noun class prefix *u-* is also associated with a number of paradigms – *a-/u-*, *ka-/u-*, *ka-/u-/e-*, *ka-/u-/bu*, *ka-/u-/ba*, *bu-/u-*, and *ba-/u-*. In all these paradigms it encodes count plurality. Its strongest association is with the singular/plural paradigm *ka-/u-*, in which 140 stems in the lexicon form nouns and *bu-/u-* which has 62 items currently attested and is a productive paradigm for tree names.

It is clear that for the paradigms *ka-/u-*, *ka-/u-/e-*, *ka-/u-/bu*, the class *u-* is equivalent. Since

u- carries the same plural function in all of these paradigms it is not of interest in this section. It is the components of the triadic paradigms that contrast that are of interest in a discussion of noun classes across paradigms. Less trivial is the question of whether the prefixes *u-* in *bu/u-* and *ka-/u-* are related. Since there are fewer noun class prefixes that may be associated with plurality, it is to be expected that some of these prefixes will appear in the plural slot of more than one paradigm. It is posited that *bu-/u-* and *ka-/u-* share the same plural prefix since these paradigms have more in common semantically than other singular/plural paradigms. As discussed in 4.3.16, paradigm *bu-/u-* is associated with semantics of assemblage, as well as large size. Paradigm *ka-/u-* (see 4.3.8) is associated with semantics of extendedness, and may also be used to denote augmentative semantics. These domains show similarities, and can be differentiated from domains associated with other singular/plural paradigms. They are more semantically specified than items in paradigm *e-/si-*, which are neutral other than the property of individuation, and they contrast with items in paradigm *fu-/ku-* in being emphatically not round (see 4.2.14 above). Thus this unity between, and opposition against other paradigms is maintained in the plural. Of course the distinction that exists between entities denoted by the singular forms of these paradigms is neutralized; it is posited that this is acceptable as individual characteristics become less salient when plural entities are involved.

It is unclear whether the noun class *u-* in *ka-/u-* and *bu-/u-* is semantically related to that in *a-/u-* or merely homophonous. A common source for these two plural classes could be posited on the basis of the fact that humans are extended in space, like many of the members of the *ka-/u-* paradigm, and thus *a-/u-* is an example of a crossed paradigm where the singular class *a-* encodes humanness, and the plural class *u-*, physical configuration. However, this is rather speculative. An alternative possibility is that the markers *a-* and *u-* are related to the lexical forms *an* ‘person’ and *bug-an* ‘people’ (and their associated agreement markers *a-* and *bug-*), and thus the plural marker in this paradigm developed separately from that in *ka-/u-*.

4.4.4 Noun class prefix *ku-*

Noun class prefix *ku-* is associated with paradigms, *fu-/ku-*, *fu-/ku-/ba-* and *ka-/ku-*. Of these, the connection between the first two is clear, it is class *ba-* that provides the contrast and this noun class prefix is discussed in 4.4.2 above. The point of interest in this section is whether class *ku-* in *fu-/ku-* is related to that in *ka-/ku-*. This seems highly plausible; *fu-/ku-* is a large paradigm, with 143 stems in the lexicon forming nouns in this paradigm (and an additional nine in *fu-/ku-/ba-*). It is highly semantically coherent showing a strong tendency to form nouns denoting entities with a round physical configuration, and also exhibits

productive noun formation functions, being used non-canonically with stems usually associated with other paradigms to create augmentative forms, often with humorous connotations. Since *ka-/ku-* is a very small paradigm forming nouns with only thirteen stems, and furthermore *ka-* also forms part of a far more populous paradigm *ka-/u-*, this seems likely to be an example of a crossed paradigm. If, as is posited here, the paradigm *ka-/u-* is associated with extended physical configuration, and *fu-/ku-* with roundness, then at first the semantic domains represented by the two noun classes in this crossed paradigm appear to be contradictory. However, it is argued that the items found in this paradigm do in fact have features of both. It was shown in 4.3.13 above that entities denoted by nouns formed in this paradigm have salient features of both extendedness and roundness. It is therefore posited that noun class prefix *ku-* carries semantics of plurality and round configuration.

4.4.5 Noun class prefix *mu-*

The noun class prefix *mu-* occurs as the plural marker in diminutive dyadic and triadic paradigms, and forms nouns with mass semantics as a monadic paradigm. It is unclear whether there is a semantic connection between these two functions. Sagna (2008:272f) unites these semantic domains – small size and liquids – under a super category ‘inherent properties’. This is rather vague and unsatisfactory, as it is posited that all properties visible to the noun classification system are to some degree inherent. The identity of noun class prefix *mu-* in its various paradigms remains a topic for future research.

4.5 Beyond semantics

It has been shown in the sections above that the noun classification system in Kujireray is to a large degree semantically motivated. Notions of underspecified, schematic meaning and metaphorical extension were evoked to explain the semantic structure of the system, and in addition it was shown that meaning resides not only in the individual noun classes, but that the schematic nature of the meaning associated with these classes can be exploited such that they may participate in different paradigms, with additional meaning contributed through the oppositions formed by these paradigms. However, it is important to recognize that no system exists in a vacuum, and Kujireray is spoken in an area characterized by extreme multilingualism on both an individual and societal level, and all aspects of language are therefore subject to influence from languages that surround it. In the following sections I treat two topics that are relevant to a discussion of the noun classification system – phonological assignment and contact effects.

4.5.1 Phonological assignment

While the previous sections have concentrated on the semantic basis for the assignment of stems to given paradigms, it must be noted that in some cases this assignment occurs for other reasons – notably phonological. It has been shown that loan words may be assigned to the default paradigms *e-/si-*, or *Ø-/si-*, or to other paradigms on the basis of perceived characteristics of the entity, such as cylindrical shape as in the case of *fu-buk/fu-bik* ‘biro’. In certain other cases, when the borrowed word has an initial syllable that resembles an existing Kujireray noun class prefix, this may indeed be reanalysed as a prefix and the borrowed item assigned to a paradigm accordingly. For example, the form *cigarette* is borrowed from the French. The initial syllable is analysed as the Kujireray noun class prefix *si-*, and since this prefix is overwhelmingly associated with plural semantics as part of the paradigm *e-/si-*, a corresponding singular form *e-garet* is created. Similarly, the form *ka-rafa* ‘bottle’ borrowed from Kriolu, is analysed as being formed in noun class prefix *ka-*, with a corresponding plural created in *u-* according to the regular and productive paradigm. This provides further evidence for the cognitive salience of both the individual noun class and the paradigm.

4.5.2 Contact effects

While many irregularities of the noun class system can be attributed to the phenomena of crossed paradigms and a one-to-many relation between several noun classes and the paradigms they participate in, an analysis that seeks to resolve all such irregularities and describe the noun class system from a purely language internal perspective is bound to miss certain observations. Given the situation of intense language contact within which Kujireray is spoken, it seems clear that the language, including the noun classification system, will have been, and continue to be, subject to influence from the individual and societal multilingualism which is so pervasive. While a systematic comparative study between Kujireray and other languages of the region is beyond the scope of this study, informal collaboration with other researchers working on other Casamance languages has made possible some early hypotheses about the effect that contact has on the noun class system of Kujireray (and indeed the influence it has had on other languages). These effects are also strongly present in the domain of verbal nouns, which will be discussed in chapter 5. The effect of contact on all areas of language is a fruitful topic for future research – see chapter 5 for further discussion. In the following I present a selection of additional data from Kujireray, Banjál and Baïnouk Gubéeher that demonstrates some of the ways in which contact can impact the shape of the noun classification system.

The singular/plural pair *ji-muhor/si-muhor* ‘lion/s’ represents a crossed paradigm. The plural in *si-* is unremarkable on its own; there are many terms for animals that form a plural in this

class. However, the singular in *ji-* is unexpected. Particularly in view of the plural in *si-*, the singular would reasonably be predicted to be formed in *e-*. Similar facts obtain in Eegimaa for the form *ji-ggaj* ‘panther’; Sagna (2008:255) analyses the prefix *ji-* in this form as the diminutive marker, which is used in this case in a metaphorical way to reduce the threat of this dangerous animal. While this is one possible scenario, data from contact language Baïnouk Gubëeher reveals an alternative analysis. The singular term for lion in Gubëeher is *ji-muxoor*, as opposed to *é-ηaj* in Mof Ēvi varieties. This indicates that the singular form for lion has been borrowed wholesale into Kujireray. Note also that in Gubëeher this class is not associated with diminutive semantics, but forms part of the *ji-* paradigm with suffixed plurals which contains many terms for animals (Cobbinah 2013:293). However, while the singular was borrowed from Gubëeher into Kujireray, facilitated by the fact that there is a homophonous noun class prefix *ji-* in both languages, the plural could not be directly borrowed, as Kujireray lacks a plural suffix. A plural was therefore created a plural *si-* since this is the plural associated with the *e-/si-* paradigm, the most common and productive paradigm for both animal terms and loanwords. Such an analysis removes the onus present in the reduction-of-threat analysis for accounting for the fact that only the singular form is afforded diminutive semantics, when a diminutive plural *mu-* is available, and several lions are surely more dangerous than a single one. Of course the fact that a formally identical, but semantically unrelated noun class prefix exists in Kujireray makes it likely that speakers will reanalyse the borrowed form as belonging to the diminutive class *ji-* and that this may therefore become part of the form’s meaning.

Another case is Kujireray *bu-nah* ‘sun’. It has been observed in 4.1.16 above that it is difficult to motivate this form in the paradigm *bu-/u-* on semantic grounds. It may perhaps be possible on the basis that the sun is huge, although this is somewhat tenuous, as presumably this form came to be far longer ago than Kujireray speakers were aware of the actual nature of the solar system – the sun does not actually appear that large in the sky. However, an examination of corresponding forms in neighbouring languages may afford a better explanation.

Table 87 Cognate forms in Gubëeher, Kujireray, Banjal and Eegimaa

gloss	Gubëeher	Kujireray	Banjal	Eegimaa
‘sun’	<i>bi-neg</i>	<i>bu-nah</i>	<i>bu-naa</i>	<i>ti-nax</i>
‘time of day’		<i>ti-nah</i>		<i>ti-nax</i>
‘day/s’	<i>dë-neg</i>	<i>fu-nah/ku-nah</i>	<i>fu-nak</i>	

The table shows that the form for ‘sun’ in Gubëeher is *bi-neg*. In Gubëeher the prefix *bi-*, as part of the paradigm *bi-/i-* is strongly associated with semantics of roundness, and thus this form is semantically motivated. It also seems that the stems in the forms for all four varieties are cognate. It is posited that this form was borrowed into Kujireray, and the prefix being reanalysed as *bu-*, the closest form phonologically to *bi-*. Since noun formation is constructional, consisting of a noun class prefix and an underspecified lexical stem, the stem *nah* is then available to Kujireray speakers, as representing the domain SUN, and may form nouns in other paradigms to denote concepts within this domain. Thus, in Kujireray, this stem now forms nouns in *ti-* (*ti-nah* ‘time of day’) and *fu-/ku-* (*fu-nah/ku-nah* ‘day/s’). The use of locative prefix *ti-* in the noun for ‘time of day’ is fully motivated, since Kujireray speakers are accustomed to keeping time according to the position of the sun. The formation of the nouns denoting ‘day/s’ is also fully motivated since this paradigm is associated with periods of time (see 4.1.14 above). A similar scenario appears to obtain for Banjal, although the term for time of day is not known at this time. Eegimaa presents an interesting case – the form in the locative prefix *ti-* is used to denote both ‘sun’ and ‘time of day’. While, as mentioned above the use of the locative marker for ‘time of day’ is principled, the formation of a noun denoting a concrete entity is somewhat surprising. One possible scenario is that the form in *bu-* was borrowed into Eegimaa, just as for Banjal, and the form *ti-nah* subsequently created, and that this form then generalized further, to replace the term for ‘sun’.

4.6 Agreement

It was demonstrated in 4.3 above that a semantic analysis of the noun classification system based at the level of the paradigm can make more powerful semantic generalizations. It was also shown in 4.4 that individual noun class prefixes are associated with schematic semantics that license their participation in more than one paradigm. Essentially, the noun

class prefixes and paradigms interact to create meaning. Now, a third level – that of agreement – warrants discussion. It will be shown that agreement, as marked on targets controlled by an antecedent noun, may also make a semantic contribution, and form part of the noun classification system just like the paradigm and the noun class prefix. There are two main issues that pertain to a discussion of agreement patterns in Kujireray and other languages like it. First, instances where two different noun class prefixes are associated with the same agreement pattern, and second, where one noun class prefix is associated with more than one agreement pattern.

Generally speaking, agreement (as opposed to noun class prefix, for example) has long been accepted as criterial in the identification of an item's membership in a given noun class, and in identifying noun classes themselves within a given system (Corbett 1991, Sagna 2008:212). However, the very fact that such a decision needs to be made is implicit evidence of the 'mismatches' between class markers and their respective agreement patterns that are commonplace in noun classification languages. In some cases, as will be seen below, the fact that nouns in one and the same (phonologically speaking) noun class prefix can govern different agreement patterns is illuminating with regards to the semantic structure of the system, although even in these cases there is often a considerable degree of variation which not only, once again, obstructs the process of categorizing the system, but can be illuminating in itself and should not be overlooked. Furthermore, there are cases where two phonologically distinct class markers may govern the same agreement pattern, and in which an a priori lumping approach may result in observations being lost.

Where there are 'mismatches' between noun class prefix and the agreement pattern that it controls, there are typically two approaches to dealing with this. In the first, the irregular agreement pattern is considered to overrule the regular pattern for semantic reasons. The second, which treats agreement as criterial, must therefore explain the wide variety of unmotivated allomorphs that necessarily appear in the inventory of the noun class system (Schadeberg 2001:10). In the approach adopted in the current thesis, these facts are unproblematic, and are merely treated as semantically motivated cases of crossed agreement which demonstrate the fact that the noun classification system operates on a three stranded basis – noun class prefix, agreement pattern and paradigm – and indeed provide evidence for the constructional nature of this system, not just as the level of noun formation, but of the entire clause

4.6.1 Agreement convergence

Like many noun class systems, agreement in Kujireray is largely alliterative, with agreement markers exhibiting phonological similarity – although not usually identity – with their

controlling noun class marker. Table 88 shows agreement patterns on a selection of agreement targets for all noun class prefixes attested thus far in Kujireray. The grey cells show instances where alliterative agreement is not available – these constitute cases of obligatory crossed agreement and will be treated in 4.6.2 below.

Table 88 Alliterative agreement patterns in Kujireray

prefix	example	gloss	DEF.DET	PRO	REL	SUBJ
Ø	<i>an</i>	‘person’	<i>Ø-a-h-u</i>	<i>Ø-o</i>	<i>Ø-a-</i>	<i>a-/n-</i> <i>a-</i>
<i>bug-</i>	<i>bug-an</i>	‘people’	<i>bug-a-g-u</i>	<i>bug-o</i>	<i>k-a-</i>	<i>ku-</i>
<i>a-</i>	<i>a-tepa</i>	‘builder’	<i>Ø-a-h-u</i>	<i>o</i>	<i>Ø-a-</i>	<i>a-/na-</i>
<i>e-</i>	<i>e-rabut</i>	‘ant’	<i>y-a-y-u</i>	<i>y-o</i>	<i>y-a</i>	<i>e-</i>
<i>Ø-</i>	<i>yaŋ</i>	‘house’	<i>y-a-y-u</i>	<i>y-o</i>	<i>y-a</i>	<i>e-</i>
<i>si-</i>	<i>si-joba</i>	‘dogs’	<i>s-a-s-u</i>	<i>s-o</i>	<i>s-a</i>	<i>si-</i>
<i>su-</i>	<i>su-or</i>	‘stars’	<i>s-a-s-u</i>	<i>s-o</i>	<i>s-a-</i>	<i>si-</i>
<i>bu-</i>	<i>bu-sana</i>	‘kapok tree’	<i>b-a-b-u</i>	<i>b-o</i>	<i>b-a-</i>	<i>bu-</i>
<i>bi-</i>	<i>bi-eb</i>	‘hunger’	<i>b-a-b-u</i>	<i>b-o</i>	<i>b-a-</i>	<i>bu-</i>
<i>ba-</i>	<i>ba-</i> <i>halanŋa</i>	‘lice’	<i>b-a-b-u</i>	<i>b-o</i>	<i>b-a-</i>	<i>bu-</i>
<i>u-</i>	<i>u-tum</i>	‘mouths’	<i>w-a-w-u</i>	<i>w-o</i>	<i>w-a</i>	<i>u-</i>
<i>fu-</i>	<i>fu-manŋo</i>	‘mango’	<i>f-a-f-u</i>	<i>f-o</i>	<i>f-a-</i>	<i>fu-</i>
<i>fa-</i>	<i>fa-rihinjanŋ</i>	‘roof’	<i>f-a-f-u</i>	<i>f-o</i>	<i>f-a-</i>	<i>fu-</i>
<i>f-</i>	<i>f-ar</i>	‘belly’	<i>f-a-f-u</i>	<i>f-o</i>	<i>f-a-</i>	<i>fu-</i>
<i>ku-</i>	<i>ku-rukand</i>	‘palm rat’	<i>k-a-h-u</i>	<i>h-o</i>	<i>k-a-</i>	<i>ku-</i>
<i>ka-</i>	<i>ka-juo</i>	‘shirt’	<i>k-a-h-u</i>	<i>h-o</i>	<i>k-a-</i>	<i>ku-</i>
<i>mu-</i>	<i>mu-sis</i>	‘salt’	<i>m-a-m-u</i>	<i>m-o</i>	<i>m-a-</i>	<i>mu-</i>
<i>ma-</i>	<i>ma-sur</i>	‘urine’	<i>m-a-m-u</i>	<i>m-o</i>	<i>m-a-</i>	<i>mu-</i>
<i>ji-</i>	<i>ji-cil</i>	‘eye’	<i>j-a-j-u</i>	<i>j-o</i>	<i>j-a-</i>	<i>ji-</i>
<i>ju-</i>	<i>ju-ol</i>	‘fish’	<i>j-a-j-u</i>	<i>j-o</i>	<i>j-a-</i>	<i>ji-</i>
<i>ja-</i>	<i>ja-cer</i>	‘uncooked rice’	<i>j-a-j-u</i>	<i>j-o</i>	<i>j-a-</i>	<i>ji-</i>
<i>ni-</i>	<i>ni-kul</i>	‘bereavement’	<i>ñ-a-ñ-u</i>	<i>ñ-o</i>	<i>ñ-a-</i>	<i>ni-</i>

Each row is not intended to represent a separate noun class. Indeed, a definitive inventory of noun classes, neatly delineated is not the ultimate aim of the analysis. The table is intended to be more descriptive than analytical, with each entry in the noun class prefix column present by virtue of being present in the language. The table illustrates that while the alliterative agreement patterns share phonological material with their controller noun class marker, they are always not mere repetitions of that noun class marker – their realization depends also on the form of the target to which they affix (see 4.2.2 above).

Crucially, Table 88 shows that the majority of noun class markers share an agreement pattern with at least one other noun class marker that is to say, there is a many-to-one relation between noun class prefixes and agreement pattern. While the convergence of agreement patterns on targets such as the determiner and pronoun is not particularly illuminating, as it could be a process of vowel assimilation resulting in the neutralization, somewhat harder to ignore is the fact that the neutralization is also observed in the subject agreement marking, where the agreement reflex consists of CV for CV noun class markers, and V for V shaped noun class markers. The crucial observation here is that while in theory it would be possible for the distinction between, say, *fu-* and *fa-* to be retained, in fact the system does not exploit this possibility. Under approaches that consider agreement as criterial for noun class membership, this would result in the noun class markers in question being automatically conflated and treated as representing the same class. In the following I argue that such an approach is inadequate for capturing the full complexity of a noun class system such as that found in Kujireray, and furthermore if the paradigm, rather than the individual noun class is regarded as meaningful in its own right then such generalizations are not in fact necessary, since the relevant semantic distinctions are captured in the oppositions with paradigms.

The examples in (276) and (277) illustrate that the two phonologically distinct noun class markers *bu-* and *ba-* share the same agreement pattern.

(276)	<i>bu-nunuhen</i>	<i>b-anosan</i>	<i>bu-baj-e</i>	<i>ka-vox</i>
	CL:bu-tree	AGR:b-QUANT	AGR:bu-have-PERF	CL:ka-name
	‘Every tree has its name.’			field notes

(277) <i>ba-mateŋ</i>	<i>b-e</i>	<i>bu-gal-e</i>
CL:ba-tomato	AGR:b-PROX	AGR:bu-spoil-PERF

‘The tomatoes are rotten.’

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While the noun class prefixes forming the nouns themselves are clearly distinct – *bu-* and *ba-* – the agreement prefix paradigms are the same. Both nouns control *b-* agreement prevocally (as illustrated on the quantifier and definite determiner in the examples) and *bu-* agreement preconsonantly. Under an approach which treats agreement as the defining criteria for class membership these nouns are of the same class. However, it is argued here that, for Kujireray at least, this analysis is unsatisfactory. When one examines the semantic features of nouns in *bu-* and nouns in *ba-* (or more accurately the paradigms they fall into) it is clear that there are features that can be ascribed to one or the other, but not both. For example almost all tree names in Kujireray are in *bu-/u-*; there are none in *ba-/u-*. Conversely, *ba-* has strong associations with collective and mass semantics which are not shared by *bu-*. As Seck (2002:195) points out (for Fogny), if both markers were in fact reflexes of the same class, one would not expect to make semantic generalizations for one that do not hold for the other. However, it is important to note that these are observations made concerning the synchronic data. While *bu-* and *ba-* have distinct identities in contemporary Kujireray, the data suggest that they may have developed from a common source.

