



A study of space in Caac, an Oceanic language spoken in the north of New Caledonia

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**A STUDY OF SPACE IN CAAC,
AN OCEANIC LANGUAGE SPOKEN IN THE NORTH OF
NEW CALEDONIA**

A thesis submitted to The University of Manchester
for the degree of Doctor of Philosophy
in the Faculty of Humanities

2014

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Word count: 86,238 words

Abbreviations

1	first person
2	second person
3	third person
ABS	absolute
ACTION	nominalizer deriving action nouns from verbs
ADD	addressee
AdvP	adverb phrase
ANAPH1	first anaphoric
ANAPH2	second anaphoric
ANAPH.SP	spatial anaphoric
ANAPH.TP	temporal anaphoric
ANIM	animate
APPL	applicative
ASS	assertive
BENF	beneficiary
CAUS	causative
CENTRIF	centrifugal 'away from the Deictic Centre'
CENTRIP	centripetal 'towards Deictic Centre'
CL	clause
CLASS	classifier
CONTENT	morpheme deriving a noun from a noun expressing the content of an container
CMP	complementizer
DC	deictic centre
DEF	definite
DET	determination
DIR	directional
DIST	distal
DU	dual
DUR	durative
DX	deictic
EN	English
EXCL	exclusive
EXIST	existential
FIG	Figure (i.e. the entity about which spatial information is given)
FR	French
ID.REL	identificational relative clause
INANIM	inanimate
INCL	inclusive
IND	indirect
INDEF	indefinite
INDPT	independent (i.e. free) pronouns
INTRN	intransitive verb
IRR	irrealis
LOC	locative
M	masculine
MEANS	nominalizer deriving instruments nouns from verbs
N	noun
NEG	negation
NEUT	neutral
NON.PERS	non-personal
NP	nominal phrase
O	object
ORD	ordinal

PAn	Proto-Austronesian
PAT	patient
PST	past reference
PERF	perfective
PERS	personal
PL	plural
PLACE	nominalizer deriving location nouns from verbs
POc	Proto-Oceanic
POSS	possessive
PP	prepositional phrase
PRED	predicate
PRE.LOC	pre-locative
PRES	presentative
PROH	prohibition
PROPERTY	nominalizer deriving nouns expressing the property of an object or an agent from verbs
PROX	proximal
PURP	purposive
QUOT	quotative
REC	reciprocal
REL	relative (clause or marker)
RES	resumptive
s	pronominal subject
S	subject
SBJ	subject marker
SG	singular
SP	spatial
S.PROX	super proximal
TAM	tense, aspect, mood
TOP	topic
TP	temporal
TR	transitivizing
TRN	transitive verb
Vb	verb
VIRT	virtual
WAY	nominalizer deriving manner nouns from verbs
.	separates components of a single morpheme
-	affix
=	clitic
~	amalgam
~	separates allomorphs in free variation
≈	separates morpho-phonologically conditioned allomorphs
//	phonological transcription
[]	indicates either a phonemic transcription or, in numbered examples, the syntactic structure of the sentence; it is sometimes used to indicate spatial concepts in examples as well
<>	graphemic transcription
x	unknown, not understood

Abstract

In the present study, I describe the linguistic expression of space in Caac, an Oceanic language spoken in New Caledonia, from both a descriptive and theoretical perspective. Caac is a minority language whose transmission process is not ensured anymore; it is also an under-documented language. Part I provides a concise description of Caac grammar, presenting thereby a first formal portrait of this language to the reader. Part II describes the formal and semantic features of the linguistic resources available in Caac to encode spatial relationships. Part III presents the theoretical framework based on and exploring further the vector analysis developed by Bohnermeyer (2012) and Bohnermeyer & O'Meara (2012). In particular, I propose an additional sub-category of vectors (Head-unspecified Vectors) which account for the uses of centrifugal forms in Caac. The resulting theoretical framework enables me to provide a systematic account of expressions of orientation as well as location and motion, and to combine the Frames of Reference typology (Pederson et al. 1998; Levinson, 1996, 2003; Bohnermeyer & Levinson, not dated) with an analysis of deictic expressions within a single framework. It also allows us to give a detailed analysis of the uses and combinations of Caac absolute and deictic directionals, which are spatial terms of primary importance for spatial reference in Caac. Special attention, moreover, is given to the use of directionals in spatial constructions involving Fictive Motion. The analysis of Caac data leads us to introduce an additional category of Fictive Motion beyond those previously recognised in the literature, labelled here 'Anticipated Paths'. In the conclusion, I propose a functional and cultural-specific explanation for the emergence of this construction. Anticipated Path expressions in turn shed new light on the nature of vectors and the relationship between location, motion and orientation.