A similar case involves the noun class prefixes *mu-* and *ma-*, which also control the same agreement pattern. Furthermore, as detailed in sections and 4.3.24 and 4.3.25 Paradigm *ma-* above, both are attested in a monadic paradigm, associated with unbounded, mass semantics. In this case a distinction between two separate classes is harder to motivate on semantic grounds. The items found in both these paradigms are much more coherent semantic speaking, consisting almost exclusively of liquids and flowing substances, or abstract entities such as colour terms (always in *mu-*) or truth and danger (in *ma-*). In the face of this evidence alone there is a stronger case for analysing the prefixes as one and the same, and positing some phonological process as responsible for the vowel alternation. However, this analysis is harder to ratify with the fact that *mu-* also participates in a dyadic paradigm *ji-/mu-* where it carries plural, diminutive semantics. An agreement based approach faces the difficulty of being obliged to conflate the ‘mass’ *mu-* and the ‘small plural’ *mu-*, with or without attempting to associate the semantic domains. Under a paradigm analysis, the separation of the items in either *mu-* falls out naturally from their inclusion in either the

monadic or dyadic paradigm – an association between the two may then be investigated.

These facts therefore raise two contrasting issues. First, for researchers in Joola languages who adhere to the notion that agreement pattern is criterial for determining noun class, the task is attempt to explain the variation in form of the noun class marker. Conversely, researchers who distinguish noun class prefixes on the basis of their distinct form must account for agreement convergences. In the following I explore both of these positions in light of the debate, on-going in the literature on Joola languages, on the post-prefix. It will be shown that there are arguments that support both positions. While a definitive stance on the matter is not taken, and a more descriptive approach is adhered to, it will be argued that a more diachronic view of the system may help to account for the many of the relevant data.

Leaving aside semantic considerations, in the cases of noun class prefix pairs like *bu-* and *ba-*, or *mu-* and *ma-*, the overt phonological facts of the language do not provide strong evidence for the one morpheme analysis, with both forms appearing in all manner of equivalent phonological contexts.⁴⁶ This means that researchers who favour the one-morpheme analysis seek another explanation for the vowel alternation. In the Joola literature, this is done by positing a **post-prefix**⁴⁷; a putative vocalic segment that occurs between the noun class prefix and the stem and which makes its existence apparent by changing the quality of the prefix vowel from /u/ or /i/ to /a/. Doneux (1975), Sambou (1979), Bassène (2007), Tendeng (2007) and Hopkins (1995) contend that the /a/ in *Ca* prefixes is due to the post-prefix, while Sagna (2008:197), Sapir (1965) and Seck (2002) treat them as different classes. Sagna (2008:200) summarizes the two positions:

⁴⁶ In a very few cases, some of the variation appears to be governed by phonological processes, for example *bi-eb* ‘hunger’, *bi-as* ‘journey’ and *su-ol* ‘fish’, where the common and productive noun class prefixes *bu-* and *si-* have the appearance of having undergone height harmony. However, while this is a fully productive process in Mof Èvi varieties, it is not present synchronically in Kujireray. These instances are therefore analysed as fossilized borrowings (see 3.1.5).

⁴⁷ The majority of literature on this phenomenon is in French, and thus refers to the posited morpheme as the *postpréfixe*.

“if we follow Sapir’s reasoning, all prefixes with a *Ca-* structure...will be analysed as separate noun class markers from those having *Cu-/Ci*⁴⁸ 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’⁴⁹

The post-prefix can explain why vowel difference in noun class prefix is neutralized in agreement patterns – the vowel in prefixes like *ma-* and *ba-* is not actually part of the prefix, they are underlyingly *mu-* and *bu-*. Sagna (2008:200) concedes that “the postpréfixe approach has the advantage of being compatible with an inventory of noun classes based on agreement class, since [it] would help to get rid of the problem of lack of uniformity between noun class markers and agreement markers in some contexts”. Similarly, for Banjal, Bassène (2006:59) believes that positing *ga-* as a separate class marker to *gu-* goes against the regularity seen elsewhere whereby subject markers are identical to class markers, since both prefixes governs agreement markers in the form *gu-*. However, care must be taken to base any analysis purely on the basis of its elegance, at the cost of overlooking empirical facts.

The existence of the post-prefix is controversial and is not an issue I propose to resolve in this thesis. Indeed, the data presented in this section seems both to support (in the case of the ‘mass’ *ma-/mu-* prefixes) and oppose (in the case of *bu-/ba-*) the conflation of phonologically distinct noun class markers into one class on the basis of the convergence of their agreement patterns, thus motivating the existence of the post-prefix, or something of its kind. It is clear, However, that whether or not one accepts that the post-prefix played a part in the development of the CV- noun class marker pairs diachronically, thus accounting for (at least some of) the agreement convergences, a paradigm approach and observations on semantic domains show that the system has become rather more complex, with distinctions developing between the two. What may have begun as a purely phonological distinction may have been reanalysed as representing a difference in meaning (Sagna 2008:199).

⁴⁸ Many Joola languages also have a process of vowel height harmony affecting the vowel of the noun class prefix. This is not synchronically productive in Kujireray, although vestiges of it remain in a limited number of items.

⁴⁹ Although, elsewhere in his analysis, Sagna treats agreement as criterial, thus rendering *Cu/Ca* pairs as reflexes of the same class.

4.6.2 Crossed agreement

While it was shown above that different class prefixes may control the same agreement pattern, the opposite case also holds; the same class prefix (formally speaking) may control different agreement patterns. This is illustrated in examples (278) and (279).

(278) *ku-pemb* *bug-e* *ku-sumit-e*
CL:ku-child AGR:bug-PROX AGR:ku-good-NEG-PERF
‘The children are sick.’ BRIN121107RW

(279) *ku-mango* *k-e* *ku-jē̃-o*
CL:ku-mango AGR:k-PROX AGR:ku-big-MID
‘The mangos are big.’ BRIN121107RW

The phrases in the examples above are directly comparable to each other. They both contain a noun in the prefix *ku-*, followed by a definite determiner and a verb. Both the verbs are prefixed with the subject agreement marker *ku-*, but there is a difference in the agreement on the determiner, i.e. *bug-e* in (278) and *k-e* in (279). According to an agreement based analysis of noun classes, this signals the existence of two distinct classes associated with the prefix *ku-*, one controlling alliterative agreement, and one controlling semantic agreement⁵⁰. This analysis is not undesirable, as there are clear semantic differences between nouns in *ku-* that control the agreement patterns *ku-* and *bug-* respectively. Specifically, the type of nouns that can control semantic *bug-* agreement all denote types of humans. Again, these facts can also be captured using a paradigm approach, where they correspond to the fact that nouns that participate in the human paradigm *a-/ku-* may control *bug-* agreement in their plural *ku-* forms; nouns in other paradigms such as *fu-/ku-* or *ka-/ku-*, which emphatically do not

⁵⁰ Note that alliterative agreement is itself semantically motivated insofar as it is a reflex of the semantically motivated noun class prefixes. It may be more accurate to say that for alliterative agreement there is no semantic conflict which manifests in crossed agreement.

denote humans, may not. While these two analyses are broadly comparable, the paradigm approach has the advantage of not entailing a categorical position as to whether the noun class marker in *ku-* represents one or two items. The difference in agreement pattern is understood, in part at least, as a function of the paradigm.

However, the situation is rather more complicated than positing one hermetic agreement pattern in one case, and a second in the other. In fact, semantic agreement is rarely obligatory – most nouns that can trigger semantic agreement can also trigger alliterative agreement in an otherwise identical context. These alternating agreement patterns are illustrated in Table 89.

Table 89 Crossed agreement

NCP	example	gloss	DEF.DET	PRO	REL	SUBJ
<i>bug-</i>	<i>bug-an</i>	‘people’	<i>bug-a-g-u</i>	<i>bug-o</i>	<i>k-a-</i>	<i>ku-</i>
<i>ku-</i>	<i>ku-pal</i>	‘friends’	<i>k-a-h-u</i>	<i>k-o</i>	<i>k-a</i>	<i>ku-</i>
			<i>bug-a-g-u</i>	<i>bug-o</i>		
<i>u-</i>	<i>u-are</i>	‘women’	<i>w-a-w-u</i>	<i>w-o</i>	<i>w-a-</i>	<i>u-</i>
			<i>bug-a-g-u</i>	<i>bug-o</i>		
<i>e-</i>	<i>e-mbot</i>	‘boy’	<i>y-a-y-u</i>	<i>y-o</i>	<i>y-a</i>	<i>e-</i>
			<i>Ø-a-h-u</i>	<i>Ø-o</i>	<i>Ø-a-</i>	<i>a-/n-a-</i>
<i>ti-</i>	<i>ti-nah</i>	‘time’	<i>t-a-t-u</i>	<i>t-o</i>	<i>t-a-</i>	<i>ti-</i>
			<i>n-a-n-u</i>	<i>n-o</i>	<i>n-a</i>	-

Taking *ku-*, for example, the first row for this prefix shows fully alliterative agreement, with agreement markers of the shape either *k-* or *ku-* depending on the shape of the target to which they are prefixed. The agreement pattern in the second row also contains some alliterative prefixes on the relative marker and subject (the semantic agreement is not available for some agreement targets), but also some of the shape *bug-*. This is related to the lexical form *bug-an* ‘people’.

A further complicating factor, implied in the table, is that there is variation and optionality in the agreement patterns for a given noun class, for example in the case of nouns denoting plural human entities. These are marked by noun classes *u-* or *ku-*, but their agreement

patterns contain items whose agreement is of the form *bug-*. In some cases, there may be an option of agreement on one and the same target controlled by such nouns. Specifically, the agreement may be alliterative – following the same pattern as *u-* or *ku-* – or semantic i.e. *bug-*. This is shown in (280) and (281) where the definite determiner in (280) shows alliterative agreement, whereas that in (281) shows semantic agreement.

(280) *ku-pemb* *k-e* *ku-roŋ-e*
 CL:ku-child AGR:k-PROX AGR:ku-remain-PERF
 ‘The children are young.’

(281) *ku-pemb* *bug-e* *ku-laj-e*
 CL:ku-child AGR:bug-PROX AGR:ku-cruel-PERF
 ‘The children are nasty.’

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This conflict between assigning agreement on formal, alliterative grounds, or semantic grounds is also observed for human denoting nouns that fall outside one of the regular human paradigms, *a-/u-* or *a-/ku-*, such as *e-mbot* ‘boy’, which may also control agreement semantic or alliterative agreement – indeed both agreement patterns may occur in the same utterance. In the examples below, the verb *e-tiŋen* in (282) exhibits alliterative agreement with its controller *e-mbot* ‘boy’, while the very same verb stem in (283) shows semantic agreement in the form *a-tiŋen*, although the definite determiners in both clauses – *y-e* - show alliterative agreement.

(282) *e-mbot* *y-e* *e-tiŋen* *me* *na-kan-om*
 CL:e-boy AGR-DEF.DET AGR:e-smoke SUBORD AGR:na-do-1S

ka-tiña *fu-iñ*
 CL:ka-pain CL:fu-liver
 ‘That the boy smokes annoys me.’

(283)	<i>e-mbot</i>	<i>y-e</i>	<i>a-tijen</i>	<i>me</i>
	CL:e-boy	AGR-DEF.DET	AGR:a-smoke	SUBORD
	<i>na-nogen-e</i>	<i>ni</i>	<i>yaŋ</i>	<i>y-a-u-y-e</i>
	AGR:na-enter-PERF	LOC	CL:Ø-house	AGR:y-DEF-PRES-AGR:y-PROX
	‘The boy smoking entered this house.’			

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Whether there are discourse-pragmatic motivations for selecting one pattern over another is a topic for future research. However, it seems clear that these data, again, present a problem for the clear delineation of noun classes in Kujireray, at least according to the traditional approach. If one treats agreement patterns as criterial for noun class membership, what can be said about items that control two different agreement patterns, even in the same utterance.

Indeed, this can be considered further support for the position that the term noun class should be viewed as a heuristic rather than an absolute label. Preoccupation with what exactly constitutes a noun class and what is criterial for membership of a class is in fact counterproductive. In obscuring the exceptions to regular and productive rules, and considering these latter the primary and most desirable areas of investigation, one ignores the fact that these exceptions are often not mere anomalies, but motivated semantically, and in examining the motivations we can glean valuable insights to the type of parameters that underpin the structure of the noun classification system. In fact it is posited that noun class is only a useful term when an item belongs to one of the regular and productive groups where there is an uncontroversial match between the prefix and the agreement pattern. Just as we see crossed paradigms, cases such as those detailed above may be considered ‘crossed classes’.

Evidence such as that above shows that the noun classification system operates on three interlinked levels – that of the noun class prefix, the agreement pattern, and the paradigm. All of these contribute semantic material, profiling aspects of the concept represented by the lexical stem. In many cases, where the class prefix and agreement match, and the paradigm is a regular and productive one, all three contribute the same information; in the case of crossed agreement and paradigms, all three may profile a different aspect. Rather than being regarded as troublesome to the analysis, these data are evidence of the communicative power of the noun classification system.

4.7 Summary of chapter 4

In this chapter I have described the nature of the Kujireray noun classification system, and shown how it manifests in the language in noun class prefixes on lexical stems, which control agreement patterns on other items such as adjectives, verbs and numerals. It was demonstrated that the system is semantically motivated, and that it operates on three interdependent levels – the paradigm, the noun class prefix, and the agreement pattern.

It was shown first that the semantic structure of the system can be more thoroughly explained at the level of the paradigm. Since the singular, plural, collective and mass groupings formed by individual noun classes are semantically motivated, a more fine-grained analysis of the system is made possible by examining these groupings. Moreover, it is posited that these number values are assigned at the level of the paradigm, not to the individual noun classes as is supposed in many other studies. However, it is not claimed that a noun class prefix carries no meaning; while an individual noun class prefix does not carry a number value in and of itself, it represents a more schematic value that is compatible with various number values, and both facilitates and constrains that prefix's participation in various paradigms. For example, noun class prefix *e-* in isolation is associated with boundedness. This means it is able to express singular meaning in certain paradigms, and collective meaning in others, provided that the entity is conceptualized as clearly delineated, or bounded, in its collective configuration.

The chapter also focused on crossed paradigms and agreement patterns, and agreement convergences, and their implications for the analysis of noun classification systems. It was shown that rather than being considered irregularities, posing a problem for a tidy delineation of the system into classes, such cases rather demonstrate the expressive power of a system organized on three levels. It was argued that selecting one level as the crucial element in determining noun class membership is both undesirable and unnecessary from an analytical point of view. Given the commitment of many researchers of noun classification systems to the cognitive notions of 'fuzzy edges' and 'peripheral members' which are so well suited to explaining the *content* of noun classes, it seems somewhat inconsistent to resort to such an all or nothing Aristotelian approach when talking about class membership. To be sure, noun classification languages do exhibit neat patterns of noun class marker and matching agreement markers, and regular and productive paradigms, to which most nouns conform and from which a few diverge. However, it is not necessary to draw a line through a language's morphosyntactic features in order to declare one category necessary and sufficient to determine class membership.

Finally, it was shown that the effect of contact must also be considered in the analysis of the

system. Given the situation of intense individual and societal multilingualism in which Kujireray exists, this should not be underestimated. It was shown that borrowing from other languages can be assigned into the system on the basis of their phonological form, which in turn may influence the semantic structure of the system. It was also shown that the existence of phonologically similar noun class prefixes in various languages can facilitate borrowing. These contact effects are identified as a highly salient area for future research (see 5.6 below).

5 Verbal nouns

Verbal nouns in Kujireray are formed by affixing a noun class prefix to a lexical stem, and without additional derivational morphology. This is not a surprising strategy, particularly given the position taken here that meaning is constructional. In Kujireray, however, a significant proportion of stems may form a verbal noun in more than one noun class prefix. Almost all stems with verbal potential form a verbal noun in the noun class prefix *e-* (referred to in the thesis as *e-* verbal nouns); a substantial number also form a second verbal noun in another noun class prefix (referred to in the thesis as non *e-* verbal nouns). In this chapter I examine the syntax and semantics of verbal nouns in Kujireray.

It is posited that the meaning of verbal nouns is contributed to by the noun class prefix in which it is formed, just as for nouns denoting concrete entities. Parallels can be drawn between the semantic contribution of noun class prefixes in the nominal and the verbal domains. Specifically, it will be shown that number values in the nominal domain find analogies in aspectual values in the verbal domain and that ultimately these values can be united by schematic features of boundedness and unboundedness.

In addition, I pay particular attention to the differences between *e-* and non *e-* verbal nouns, where both types exist for a given stem. It is shown that where such an opposition exists, verbal nouns in *e-* exhibit more verbal characteristics and those in non *e-* prefixes more nominal characteristics. The functional nature of the analysis assumes that such differential morphosyntactic behaviour must be due to semantic and/or conceptual differences between the two types of verbal noun. Since both *e-* and non *e-* verbal nouns refer to the situation represented by the stem (the case of result nouns notwithstanding) it is posited that the distinction between the two is found in the way in which they refer to that situation, the portion of the associated conceptual domain that they profile. It is argued here that, generally speaking, the *e-* form is associated with specific reference to a particular instance of the situation. The non *e-* form is used to name the situation, and as such may be used with generic, non-specific reference (although in certain constructions it may also be used to refer to specific instances).

According to criteria discussed in 2.4 above, for the purposes of this thesis, the term verbal noun refers to any noun whose stem may also occur in a verbal construction, and that is associated with eventive or stative semantics. Cases where a verbal noun is ambiguous between denoting a situation and an entity (as is the case for many result nouns) will be treated, but nouns denoting concrete entities only, even when their stem is also associated with a verbal meaning by way of a paradigmatic network will not. For example, the term *ka-*

pib ‘shout’ can be used in both verbal (such as progressive and object marker constructions) and nominal contexts (such as possessive constructions), to denote the act of shouting, and the result of the shouting act respectively; a verbal noun of this type is therefore included in the analysis. A form such as *fu-tep* ‘wall’ on the other hand, although it is formed from a stem *tep* BUILD which has verbal potential, can only be used in nominal contexts, so while it can certainly be considered a type of result noun, it is not considered a verbal noun for the purposes of this discussion.

As mentioned above, a significant proportion of stems in Kujireray may form a verbal noun in more than one noun class prefix. Virtually all verbal stems form a verbal noun in the noun class prefix *e-*, and for 66% of verbs (502 out of 756 in the lexicon) this is their only verbal noun. The remaining 34% (254 out of 756) form one verbal noun in *e-* and one in another noun class prefix (it is extremely rare for a stem *not* to form a verbal noun in *e-*. See 5.3.2 below for a discussion of possible cases).

Of the 20 noun class prefixes in the system ten⁵¹ are involved in the formation of verbal nouns. Of the 756 stems with verbal potential, 118 are attested as forming a verbal noun in *ka-*, 15.6% of the total. The next largest groups are stems which form a verbal noun in *bu-* or *ba-*, 4.9% and 6.1% respectively. The other prefixes involved in verbal noun formation are *fu-*, *ja-*, *ku-*, *mu-*, and *si-*, each of which forms verbal nouns with between 1-2% of verbal stems.

It is important to note that verbal nouns do not participate in paradigms in the same way as prototypical, concrete entity denoting, nouns, as described in Chapter 4 above. Since they are not prototypical nouns, and retain, to varying degree, stative or eventive semantics and verbal syntactic behaviour, they interact with the noun classification system in a somewhat partial manner. However, the formation of verbal nouns in various noun classes is semantically motivated, and some generalizable relations between *e-* and non *e-* forms can be observed.

In section 5.1 I examine the noun classes in which verbal nouns are formed, and draw parallels between both individual noun classes and paradigms in the prototypical nominal

⁵¹ The figure is based on my analysis that each phonetically distinct form should be counted as a separate prefix. Proponents of the post-prefix analysis who count, say, *bu-* and *ba-* as the same underlying prefix would differ in the figure they offer. In fact, the verbal noun data presented in this chapter may be considered as a contribution to the discussion on the post-prefix, although there are facts that support either position, suggesting that the basis for the debate needs to be reformulated.

domain, as detailed in the previous chapter. In 5.2 I present data pertaining to the morphosyntactic behaviour of verbal nouns, and in section 5.3 I present results from the specialized questionnaire tasks, designed to test semantic differences between *e-* and non *e-* verbal nouns. In 5.4 I summarize the findings on verbal nouns.

5.1 Verbal nouns in the noun classification system

Chapter 4 provided a detailed treatment of the semantics associated with the noun classification system, at the level of the paradigm, the noun class prefix and the agreement pattern. It was shown that the meaning of nouns is constructional with both prefix and stem contributing underspecified semantics which elaborate each other to create the desired meaning. In the following I examine the semantic contribution to the meaning of verbal nouns made by the noun class prefixes in which those nouns are formed. Furthermore I suggest parallels with the semantic contribution made in the formation of nouns denoting concrete entities, as explored in the previous chapter.

If the speaker merely wishes to nominalize a stem in order to make available the kind of cognitive manipulations available to entities, then one verbal noun is sufficient. Indeed, for the majority of verbal stems in Kujireray, that form only one verbal noun, in *e-*, the full range of manipulations is available. It is therefore posited for Kujireray that where a stem forms verbal nouns in more than one prefix, this is due to the particular salience of a particular portion of the domain represented by that stem, for reasons provided by encyclopaedic knowledge and experience of the world.