Declaration

I declare that no portion of the work referred to in the thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

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Writing a thesis is also learning how to deal with the limits of our research and its contradictions. Here is one of them: although my thesis is a very specialized piece of work written in a language most of them cannot read, it is dedicated to the Mwelebeng people in New Caledonia. Et, s'il y a une partie de la thèse que j'aimerais accessible aux habitants de Pouébo, c'est celle-ci. Je l'écris donc en français. Je remercie du fond du coeur Carine Nonghai et ses parents, Came Carine ma Ne Carine, pour m'avoir les premiers ouvert la porte, m'avoir guidée sur le chemin coutumier et avoir participé avec tant de générosité à mon travail sur le caac. Merci Ne Jiluk et merci Lulu pour m'avoir accueillie chez vous et pris soin de moi tout au long de mes terrains. A la famille Nonghai et Devath, donc, qui m'ont accordé leur confiance et leur soutien psychologique et matériel sans faille, mille mercis. Je dois également énormément à une autre famille, celle de Jean-Marc Pidjo et Ghislaine Pidjo, qui m'a tellement apporté mais aussi poussée toujours plus loin sur mon chemin intellectuel et personnel. Came Atena, je ne sais plus comment te remercier pour toutes ces très précieuses heures de travail et de partage. Aux habitants de Pouebo qui ont subi mes questions, mes doutes, ma curiosité et m'ont toujours reçu avec bienveillance, merci. Sans oublier Dolorès Bodmer, un grand merci à toi pour m'avoir mise en contact avec Carine!

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Part I: THE CAAC LANGUAGE

Chapter 1: Introduction

1.1 The language and its speakers

1.1.1 Location

Caac is one of the twenty-eight indigenous languages¹ spoken in New Caledonia. New Caledonia is a French Pacific collectivity situated in the easternmost region of Melanesia, north of the tropic of Capricorn, between the 18th and 23rd southern parallels and between the 159th and 169th meridians (Figure 1).

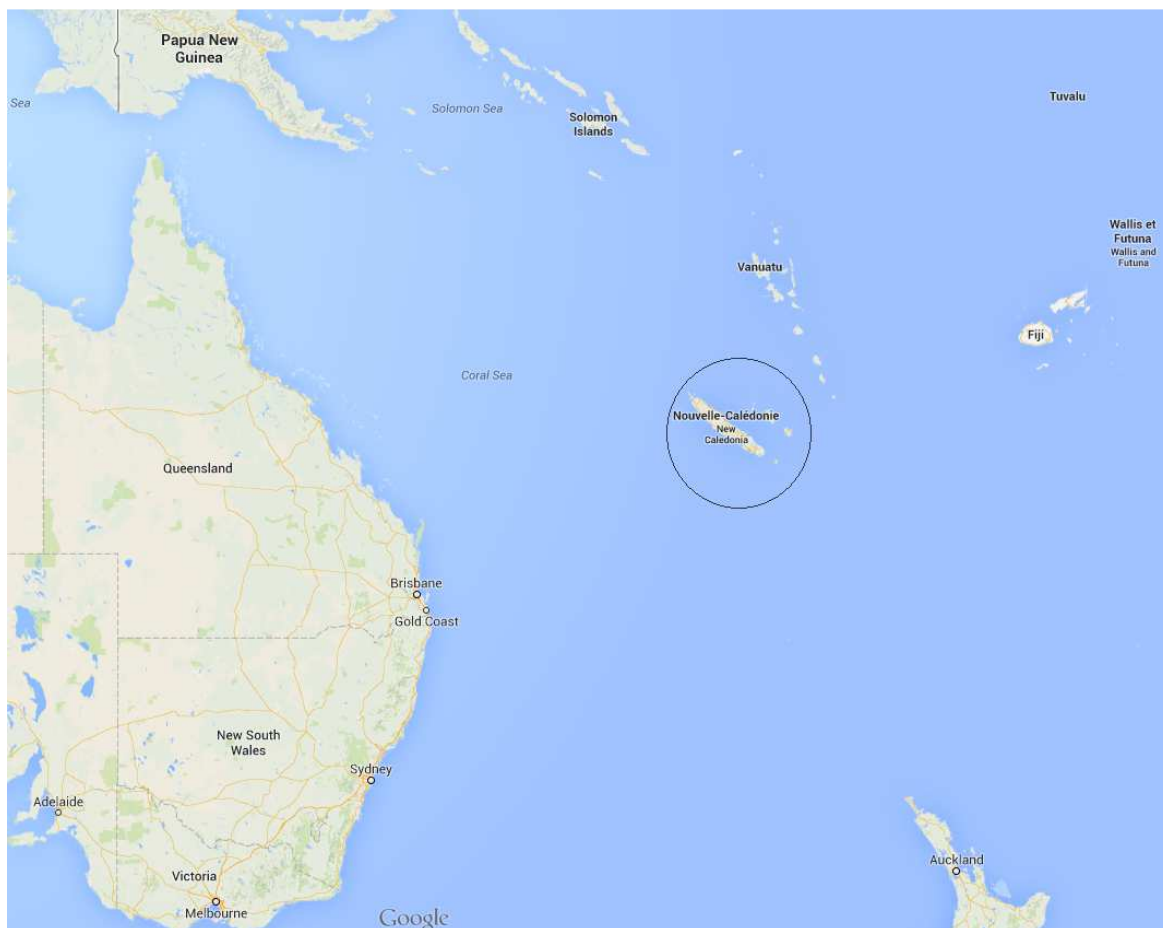


Figure 1: Map of New Caledonia in the South Pacific region²

¹ Académie des Langues Kanak, last accessed 05/01/2015.

² Google Maps, last accessed 05/01/2015.

The territory of New Caledonia comprises the main island called 'la Grande-Terre' (98% of the territory), the Loyalty Islands, the Isle of Pines, the Belep and Chesterfield islands and various reefs, which all together cover 18,576 square meters. New Caledonia is situated 500km from the Vanuatu Islands and 1,500km from Australia, the Fidji and Solomon Islands. A mountain range runs the length of the main island, the highest point Mont Panié being in the north (1,628m); as we will see in chapter 6, this geographical characteristic is of some importance for descriptions of space in Caac. The main city and administrative centre is Noumea. The New-Caledonian population estimate by INSEE (2009³) is 245,580 inhabitants, 99,100 of whom are Kanak (i.e. 40.3% of the population). Europeans (mainly French) form the second most important community (29.2%); the rest of the population comes from South-East Asia or the Pacific region, notably Vietnam, Indonesia, Tahiti, the Vanuatu Islands, and Wallis and Futuna Islands. Most of them live in the Noumea agglomeration, in the south of the mainland.

New Caledonia has been inhabited for over 3,300 years. The indigenous population called *Kanak*⁴ results from migrations originating from the south-east of Asia⁵ (the presence of remains of the Lapita pottery confirming its Oceanic origin; see Sand, Bole & Ouetcho (2000: 173-5) and Sand (2010) inter alia). The Kanak social organization is based on clans⁶ (groups consisting of several families) gathered within a chiefdom. Traditionally, the Kanak people live off agriculture, hunting and fishing. The social and agricultural events in the life of the Kanak people used to be based on the rhythm of the culture of the yam ('the calendar of the yam'). Social relationships are ruled by a set of unwritten rules and rituals called *la coutume* in New Caledonian French. *La coutume* rests on verbal exchanges (*la parole*) and is the opportunity for the participants to re-assert and strengthen (or challenge) the social position, status, rights and legitimacy of the individuals or clans taking part in the customary ceremonies and rituals within the overall hierarchy of the chiefdom. Nowadays, the everyday life of the Kanak people also integrates many aspects of the Western lifestyle imported by the French community living there and the media. For example, they use the Pacific Franc money as well as

³ Institut National de la statistique et des études économiques, last accessed 05/01/2015.

⁴ First used by French colonizers to refer to the indigenous population of New Caledonia, the word *canaque* has been reclaimed by the indigenous people and became a term of self-appellation (*kanak*). The new spelling *kanak* follows the rules of the orthography used to write down Austronesian languages nowadays. By contrast with other adjectives and nouns in French (including the now deprecated word *canaque(s)*), *kanak* does not agree in number. The word *kanak* is regarded as a symbolic way of creating distance between the cultural identity of the colonizing people and the cultural identity of the indigenous people.

⁵ It is hypothesized that the speakers of Austronesian languages (Kanak languages belong to the Austronesian language family, see section 1.1.2 below) may originate in Taiwan. For more information on this topic, see for instance Haudricourt (1964) and Ozanne-Rivierre (1998b).

⁶ See Pidjo (2003) for a detailed study on the social organisation of the Caac speakers in the Mwelebeng chiefdom.

customary money⁷ for special occasions; they get food from shops as well as their gardens, the bush and the sea. Most people have access to the media and technology (from cars to radios, TVs, mobile phones, and at a lesser degree, computers); young adults look for jobs and children go to schools. The customary lifestyle is preserved to a greater extent in the rural areas than in cities.

The first European to arrive in New Caledonia was Captain James Cook on the 4th of September 1774 and in 1853, New Caledonia was annexed to France. It is still a French territory but its status has changed several times since then. In the 1980s, the political tensions between loyalists and members of the independence movement led to three official agreements, the Matignon (26th of June 1988), Oudinot (20th of August 1988) and Noumea (5th of May 1998) Accords. These agreements initiate a gradual transfer of competences from the French State to New Caledonia and pave the way for a self-determination referendum which is planned to take place between 2014 and 2018. New-Caledonia's official status is now a French Pacific collectivity with special status (*collectivité d'Outre-Mer à statut particulier*⁸). The Kanak people have a double civil status: they are French citizens, and as the native New-Caledonian people, they have a special status (*statut civil coutumier*) which takes account of their customary laws.

The area where most Caac speakers live is the village of Pouebo (*Pweevo*⁹ in Caac) on the north-eastern coast of the main land, in the customary area of Hoot ma Waap. The administrative limits of the village of Pouebo roughly correspond to the current limits of the Mwelebeng chiefdom whose territory has been modified, however, with the arrival of the first colonizers in the 19th century and the recent redistribution of customary land. Pouebo lies between the mountain range on the west side and the lagoon on the east side, and along the shore, from the area (called *tribu* in New Caledonian French) of *Re caac* (St-Louis) on the north side to *Cabwen* (Tchambouène) and *Yabe* (Yambé) in the south (Figure 2). The neighbouring villages are *Balaar* (Balade) in the north where Nyelâyu speakers live and *Jawe* (Diahoué) where Jawe speakers reside. The neighbouring community living inland to Pouebo, in the mountain range consist of Yuanga and Zuanga speakers.