5.1.1 Verbal nouns in *e-*

With a very few, non-unanimous exceptions (see 5.1.2 below), all stems that *may* form verbal nouns, *do* form a verbal noun in noun class prefix *e-*. Indeed, for the majority of such stems this is the only prefix in which verbal nouns may form. As such the class of stems that may form verbal nouns in *e-* only is highly populous and diverse. As in the nominal domain, discussed in Chapter 4 above, any meaning associated with this noun class prefix must be highly schematic in order to be generalizable over such a large and heterogenous group. It was observed in 4.4.1 that in the nominal domain entities denoted by forms in this class are conceptualized as saliently bounded. This is the default class to which loan words are assigned unless they have any particularly salient features that motivate their inclusion in another paradigm (such as roundness, or fluid form). With these observations in mind, it is unsurprising that this should also be the default class for verbal noun formation. Broadly speaking, to nominalize an event is scan it summarily, in its entirety, which is essentially to bound it conceptually. Recall Langacker's representations comparing summary and

sequential scanning of events, presented in Chapter 2 and reproduced below.

Figure 16 Sequential and summary scanning



- a. 'The doctor examined the patient.' b. 'The doctor's examination of the patient.'

In the verbal form in Figure 16a, the situation is viewed as unfolding through time. In the verbal noun form in Figure 16b, the situation is viewed as a whole (although the event structure is still retrievable) - the situation is conceptually bounded. Once it is bounded conceptually it is available to some of the same conceptual, and thus semantic and syntactic manipulations as concrete entities.

The notion of boundedness as relevant to the classification of both entities and events is also reinforced in some of the oppositions observed for verbal nouns – in which *e-* is always one member. This is explored in the following subsections.

5.1.2 Verbal nouns in *ka-*

Apart from *e-*, *ka-* is by far the most common noun class prefix involved in verbal noun formation. Furthermore, the considerable productivity of class *ka-* in forming verbal nouns means that this is also an area where the highest level of inter-speaker dissent is observed as to whether a given stem may or may not form a verbal noun in this class.

Taking the position that much meaning occurs in opposition between noun class prefixes, as well as belonging to the prefixes themselves, it can be assumed that the existence of a non *e-* verbal noun in addition to the *e-* can be attributed to the wish to profile a portion of the situation's domain that contrasts for some value. In the prototypical nominal domain, however, both *e-* and *ka-* are strongly associated with both singularity and individuation, and thus boundedness at a more schematic level, although nouns formed in *ka-* are also associated with more particular semantics of extendedness. It is unclear, however, which process of metaphor could extend the domain of extendedness from entities to the types of situations denoted by verbal nouns in *ka-*. It is posited rather that one of the functions of noun prefix *ka-* is not to express semantics of extendedness, but to act as a 'contrast' class,

in opposition to *e-*. For example, it was shown in Chapter 4 that there are several result nouns – that is nouns denoting entities associated with a certain situation, denoted by the same stem in a verbal context - formed in both *ka-/u-* and *ka-/ku-*. Given the lack of nominalizing morphology apart from the noun class prefix itself, and the fact that all verbal stems may form a verbal noun in *e-*, the use of *ka-* to form the result noun may be a strategy to disambiguate the eventive verbal noun and the result noun. In addition to, and indeed related to, the observation that *ka-* may form result nouns that contrast to *e-* verbal nouns, it is posited that opposition between *e-* and *ka-* verbal nouns may have to do with reduced transitivity. The function of result noun formation and the association with reduced transitivity are related. A result noun is a full prototypical noun with no verbal properties – essentially, an entity has zero transitivity.

Cobbinah (2013:436) observes for Baïnouk Gubëeher that many reflexive verb stems (formed from transitive stems using valence reducing morphology) form verbal nouns in *gu-* (broadly equivalent to Kujireray *ka-*) whereas the transitive counterparts form verbal nouns in *bu-* (broadly equivalent to *e-*)⁵². This observation appears to be relevant to Kujireray, and indeed can be extended to include verbs with middle and reciprocal semantics as well. For examples, almost all reflexives, reciprocals and middles that have a transitive counterpart form verbal nouns in *ka-*, whereas the transitive forms have a verbal noun in *e-* only (an *e-* form is also arguably available for the reduced valence forms, although the *ka-* form is preferred by consultants – this is a sign of the high productivity of *e-* in the verbal domain). These are shown in Table 90.

⁵² In terms of both frequency and semantic domains, these classes are comparable to Kujireray *ka-* and *e-* respectively. They are the classes with the greatest and second greatest populations respectively in the prototypical nominal domain. Both are quite heterogenous in terms of semantic domains, although both *gu-* (Gubëeher) and *ka-* (Kujireray) appear to carry additional semantic of extendedness.

Table 90 Intransitive verbal nouns in *ka-*

	intransitive form in <i>ka-</i>	gloss	transitive form in <i>e-</i>	gloss
a	<i>kë-bif-or</i>	‘fan oneself’	<i>e-bif</i>	‘fan’
b	<i>ka-hof-or</i>	‘scratch oneself’	<i>e-hof</i>	‘scratch’
c	<i>ka-hot-or</i>	‘adhere to’	<i>e-hot</i>	‘adhere TR’
d	<i>ka-ja-or</i>	‘travel, journey’	<i>e-jaw</i>	‘go’
e	<i>ka-lek-or</i>	‘adjust, prepare oneself’	<i>e-lek</i>	‘make, fix’
f	<i>ka-los-or</i>	‘rub oneself’	<i>e-los</i>	‘rub, paint’
g	<i>ka-mil-o</i>	‘shave oneself’	<i>e-mit</i>	‘shave TR’
h	<i>ka-pos-o</i>	‘wash oneself’	<i>e-pos</i>	‘wash TR’
i	<i>ka-teg-or</i>	‘tremble’	<i>e-tex</i>	‘hit’
j	<i>ka-jug-or</i>	‘interview’	<i>e-jux</i>	‘see’
k	<i>ka-nap-or</i>	‘mingle’	<i>e-nap</i>	‘be in same place’

In addition, Cobbinah (2013:219) observes that for Gubëeher, the few verb stems that do *not* form verbal nouns in *bu-* (equivalent of Kujireray *e-*) are all intransitive. In Kujireray, the very few stems for which a verbal noun in *e-* is not accepted, all form their verbal noun in *ka-*. These are shown in Table 91.

Table 91 Stems that do not form verbal nouns in *e-*

a	<i>ka-poso</i>	‘wash oneself’	<i>e-pos</i>	‘wash’
b	<i>ka-milo</i>	‘shave oneself’	<i>e-mit</i>	‘shave’
c	<i>ka-robo</i>	‘sit down’	<i>e-roben</i>	‘sit CAUS’
d	<i>ka-maṅor</i>	‘love each other’	<i>e-maṅ</i>	‘love’
e	<i>ka-lumbo</i>	‘warm oneself’		
f	<i>ka-kofen</i>	‘sleep’		
g	<i>ka-lec</i>	‘weave straw’		
h	<i>ka-wa</i>	‘harvest palm wine’		

An examination of these forms provides further evidence that *ka-* has associations with reduced transitivity. Of the eight verbal nouns, (a-f) are all intransitive. Furthermore, (a-e) all feature valence reducing morphology; either middle suffix *-o*, or reciprocal *-or*. Of these, only (e) is not attested in a corresponding transitive form. The forms in (g-h) are putatively transitive – there is a distinct Theme participant in the event structure, that is realizable in a bivalent construction. However, in both cases the identity of the Theme is strongly associated with the meaning of the verb to the extent that it is entirely predictable; *e-lec* ‘weave straw’ can only have *e-ñorol* ‘straw’ as its Theme, *ka-wa* ‘harvest palm wine’ can only have *bu-nuh* ‘palm wine’. As such, to overtly express the Theme participant is to introduce redundancy and therefore it is probably the case that these stems are used in monovalent constructions the majority of the time.

There are cases where there is a definite difference in meaning between the *e-* and *ka-* verbal nouns for a given stem, showing that the noun class prefixes, individually and in opposition, contribute a significant degree of meaning. In these cases the *ka-* form is invariably more specialized, which may lead to reduced valence as a result of the Theme participant being understood as part of the semantics of the verb. For example the stem *bet* can form verbal nouns in *e-* and *ka-* to form verbal nouns meaning ‘put down’ and ‘lay egg’ (of a bird) respectively. Of these, the latter is more highly specified for meaning, and the Theme is fully predictable.

A further simple, but non trivial observation is that all stems forming verbal nouns in this noun class denote dynamic situations. Although these may not necessarily be telic, insofar as having a specified endpoint, Croft (2012:60ff) points out that even activities that are

semantically atelic are probably conceptualized as coming to an end at some point; one cannot, say, dance indefinitely in the same way that one can be intelligent or beautiful indefinitely. Furthermore, it may be posited that for dynamic situations, actions are more easily individuated, unlike the homogenous segments of state type situations. That is to say, even if they are not bounded semantically, at a conceptual level they are more bounded, or individuated, than state type situations. Since the system has recourse to noun class prefixes with strong semantics of unboundedness, such as *mu-* and *ma-*, or non-individuation like *ba-*, it is unlikely to select a prefix with strong associations with boundedness to create verbal nouns for colours or states. This draws attention to the fact that the classes are operating in a kind of polysemous system where not only the classes themselves, but the oppositions between them are meaningful (see Hendrikse 2001). It also draws attention to the fact that verbal nouns participate in the noun classification system in a somewhat different way to prototypical nouns due to the inherent differences in conceptual representation of entities and events. Different types of events are classified according to oppositions between individual noun classes, but the events themselves do not enter into the same type of paradigmatic relations observed in the nominal domain.

5.1.3 Verbal nouns in *ba-*

In 4.4 above it was shown that *ba-* is a noun class prefix that is used to mark collectivity in triadic paradigms. Many insects, young animals and artefacts such as beads all form a collective noun in this prefix, as part of a triadic paradigm. It is also pertinent to the discussion at hand that when a stem forms a collective noun in this prefix, that is likely to be the citation form for that noun stem. That is to say, for the type of nouns that are compatible with this noun class prefix, the collective construal is likely to be the most salient. These sorts of entities, while they can be conceptually individuated, are most often encountered in a collective form, where the component entities are not particularly individuated. There is also a monadic paradigm *ba-* which is associated with mass semantics. The semantic values of collectivity and mass are united at a higher level of abstraction by the property of unboundedness. It will be shown in this section that this value can also be invoked to account for the formation of verbal nouns in this noun class prefix. Verbal nouns in *ba-* overwhelmingly denote either events associated with agriculture and domestic life, or qualities and states. It will be shown that these two ostensibly unrelated groups do in fact exhibit similarities with regards to their conceptual structure, which can be characterized by a property of unboundedness.

The first set of verbal nouns in *ba-* all denote events that are all highly salient in the socio-cultural context in which Kujireray is spoken. They denote actions to do with agricultural

and domestic tasks. These are shown in Table 92.

Table 92 Agricultural and domestic work verbal nouns in *ba-*

a	<i>ba-li</i>	‘build dam’
b	<i>bě-ñěj</i>	‘do laundry’
c	<i>ba-ñocen</i>	‘tread grain’
d	<i>ba-noŋ</i>	‘mow’ (with scythe)
e	<i>ba-pikor</i>	‘chop up’
f	<i>ba-rab</i>	‘turn earth’
g	<i>ba-tekul</i>	‘clear earth’
h	<i>ba-tot</i>	‘gather’ (grains, beans etc.)
i	<i>ba-wutul</i>	‘build ridges’ (in paddy)
j	<i>ba-hac</i>	‘clear ground’
k	<i>ba-hul</i>	‘deroot’
l	<i>ba-wu</i>	‘sweep’
m	<i>ba-ganjul</i>	‘cultivate’ (particular method, now obsolete in Brin)
n	<i>ba-fi</i>	‘sew’
o	<i>bě-fěsul</i>	‘weed’

Assuming that the semantics of unboundedness that manifest in values of collectivity or mass in the nominal domain also apply to verbal nouns, it is pertinent to ask how this prefix elaborates a stem representing a situation. It is posited that in the verbal domain *ba-* is associated with a value of pluractionality. It is important, however, to clarify how this value is understood, as pluractionality subsumes a number of notions. One potential interpretation is that all the events denoted by these forms typically consist of a fairly simple action, repeated over and over again. For example, sewing consists of repeating the action of threading a needle and cotton in and out of a garment; stamping rice consists of a large and indefinite number of stamping actions to separate the husk from the grain; turning the earth

(to create the ridges and furrows of the rice paddy) consists of repeatedly inserting the shovel into the earth and turning it over. Thus it would be tempting to infer that this almost inherent pluractionality is the motivation for the formation of verbal nouns in *ba-*.

However, such an analysis presents certain problems; if the verbal noun in *ba-* denotes a plurality of the individual component actions, then by analogy with the nominal domain, where the *e-/ba-* opposition marks a singular/collective distinction, the logical inference is that the *e-* verbal nouns for these verb stems would denote just one, non-repeated semelfactive instance of the particular action. That is to say *e-fi* ‘sew’ (as opposed to *ba-fi*) would refer to just one ingress and egress of the needle and thread, *e-far* ‘turn earth’ would refer to just one cycle of motion of the shovel to turn just one clod of earth, and so on. This is clearly not the case, indeed even trying to conceive of these events is somewhat nonsensical – people who sew generally make more than one stitch at a time, and it would be very peculiar to travel all the way to your rice field to turn just one clod of earth. Similar observations hold for all the activities in Table 92.

It is posited that the more relevant fact that motivates the formation of these verbal nouns in *ba-* is that these are all events that take place extremely regularly. Over one cycle of cultivation, the men and women will descend to the rice fields countless times to perform the duties required. Sewing and sweeping too are activities that are carried out day after day. In this sense also they can be conceived of as having pluractional semantics since habitual reference is also clearly related to pluractionality (Goldberg 2005, Newman 1990). Under this interpretation it is therefore more coherent to posit that the *e-* form may be used to refer not to one semelfactive motion, but to one particular episode of the action, one outing to the rice field, one session of sewing etc. This corresponds to the fact that the *e-* form is most likely to be used in a progressive construction which necessarily refers to one specific instance of an event (see 5.2.2 above). The converse objection to this analysis would be that as we have seen the non-default *ba-* form is used also in progressive forms when the speaker is referring to one episode of the action. This however, is easily explained from a usage based perspective – if the *ba-* form is the most used in speech, it may become reanalysed as the only, or at least most common, choice (Goldberg 2005).

Furthermore, it is possible that while the preferred form for these stems is in semantically motivated *ba-*, a form in *e-* is available purely by virtue of the productivity of this prefix. When pressed to posit a meaning for this default form, speakers, constrained by their knowledge of the semantics of class *e-*, and some metalinguistic knowledge of the notion of number, interpret it not as meaning one single component action, but a single episode of this type of activity. These observations are further evidence for the fact that verbal nouns

participate in the noun classification system in a different way to prototypical nouns. The distinction between *e-* and non *e-* verbal nouns does not represent the same sort of semantic oppositions (i.e. number) that are observed in the nominal domain. Indeed, it is argued that the native speaker intuition that *e-* verbal nouns are ‘singular’ where *ba-* verbal nouns (for the same stem) are ‘plural’, is testament to the cognitive reality of the paradigm and the analogies existing between the conceptualizations of entities and situations. The singular/collective opposition in *e-/ba-* is so strongly entrenched in the nominal domain that speakers consciously attempt to analogize it to the verbal domain.

These facts show that there is indeed an analogous link between nominal *ba-* and verbal *ba-*, although this link is of a slightly different nature to the rather simplistic scenario described above. It is clear that, while the inventory of noun classes available for the formation of verbal nouns is the same as the one used for prototypical noun formation, and there are significant correspondences between the two systems (indeed, to the extent that it is not always possible to determine whether an item should be classified as a verbal noun or not) the shape of the classification system for verbal nouns is of a slightly different shape, due to the different conceptual ‘shape’ of concrete entities and events. While many parallels can be drawn between the ways humans conceptualize entities and events (specifically the latter in terms of the former), there are bound to be crucial differences. Indeed, it is claimed that the asymmetries between paradigms in the nominal and verbal domains are indicative of these conceptual differences. The somewhat reduced participation of verbal nouns in the system reflects the fact that while we may reify events, they are still not lined up and counted in the same way that concrete entities are.

Nouns in *e-* and *ba-* in the nominal domain represent a distinction between singular and collective. These labels do not represent mere inflectional syntactic categories but represent two of the configurations in which such entities are encountered in the real world that are particularly salient to human cognition. The domain LOUSE contains a conceptualization of one single louse as an individuated entity, as well as a large collective number of lice, within which configuration the individuals and their boundaries are significantly backgrounded. Apart from the obvious distinction in the numbers of lice involved, there is a difference in the cognitive representation, or construal, of the entities involved, specifically a difference in granularity. Compare the representation of a prototypical noun in paradigm *e-/si-/ba-*, shown in Figure 17, with the geometric representations of a verbal noun in *e-/ba-*, shown in Figure 18.

Figure 17 Alternating construals of *halanga* LOUSE

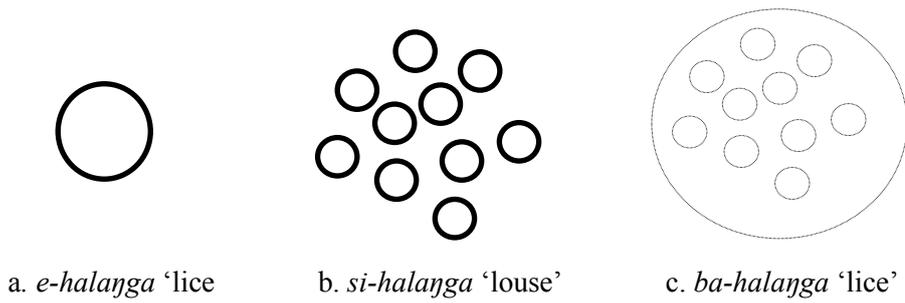
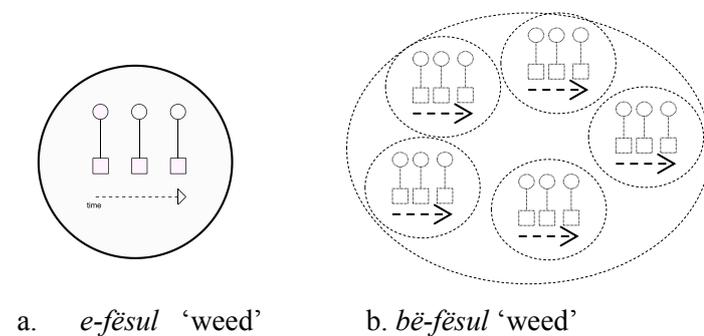


Figure 18 Alternating construals of *fěsul* WEED



In Figure 18a, although the event is summarily scanned in order to allow conceptual manipulation, as indicated by the solid surrounding circle and the dashed line representing the passage of time, the participants and the subevents are nevertheless fairly prominent in the conceptual representation. The event structure is therefore retained, which results in syntactic behaviour such as the obligatory expression of Theme participants (see 5.2.1 below). In Figure 18b, just as for the conceptualization of *ba-halanga* in 0c, the participants and subevents are ultimately retrievable – it is part of the conceptual frame represented by *fěsul* that the situation involves one human entity acting on a botanical entity. However, the prefix *ba-* elaborates the stem to profile the portion of the domain where this is a habitual enterprise. The fact that there are many instances of the event in the representation means that these are less profiled, as represented by the dashed lines of the individual events. The distinction is akin to that drawn between ‘leaves’ and ‘foliage’, which amounts to a difference in construal and of granularity (Croft 2012:67). With a coarse-grained granularity such as that in Figure 18b, it is also easy to see why *ba-* verbal nouns are associated with non-specific reference. Since the form refers to many instances of an event, with no one instance profiled, the reference is necessarily to the kind of event in general (although it is also posited that these forms become dominant to the extent that they may also express

specific reference).

The second class of verbal nouns in *ba-* are those associated with stative rather than dynamic situations as illustrated in Table 93.

Table 93 Quality and state verbal nouns in *ba-*

a	<i>ba-tiit</i>	‘smallness’
b	<i>ba-uŋ</i>	‘wideness’
c	<i>ba-sum</i>	‘goodness’
d	<i>ba-ŋiŋ</i>	‘ferocity’
e	<i>ba-kooŋ</i>	‘rightness, correctness’
f	<i>ba-lil</i>	‘heaviness, slowness’
g	<i>bě-jěl</i>	‘bigness, strength’

This is of interest since the situations represented by these stems are inherently intransitive and may occur exclusively in monovalent constructions, correlating with the observation that *ba-* verbal nouns of transitive stems (and indeed other non *e-* verbal nouns) are able to occur in monovalent constructions whereas their *e-* counterparts are not. Furthermore, in the case of these state-denoting verbal nouns, consultants are far less accepting of the *e-* form than with dynamic verbs⁵³.

It is claimed that for the dynamic verb stems shown in Table 93 above, the verbal nouns in *e-* profile a fine-grained conceptualization of the situation, complete with event structure, and are thus appropriate for making specific reference to an instance of the action. The forms in *ba-* represent a more coarse-grained view of the event, naming it as a generic activity (while in theory such a process should be available for any situation, the fact that only certain stems form verbal nouns in *ba-* is a result of the high degree of socio-cultural salience of these activities, the fact that they actually are performed so regularly that the boundaries between events are cognitively less relevant). The *ba-* form evokes the concept

⁵³ In fact, the only context where *e-* verbal nouns for these stems have been spontaneously provided, and indeed seem to be preferred, are in comparative constructions. The semantic motivation for this is a topic for future research.

of the situation as a habitual activity, thus making this form suitable for naming the situation in a generic way.

Furthermore, the coarse-grained construal of the dynamic event denoting *ba-* forms can be compared to the cognitive representation of a state. The pluractional nature of the dynamic event-denoting verbal nouns is such that the individual event structure, including the Theme participant and the change of state, is not prominent; indeed, even the individual instances are not profiled. In the same way, the cognitive representation of a state has only one participant, and the structure is rather flat, not involving change. Cognitively speaking, states and qualities are inherently continuous situations with no internal structure, and the agricultural practices, while consisting of many small repeated actions, are construed as on-going homogenous activities. Conversely, the relative incompatibility of stems representing states with *e-* is to be predicted. It is claimed that *e-* verbal nouns are associated particularly with specific (as opposed to non-specific) reference, and states do not have instances.

Related to this is the fact that *ba-* is also associated with the manner nominalization construction *ba-V-er*. The construction *ba-V-er* is a fully productive construction that can be used to form a verbal noun from any stem with verbal potential (represented in the formula by V). Equivalent constructions are attested in Mof Ēvi Joola varieties, and more remarkably, Baïnouk Gubëeher, which although spoken in the neighbouring village, is only distantly genetically related to Kujireray, thus providing evidence for the pervasive influence of contact effects on these languages. It has two main functions in Kujireray – formation of adverbials, and of manner nouns. Indeed, this construction appears to be in competition with other verbal nouns for a manner reading.

Bassène (2007:134-5) labels the equivalent construction in Banjal the ‘gerondif’ and provides examples showing the construction in adverbial function. The construction also has this function in Kujireray.

(284)	<i>wa</i>	<i>a-ti-i</i>	<i>a-puma</i>	<i>a-lar-e</i>	<i>asila</i>
	what	brother-2S.POSS	AGR-young	3S-do-PERF	3S
	<i>ba-tiñ-er</i>	<i>s-a</i>	<i>këbujom</i>	<i>a-ban</i>	
	CL:ba-eat-GER	AGR:s-CONN	morning	3S-finish	
	‘What did your little brother do after eating breakfast?’				field notes

The form can also be used as a manner noun.

(285) *ba-tiñ-er-ol* *bu-ëër-o*

CL:ba-eat-HAB-3S.POSS AGR:bu-beautiful-MID

‘His manner of eating is good.’

field notes

Both the adverbial function and the manner function are coherent with an analysis that this is the same prefix used in the formation of both prototypical nouns and verbal nouns, and which carries semantics of unboundedness. It was shown above that the collective semantics of *ba-* in the nominal domain are analogous to habitual semantics in the verbal domain due to their properties of unboundedness in the spatial and temporal domains respectively. A manner noun is inherently associated with habituality – to comment on someone’s manner of doing something, they must be doing that for longer than an instant, or on more than one occasion. When in adverbial function, as in (284) above, the form has stative semantics; it expresses a sort of background activity that held during the event denoted by the matrix verb. As shown in section, habituality and stativity are in fact related conceptually by the property of unboundedness.

A final observation concerns the identity of the the suffix *-er* in this construction. Bassène (2007:134) labels forms in this suffix in Banjal ‘gerondif’, although he also presents forms, ostensibly with the gerundive function, but without this suffix. The identity of this suffix in Kujireray remains a topic for future research. However, it is remarked that there is a similar morpheme in the negative habitual suffix *-erit* (see 3.4.4 above). It seems plausible to posit that *-it* expresses the negation in this construction, as we see *-ut* as a negative marker in other, non habitual contexts (see 3.4.5). It would seem reasonable, therefore, to hypothesize that the suffix *-er* may be associated with habitual semantics.

5.1.4 Verbal nouns in *si-*

In the nominal domain class *si-* forms part of the most populous paradigm *e-/si-* (see 4.3.6 above). The class of stems forming verbal nouns in this class is considerably smaller and less productive, commensurate with the observation that verbal nouns do not interact in the noun classification in a directly parallel way to prototypical, concrete entity denoting nouns, due to fundamental differences in the conceptual representations of their referents. The verbal nouns thus far attested in this *si-* are shown in Table 94.

Table 94 Verbal nouns in *si-*

a	<i>si-pinor</i>	‘think’
b	<i>si-tehun</i>	‘converse’
c	<i>si-oto</i>	‘dream’
d	<i>si-ceŋgor</i>	‘debate, discuss’
e	<i>si-piñor</i>	‘forget’

In the nominal domain, *si-* is a plural class marker, almost always associated with entities that form a singular in *e-*. The class of stems that form a verbal noun in noun class *si-* is small, but also semantically coherent. Stems in this class are associated with psychological and social activities to do with verbalising ideas and opinions. It could be argued that these types of activities are inherently pluractional. The acts of thinking and dreaming consist of a succession of linked cognitive processes; discussions and arguments consist of a continuous exchange of ideas.

5.1.5 Verbal nouns in *bu-*

In the nominal domain class *bu-* is associated with various paradigms, and with various semantic domains. Nevertheless generalizations can be made with respect to the semantic domains with which it is associated (see chapter 4). For example Sagna (2008:235ff) attributes the presence of entities such as trees and constructed entities to a more schematic semantics of assemblages. In addition, *bu-* can be used with augmentative function. It was also discussed chapter 4 that contact effects seem to be evident in the semantic structure of class *bu-* and the paradigms in which it participates.

Bu- is one of the most populous classes for the formation of verbal nouns. Ostensibly, the verbal nouns in this class are more semantically diverse than those in other classes. However, as in the nominal domain, generalizations can be found. For example, as for *ba-*, verbal nouns for a significant number of stems associated with states are found in *bu-*, although whether there are any semantic distinctions between these states and the ones forming verbal nouns in *ba-* is unclear at this time.

Table 95 Stative verbal nouns in *bu-*

a	<i>bu-topo</i>	‘deafness’
b	<i>bu-lëput</i>	‘nastiness’
c	<i>bu-gai</i>	‘tiredness’
d	<i>bu-atet</i>	‘laziness’
e	<i>bu-sojet</i>	‘stupidity’
f	<i>bu-ŋoet</i>	‘ugliness’
g	<i>bu-rim</i>	‘darkness’
h	<i>bu-lëlfët</i>	‘length’
i	<i>bu-fël</i>	‘old age’
j	<i>bu-roŋ</i>	‘life’
k	<i>bu-cin</i>	‘residence’
l	<i>bu-ui</i>	‘exile’

For stems not associated with stative semantics it is an often encountered speaker intuition that the alternation between *e-* and *bu-* forms for a given stem can be attributed to a difference in the number of participants – the form in *e-* denotes an action carried out by one person, while the form in *bu-* typically involves multiple (minimally two) participants. While, this intuition is not in fact found to play out systematically in the grammar as verbal nouns in *bu-* can occur with singular subjects and objects, it can certainly be claimed that multiple participants are involved in the typical denotation of the event. For example climbing (trees) is a highly culturally salient activity, carried out to harvest palm wine, leaves and fruits, and carry out maintenance work, and an individual would be likely to climb a number of trees in a day to those ends. Verbal nouns in *bu-* to which such a generalization can be applied are shown in Table 96.

Table 96 Multiple participant verbal nouns in *bu-*

a	<i>bu-yajet</i>	‘collect wood’
b	<i>bu-rosih</i>	‘hunt/collect shellfish’
c	<i>bú-těj</i>	‘fight’
d	<i>bu-ñemor</i>	‘chat up’
e	<i>bu-emor</i>	‘meet’
f	<i>bu-jator</i>	‘walk around’
g	<i>bu-penor</i>	‘have sex’
h	<i>bu-nimo</i>	‘marry’
i	<i>bu-feeno</i>	‘marry’

A related observation is that the alternation between some verbal nouns in *e-/bu-* is also associated a slight change in meaning, that is also to do with the number of participants.

Table 97 Meaning changes in verbal stems with verbal nouns in *e-/bu-*

form in <i>e-</i>	gloss	form in <i>bu-</i>	gloss
<i>e-ficor</i>	‘share’	<i>bu-ficor</i>	‘distribute’
<i>e-lar</i>	‘do’	<i>bu-lër</i>	‘work’
<i>e-taj</i>	‘struggle’	<i>bu-tē</i>	‘fight’
<i>e-simen</i>	‘slaughter’	<i>bu-simen</i>	‘sacrifice’

The forms in *e-* in the left-hand column have a meaning that is relatively neutral with respect to plurality of any participant. The verbal nouns in *bu-* on the other hand denote events that inherently contain some sort plurality. *Bu-ficor* denotes the act of distributing plural items to plural recipients; *bu-ler* entails doing a number of things in succession – to do just one thing would not count as work. While one can struggle with one thing, such as an abstract problem, *bu-tej* necessarily involves at least two people, and culturally speaking often many fighters and an audience. Similarly *bu-simen* ‘sacrifice’ within this culture implies that a

number of beasts are involved, or that a number of people are required to carry it out, particularly in the case of a pig or cow.

5.1.6. Verbal nouns in *mu-*

The paradigm *mu-* also contains just a few members. Two of these are words denoting some kind of mental capacity, both glossed here as intelligence, although there are no doubt semantic distinctions between the two. Notably, all colour terms (i.e. those denoting the colour as an abstract property, rather than attributing that colour to another entity) are formed in this paradigm.

Table 98 Verbal nouns in *mu-*

a	<i>mu-jengulo</i>	‘intelligent’
b	<i>mu-jax</i>	‘intelligent’
c	<i>mu-gib</i>	‘greedy’
d	<i>mu-jugax</i>	‘red’
e	<i>mu-fifulut</i>	‘blue’
f	<i>mu-lenax</i>	‘black’
g	<i>mu-tuai</i>	‘white’

It has been shown in chapter 4 that nouns in paradigm *mu-* denote liquids. It is posited that this semantic domain can be further schematised to semantics of mass, or non-boundedness. These are not entities that exhibit, as part of their prominent cognitive representation, fixed and definite boundaries. They cannot be counted, indeed in the prototypical nominal domain, *mu-* is one of the few classes that appears resistant to participation in crossed paradigms – the unbounded nature of these entities is persistent in their mental representation (see also section 5.1.7 below).

5.1.7 Verbal nouns in *ma-*

As for *mu-*, only a very small number of verbal nouns are formed in *ma-*. These are shown in Table 99.

Table 99 Verbal nouns in *ma-*

a	<i>ma-boi</i>	‘defecate’
b	<i>ma-sur</i>	‘urinate’
c	<i>më-ti</i>	‘fart’
d	<i>më-jul</i>	‘blow nose’
e	<i>ma-rem</i>	‘drink’

There is a very clear semantic domain represented by this group, namely bodily functions that have to do with some sort of fluid.

As in the prototypical nominal domain, the distinction between verbal nouns in *mu-* and *ma-* is rather fuzzy. It is argued that the use of both classes in the verbal domain is motivated on the basis of semantics of non-boundedness. However, in the case of *mu-* it is the situation itself that is unbounded, whereas in the case of *ma-* it is an entity associated with the situation that motivates the membership.

As is the case for stems that form verbal nouns in *mu-*, speakers are somewhat reluctant to use verbal nouns in *e-* for these stems. It is posited that this is because the semantic domains associated with these respective noun class prefixes are mutually incompatible. The situations or entities associated with the stems in Table 98 and Table 99 above, which motivate the formation of their verbal nouns in these prefixes, are inherently unbounded, whereas class *e-* is associated with individuation and boundedness.

5.1.8 Verbal nouns in *fu-*

The stems forming verbal nouns in *fu-* are varied in terms of semantic domains.

Table 100 Verbal nouns in *fu-*

a	<i>fu-tiñ</i>	‘eat’
b	<i>fu-rësor</i>	‘play’
c	<i>fu-nom</i>	‘buy’
d	<i>fu-nomen</i>	‘sell’
e	<i>fu-baŋ</i>	‘keep’
f	<i>fu-lip</i>	‘search’
g	<i>fu-lo</i>	‘fall’
h	<i>fu-wasen</i>	‘visit fetish’
i	<i>fu-këënum</i>	‘pay attention, respect’
j	<i>fu-fël</i>	‘old age’

It was shown in chapter 4 that the noun class *fu-* has strong associations with nouns denoting locations. In particular, it can be used to derive location nouns from stems that in a verbal context denote an action associated with that location – indeed the location exists purely to facilitate the action. It is possible that this is the original source of some of the forms in Table 100 above. The forms in (a-e) in particular denote activities that may be associated with a special place (although note these forms do not presently have this locational meaning).

5.1.9 Verbal nouns in *ja-*

Table 101 shows the verbal nouns attested in *ja-*.

Table 101 Verbal nouns in *ja-*

a	<i>ja-mbal</i>	‘fish with net’	
b	<i>ja-feh</i>	‘fish with barrage’	
c	<i>ja-bet</i>	‘fish with line’	< cf. <i>e-bet</i> ‘put down’
d	<i>ja-ya</i>	‘fish with spear’	< cf. <i>e-ya</i> ‘stab, stake’
e	<i>ja-baŋen</i>	‘trap’	
f	<i>ja-mux</i>	‘kill’	
g	<i>ja-mugoro</i>	kill oneself, each other’	
h	<i>jë-ëri</i>	‘beauty’	

This verbal noun paradigm is of particular interest with respect to the effect of language contact on the structure of the classification system. As discussed in chapter 4, the noun class *ja-* is virtually unattested in Kujireray, forming a noun in one sole item, *ja-cer* ‘uncooked rice.’ The hypothesis that this form is a reflex of the diminutive class *ji-* in combination with a post-prefix is rejected not only on the grounds that this is the only prototypical noun form in this class, but that this is a class particularly associated with agriculture (particularly riziculture) in the neighbouring language Baïnounk Gubëeher. The placement of class *e-* in brackets in the heading of this section is due to the fact that a form in *e-* is not accepted for some of these of these stems to obtain the meaning provided in the examples in the left hand column. The stems in (c-d) denote another, related type of action in an *e-* verbal noun, and therefore the more specialised meaning is not available for these forms. This again illustrates the semantic contribution of the noun class. Even when a noun class is borrowed (or maybe especially when it is borrowed) it may be used with stems already existing in the language to create new forms. This evidence of creative word formation also supports the hypothesis that stems represent somewhat general and schematic meanings, which are available to elaboration by various morphosyntactic devices. For example the core meaning of the stem *bet* is to place something from a higher position to a lower one. In an *e-* verbal noun, there is no further semantic specification and the meaning is simply ‘put down’, whereas in class *ja-* this meaning is interpreted within the sphere of fishing practice associated with the class and the eventual meaning is ‘fishing with a line’. Similarly, the core meaning of *ya* (i.e. the meaning that is shared by all surface forms in this

stem) is something like ‘apply force with a fast (downward) movement’. Speakers usually translate such a form as ‘stab’ or ‘stake’ and it is often associated with an entity such as a stick.

5.1.10 Verbal nouns in *ku-*

a	<i>ku-loden</i>	‘greet’
b	<i>ku-saaf</i>	‘greet’
c	<i>ku-cinih</i>	‘request’
d	<i>ku-boñ</i>	‘send’
e	<i>ku-fooñ</i>	‘sing’
f	<i>ku-jel</i>	‘insult’
g	<i>ku-bejo</i>	‘tease, do wrong’
h	<i>ku-licen</i>	‘splash, baptise’
i	<i>ku-tex</i>	‘hit’
j	<i>ku-rum</i>	‘bite’

Semantic parallels can be drawn between verbal nouns in this noun class prefix and those in *si-*. Situations denoting verbal communication are strongly represented in this paradigm. It could be argued that the events of verbal communication in this paradigm are more directed than those in *e-/si-*, in that they have a particular purpose and can be conceived of as having an endpoint.

Interestingly, in realization under cessation tests, *tex* ‘hit’ was identified by two speakers as being particularly ambiguous – it could be telic if the interpretation was of one sole blow, but atelic if one assumed a sustained beating. Presumably this is potentially the case for many actions – it is unclear why this distinction should particularly stand out for speakers of Kujireray. It could potentially be a case of language affecting cognition – since the verbal noun is formed in a noun class associated with plurality, there is an association with a pluractional event. Alternatively, the formation of a verbal noun in *ku-* may reflect that fact that a pluractional beating event is more cognitively salient than a single hitting event. The situations denoted by these verbal nouns all have a dimension of plurality insofar as all they

all require a minimum of two participants; an Agent (or Effector) and a Theme.

5.1.11 Summary of verbal nouns in the noun classification system

In this section I showed that the formation of verbal nouns in various noun class prefixes is semantically motivated in a comparable, though not identical way, to the formation of nouns denoting concrete entities as described in the previous chapter. It was shown that the classes of verbal nouns in various noun class prefixes are motivated along semantic parameters such as plurality (with respect to both event pluractionality and participants), habituality, transitivity and stativity. As well as motivating these classes along semantic parameters within the domain of situations, I discussed how, at a higher level of abstraction, the semantic contribution of noun class prefixes in the nominal and verbal domains can be united by the schematic categories of boundedness and unboundedness.

5.2 Morphosyntax of verbal nouns

In the following I examine the morphosyntactic behaviour of Kujireray verbal nouns. Goldberg (2003:7) observes the “strong correlation between the meanings of verbs and the syntactic frames they can appear in”, and following this observation, I assume that where morphosyntactic behaviour between the two verbal nouns of a given stem differs, this is an overt manifestation of semantic differences between the two. Although the stem involved represents the same conceptual domain (i.e. a situation, along with all typically associated participants, attendant socio-cultural knowledge etc.) in both forms, the portion of the domain that is profiled is different for each verbal noun. In particular, the verbal noun in *e-* profiles an actual instance of a situation, conceptualized as unfolding through time. As such the event structure is foregrounded in the construal and the verbal noun retains certain verbal properties such as (partial) argument structure and adverbial modification. For non *e-* verbal nouns, generally speaking, the concept profiled is a more general picture of the situation - the situation is named in a generic way, either as a socio-culturally salient type of activity, or someone’s manner of doing something. As such the conceptual representation of the situation is more coarse-grained, event structure is not profiled and the verbal noun therefore takes on more nominal properties, such as compatibility with possessive constructions and adjectival modification.

5.2.1 Expression of Theme participant

Although the analysis is somewhat confounded by widespread object omission in normal speech, evidence from elicitation tasks show that for verbal nouns in *e-*, where the stem represents a transitive situation, an internal argument corresponding to the affected

participant is obligatory. For example, while the construction in (286) is fully acceptable, when speakers are provided with the construction in (287), the response is invariably the question *enon wa?* ‘mowing what?’ indicating that the bare *e-* form is incomplete without overtly specifying the Theme participant.

(286) *umu ni ba-non*
 COP.AGR:m LOC CL:ba-mow
 ‘He is mowing.’⁵⁴

(287) *??umu ni e-non*
 COP.AGR:m LOC CL:e-mow
 intended: ‘He is mowing.’

The formation of the verbal noun in *ba-* affords this form semantic features of pluractionality and habituality which are associated with non-specific reference (see 5.1.3 below).⁵⁵ This reduces the level of profiling of the Theme participant, which allows it to remain unexpressed in (286).

⁵⁴ Many examples in this chapter are given without source references. This is due to the fact that they were gathered using the specialized syntactic tests and questionnaires, and hence the same forms were provided by a number of speakers.

⁵⁵ The prefix *ba-*, by nature of its association with pluractional semantics (by analogy with the collective semantics in the nominal domain) means this form is associated with generic reference. However, it seems that the reference in (286) is to a specific instance of mowing – it is argued that this is due to the fact that the *ba-* form, due to frequency effects, has become the default verbal noun for this stem in Kujireray and can be used for both specific and generic reference, depending on the construction, whereas the *e-* form tends to be used only for specific reference. In fact, even the use of a generic term for the event is not incompatible with a specific reference construction. It is suggested that the distinction between the constructions in (286) and (287) maybe something akin to the difference between English sentences ‘he is doing the washing up’ and ‘he is washing up (the dishes)’ respectively.

However, while it is not necessary to express the Theme in the non *e-* verbal noun construction, it is not disallowed. The Theme of the mowing event can be expressed in constructions using both a non *e-* or *e-* verbal noun.

(288) *umu ni ba-noŋ ka-kin-ol*
 COP.AGR:m LOC CL:ba-mow CL:ka-field-3S.POSS
 ‘He is mowing his field.’

(289) *umu ni e-noŋ ka-kin-ol*
 COP.AGR:m LOC CL:e-mow CL:ka-field-3S.POSS
 ‘He is mowing his field.’

It is posited that the obligatory expression of the Theme participant for the verbal nouns in *e-* is due to the fact that the event structure is profiled and thus argument structure retained. However, for the non *e-* verbal noun construction in (288), the presence of a noun – *ka-kin-ol* ‘his field’ – denoting the Theme participant also seems to indicate the presence of argument structure. It would be unsatisfactory to claim that event structure (and thus argument structure) is *optionally* available to non *e-* forms, which may retain or drop it as required. It is preferable to posit that while the surface form of the *e-* and non *e-* constructions in (288) and (289) are ostensibly identical, in fact the syntactic structures differ in some respect. In fact this analysis is plausible, since the object construction and the possessive construction in Kujireray are formed in the same way. A nominal object is placed after the verb in a sentence (see 3.2.1.2 above), and a possessor may be placed directly after the possessee (see 3.3.15 above). Other than in verbal noun constructions no ambiguity arises, because the object construction contains a full, inflected verb, and in the possessive construction both terms are full nouns denoting concrete entities. It is posited that in the constructions above, only those containing verbal nouns in *e-*, as in (287) and (289), constitute true examples of event structure profiling, manifested in argument structure retention, where the semantic relation is expressed using the object construction. For the *ba-* forms in (286) and (288) it is posited that the relation between the verbal noun and the subsequent noun is in fact a relation of possession.