⁷ Also called *monnaie kanak* in New Caledonian French.

⁸ Collectivités locales, le portail de l'Etat au service des collectivités, last accessed 05/01/2015.

⁹ Placenames in Caac are given in italic; their translations in French are given in normal font.



Figure 2: Map of Pouébo (Institut Géographique National, 1995)

1.1.2 Linguistic affiliation

The New Caledonian (or Kanak) languages are part of the Oceanic branch of the Austronesian linguistic family. The names and the numbers of subgroupings of the various Austronesian languages have been much debated; the classification here follows one of the genetic models proposed by Lynch, Ross & Crowley (2001: 112-113). Caac belongs to the Mainland New Caledonian grouping:

- *Southern Oceanic linkage*
 - Northern Vanuatu linkage*
 - Nuclear Southern Oceanic linkage*
 - Central Vanuatu linkage*
 - Southern Efate / Southern Melanesian linkage*
 - South Efate dialect network*
 - Southern Melanesian family*
 - Southern Vanuatu family*
 - New Caledonian family*
 - Mainland New Caledonian (linkage?)***
 - Loyalty Islands family*

Around twenty-eight indigenous languages are still spoken in New-Caledonia, one of which is Polynesian (Fagauvea). Dialectal variability complicates the linguistic map of New-Caledonia and the number of languages is still debated.¹⁰ Despite frequent contacts between the various Kanak chiefdoms, the linguistic area is very diverse (Figure 3).

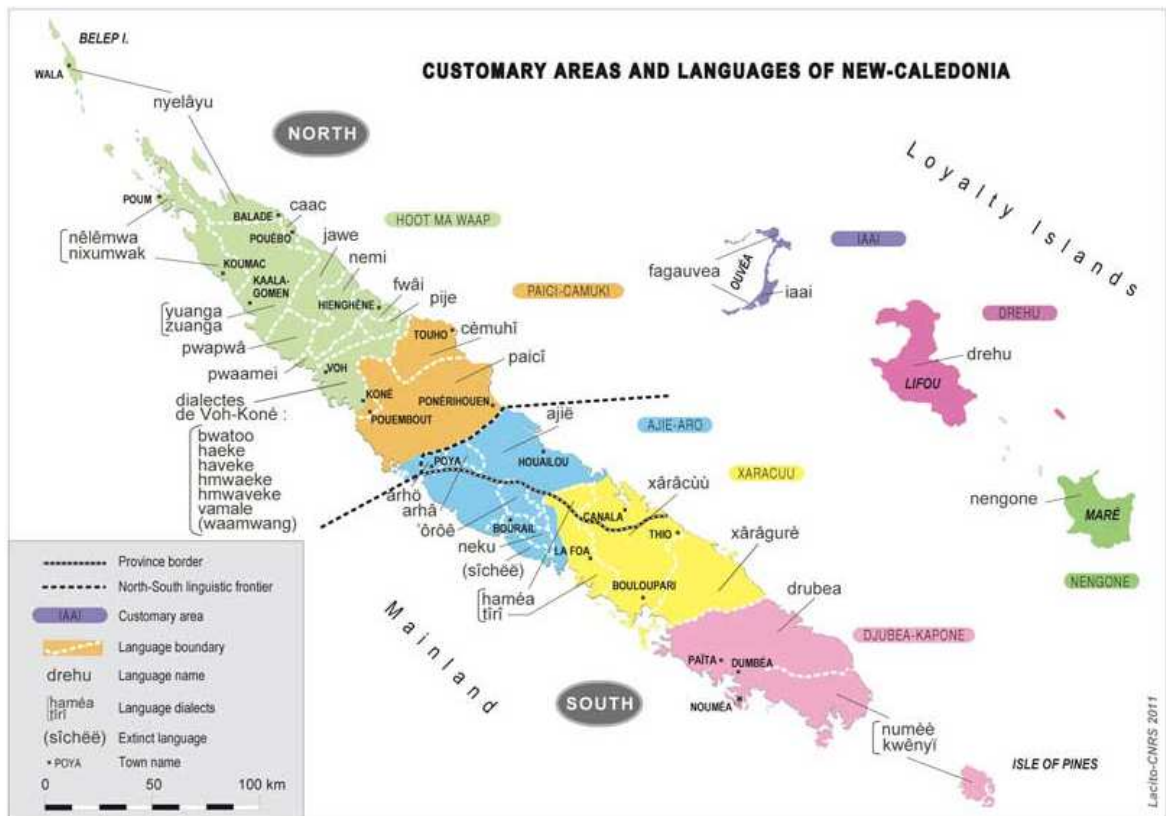


Figure 3: Map of New Caledonian Languages (copied from Laboratoire des Civilisations à Tradition Orale – CNRS, 2011)