This position is supported by the fact that, for non *e-* verbal nouns, the postposed noun need not denote the Theme participant; it may also denote the Agent participant as in (290), an option that is not available for the *e-* verbal noun in (291). For *e-* verbal nouns (that have a non *e-* counterpart) the postposed noun may only denote the Theme.

(290) *ba-noŋ* *Raphael bu-ëër-o*
 CL:ba-mow Raphael AGR-beautiful-MID
 ‘Raphael’s mowing is good.’

(291) **e-noŋ* *Raphael e-ëër-o*
 CL:ba-mow Raphael AGR-beautiful-MID

intended ‘Raphael’s mowing is good.’

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The syntactic slot after the non *e-* verbal noun is available to encode both the Agent and the Theme participants as it forms part of a possessive construction and as such is very flexible in terms of the type of relation it can encode, whereas a true object construction is much more semantically constrained (Taylor 1989:663). Real world knowledge and context resolve any ambiguity that may arise – in a construction such as that in (288), a field cannot be the Agent of a mowing event, and is a prime candidate for a Theme, thus the correct interpretation is reached. In (290), Raphael, as a human, is a likely candidate for Agent. Further discussion on the expression of external arguments in verbal noun constructions follows in the section below.

5.2.2 Expression of Agent participant

As shown above, for non *e-* verbal nouns⁵⁶ a postposed noun may also denote an Agent participant, whereas for verbal nouns in *e-* (which participate in the alternation) this option is not available. This is illustrated in (292) and (293) below. (293) is ungrammatical when the intended reading is that Clemence is the Agent of the sewing event; she can only be the Theme. Thus, the only available interpretation of (293) is the rather unusual situation of

⁵⁶ And *e-* verbal nouns with a) no non-*e* counterpart and/or b) denoting intransitive situations.

someone actually stitching into Clemence herself.

- (292) *ba-fi* *Clemence* *bu-ëër-o*
CL:ba-sew Clemence AGR:bu-beautiful-MID
'Clemence's sewing is good.'

- (293) **e-fi* *Clemence* *e-ëër-o*
CL:e-sew Clemence AGR:e-beautiful-MID
intended: 'Clemence's sewing is good.'

The same observations hold when the verbal noun forms a constituent with a noun denoting a Theme participant. In (294) below, the noun *u-juo* 'shirt' directly postposed to the non *e*-verbal noun *ba-fi* 'sewing', is interpreted as the Theme of the sewing event, by way of a possessive relation, as discussed in the previous section. The subsequent noun *Clemence* forms a possessive relation with the whole constituent, and thus the interpretation is 'Clemence's sewing of shirts'. This interpretation is not available for the *e*-verbal noun construction in (295). While a construction such as *efi u-juo e-ëër-o* 'sewing shirts is good', where *u-juo* 'shirts' expresses the Theme participant, is fully acceptable, the additional noun *Clemence* may not be interpreted as the Agent participant of the verbal noun complex *efi u-juo* 'sewing shirts'. Rather, it must form a constituent with *u-juo* 'shirts' such that *Clemence* is the possessor thereof. The natural interpretation of (295) would be translatable as 'sewing Clemence's shirts is good' (although note that this interpretation would also be available for (294), due to the flexibility of the possessive construction as opposed to that of the object construction).

- (294) *ba-fi* *u-juo* *Clemence* *bu-ëër-o*
CL:ba-sew CL:u-shirt Clemence AGR:bu-beautiful-MID
'Clemence's sewing of shirts is good.'

- (295) **e-fi* *u-juo* *Clemence* *e-ëër-o*
 CL:*e-sew* CL:*u-shirt* Clemence AGR:*e-beautiful-MID*
 intended: ‘Clemence’s sewing of shirts is good.’

These facts are analysed as further evidence that the argument structure of *e-* verbal nouns is retained, to the extent that all post-verbal nouns must be interpreted as part of the internal argument, thus forcing the interpretation of *Clemence* in (295) as the possessor of the shirts rather than the Agent of the sewing.

In non *e-* verbal noun constructions where an Agent is expressed through the possessive construction, as in (294) above, the verbal nouns can be interpreted either as a manner noun, expressing a meaning such as ‘the way Clemence sews shirts is good’ or as a kind of result noun, referring to the work or activity of the type denoted by the root, already carried out by the participant in question, translatable as ‘the sewing Clemence has done is good’. Both of these observations are commensurate with the observation that non *e-* verbal nouns exhibit more nominal characteristics than their non *e-* counterparts. A manner noun has generic properties, as it implies a generalization is being made over the way a participant carries out an action. As such its event structure is backgrounded and it loses verbal characteristics in the morphosyntax. A result noun is used to refer to a concrete entity in the world that is part of the conceptual domain represented by the stem. It is therefore unsurprising that it does not retain verbal properties.

The possessive construction involved in the expression of participants for non *e-* verbal nouns also allows the expression of a participant who is the Beneficiary of the action. This is further evidence that the juxtaposition constructions for *e-* and non *e-* verbal nouns are distinct in structure. See 5.1.4 below for further discussion of the expression of this participant type.

5.2.3 Adjectival and adverbial modification

As has been discussed in the previous sections, there is an asymmetry in the relative functions, and therefore morphosyntactic behaviour, of *e-* versus non *e-* verbal nouns. Verbal nouns in *e-* tend to retain part of their event structure, as they tend to be used to denote a specific instance, and therefore a more fine-grained profiling of the situation. Non *e-* forms are associated with a more generic view of the situation, although they are also compatible with constructions that have more specific reference.

Accordingly, non *e-* verbal nouns can vary between more nominal and more verbal behaviour, whereas *e-* forms (that exist in an alternation) stay on the verbal side. This is illustrated by the fact that non *e-* verbal nouns may be modified by both adverbs (invariable) and adjectives (subject to concord), whereas their counterparts in *e-* are modified by adverbs only. The examples below show that non *e-* form *ba-fî* is compatible with both adverbial modification, as in (296), and adjectival, as in (297), whereas its counterpart in *e-* is compatible only with adverbial modification, as in (298) and is unacceptable with adjectival modification, as in (299).

(296) *umu ni ba-fî mĕĕmĕx/nĕr*
 COP.AGR:m LOC CL:ba-sew much⁵⁷/ much
 ‘She is sewing a lot.’

(297) *umu ni ba-fî b-ĕĕmĕx*
 COP.AGR:m LOC CL:ba-sew AGR:b-big
 ‘She is doing a big load of sewing.’

(298) *umu ni e-fî mĕĕmĕx/nĕr*
 COP.AGR:m LOC CL:e-sew much / much
 ‘She is sewing a lot.’

(299) **umu ni e-fî y-ĕĕmĕx*
 COP.AGR:m LOC CL:e-sew much / much
 intended: ‘She is doing a big load of sewing.’

⁵⁷ Etymologically, this form is analysed as comprising the stem *ĕĕmĕx*, prefixed by the absolutive prefix *m-* associated with creating adverbial meanings (see 4.3.29). Since it is invariable in this adverbial function the form is simply glossed ‘much’ here.

(305) *ba-kec* *b-a* *William* *bu-ëër-o*
 CL:ba-write AGR:b-CONN William AGR:bu-beautiful-MID
 ‘William’s writing is good.’

Two out of the three consultants with whom the syntax of verbal nouns has been systematically tested allow constructions of this type. The third, who does not accept such constructions, explains that he finds the connector redundant and cacophonous. This may be an effect of the ambiguity in meaning of the non *e-* verbal nouns, as well as the variation exhibited in possessive constructions. While the connector *AGR-a* may be used to express a possessive relation between two entities, it is not the only construction available – simple possessee-possessor juxtaposition can be used for the same purpose. However, these constructions are not fully equivalent; an asymmetry exists between the two in terms of function. Table 102 (repeated from 3.3.15 above) shows that juxtaposition may encode both an inherent (such as body parts or family members), and non-inherent (such as material possessions) possession relation, whereas the *AGR-a* connector construction is available only for non-inherent relations.

Table 102 Assymetry between the two possessive constructions

	‘inherent’⁵⁸ possession relation	‘non-inherent’ possession relation
juxtaposition	<i>fu-how Damien</i> ‘Damien’s head’	<i>yaŋ Damien</i> ‘Damien’s house’
connector AGR-a	<i>*fu-how f-a Damien</i> intended: ‘Damien’s head’	<i>yaŋ y-a Damien</i> ‘Damien’s house’

When a verbal noun construction contains a noun denoting an Agent participant (in either the juxtaposition or connector construction), the verbal noun can be interpreted as a manner noun or as a kind of result noun, referring to the work or activity already carried out by the participant in question. For example, the Kujireray construction in (305) can be interpreted

⁵⁸ The term ‘inherent’, as opposed to inalienable, is chosen here deliberately to highlight the fact that the possession relation referred to is a conceptual one, not a grammatical one.

as ‘the way William writes is good’ or ‘the writing that William has done is good’. The variation in acceptability of the connector construction to express an Agent participant may be due to the fact that for some speakers the relation between the situation denoted by the verbal noun and the Agent is one of inherent possession (thus disallowing the connector construction), whereas for others it is non-inherent (so the connector construction is permissible). Alternatively, for some speakers the function of the AGR-*a* connector may be extended in this context to include expression of inherent possession relation. These matters are beyond the scope of the present research but are important to an understanding of verbal nouns in Kujireray and are identified as a topic for future research.

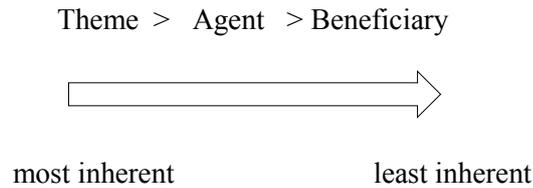
A consensus on acceptability of the connector AGR-*a* in verbal noun constructions occurs when the possessor of the verbal noun is not a direct participant in the event, but a Beneficiary or Goal as in example below. This is in keeping with the hypothesis that participants that are less semantically involved with the event should be better candidates for encoding via the non-inherent possession construction.

- (306) *ji-ban-e* *ka-tep* *k-a* *Raphael*
 2P.EXCL-finish-PERF CL:ka-build CD:k-CONN Raphael
 ‘We finished Raphael’s building work.’

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The example above was accepted by all consultants when the intended meaning of *katēp ka Raphael* was building work that was being done *for* Raphael, on his behalf, rather than building being done *by* Raphael. The data suggest that the variation as to which participants may be encoded using the AGR-*a* connector construction depends on which relations are considered inherent. It has been shown that a Theme participant cannot be encoded using this construction, that some but not all speakers accept an Agent, and all accept a Beneficiary. A hierarchy is therefore proposed that pertains to the degree of ‘inherentness’ a given participant has to the situation in which it participates. This is represented in Figure 19.

Figure 19 Inherentness of possession hierarchy



Further investigation of this hypothesis is identified as a topic for future research.

5.2.4 Negation

Compatibility with negation morphology is not an area where *e-* and non *e-* forms contrast, at least with conventionalized forms. However, the interaction between the negation morpheme *-ut* and the noun classification system reveals other effects that are illuminating as to the semantic contribution of noun class prefixes to verbal nouns.

For conventionalized verbal nouns – i.e. those that have been established as having some sort of lexical reality – compatibility with the negative morpheme *-ut* appears to be questionable. Speakers were often reluctant to produce such forms and tended to offer alternative constructions as translation alternatives for the French elicitation phrases – these are described below. There are no forms in the corpus of non-elicited data where a verbal noun is produced with a negative suffix. This marginality accounts for variation and uncertainty as to the acceptability of various forms. Some speakers would accept constructions consisting of a conventionalized verbal noun with a negative suffix *-ut* in some cases, whereas others refused them outright. Two cases provided by a speaker for *fu-tiñ* ‘eat’ are shown in (307) and (308). Note that the equivalent constructions in *e-tiñ* exhibited similar levels of questionable acceptability.

- (307) *fu-tiñ-ut* *fu-sum-ut*
CL:fu-eat-NEG AGR:fu-good-NEG
‘Not eating isn’t good.’

BRIN140228RW

- (308) *fu-tiñ-ut-i* *fu-kan* *me* *muni* *u-agen*
 CL:fu-eat-NEG-2S.POSS AGR:fu-do SUBORD COMP 2S-quick
e-hël-i
 CL:*e*-drunk-PASS
 ‘Your not eating made you get drunk quickly.’ BRIN140228RW

However, while conventionalised verbal nouns are problematic in negative constructions using *-ut*, these problems can often be resolved by using the same stem in a form with the prefixes *ba-* or *ka-*, even for stems where verbal nouns in these prefixes are otherwise unattested. Constructions such as those below are more readily accepted, indeed they are provided in preference to negative forms in the conventional verbal noun class prefixes for those stems.

- (309) *ba-tiñ-ut* *bu-jon-ut* *fu-tiñ/ *ba-tiñ*
 CL:ba-eat-NEG AGR:bu-good-NEG
 ‘Not eating isn’t good.’

- (310) *ka-paden-ut* *ku-jon-ut* *e-paden/*ka-paden*
 CL:ka-harvest-NEG AGR:ku-good-NEG
 ‘Not harvesting isn’t good.’ BRIN140220RW2

These facts are relevant to discussion of constructional meaning in Kujireray verbal nouns, and the semantics carried by noun class prefixes. Both of these prefixes are strongly associated with reduced transitivity semantically speaking (see 5.3.2 and 5.3.3 below). Negation is also strongly associated with reduced transitivity – since no situation actually occurs, there is necessarily no force-dynamic relation (Hopper and Thompson 1980: 287).

5.2.5 Summary of syntactic evidence

The syntactic facts show that *e-* forms retain more verbal qualities than non *e-* counterparts, and conversely that non *e-* verbal nouns exhibit more nominal morphosyntactic behaviour.

The differences between the two are summarized in Table 103.

Table 103 Syntactic differences between *e-* and non *e-* verbal nouns

<i>e-</i> verbal nouns	non <i>e-</i> verbal nouns
transitive verbs MUST express Theme	transitive verbs MAY express Theme
only Theme may be expressed	a range of participant types may be expressed
participants expressed by object construction	participants expressed by possessive construction
adverbial modification only	adverbial and adjectival modification

These syntactic differences are due to semantic differences between the two types of verbal noun. While both verbal nouns share the same stem, which represents the same conceptual domain, the contribution of the noun class prefix to the construction is such that the portion of the domain that is profiled is different. In the case of *e-* verbal nouns, the situation is viewed in a more fine-grained way, thus event structure is retained. For non *e-* verbal nouns the construal is more coarse-grained, the situation is named without profiling the particulars of event and participant structure. In the section below I explore some of the semantic factors that pertain to this distinction.

5.3 Questionnaire tasks

The data from the syntactic investigation presented above shows that non *e-* verbal nouns have more nominal characteristics and *e-* verbal nouns are more verbal. While this is commensurate with the hypothesis that *e-* forms are associated with specific reference, and the non *e-* forms with a more generic, naming function, further investigation is required to support this position, by examining the distribution of verbal nouns in Kujireray in various semantic functions.

As described in 2.4.4.2 above, the questionnaires were designed to test whether various syntactic or semantic parameters had any effect on a speaker's choice of an *e-* or non *e-* verbal noun. Both the implementation and the design of the task were based on the fact that, since there was so much variation – both inter- and intra-speaker – in the acceptability of various verbal nouns in different morphosyntactic contexts, hypotheses could not be conclusively tested using simple elicitation, or an examination of the corpus. Rather, given the apparent lack of inviolable rules with regards to many of the hypothesised criterial parameters, a large sample was collected in order to examine tendencies. The questionnaire

was designed to test several parameters according to how the data were manipulated.

5.3.1 Valence

Valence was one of the major parameters identified as relevant to the alternation between *e-* and non *e-* verbal nouns. It was shown in 5.2.1 above that *e-* verbal nouns retain argument structure and must express their Theme participant, whereas non *e-* forms do not retain argument structure and thus there is no obligation to express participants (although this may optionally be done through possessive constructions). But while it is clear that the verbal noun affects the valence of the construction, it remains to be seen whether the converse is true; namely whether the valence of the construction influences the choice of verbal noun in Kujireray. Cobbinah (2013) found that for Baĩnounk Gubēeher, the presence or absence of an overt Theme participant in a verbal noun construction directly influences the selection of verbal noun, to such a degree that this could be argued to be a causal factor⁵⁹. However, preliminary research using the same methodology did not yield such results for Kujireray. In fact, using the same data collection methods as Cobbinah (2013:434), it was found that the non *e-* verbal nouns were preferred in both the presence and absence of a noun denoting the Theme participant. The frame questionnaire was therefore developed to explore what influence, if any, the valence of a construction has on a speaker's choice of verbal nouns in Kujireray.

As described in Chapter 2, the questionnaire consisted of four pairs of frames that differed only in the presence or absence of a direct object. For the analysis all semantically intransitive verbs were removed from the sample - that is, all verbs that could not appear in a bivalent construction with a non-oblique object⁶⁰. Table 104 shows the frames from the questionnaire organized according to the parameter of valence, with an example construction in inverted commas in each case.

⁵⁹ This was investigated using video translation tasks - see Cobbinah (2013:434)

⁶⁰ It is noteworthy that judgment of a verb as transitive was not fully consistent across speakers - some verbs would take a direct object for some speakers, but an oblique for others. Furthermore, although it was not examined systematically in the study, since the decision was made to remove oblique object-taking verbs for this portion of the analysis, informal observations suggest that the presence of even an oblique object may have similar effects to that of a direct object, suggesting that any effects are deeper than the syntax.

Table 104 Frames used in elicitation tasks, divided to test valence effects

monovalent	bivalent
V is good	V Obj is good
'eating is good'	'eating rice is good'
he taught me to V	he taught me to VObj
'he taught me to eat'	'he taught me to eat rice'
he is V-ing	he is V-ing Obj
'he is eating'	'he is eating rice'
he knows how to V	he knows how to VObj
'he knows how to eat'	'he knows how to eat rice'

For every stem in the sample, speakers were asked to provide a translation equivalent of these frames. There were four possible responses:

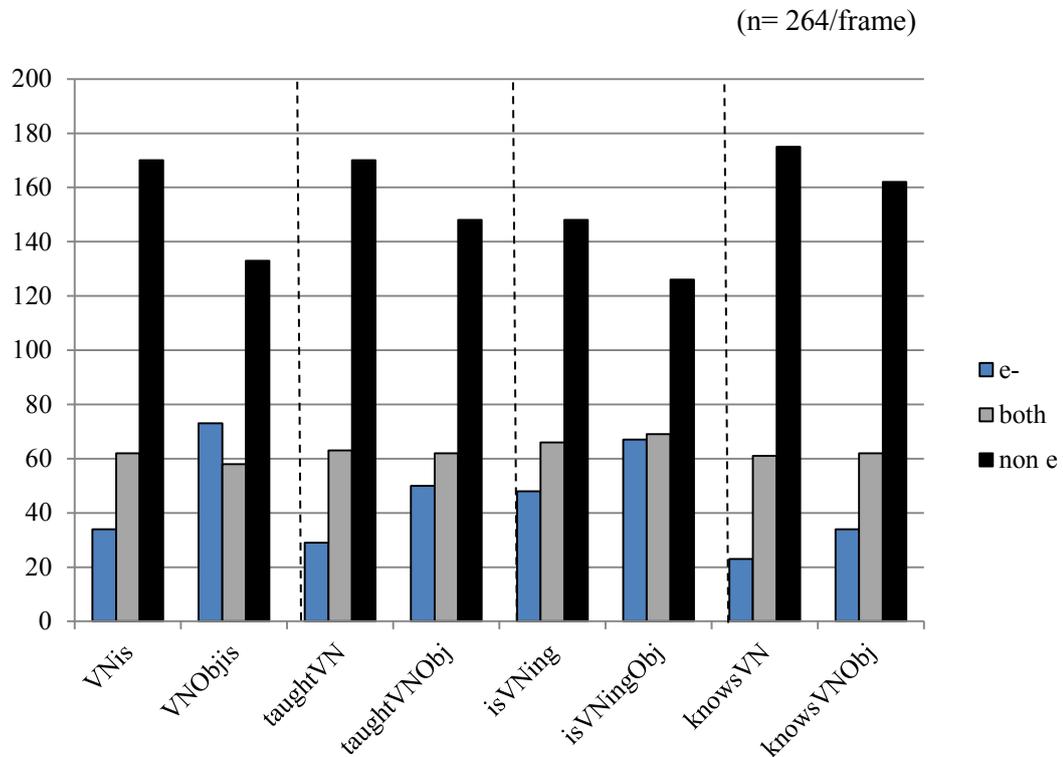
1. Construction in *e-* verbal noun
2. Construction in non *e-* verbal noun
3. Constructions in both *e-* and non *e-* verbal noun
4. Construction is judged semantically infelicitous⁶¹

Chart 2 shows the responses in the sample, for all speakers, organised for each frame. The questionnaire contained 88 transitive verb stems, so for each frame a total of 264 tokens (88

⁶¹ This response occurred when a speaker judged that a verbal noun could not be used in a given frame. For example, this was a quite common occurrence with state denoting verbal nouns; speakers were inclined to reject, or refuse to translate, constructions such as 'he taught me to be thin'.

types for three speakers) were tested.

Chart 2 Frequency of *e-* and non *e-* verbal nouns across all frames: all speakers



Each cluster of three bars shows the frequency of responses for each frame, with the bars for each frame (from left to right) representing an *e-* form (blue), both an *e-* and non *e-* form (grey), and a non *e-* form only (black) respectively. The clusters representing monovalent and bivalent pairs for each frame are adjacent to each other and the dashed vertical lines between each pair of clusters are for ease of comparison between each monovalent/bivalent pair. For example, the cluster on the far left of the graph, for the frame ‘V is good’, shows that in 170 cases (n = 264), speakers provided only a non *e-* verbal noun, whereas an *e-* verbal noun only was provided in just 34 cases. In 62 cases speakers spontaneously provided both forms. In the bivalent counterpart of this frame (second cluster from left) ‘V Obj is good’ there is a significant decrease in this preference – a non *e-* only was provided in only 133 cases and *e-* only in 73.