The grammatical systems of Kanak languages are varied and some of their phonological systems are quite complex (in particular the four languages with tones). This variety can be explained by the old age of the populating movement, and possibly a strong determination of the numerous communities to maintain a separate linguistic/social identity. Language contact can be observed with French and Polynesian languages partly affecting the lexicon of the Kanak languages. New Caledonian languages are traditionally divided into the Loyalty Islands group and the Mainland group, the latter being further sub-divided into the North/South groupings (Rivierre, 1981; Haudricourt & Ozanne-Rivierre, 1982: 7; Ozanne-Rivierre, 1995: 44-45). The Northern group¹¹ (comprising Caac) exhibits

¹⁰ Corpus de la Parole, last accessed 05/01/2015.

¹¹ For thorough comparative studies on the phonological systems of the Northern New Caledonian languages, see Haudricourt (1971), Haudricourt & Ozanne-Rivierre (1982: 9-59), Rivierre (1994: 508-519), Ozanne-Rivierre (1995), Ozanne-Rivierre & Rivierre (1989: 415-420; 2004) inter alia.

conservative features in terms of syllabic structure, vowels and etyma (Haudricourt & Ozanne-Rivierre, 1982: 25-59; Ozanne-Rivierre, 1995; Ozanne-Rivierre & Rivierre, 2004), and word order (VOS in the northern languages vs SVO in the southern languages). The typological profile of Caac is fairly typical of Northern New Caledonian languages (see chapter 2).

Caac is spoken by the Mwelebeng people. The most recent estimates report that a bit more than a thousand people declare being Caac native speakers: 1,050 speakers in Rivierre (2003: 370) and 1,165 speakers in ISEE (2009). In Pouebo, the speakers live in several areas: *Re caac* (St-Louis), *Pwai* (St-Marie), *Pweâ* (St-Gabriel), *Re pwec* (St-Joseph and St-Denis), *Wayara* (St-Adolphe/St-Ferdinand), *Cabwen* (Tchambouène), *Yabe* (Yambé), and *Weda* (St-Paul) located in the neighbouring village of *Balaar*.

Part of the community lives near Noumea, mainly in Paita-Mont Dore, and people regularly commute between Noumea and Pouebo. Children who go to school in the south tend to speak French more easily than they speak Caac. The first Caac speakers to settle near the nascent city of Noumea arrived in La Conception in the 1850s, as around 120 people from Pouebo and Balade were forced to accompany the Marist missionaries to La Conception in 1855 (Hollyman, 1999a: 85). The language as spoken by the Mwelebeng people living in Pouebo and by those living in La Conception started to progressively diverge because of the lack of contact between the two communities in the past. The language spoken in Noumea underwent important phonological changes under the influence of the neighbouring southern languages (for some details about the Caac language as spoken in La Conception; see Leenhardt, 1946: 122-127 and Hollyman, 1999a: 85-104). The variant spoken in La Conception has been called *Caawac* by Hollyman (1999a: 85), which is also the name given to the language of the Mwelebeng people as spoken in Pouebo until early 20th century in the literature (*Tiawat* in Bresson, 1912). According to Jim Hollyman (1999a: 85), *Caawac* is not spoken in La Conception anymore. This study focuses on Caac as it is spoken in Pouebo only. Conducting research in La Conception was beyond the scope of this study.

1.1.3 Sociolinguistic background

French is the only official language, and the most frequently used in the media, education, public services, and political life. As the vehicular language, French is also the main means of communication used between different linguistic communities. Its presence and use depend on the milieu, generation, place and degree of education. Although growing, the presence of Kanak languages is still very limited in the media and in the educational system. Kanak people are

traditionally bilingual or multilingual: typically, they can understand the language(s) spoken by the neighbouring linguistic groups, and French.

After three decades of political, social and cultural demands by Kanak people, Kanak languages were officially recognized as “languages of culture and education” by the Noumea Accords in 1998. Several Kanak languages¹² have now been integrated in the territorial curriculum. As for the Caac language, it was taught in Pouebo in an alternative school organized by the community of speakers (*Ecole Populaire Kanak*) at the end of the 1980s and very early 1990s, and more recently in a private secondary school. Nowadays there is no class dedicated to teaching Caac. Generally speaking, Caac is used within the family and in social and customary contexts.

Caac is considered to be a “vulnerable” language according to the UNESCO’s classification.¹³ There are many reasons for the current vulnerability of Caac. Based on my experience in the field and discussions with the sociolinguist Julia Sallabank, who came to visit me in Pouebo in March 2013, what seems to be endangered first of all is the transmission process (see also Sallabank, to appear). Despite the recent authorisation to teach vernacular languages at school and despite efforts of re-valuing linguistic policies, part of the young Mwelebeng people have only passive knowledge of Caac. This can be partly explained by the fact that most adults tend to devalue their own ability to speak Caac and have a negative attitude towards the way the youth speaks Caac. Moreover, the schooling system and the variety of contexts new to their lifestyle (at work, in the media, in public services etc.) favour the use of the lingua franca (French) over Caac.

1.1.4 Previous work on Caac

The first list of words was collected by Cook and Forster in 1774 mixing words in Caac and in Nyelâyu spoken in Balade, where both navigators dropped anchor. In the second half of the 19th century and early 20th century, the Marist missionaries studied Caac but did not publish any religious books. Two missionaries, Father Gagnière and Father Rougeyron, wrote one dictionary each, translating Caac words into Nyelâyu and Iaai. Father Gagnière also wrote down five traditional tales (for more details, see Hollyman, 1999b: 1-2, and Rivierre, 2003: 371). In 1912, living in Pouebo, the priest Edouard Bresson (1884-1967) wrote an incomplete French-Caac dictionary and some grammatical notes. In 1939, the protestant missionary Leenhardt started to collect a list of words in Caac (which he calls

¹² In particular, the major languages (in terms of numbers of speakers) such as Drehu, Nengone, Ajië and Xârâcùù.

¹³ United Nations Educational, Scientific and Cultural Organization, last accessed 05/01/2015.

“Moenebeng” from the name of the chiefdom) and a few pages about the Caac grammar. Leenhardt worked in La Conception with a consultant from *Cabwen* (Pouebo).

The first linguist to work on Caac was André-Georges Haudricourt (1962, 1971) who published on Caac phonology. On his recommendation, the linguist Jim Hollyman started studying Caac and conducted some fieldwork between 1961 and 1966. It seems that Hollyman stayed for a short period in Pouebo and mainly worked in Noumea. Hollyman wrote several papers about the Caac language including a phonological sketch (1962, 1999a: 86-88; 1999b: 4-5), a nine-page grammar sketch (1999a: 106-112) and six pages of grammatical notes (1999b: 5-14). In his book *Etudes sur les langues du Nord de la Nouvelle-Calédonie*, Hollyman examines possession marking in Caac (1999a: 59-71) and provides the first account of the dialectal differences between the way Caac is spoken in Pouebo and in La Conception (1999a: 85-104). Hollyman also gathered traditional narratives¹⁴ from the 19th century (three narratives in (1999a: 105-123) and six narratives in the unpublished dictionary (1999b: 151-185)) and collected several detailed specialized lexicons in Caac and Caawac (lexical fields of plants, animals, kinship and toponymy; see 1999a: 125-162, 163-165). Hollyman worked on a Caac/Caawac-French dictionary (1999b: 25-167); the latter has not been fully revised and has not been published yet. Many words in this dictionary are not recognised by the speakers I worked with; it seems that they have fallen out of use. Differences between Caac as described by Hollyman and present-day Caac have also been observed on the phonological level, e.g. the loss of the distinction between some aspirated consonants and non-aspirated consonants (section 2.1.2), and on the grammatical level, e.g. the replacement of the subject marker *we* by *o* (section 2.2.3.2).

The documentations and descriptions of neighbouring Kanak languages have been of great help and I will make reference to these works throughout the thesis. Amongst the Northern New Caledonian languages, Nêlêmwa has been thoroughly described by I. Brill in a fully-fledged grammar (2002), a Nêlêmwa-Nixumwak-French-English dictionary (2000), and in a number of articles addressing various morphosyntactic topics with a typological and comparative approach. J.C. Rivierre and F. Ozanne-Rivierre have also published in-depth studies of the state, origins and evolution of various phonological phenomena in the languages of the north of New Caledonia. A grammar sketch and dictionary are available in Nyelâyu (Ozanne-Rivierre, 1998a) and in Bwato (Rivierre, Ehrhart & Diéla, 2006). Eventually, a comparative phonological analysis and a thematic dictionary in Jawe, Pije, Fwâi

¹⁴ One tale is translated and glossed; the other two are translated only. The tales are followed by some grammatical notes (Hollyman, 1999a: 119-120).

and Nemi were published in 1982 by A.-G. Haudricourt & F. Ozanne-Rivierre, and a 700 words lexicon in Yuanga¹⁵ was collected by an anthropologist called D. Bretteville (1995).

Not all New Caledonian languages have been documented, and in particular the spatial systems of Kanak languages have not been systematically described. Hitherto, most of the available information about spatial reference in Northern New Caledonian languages is scattered over various grammars, grammar sketches and dictionaries. The seminal articles written by Ozanne-Rivierre (1994; 1997) offer the first general overview on spatial reference in New Caledonian languages. In-depth studies of the spatial deictic systems in Nêlêmwa and in Iaai (Loyalty Islands, New Caledonia) have been published by Brill (2004a) and Ozanne-Rivierre (2004) respectively. In addition, S. Bearune (2006; 2012) wrote her master dissertation on the directional system in Nengone (Loyalty Islands, New Caledonia), and her Ph.D. thesis on the linguistic expression of location in Nengone.