For each monovalent/bivalent pair of frames a similar trend is observed. In both frames there is an overall preference for the non *e-* verbal noun, but this preference is more pronounced in the monovalent construction. From the opposite viewpoint, the preference for the *e-* form is increased in the bivalent constructions. However, in contrast to the Cobbinah’s (2013:434) observations for Baïnouk Gubëher, there is not an outright reversal of the preference. The

Kujireray results suggest that while the non *e-* form is preferred in both monovalent and bivalent constructions there is something about the presence of an overt object that increases the likelihood of speakers using an *e-* form. The data also show that while there is a contrast in the respective distributions of *e-* and non *e-* verbal nouns the contrast is not absolute and there is some degree of overlap. While *e-* verbal nouns are associated strongly (if not exclusively⁶²) with bivalent constructions, non *e-* verbal nouns may be associated with both bivalent and monovalent constructions. This is commensurate with the findings presented in 5.2 on the syntax of verbal nouns that while a Theme participant is obligatorily expressed for a *e-* verbal noun (for a transitive verb) it is only optionally expressed for a non *e-* form, due to the fact that *e-* forms retain event structure and non *e-* forms do not. Ambiguity arises because the Theme participant of a verbal noun may be expressed in two formally identical but semantically distinct constructions, the object construction and the possessive construction. The formal identity of the constructions means that when speakers are asked to translate a French construction with an overt object they may feasibly choose a Kujireray construction which corresponds to a possessive relation, as well as an object construction. This helps to explain the difference between the Kujireray and Gubëeher results. In Gubëeher, a possessive marking between two nouns (expressed using a connector) contrasts formally with object marking (juxtaposition). Therefore, while a participant associated with a verbal noun may be expressed using the possessive construction, this would be a more unnatural translation for a French object construction. For Gubëeher therefore, the fact that equivalent of *e-* verbal nouns retain event structure and equivalent of non *e-* do not, is more evident in the morphosyntax of the language. In Kujireray the facts obscure this to some extent – indeed the formal ambiguity between possessive and object construction may facilitate the dominance of non *e-* verbal nouns, as well as the variation observed. Indeed, if the non *e-* is the preferred form, and is able to express the Theme participant as required, then it is pertinent to enquire what motivates any use at all of the *e-* form. Since the presence of an overt object is clearly not causal in the selection of an *e-* or non *e-* verbal noun, it is hypothesized be that the strong association of overt Theme participants with *e-* forms is responsible for the observed increase in these forms in the bivalent frames.

The observations made in the previous paragraph present an area for future comparison between Kujireray and Gubëeher, and indeed other languages spoken in the vicinity.

⁶² It is acknowledged that the fact that *e-* forms occur at all in the monovalent constructions seems to contradict the assertion that *e-* forms retain argument structure. However, object omission is widespread in Kujireray which may contribute to a grey area in acceptability.

Furthermore, it should also be noted that there is notable variation in the markedness of the preference from speaker to speaker (for which contact and multilingual repertoires is one plausible explanation). Charts 3 to 5 show the results for each individual speaker.

Chart 3 Frequency of *e-* and non *e-* verbal nouns across all constructions: UB

(n=107)

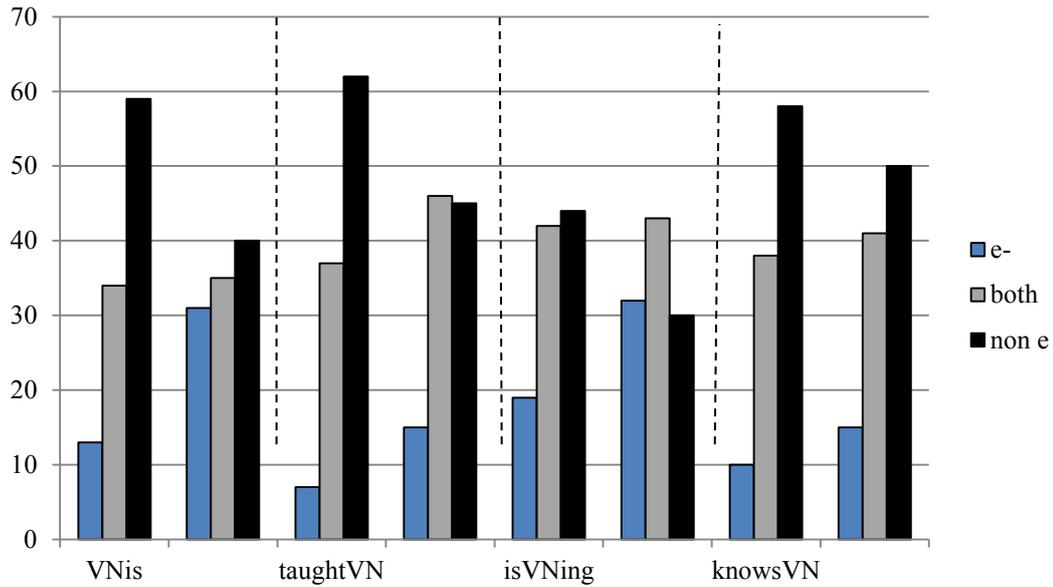


Chart 4 Frequency of *e-* and non *e-* verbal nouns across all constructions: RB

(n=81)

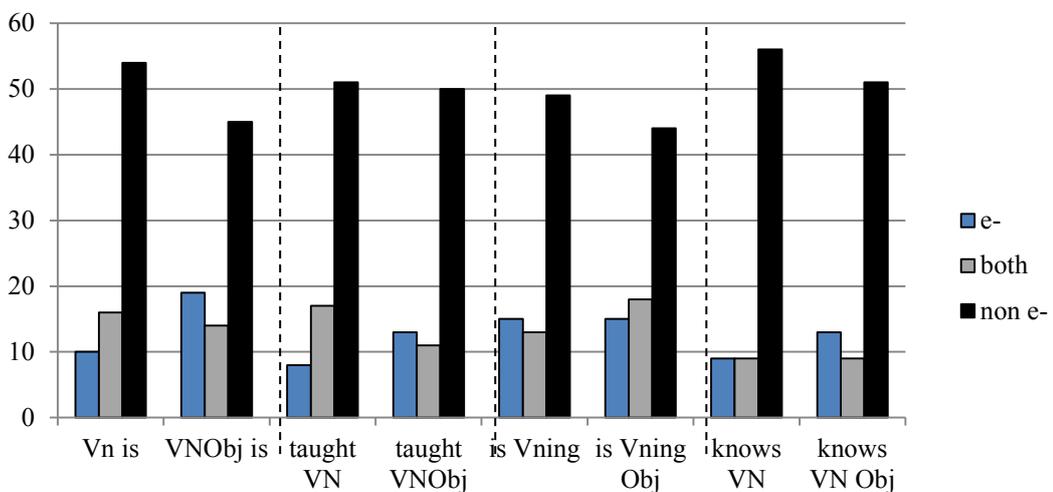
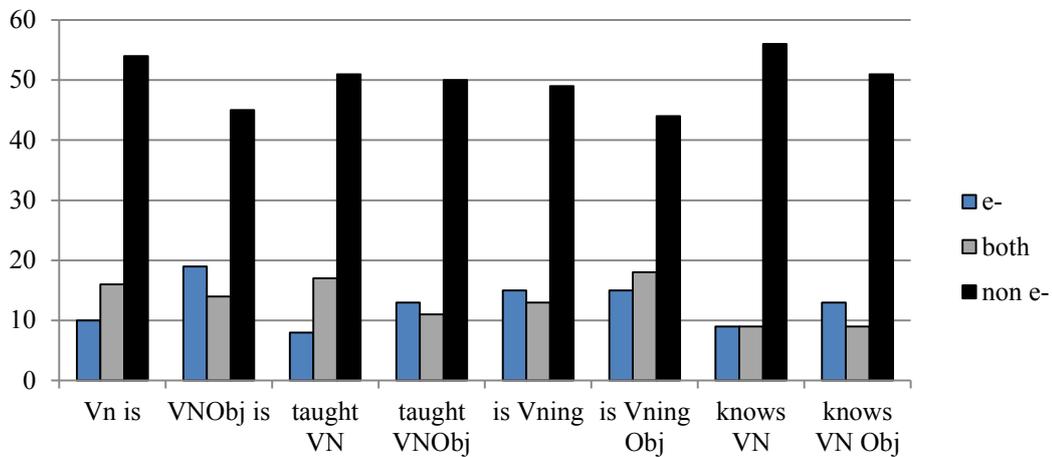


Chart 4 Frequency of *e-* and non *e-* verbal nouns across all constructions: WD

(n=80)



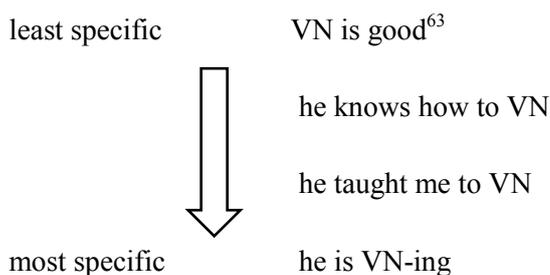
The charts show that while all speakers exhibit some increase in their production of *e-* forms in bivalent as opposed to monovalent constructions, this preference is far more marked for UB (Chart 3). Although the reasons for this variation are unclear at this time, it suggests that there are several parameters associated with the choice of *e-* or non *e-* verbal nouns, which are afforded different levels of priority in the minds of individual speakers. For example, it was observed earlier in this section that the non *e-* verbal nouns occur with greater frequency in the questionnaire, indicating an overall preference for these forms. However, it is also posited that the presence of a Theme participant in the construction increases the likelihood of an *e-* form being provided. In addition, it is posited that such variation is not only evidence for the relevance of several semantic features to the choice of *e-* or non *e-* verbal noun, but is symptomatic of the high degree of multilingualism and linguistic variation in the region. For example, one possible explanation for UB's exhibiting elevated levels of the valence effects in his choice of verbal noun could be that he has greater contact with speakers of, say, Baïnounk Gubëeher, for whom this parameter has a significantly greater effect. The issue of variation in verbal noun usage, as well as multilingualism on both an individual and societal level, and the effects that it has on linguistic choices is a topic for future research.

5.3.2 Specific vs non-specific reference

For a stem representing a situation, two different verbal nouns for that stem will profile different parts of the domain, two different but related concepts pertaining to that situation. It is argued that this distinction pertains to the type of reference made to that situation, specifically whether the reference is to a specific instance of that situation, or to a more

general conceptualization of the situation as a generic type. Indeed, this is a strong and spontaneously provided intuition of native speakers, when asked to explain the difference between the two types of verbal noun. In attempting to distinguish, several speakers proposed that the *e-* form is used when one observes the situation personally. This judgement was explored using the same data from the task described above, but dividing the frames differently in the analysis. Level of specificity of reference is rather more difficult to control than the simple presence or non-presence of an overt object; nevertheless an attempt was made to select frames that would encourage one interpretation or another, and this was supplemented with the provision of context for each frame, as detailed in 2.4.4.2 above on methodology. In fact it seems probable that these frames actually exist on a continuum of specificity – this is illustrated in Figure 20 Frames used in elicitation tasks, from least specific to most specific.

Figure 20 Frames used in elicitation tasks, from least specific to most specific



The order of the grading is justified on the following grounds. The progressive construction has inarguably specific reference in Kujireray; indeed this is a strong tendency cross linguistically (Krifka et al. 1995:6). On the other hand, non-specific reference is harder to link to a particular type of noun and is more contextually conditioned (Krifka et al. 1995:8). The ‘V is good’ construction was presented to speakers during as elicitation as pertaining to the activity or state in general. The same is true of ‘he knows how to V’ and ‘he taught me to V’, although it is proposed that these may be more ambiguous between a specific and non-specific reading. For example, if one is taught to do something, this must have involved a specific instance of teaching on (at least) one occasion.

⁶³ Only monovalent constructions were included in this part of the analysis since it was judged that presence of an overt object – a factor often associated with more specific reference (Hopper and Thompson 1980:288) would confuse the issue.

The charts below show the results of the elicitation frame task for this parameter, for all the speakers combined, and then for each individual speaker. The results for all transitive stems that formed both *e-* and non *e-* verbal nouns totalled 488 tokens, although these were not evenly distributed across all speakers for various reasons. In some cases speakers may have judged a given frame infelicitous with a stem, in which case the result is not included. In others, the speaker may not have provided both an *e-* and a non *e-* verbal noun for a given stem.

Chart 5 Comparison of verbal noun types for non-specific and specific reference:all speakers

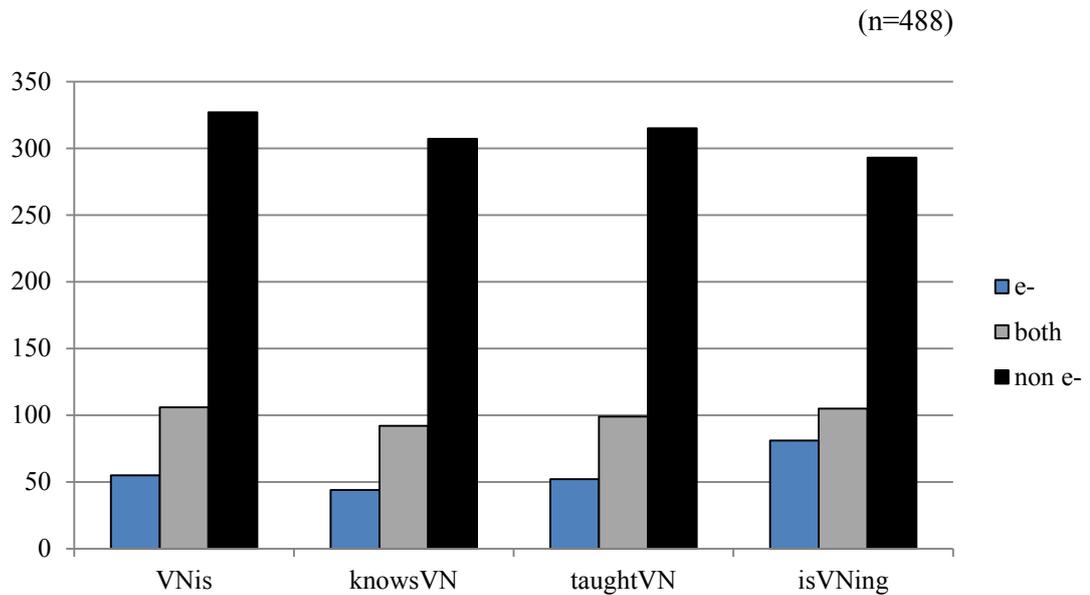


Chart 6 Comparison of verbal noun types for non-specific and specific reference: UB

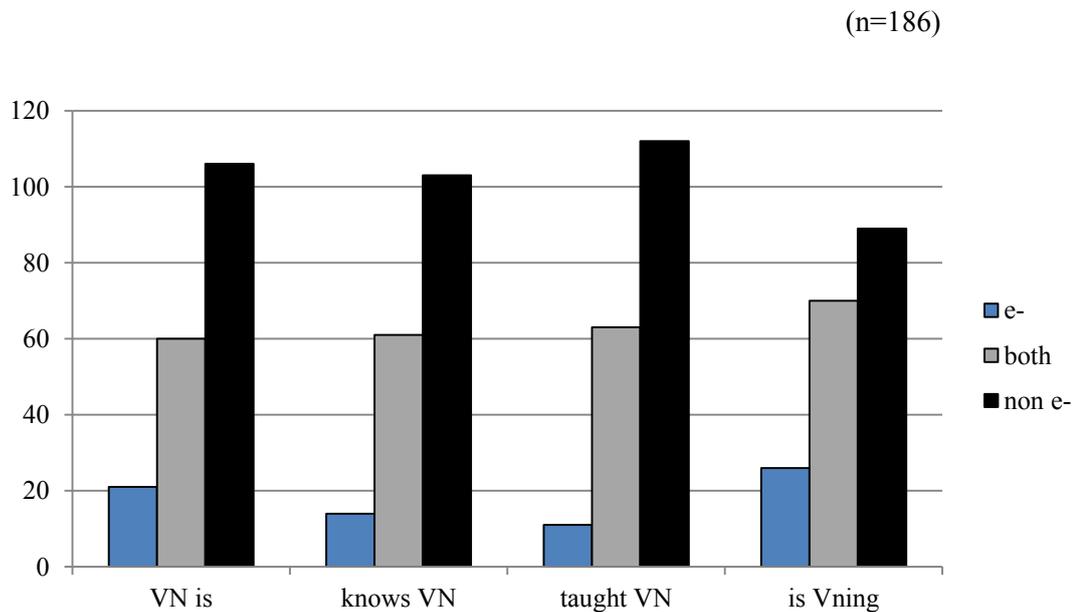


Chart 7 Comparison of verbal noun types for non-specific and specific reference: RB

(n=156)

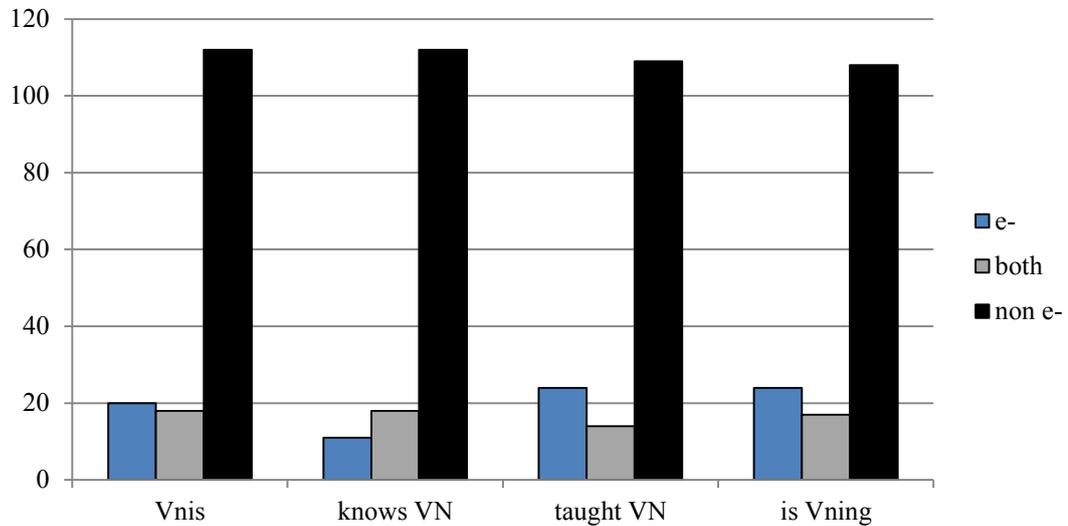
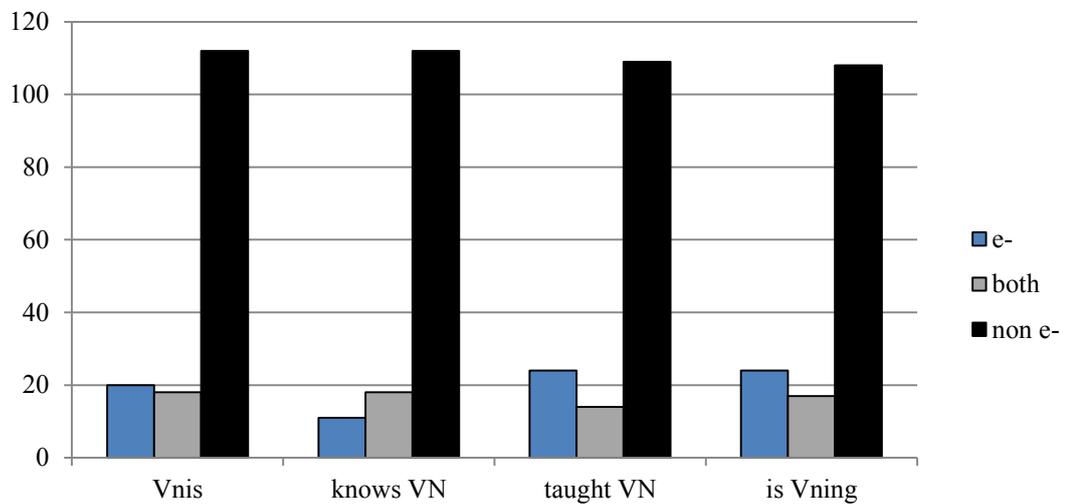


Chart 8 Comparison of verbal noun types for non-specific and specific reference: WD

(n=146)



Again, there is an overall preference for the non *e-* form in every frame. Indeed, looking at the data for individual speakers, for RB and WD there appears to be very little difference in their choice from frame to frame. We see again the significant preference for non *e-* verbal nouns in all frames, both specific and non-specific. In fact, for both speakers the number of *e-* forms provided is slightly higher for the ‘he taught me VN’ frame than for the ‘he knows VN’ frame, counter the predictions that the latter should elicit more reliably generic

reference. For UB there is a slight increase in the number of default verbal nouns provided for the progressive (specific) frames but it is not particularly remarkable.

The data as presented in these charts provide some evidence that the use of the progressive construction may make speakers more likely to select a verbal noun in *e-*, although this influence is not strong enough to counter a pronounced preference for the non *e-* forms. Indeed, in 49% of all cases where both an *e-* and a non *e-* verbal noun were available, speakers would offer only the non *e-* form for every single frame regardless of either transitivity or specific/non-specific reference, and in no cases would they offer only default for all frames.