1.1.5 Methods of collection and nature of the data

The present study is based on the data I collected in Pouebo during three fieldtrips covering a period of 8 months in total (6 weeks in January-February 2011, 4 months and a half in September 2011-January 2012 and 2 months in March-April 2013). I recorded data with around 40 male and female speakers from various areas (*tribus*) of Pouebo. The age range of the speakers I worked with was wide, ranging from speakers in their early twenties to one speaker in her nineties. During my three fieldtrips, I was hosted by one family at their home in the area of Pweâ for the whole duration of my field trips. As native-speakers and members of the Mwelebeng chiefdom, they offered me many opportunities to learn about the customary ways (*le chemin coutumier*) to introduce myself, to meet other native speakers, and create bonds with anyone interested in my visit. My host family enabled me to attend events from their community and readily share their daily life, activities but also their connections within the chiefdom.¹⁶

The thesis is based on the data I collected for a documentation project on Caac (IGS0131) supported by the Endangered Languages Documentation Programme (ELDP) funded by Arcadia (<http://www.hrelp.org/grants/>). The LaCiTO (Laboratoire des Civilisations à Tradition Orale, CNRS, France) also provided a financial contribution which funded my first fieldtrip in Pouebo. The data are being progressively deposited in the Endangered Languages Archive (ELAR) in the School of Oriental and African Studies in the University of London (<http://elar.soas.ac.uk/deposit/0073>).

¹⁵ Isabelle Brill is currently documenting Zuanga-Yuanga.

¹⁶ For more details about my personal experience of fieldwork as a foreigner and female field worker, see Cauchard (to appear).

I recorded around 40hrs of data (mainly audio recordings, and a few hours of video recordings). Around 10h have been transcribed and partly glossed and translated, with help from speakers in the field. They are very diverse in terms of focus, ranging from elicited to spontaneous data. They cover many topics: life stories, social organization (present and past) and the evolution of speakers' lifestyle over the last decades, traditional techniques and concepts, environment (landscapes, routes, animals and plants), discussions of lexical items, procedural discourses, traditional narratives called *higon* which describe the successive migrations, the distribution of land and the present spatial features of the chiefdom in a metaphoric way.¹⁷ Elicited data with a focus on spatial language include stimuli such as the Topological Relations Pictures series (Bowerman & Pederson, 1992), the Positional Verbs photos series (Ameka, de Witte & Wilkins, 1999), the Man & Tree Game (Levinson et al., 1992), and the Motion verb stimulus (Levinson, 2001). I also resorted to the widely used picture book entitled *Frog, Where Are You* (Mayer, 1969). Elicited data were also prompted by scenarios and pictures I created for that purpose; some of these stimuli were inspired by the Ball & Chair picture series developed by the MesoSpace team (Bohnenmeyer, 2008) and the elicitation game 'One table, two speakers, four cups' created by François (2003: 420-421). Spatial information was also elicited by mentioning some experiences I shared with the speakers and asking them to tell me or another speaker about it (e.g. mentioning our visit to a garden inland or a customary ceremony we attended). Direct questions were also employed to collect and check data on space. Some data have been checked or further elicited by emails and phone with one or two speakers after I left the field.

1.1.6 Orthography and conventions used

Caac is transmitted by oral tradition and its orthography is not yet officialised. The graphemes I used in this study to transcribe Caac are presented in the phonological sketch (section 2.1).

Each example in Caac consists of three lines: (i) the Caac transcription in italic font, (ii) the morpheme-by-morpheme gloss, and (iii) the English translation in single quotation marks ('...'). A literal translation is sometimes given in brackets. The source of part of the examples is given at the end of the translation, within brackets: the name¹⁸ of the text appears first (e.g. **We_DI**), followed by two capital letters referring to the speaker (e.g. **We_DI**). Fieldnotes are referenced as 'Fldnt (+ number)', and can specify the speaker (e.g. Fldnt_**OD**).

The following transcription conventions are employed: a comma in the Caac text is used to indicate a rising intonation; the dot signals a falling intonation. A long break is represented by three dots (...). A

¹⁷ For more information about *higon*, see Pidjo, 2003: 122-124.

¹⁸ The name of the text is written either in Caac or in English.

question mark is used for rising intonation in interrogative sentences. A hyphen is used for affixes and an equal sign for clitics; periods in the gloss separate several pieces of information about a single morpheme (e.g. 3SG.S for the third person singular subject pronoun). In the analysis and for quotation forms, the wavy equal sign (\approx) signals that the second linguistic form has undergone a stem modification (e.g. the free noun | *mwa* \approx *mwe*-POSS 'house(-POSS)'). But note that in the Caac text and its gloss, stem-internal change is not indicated (e.g. *mwe Evin* 'the house of Evin' is glossed: house Evin). Square brackets in the Caac text generally represent syntactic boundaries; they are sometimes also used to signal key concepts of spatial descriptions (e.g. Path, Goal etc., see chapter 3). In the Caac text, words originating in French are underlined (e.g. FR vélo 'bicycle'; loto < FR *l'auto* 'the car'). Words or strings of words in Caac illustrating a point are given in bold font. An asterisk preceding some text in Caac or in English indicates that what follows is not grammatical. An asterisk is also used to signal reconstructed words (Proto-Oceanic) but unlike examples of ungrammatical phrases or clauses, Proto-Oceanic words are given in normal font. Any tilde (~) refers to a variant form, e.g. *yelaap*~*yalaap* 'jump'. A complete list of the abbreviations used in this study can be found on pages 6-7.