However, in examining the data further, a number of observations can be made that provide further evidence for the effects of specificity of reference on a speaker's choice of verbal noun. For example, as detailed in the introduction to this chapter, it is known that noun class prefix *e-* is extremely productive in verbal noun formation - it is known to form a verbal noun with virtually every verb stem. Therefore, when it happened that the *e-* form was not provided at all for a given verb, that is, the non *e-* form was provided for all frames, I would ask the consultant, first whether the *e-* form was acceptable to them, and second whether they could think of a context when you might use that form. In every case of this type, the context provided would be a progressive form, with an object provided in the case of transitive verb stems. That is to say, while the non *e-* form may be used in a variety of contexts, the *e-* form seems to be associated with the progressive construction because, it is posited here, of the inherent specificity of its reference.

The second observation is that in virtually no cases (<1%) did a speaker provide an *e-* form in the less specific frames with a non *e-* form in the specific. Table 105 illustrates this tendency:

Table 105 Possible combinations of verbal nouns in specific and non-specific frames

non-specific reference (He taught me to write)	specific reference (He is writing)	combination attested?
<i>naligenom ba-kec</i>	<i>umu ni e-kec</i>	✓
<i>naligenom ba-kec</i>	<i>umu ni ba-kec</i>	✓
<i>naligenom e-kec</i>	<i>naligenom e-kec</i>	✓
<i>naligenom e-kec</i>	<i>naligenom ba-kec</i>	X

The table shows the four logical possibilities for combinations of *e-* and non *e-* verbal nouns for the stem *kec* WRITE in the specific reference frame ‘he is writing’ and the less specific reference frame ‘he taught me to write’. If specificity had no bearing on the choice of verbal noun then we would expect to find all four combinations in the results of the questionnaire. However, the fourth combination, where the specific construction takes the non *e-* form, and the non-specific the *e-* form is unattested.

5.3.3 Summary

The results from the questionnaire task yielded the following observations:

1. Non *e-* verbal nouns are preferred in all contexts.
2. The presence of an object in the elicitation frame increases frequency of *e-* forms, but does not reverse overall preference.
3. Non *e-* forms may be associated with specific and non-specific reference, but *e-* forms are associated with specific reference.

It was found that in both monovalent and bivalent clauses there was a preference for the non *e-* verbal noun; that is, the occurrence was higher than that of *e-* verbal nouns, although this preference was less pronounced in bivalent clauses, implying that the valence has some influence on the choice, although this influence is not categorical. Furthermore, this observation clearly only applies to bivalent verbs – there are also monovalent verbs with both a *e-* and non *e-* verbal noun – what affects the choice of verbal noun for such stems remains a topic for future research.

The same elicitation frames were used to examine whether the notion of specific vs. non-specific reference affects choice of verbal noun. Although it is not the case that specific reference selects *e-*, and non-specific reference selects non *e-*, since non *e-* is preferred in both cases – it seems to be the case that *e-* verbal nouns tend to be used *only* for specific reference, whereas non-default may be used for either. The notion of specific vs. non-specific reference can also be considered in relation to both nominal vs. verbal status and transitivity. A verbal noun making reference to a specific instantiation of an action may be expected to display more verbal properties than one making non-specific reference to a genre of activity (and certainly not less) (Haiman 1985:790). Furthermore, a verbal noun

with non-specific reference has greater potential to occur without an object since the object is more likely to be semantically retrievable (particularly in the case of such socio-culturally salient activities) (Goldberg 2005) whereas when one is describing an actual situation unfolding the participants are far more salient and therefore likely to be obligatory.

5.4 Summary of Chapter 5

In this chapter I showed that verbal nouns in Kujireray are formed in the same way as prototypical, concrete entity-denoting nouns, that is with a noun class prefix and a lexical stem. In section 5.1 I showed that while verbal nouns interact with the noun classification system in a somewhat reduced manner, due to the conceptual differences between concrete entities on the one hand, and situations on the other, nevertheless parallels can be drawn between the semantic contribution of noun class prefixes in both domains.

In section 5.2 I compared the morphosyntactic behaviour of *e-* verbal nouns and their non *e-* counterparts. I showed that *e-* verbal nouns have more verbal characteristics, such as retention of argument structure and adverbial modification, whereas non *e-* verbal nouns exhibit nominal characteristics such as compatibility with possession constructions and adjectival modification. In section 5.3 I argued that the syntactic differences observed between *e-* and non *e-* verbal can be attributed partially to the type of reference – specific or generic - the verbal noun is making.

6 Conclusion

In this final chapter, I summarize the thesis, and present areas that have been identified as particularly fruitful for future research.

6.1 Summary of thesis

In Chapter 1, I provided background on the geographical, historical, social and linguistic context in which Kujireray is spoken. While there is not a shortage of literature on these topics in the Casamance, this chapter constitutes the first description of this kind focussing specifically on the village of Brin. While there are generalizations that can be made about the way of life in this region, each individual community has its own characteristics, and a description, albeit brief, at the level of the village, rather than the region or the ‘ethnic’ group can only enrich the literature on the Casamance. In particular, I placed emphasis on the fluidity of identity, ethnic affiliation, and linguistic repertoires and practices that are so characteristic of the region, as well as commenting on the specific field work situation.

Chapter 2 presented the theoretical framework adopted in the thesis. I reviewed the literature on categorization and noun classification systems, and argued that a Cognitive Linguistics approach is well suited to the analysis of these phenomena, particularly in comparison to more objectivist viewpoints. The latter depends on feature lists of necessary and sufficient conditions to understand human categorization, which cannot account for the internally structured and fuzzy-edged nature of the categories that humans create, and that are overtly manifested in the language in noun classification systems. It was shown that human categories are built around prototypes, based on our own judgement and experience. In addition, our encyclopaedic knowledge about the world, and propensity for metaphorical thought means we are able to structure categories in a complex manner, as illustrated by the radial category model.

Having argued that noun classification systems of the type found in Kujireray are indeed semantically motivated and that this motivation is best understood from a cognitive perspective, I introduced the theoretical apparatus utilized in the thesis. In this way the thesis represents a contribution to the Cognitive Linguistics literature, in advancing the use and demonstrating the aptitude of these theoretical tenets in the analysis of noun classification. Conversely, notions such as underspecification and constructional meaning, (and the mechanics thereof – concepts, domains, profiling etc) allow a perspicacious view on the formation of meaning in the Kujireray system which will contribute to our understanding of these systems. Indeed, the nature of constructional meaning in other areas of Kujireray grammar is identified as a topic for future research.

Chapter 3 is a sketch grammar of Kujireray, and constitutes the first description of this language. As such, it is of interest to specialists in Atlantic languages and West African languages, as well as typologists seeking data from many and varied languages. Although the description is necessarily an overview, many of the principal phonological, morphological and syntactic features are described, and many areas for future research are identified throughout the text. In particular this chapter gives an initial impression of the grammatical relations, thematic roles and verb classes found in Kujireray, as well as the morphology such as subject and object marking, possessive constructions and valence changing morphology that are identified as particularly relevant to the analysis of verbal nouns as undertaken in Chapter 5.

Chapter 4 comprises a detailed account of the structure of the Kujireray noun classification system. The semantic analysis is carried out at the level of the paradigm which results in a more fine-grained view of the system. However, the analysis builds on work by Cobbinah (2013) in demonstrating that it is not only the paradigm, but also the the noun class prefixes and agreement patterns that carry meaning. The noun classification system is thus modelled as operating on three levels, each of which can contribute semantic information regarding the concept represented given by a stem. In many cases, where a stem forms nouns in a regular and productive paradigm, and controls regular alliterative agreement, these levels merely reinforce each other. However, in the case of crossed paradigms, and crossed agreement patterns, different levels may contribute different types of semantic information, thus demonstrating the considerable expressive power of the system.

In addition it was shown that, commensurate with the position that meaning is constructional, noun class prefixes possess semantics at an abstract, schematic level, that facilitate and constrain their participation in various paradigms. In particular, the concepts represented at this level are boundedness and unboundedness, which are elaborated at the level of the concrete entity as values of individuation and mass respectively, and thus correlate to number values of singular, plural, collective and mass in the noun classification system.

Finally, in Chapter 5 I presented data pertaining to verbal nouns in Kujireray. I showed that where a given stem may form verbal nouns in both *e-* and another non *e-* noun class prefixes, significant morphosyntactic differences can be observed between the two. Specifically, it was shown that verbal nouns in *e-* retain more verbal qualities, whereas non *e-* forms are further down the continuum towards nominal distribution. It was argued that these syntactic differences are symptomatic of semantic and conceptual differences between the ways that the respective forms refer to the situation represented by the lexical stem.

Broadly speaking, it was posited that verbal nouns in non *e-* prefixes refer to the situation in a generic fashion, whereas forms in *e-* tend to refer specifically to an instance of the situation.

6.2 Future research

While one of the main aims of the thesis has been to demonstrate that the Kujireray noun classification system is semantically motivated, it has also been alluded to at several points that there are other factors affecting the structure of the system. It is observed that while semantic networks, based on notions of embodied experience, encyclopaedic knowledge and metaphorical thought, are highly effective in modelling the structure of noun classification systems, care must be taken in over-applying such apparatus in the absence of substantial evidence from lexical or psycholinguistic data. Dingemanse (2003:10ff), for example, warns against the danger of imposing the linguist's own interpretation of categories which may bear no real resemblance to either the synchronic or diachronic facts of the language. There may be much material in such systems that is no longer actively motivated by the current system, that may have been reanalysed, and that may be influenced by the lexical material and/or noun classification systems of languages with which that language is, and has been, in contact. In 4.5 particularly, I showed that many items in Kujireray may be assigned to a given paradigm either on phonological grounds, or as a result of borrowing from one of the many languages with which speakers of Kujireray are, or have been, in contact. It was argued that paradigm membership that can be motivated only rather tenuously when one examines a language in isolation, can more readily and convincingly be accounted for when one takes effects of language contact into account. Language contact is therefore identified as a highly salient topic for research in this part of the world.

In fact, language contact and multilingualism in this part of the Casamance is the subject of the Crossroads research project to which I will be contributing in the coming years. The study will focus on three languages that are in close contact, both geographically and socially; these are Kujireray, Banjal (spoken in Mof Ēvi) and Baïnouk Gubëeher (spoken in Djibonker). Social network studies will be carried out in order to investigate the effects that individual and societal multilingualism have on linguistic practices and repertoires and people in these communities. In the following I present some of the contact data that is pertinent to the structure of the noun classification systems of the languages involved and discuss some of the implications of these.

Even a preliminary comparison of the lexicons of some of the languages in this area, undertaken by Alexander Cobbinah (personal communication), reveals a large amount of lexical convergence, even between languages that are not spoken near to each other, and are

only very distantly related genetically. Cobbinah’s survey includes data from Baïnounk varieties, Gubëeher (spoken in the village west of Brin), Gubelor (spoken in the village to the east of Brin), Guñaamolo (found largely north of the Casamance River), Jegui (spoken south of the border in Guinea Bissau), and Gujaher (spoken some kilometres east of Ziguinchor, and the subject of ongoing research by Friederike Lüpke). He also includes data from the Joola languages Kujireray, Banjal, Kaasa and Bayot.

Between these languages, there are scores of lexical items that are cognate in some or all of the languages. Moreover, the patterns of borrowing are complex. It is not the case that we observe unidirectional wholesale borrowing from one language to another. Any given language shows evidence of borrowing from its neighbours, at the same time as contributing other lexical items in return. These facts are very broadly illustrated in Table 106. For reasons of space and clarity I have not included all the languages in the survey. Note that the first four languages in the table are all in close geographical contact, whereas the final two, Joola Kaasa and Baïnounk Guñaamolo are generally found further afield (although of course speakers of all languages are in mobile and in regular contact).

Table 106 Cognates in Joola and Baïnounk languages

gloss	Baïnounk Gubëeher	Baïnounk Gubelor	Joola Kujireray	Joola Banjal	Joola Kaasa	Baïnounk Guñaamolo
‘be blind’	<i>si-pi:m</i>	<i>bu-pi:m</i>	<i>ε-pim</i>	<i>bu-pim</i>	<i>fum</i>	<i>bu-pimɔ</i>
‘be right’	<i>wuh</i>	<i>wuux</i>	<i>e-wuh</i>	<i>ε-fol</i>	<i>σ-fəl</i>	<i>wuh</i>
‘tree’	<i>si-nonohɛn,</i> <i>si-nɔ</i>	<i>si-nɔx</i>	<i>bu-nonohɛn</i>	<i>bu-nonoh</i>	<i>bu-nunukɛn</i>	<i>si-nɔŋɔ</i>

The first row shows that in all of the languages concerned, the form for ‘be blind’ is cognate. This signals either a common ancestry for this form, or a multilateral borrowing from one language (not necessarily one of the current sample) into all the others. Further research and examination of a large number of languages of the region is required to identify the original source of such forms.

The second row shows the forms for ‘be right’. The cells highlighted in orange indicate that this form is cognate in all the languages except the Joola varieties Banjal and Kaasa, which are cognate with each other. In this case it is the Kujieray form that is of interest. Diverging from its genetically related Joola cousins, the Kujieray form *e-wuh* is cognate with the forms from Baïnounk languages. This suggests that the close contact of Kujireray with Baïnounk

Gubëeher and Gubelor has resulted in alteration of the lexicon.

The third row shows a similar situation obtaining the the opposite direction. In all three Joola varieties, the form for ‘tree’ is cognate, and Bānɔnk varieties Gubelor and Guñaamolo, highlighted in orange, also have cognate forms, distinct from the Joola ones, thus reflecting the distinct gentic lineage of these two language groups. Bānɔnk Gubëeher, on the other hand, highlighted in pale orange, has two attested forms for ‘tree’; *si- nɔ*, which is cognate with the forms in genetically related Bānɔnk varieties, and *si- nonohen*, which is cognate with the Joola forms, and is evidently the result of borrowing due to contact.

These simple examples demonstrate the complexity of the contact situation, and of course these effects extend to phonological and morphosyntactic categories as well. A detailed study of the distribution of these features can contribute to an understanding of the synchronic and diachronic dynamics of language contact in the region, shedding light on the contested classification of these languages, and the history of the various societies that populate this geographical area.

Furthermore, while the complex dynamics of borrowing and contact effects are of interest per se, the effect that multilingualism has on the structure of the noun classification systems of the languages involved is identified as a particularly salient research topic. Note, for example, that in the case of the forms for ‘tree’, the Joola forms are all formed in noun class prefix *bu-*, which is the regular and predictable prefix for forming nouns denoting trees (as part of the singular/plural paradigm *bu-/u-*). Bānɔnk Gubëeher, however, while the lexical stem *nonohen* has been borrowed from Joola, it nevertheless forms a singular noun in *si-*, which is the regular singular class for trees in that language (as part of the paradigm *si-/mun-*). In this case the lexical stem has been borrowed, and intergrated into the existing, semantically motivated, noun classification system.

Nor is this the only pattern that is observed concerning the integration of borrowed forms into the systems of the various languages. The similar, but not identical, semantic organization of the noun classification systems, and the existence of phonologically similar noun class prefixes, that may or may not be associated with comparable semantic domains across languages means that this is fruitful topic for future research. Friederike Lüpke (personal communication), in collaboration with other members of the Crossroads team, has identified a number of logical possibilities for such borrowings, two of which are presented in Table 107.

Table 107 Logical possibilities for borrowing in Gubëeher and Kujireray

	Gubëeher paradigm	Kujireray paradigm	semantic domain
phonologically distinct, semantically comparable	<i>si-/mun-</i> <i>si-/mu-nunvhen</i> 'trees'	<i>bu-/u-</i> <i>bu-/u-nunuhen</i> 'tree/s'	trees
phonologically comparable, semantically distinct	<i>bi-/i-</i> <i>bi-/i-nég</i> 'sun/s'	<i>bu-/u-</i> <i>bu-/u-nah</i> 'sun/s'	G = round K = trees

As has been demonstrated above, the fact that the two languages both have a semantically comparable, but phonologically distinct noun class paradigm for forming nouns denoting trees facilitates the integration of lexical stems into the semantically motivated system. Conversely, the existence of noun class paradigms that are formally comparable, but do not share semantic content can be highly illuminating with regards to the structure of the systems. For example, it was shown 4.5.2 above that the Kujireray singular form for 'sun' is *bu-nah*, which seems anomalous considering that this is a noun class more strongly associated with trees and assemblages. However, if one considers that the form has been borrowed wholesale from a Bãinounk language such as Gubëeher, where the noun class prefix, being associated with roundness, is semantically motivated, the situation becomes clearer. The borrowing of the stem together with the noun class prefix is facilitated by the existence of a formally identical form in Kujireray. This account is appealing as it avoids the creation of rather unsubstantiated links within the semantic networks of Kujireray. That said, it is easy to see how such forms may be reanalysed by speakers of Kujireray, thus affecting the semantic structure of that paradigm, and thus the entire system. For example, there are a number of Kujireray forms in *bu-/u-*, such as *bu-tum/u-tum* 'mouth' and *bu-la/u-la* 'face/s' whose membership in this paradigm are difficult to account for if one examines the Kujireray system in isolation. However, it is possible that contact with languages in which phonologically similar noun class prefixes have semantic content compatible with the physical configuration of such entities, it is conceivable that the noun class prefixes have been borrowed, even without the lexical stems.

So, while it has been demonstrated throughout this thesis that noun classification systems of

the type found in Kujireray can be characterized as complex networks with rich internal structure, so the contact situation can be conceived of as a vaster network extending between speakers of all languages in the region. An extensive study of this phenomenon, as will be undertaken by the Crossroads project can shed light on both the organization of noun classification, and the effects that language contact has on these systems.

Appendix 1 Data source metadata

source code	type	consultants	topic
BRIN111116RW	elicitation	IB, UB	various
BRIN111117RW	elicitation	WD	Swadesh, agreement
BRIN111118RW	elicitation	IB, UB	Dahl TAM
BRIN111122RW	elicitation	WD	Dahl TAM
BRIN111123RW	elicitation	UB	Dahl TAM
BRIN111124RW	elicitation	WD	demonstratives
BRIN111125RW	elicitation	RB, AB	Dahl TAM
BRIN111129RWa	elicitation	WD	various
BRIN111129RWb	elicitation	WD	various
BRIN111130RWa	elicitation	RB	Dahl TAM
BRIN111130RWb	elicitation	RB	relative clauses
BRIN111205RWa	S.C.E.	VB, GS, UB	fable: The little sorceror Totolio
BRIN111205RWb	S.C.E.	VB, GS, UB	fable: Initiation
BRIN111205RWc	S.C.E.	VB, GS, UB	fable: Jaletetum
BRIN111208RW	elicitation	RB	adverbials
BRIN111209RWa	S.C.E.	WD	demonstration: shovel
BRIN111209RWb	elicitation	WD	various
BRIN111213RW	elicitation	WD	adverbials
BRIN111214RW	elicitation	RB	various
BRIN120117RWc	S.C.E.	VB, MD, UB	fable: Crocodiles
BRIN120124RW	S.C.E.	CD1	fable: Journey
BRIN120124RWb	S.C.E.	CD1	fable: Stepmother

source code	type	consultants	topic
BRIN120227RWb	S.C.E.	UB	description: building
BRIN120301RW	elicitation	EB	valence, vocabulary
BRIN120316RWa	elicitation	WD	pronouns
BRIN120316RWb	elicitation	WD	agreement, valence
BRIN120331RW	S.C.E.	MS	description: fishing
BRIN121029RWa	elicitation	WD	paradigms, habitual, progressive
BRIN121029RWe	S.C.E.	UB	demonstration: slingshot
BRIN121030RW	elicitation	UB, JMB	stative verbs
BRIN121106RW	S.C.E.	WD	thanks
BRIN121106RWd	S.C.E.	UB, JMB	description: cultivation
BRIN121107RW	elicitation	WD	stative verbs
BRIN121120RWa	elicitation	RB, AB	various
BRIN121204RWa	elicitation	WD	verbal noun syntax
BRIN121211RWa	elicitation	RB	stative verbs
BRIN121217RWa	video translation	RB	read/climb/build
BRIN121220RW	elicitation	WD	ideophones, comparatives
BRIN130208RWc	S.C.E.	WD	describing activities in photos
BRIN140212RW3	elicitation	RB	verbal noun syntax
BRIN140213RW	elicitation	EB	valence
BRIN140220RW2	elicitation	UB	verbal noun syntax
BRIN140228RW	elicitation	UB	verbal noun syntax

source code	type	consultants	topic
MSRWBC22	S.C.E.	WD, MB	describing photos
video translation: <i>build</i>	translation	UB	translating video scripts

Appendix 2 Consultant metadata

consultant ID	gender	age	languages spoken
AB	M	80s	K, F, Ka, B, Fr, W, Kr
CD1	F	70s	K, F, W, Ka, Kr
CD2	M	60s	K, B, W, Ka, Kr, Fr
EB	M	50s	K, F, W, Ka, Kr, Fr
GS	F	70s	K, B, Ka, W
IB	M	50s	K, F, W, Ka, Kr, Fr
JMB	M	50s	K, F, W, Ka, Kr, Fr
MB	M	20s	K, Ka, W, Fr
MS	M	60s	K, F, W, Fr
RB	M	50s	K, F, W, Ka, Kr, Fr
UB	M	40s	K, F, W, Ka, Kr, Fr, En
VS	F	70s	K, B, Ka, W
WD	M	40s	K, F, W, Ka, Kr, Fr, En, Mn

Key to languages:

K = Kujireray Mn = Manjak

F = Fogny W = Wolof

Ka = Kaasa

B = Banjal

Kr = Kriolu

Fr = French

En = English

Publication bibliography

- Aikhenvald (2000) *Classifiers : a typology of noun categorization devices*. Oxford: Oxford University Press.
- Allan (1977) *Classifiers*. In *Language* 53 (2). pp. 285-311.
- Allen, W. Sidney (1964) *Transitivity and Possession*. In *Language* 40 (3), pp. 337–343.
- Alsina, Alex (1992) *On the Argument Structure of Causatives*. In *Linguistic Inquiry* 23, 517-55.
- Barry, Abdoulaye (1987) *The Joola languages: subgrouping and reconstruction*. SOAS, London.
- Bassène, Alain-Christian (2007) *Morphosyntaxe du joola banjal, langue atlantique du Sénégal*. Köln, Rüdiger Köppe Verlag
- Bassène, Alain-Christian (2010) *Ditransitive constructions in Jóola Banjal*. In Andrej Malchukov, Martin Haspelmath, Bernard Comrie (Eds.) *Studies in ditransitive constructions: a comparative handbook*. Berlin: Mouton de Gruyter, pp. 190–203.
- Bassène, Mamadou (2012) *Morphophonology of Joola Eegimaa*. PhD, University of Minnesota.
- Batibo, Herman M. (1987) *The Bantu Ancestors' Vision of the World*. In *Journal of Linguistics and Language in Education* 2, pp. 1–23.
- Bauer, Laurie (2001) *Morphological productivity*. New York, Cambridge: Cambridge University Press.
- Baum, Robert Martin (1986) *A religious and social history of the Diola-Esulalu in pre-colonial Senegambia*. PhD. Yale University, Yale.
- Baum, Robert Martin (1999) *Shrines of the Slave Trade: Diola religion and society in precolonial Senegambia*. New York, Oxford: Oxford University Press.
- de Benoist, Joseph Roger (2008) *Histoire de l'Eglise catholique au Senegal: de milieu du XVe siecle a l'aube du troisieme millenaire*. Dakar: Editions Clairafrique.
- Berlin, Brent (1977) *Speculations of the Growth of Ethnobotanical Nomenclature*. In Benjamin Blount and Mary Sanchez (Eds.) *Speculations of the Growth of Ethnobotanical Nomenclature*. New York: Academic Press, pp. 63–102.
- Berlin, Brent, Dennis E. Breedlove and Peter H. Raven (1973) *General Principles of Classification and Nomenclature in Folk Biology*. In *American Anthropologist* 75

(1), pp. 214–242.

- Berndt, Wolfgang (2012) A cognitive approach to the functions of the particle me in Joola-Banjul. In M. Brenzinger and A.-M. Fehn (Eds.) *6th World Congress of African Linguistics*. Cologne, 2009. Cologne: Rüdiger Köppe Verlag, pp. 341–353.
- Blecke, Thomas (2012) The grammar of action nominals in Tigemaxo (Bozo). In M. Brenzinger and A.-M. Fehn (Eds.) *6th World Congress of African Linguistics*. Cologne, 2009. Cologne: Rüdiger Köppe Verlag, pp. 355–362.
- Boulègue, Jean and Jean Suret-Canale (1985) The western Atlantic coast. In J.F.A. Ajayi and Michael Crowder (Eds.) *History of West Africa*. 3rd ed.: Longman (1), pp. 503–530.
- Brooks, George B. (1993) *Landlords and Strangers. Ecology, Society, and Trade in Western Africa, 1000-1630*. Boulder/San Francisco, Oxford: Westview Press.
- Bybee, Joan (1985) *Morphology: a study of the relation between meaning and form*. Amsterdam: John Benjamins.
- Bybee, Joan, Revere Perkins and William Pagliuca (1994) *The evolution of grammar: tense, aspect and modality*. Chicago, London: University of Chicago Press.
- Childs, G. Tucker (2010) The Mande and Atlantic groups of Niger-Congo: prolonged contact with asymmetrical consequences. In *JLC* 3, pp15-46
- Cobbinah, Alexander (2010) *The Casamance as an Area of Intense Language Contact. The Case of Bainouk Gubaher*. In *JLC* 3, pp. 175–201.
- Cobbinah, Alexander (2013) *Noun classification and verbal nouns in Baïnouk Gubëher*. PhD. SOAS, London.
- Cobbinah, Alexander and Friederike Lüpke (2014) When number meets classification: The linguistic expression of number in Baïnouk languages. In Anne Storch and Gerrit J. Dimmendaal (Eds.) *Number- Constructions and Semantics*. Case studies from Africa, Amazonia and Oceania. Amsterdam, Philadelphia: John Benjamins, pp. 199–220.
- Coly, Jules Jacques (2010) *Morphosyntaxe Du Kuwaatay (Sénégal)*. PhD.
- Comrie, Bernhard, and Sandra A. Thompson (1985) Lexical Nominalization. In *Language Typology and Syntactic Description Vol. 3*, ed. Timothy Shopen, 349–407. Cambridge: Cambridge University Press.
- Contini-Morava, Ellen (1994) *Noun Classification in Swahili*. PhD thesis,

University of Virginia/Charlottesville.

- Contini-Morava, Ellen (1997) Noun classification in Swahili: a cognitive-semantic analysis using a computer database. In *African languages at the crossroads: papers from Kwaluseni*, ed. R. K. Herbert, 599-628. Köln: Rüdiger Köppe.
- Contini-Morava (2000) Noun Class as Number in Swahili. In Ellen Contini-Morava and Yishai Tobin (eds.) *Between Grammar and Lexicon*, 3–30. Amsterdam/Philadelphia: John Benjamins.
- Contini-Morava, Ellen (2002) (What) do noun class markers mean? In *Signal, Meaning and Message*, eds. Wallis Reid, Otheguy Ricardo and Nancy Stern, 3-64. Amsterdam: John Benjamins.
- Corbett, Greville (1991) *Gender*. Cambridge: Cambridge University Press.
- Creissels, Denis (2005) A typology of subject marker and object marker systems in African languages. In F.K.E. Voeltz (Ed.) *Studies in Linguistic Typology*: John Benjamins, pp. 445–459.
- Creissels, Denis (to appear) Typologie des systèmes de classes nominales dans deux groupes de langues atlantiques. In Denis Creissels et Konstantin Pozdniakov (éds.) *Les classes nominales dans les langues atlantiques*.
- Crisma, Paola, Lutz Marten and Rint Sybesma (2011) The point of Bantu, Chinese and Romance noun classification. In *Rivista di Linguistica* 23 (2), pp. 251–299.
- Croft, William (2012) *Verbs: Aspect and Causal Structure*. Oxford: Oxford University Press.
- Croft, William and Timothy C. Clausner (1999) Domains and image schemas. In *Cognitive Linguistics* 10 (1), pp. 1–31.
- Croft, William and D. Alan Cruse (2004) *Cognitive Linguistics*. Cambridge: Cambridge University Press.
- Dahl, Östen (1985) *Tense and aspect systems*. Oxford: Basil Blackwell.
- Delplanque, A. (1995) Que signifient les classes nominales? L'exemple du Moore, langue Gur. In *Linguistique Africaine* 15, pp. 5–54.
- Denny and Creider (1986) The semantics of noun classes in proto-Bantu. In Colette Craig (Ed.) *Noun classes and categorization. Proceedings of a symposium on categorization and noun classification*. Amsterdam, Philadelphia: John Benjamins, pp. 217–240.
- Diandy V.E. (2005) *Phonologie de Kujireray*. Masters thesis. UCAD, Dakar.

- Diessel, Holger (1999) *Demonstratives. Form, function and grammaticalization*. Amsterdam, Philadelphia: John Benjamins.
- Dingemanse, Mark The semantics of Bantu noun classification: a review and comparison of three approaches. MA. Leiden University.
- Dixon, Robert M. W. (1986) Noun Classes and Noun Classification in Typological Perspective. In Colette Craig (Ed.) *Noun classes and categorization. Proceedings of a symposium on categorization and noun classification*. Amsterdam, Philadelphia: John Benjamins, pp. 105–112.
- Doneux, Jean Leonce (1975) *Les systemes phonologiques des langues de Casamance*. Dakar: CLAD.
- Dowty, David (1979) *Word meaning and Montague grammar*. Dordrecht, Boston: Reidel
- Dowty, David (1991) Thematic Proto-Roles and Argument Selection. In *Language* 67 (3), pp. 547–619.
- Evans, Vyvyan and Melanie Green (2006) *Cognitive Linguistics: An Introduction*. Edinburgh: Edinburgh University Press.
- Fillmore, Charles J. (1968) The Case for Case. In E. Bach and R Harms (Eds.) *Universals in Linguistic Theory*. New York: Holt, Rinehart and Winston.
- Fillmore, Charles J. (1976) Frame semantics and the nature of language. In *Annals of the New York Academy of Science* 280, pp. 20–32.
- Foucher, Vincent (2003) Pas d’alternance en Casamance? Le nouveau pouvoir sénégalais face à la revendication séparatiste casamançaise. In *Politique africaine* 3 (91), pp. 101–119.
- Goldberg, Adele (1995) *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press.
- Goldberg, Adele (2003) Constructions: a new theoretical approach to language. In *TRENDS in Cognitive Sciences* 7 (5), pp. 219–224.
- Greenberg, Joseph H (1978) How do languages acquire gender markers? In Joseph H. Greenberg, Charles A. Ferguson and A. Moravcsik Edith (eds.), *Universals of Human Language*. Stanford: Stanford University Press, pp. 47-82.
- Grimshaw, Jane (1990) *Argument Structure*. Cambridge, Massachusetts: MIT Press.
- Grinevald, Collette and Frank Seifart (2004) Noun classes in African and Amazonian languages: Towards a comparison. In *Linguistic Typology* 8, pp. 243–285.

- Hendrikse (1997) Systemic polysemy in the southern Bantu noun class system. In Hubert Cuyckens and Britta E. Zawada (Eds.) *Polysemy in Cognitive Linguistics*. Selected Papers from the International Cognitive Linguistics Conference, Amsterdam. Amsterdam, Philadelphia: John Benjamins, pp. 185-.
- Hopkins, Bradley L. (1995) Contribution à une étude de la syntaxe du Diola-Fogny. PhD. UCAD, Dakar.
- Hopper, Paul and Sandra Thompson (1980) Transitivity in Grammar and Discourse. In *Language* 56 (2), pp. 251–299.
- Horton, Robin (1985) Stateless societies in the history of West Africa. In J.F.A. Ajayi and Michael Crowder (Eds.) *History of West Africa*. 3rd ed.: Longman (1), pp. 87–128.
- de Jong, Ferdinand (2007) *Masquerades of Modernity: Power and Secrecy in Casamance, Senegal*. Edinburgh: Edinburgh University Press.
- Kemmer, Suzanne (1993) *The Middle Voice*. Amsterdam/Philadelphia: John Benjamins.
- Kihm, Alain (2000) Noun Class, Gender, and the Lexicon-syntax-morphology Interfaces: a Comparative Study of Niger-Congo and Romance Languages (ms.).” *Atlantic*.
- Klaiman, M. H. (1991) *Grammatical Voice*. Cambridge: Cambridge University Press.
- Kopstevskaya-Tamm, Maria (1993) *Nominalizations*. London, New York: Routledge.
- Krifka, Manfred (1989) Nominal reference, temporal constitution and quantification in event semantics. In Renate Bartsch, Johan van Benthem and Peter van Emde Boas (eds.) *Semantics and Contextual Expression.s* Dordrecht: Foris, pp75-115.
- Krifka, Manfred, Francis Jeffrey Pelletier, Gregory N. Carlson, Alice ter Meulen, Gennaro Chierchia and Godehard Link (1995) Genericity: an introduction, in: G. Carlson and F. Pelletier (eds.) *The Generic Book*, Chicago: University of Chicago Press, 1-124
- Lakoff, George (1987) *Women, Fire and Dangerous Things: What categories Reveal About the Mind*. Chicago: University of Chicago Press.
- Lakoff, George and Mark Johnson (1980) *Metaphors We Live By*. Chicago: University of Chicago Press.
- Langacker, Ronald (1987) Nouns and Verbs. In *Language* 63, pp. 53–94.
- Langacker, Ronald (1991) *Concept, image and symbol: The cognitive basis of grammar*. Berlin: Mouton de Gruyter.
- Linares, Olga (1992) *Power, Prayer and Production: The Jola of Casamance, Senegal*.

- Cambridge: Cambridge University Press.
- Lucy, John A. (2000) Systems of noun classification: a concluding discussion. In Gunter Senft (Ed.) *Systems of Noun classification*. Cambridge: Cambridge University Press.
- Lüpke, Friederike (2005) A grammar of Jalonke argument structure. PhD. Radboud Universiteit Nijmegen.
- Lüpke, Friederike (2009) Data Collection Documentation Methods for Field-based Language Documentation. In *Language Documentation and Description* 6, pp1-39.
- Lüpke, Friederike (2010a) Multilingualism and Language Contact in West Africa: Towards a Holistic Perspective. In *JLC 3 (THEMA)*, pp1-14.
- Lüpke, Friederike (2010b) Language and Identity in Flux. In Search of Bainouk. In *JLC 3 (THEMA)*, pp155-174.
- Lüpke, Friederike (2015) Pure fiction - the interplay of indexical and essentialist language ideologies and heterogeneous practices. A view from Agnack. In *Language Documentation and Conservation*.
- Lüpke, Friederike and Ann Storch (2013) *Repertoires and Choices in African Languages*. Berlin: Mouton de Gruyter.
- Malchukov, Andrej (2004) Nominalization/verbalization: constraining a typology of transcategorical operations: LINCOM EUROPA.
- Mark, Peter, Ferdinand de Jong and Clémence Chupin (1998) Ritual and Masking Traditions in Jola Men's Initiation. In *African Arts* 31 (1).
- Mufwene, Salikoko S. (1980) Bantu noun class prefixes: inflectional or derivational? In Jody Kreiman and Almerindo E. Ojeda (Eds.) *Papers from the Sixteenth Regional Meeting Chicago Linguistic Society*. Chicago Linguistic Society. Chicago: University of Chicago.
- Newman, Paul (1990) Nominal and verbal pluractionality in Chadic. Dordrecht: Foris
- Nugent, Paul (2010) The History of Ethnicity: Mandinka/Jola and Ewe/Agotime Identities in th Nineteenth and Twentieth Centuries. In Alexander Keese (Ed.) *Ethnicity and the long-term perspective: The African experience*. Bern: Peter Lang, pp. 127–153.
- Palmer, Gary B. and Claudia Woodman (2000) Ontological Classifiers as Polycentric Categories as Seen in Shona Class 3 Nouns. In Martin Pütz and Marjolijn H. Verspoor (Eds.) *Explorations in Linguistic Relativity*. Amsterdam, Philadelphia: John Benjamins.

- Palmeri, Paolo (1995) Retour dans un village Diola de Casamance. Chronique d'une recherche anthropologique au Senegal. Paris: L'Harmattan.
- Payne, Thomas E. (1997) Describing morphosyntax: a guide for field linguists. Cambridge: Cambridge University Press.
- Posner, Michael I. (1986) Empirical studies of prototypes. In Colette Craig (Ed.) *Noun classes and categorization. Proceedings of a symposium on categorization and noun classification*. Amsterdam, Philadelphia: John Benjamins, pp. 53-62.
- Pozdniakov, Konstantin (2007) Les langues atlantiques. In Emilio Bonvini, Joëlle Busuttill and Alain Peyraube (eds.), *Dictionnaire des langues*. Lyon, Quadrige.
- Pozdniakov, Konstantin (2010) La classification nominale: à la croisée des paradigmes. In Franck Floricic (Ed.) *Essais de typologie et de linguistique générale. Mélanges offerts à Denis Creissels*. Lyon: ENS Éditions, pp. 87–105.
- Pozdniakov, Konstantin, and Guillaume Segerer (2010) Classification De Langues Atlantiques. Mise à Jour Senelanguages. Ndayane. Ndayane/Senegal.
- Rathert, Monika and Artemis Alexiadou (2010) The syntax of nominalizations across languages and frameworks. Berlin, Mouton de Gruyter.
- Richardson, Irvine (1967) Linguistic evolution and Bantu noun class systems. In *La classification nominale dans les Langues Négro-Africaines*. Paris: Centre National de la Recherche Scientifique, pp. 373–389.
- Roche, Christian (1976) Conquete et resistance des peuples de Casamance (1850-1920). Dakar, Abidjan: Les Nouvelles Editions Africaines.
- Rosch, Eleanor (1973) Natural categories. In *Cognitive Psychology* 4 (328-350).
- Rosch, Eleanor (1975) Cognitive representations of semantic categories. In *Journal of Experimental Psychology: General* 104 (192-233).
- Rosch, Eleanor (1978) Principles of categorization. In E. Rosch and B.B. Lloyd (Eds.) *Cognition and categorization*. Hillsdale, NJ: Erlbaum.
- Rosch, Eleanor, Carolyn B. Mervis, W. Gray, D. Johnson and P. Boyes-Braem (1976) Basic objects in natural categories. In *Cognitive Psychology* 8, pp. 382–439.
- Rosch, Eleanor H. and Carolyn B. Mervis (1975) Family Resemblances. Studies in the Internal Structure of Categories. In *Cognitive Psychology* 7, pp. 573–605.
- Sagna, Serge (2008) Formal and semantic properties of the Gújjolaay Eegimaa (a.k.a Banjal)

- noun classification. PhD. SOAS, London.
- Sagna, Serge (2010) Issues in noun classification and noun class assignment in Gujjolay Eegimaa (Banjal) and other Joola languages. In *Studies in African Linguistics* 39 (1), pp. 1–33.
- Sambou, Pierre-Marie (1979) Diola Kaasa Esuulaalur. Phonologie, Morphophonologie Et Morphologie. PhD. UCAD, Dakar.
- Sapir, J. David (1965) A grammar of Diola-Fogny. Cambridge: Cambridge University Press.
- Sapir, John David (1971) West Atlantic: An inventory of the languages, their noun class systems and consonant alternations. In Thomas Seboek (Ed.) *Current Trends in Linguistics*. The Hague: Mouton, pp. 45–112.
- Sauvageot, Serge (1967) Note sur la classification nominale en baïnouk. In Gabriel Manessy and André Martinet (Eds.) *La classification nominale dans les langues négro-africaines*. Aix-en-Provence: Editions du Centre National de la Recherche Scientifique, pp. 136–225.
- Schadeberg, Thilo C. (2001) Number in Swahili Grammar. In *AAP* 68. Swahili Forum VIII, pp. 7–16.
- Seck, Cornelia. (2002) Some notes on the noun classification in Diola-Fogny (Jóola Foñi). *Afrikanistische Arbeitspapiere* 69, pp.189-203.
- Selvik (1997) When a dance resembles a tree. In Hubert Cuyckens and Britta E. Zawada (Eds.) *Polysemy in Cognitive Linguistics. Selected Papers from the International Cognitive Linguistics Conference*, Amsterdam. Amsterdam, Philadelphia.
- Senft, Gunter (2000) Noun classification systems. In Gunter Senft (Ed.) *Systems of Noun classification*. Cambridge: Cambridge University Press, pp. 11–49.
- Szawerna, Michal (2004) Deverbal nominalization as a type of metonymic extension from processes to things. Perspectives on Metonymy. Łódź, Poland.
- Talmy, L. (2000) Towards a cognitive semantics. Cambridge, Massachusetts: MIT Press.
- Taylor, John (2008) Prototypes in Cognitive Linguistics. In *Handbook of Cognitive Linguistics and Second Language Acquisition*, pp. 39-65.
- Taylor, John R. (1995) Linguistic Categorization. Oxford: Oxford University Press.
- Tversky, Barbara. (1985). Categories and parts. In C. Craig & T. Givon (Eds.), *Noun classes and categorization*. Philadelphia: John Benjamins, pp. 63-75.
- Tendeng, Odile. 2007. *Le Gusiilay: Un Essai De Systématisation*. Bern: Peter Lang.

- Vendler, Zeno. 1967. Verbs and times. *The Philosophical Review* LXVI:143-160.
- Verkuyl, H.J. (1972) On the compositional nature of the aspects. Reidel: Dordrecht.
- Weiss, Henri (le Père). 1940. Grammaire et lexique du diola du Fogny. Paris: Imprimerie A. Thonyon-Thèze.
- Williamson, Kay and Roger Blench (2000) Niger-Congo. In Bernd Heine and Derek Nurse (Eds.) *African Languages: An introduction*. Cambridge: Cambridge University Press, pp. 11–42.
- Wilson, W.A.A. (1989) Atlantic. In John Bendor-Samuel and Rhonda L. Hartell (Eds.) *The Niger-Congo Languages*. London, New York: University Press of America, pp. 81–104.
- Wintz, Édouard (1909) Dictionnaire français-dyola et dyola-français: précédé d'un essai de grammaire. Paris: Elinkine.
- Wright, Donald R. (1985) Beyond migration and conquest: Oral traditions and Mandinka ethnicity in Senegambia. In *History in Africa* 12, pp. 335–348.
- Yap, Foong Ha, Karen Grunow-Harsta and Janick Wrona (2011) Nominalization in Asian languages. Amsterdam, Philadelphia: John Benjamins
- Zawada, Britta and Mtholeni N. Ngcobo (2008) A Cognitive and Corpus-linguistic Re-analysis of the Acquisition of the Zulu Noun Class System. In *Language Matters. Studies in the Languages of Africa* 39 (2). Amsterdam, Philadelphia; John Benjamins, pp. 316–331.