1.2 The thesis

1.2.1 Aims and theoretical interests of the study

In this thesis, I investigate the linguistic representation of spatial relationships in Caac, more precisely, how Caac speakers convey information in three domains of spatial reference: location, motion and orientation.

Oceanic languages are of great interest for research on the cognitive and linguistic representation of space. The wide use of spatial terms based on the environment of the speakers, the range and complexity of their spatial deictic systems, and the absence of the relative reference system using left/right terms (e.g. *to the left of the tree*) are striking features of the spatial systems in this language family. Descriptions of spatial reference in individual languages feed the debate about the nature of the relationship between language and cognition. They particularly contribute to the discussion about the ways and the extent to which each particular language may influence the way its speakers perceive the world, and conversely, the ways our world-view may shape the structure of the language we speak (see Levinson, 2003: 1-23) for a detailed summary and overview on the topic of linguistic relativity). In this study, I investigate spatial language in Caac as it is currently spoken, within a fairly fragile sociolinguistic context. When relevant, I take into account the current language shift Caac speakers experience, the rapid and internal language change (comparing with the

documentation from the 19th century and 1960s when possible), the important changes in the lifestyle the speakers have undergone within a few decades as well as the strong desire of most speakers to maintain their linguistic and cultural identity.

A major aim of this thesis is to contribute to the development of a more unified framework in which we can analyse spatial descriptions, starting with clarifying the kind of information that speakers can communicate on within the domain of space, separating those spatial domains (location, motion and orientation) from the strategies they use to convey spatial information, and analyzing those strategies in terms of vectors. The debate on the nature of the relations between deixis and Frames of Reference is also re-examined within the vectorial framework (see section 7.2.2). This framework allows us to undertake an explicit and detailed analysis of the types of spatial components that are combined in location, motion and orientation descriptions (e.g. Figure, Ground, Cue, Direction etc.), and to represent their functions in a systematic way (as the Tail, Head or Axis of a vector). This analysis in turn leads us to specify some aspects of the vectorial analysis which have not been explored to date, such as the vectorial representation of centrifugal terms, and introduce a more detailed categorization of vectors which includes Head-specified Vectors and Head-unspecified Vectors. The analysis of Caac data in terms of vectors also allows us to further explore the role of dynamicity, in particular considering location and orientation descriptions in terms of Fictive Motion expressions, and to identify an additional Fictive Motion category (Anticipated Paths).

1.2.2 Overview

The first part of the thesis (chapter 2) is a phonological and grammatical sketch of the Caac language. Except for the work done by Hollyman (section 1.1.4) which is based on the tales collected by the missionaries in the 19th century and on his own data collected mainly in La Conception (Noumea) in the 1960s, the grammar of Caac as it is spoken in Pouebo has never been described. The purpose of the first part of the thesis is three-fold: (i) serving as a guide for the reader to be able to read the examples and follow the formal analysis of Caac spatial language; (ii) describing the language as it is spoken in Pouebo in the early 2010s, contributing therefore to the documentation of a language whose transmission process is endangered; and (iii) providing a basis for future comparison of Caac with Caawac and with other languages of New Caledonia and the Austronesian language family.

The second part of the thesis addresses the question of the formal categorization of the linguistic resources relevant to the expression of space in Caac. It starts with presenting three types of basic spatial constructions: the Basic Locative Constructions, the Basic Motion Constructions and

the Basic Orientation Constructions (chapter 3). Then follows the description of verbs dedicated to spatial descriptions (chapter 4). The encoding of the reference object with respect to which an entity is located, moving or oriented is examined in chapter 5. Finally, the set of directionals coding the direction in which the Figure is located, moving or oriented is explored in depth in chapter 6.

In the third part of the thesis, the theoretical framework (chapter 7) is presented to the reader. This is followed by the analysis of Caac spatial data (chapter 8) interpreted within the vectorial framework, taking into consideration the specific cultural context as accurately as possible. In this last chapter, I account for the spatial components and overlapping strategies that take part in the expression of location, motion and orientation within the same framework (i.e. in terms of vectors) and in a systematic way. The last section of chapter 8 (section 8.3) focuses on the use of directionals in static contexts. They are described in terms of different types of Fictive Motion expressions drawing on Talmy's classification of Fictive Path (Talmy, 2000). Finally, I present a type of Fictive Path, the Anticipated Path, which relies heavily on contextual clues and probably culture-specific preferences, and which, to my knowledge, has not been reported up to now.

Chapter 2: Sketch Grammar

Caac is an accusative language with a VOS word order. Pronominal subjects are pre-verbal and can co-occur with nominal subjects placed in post-verbal position [sVOS]. NPs display a head-modifier order. Nouns are classified into three groups (bound nouns, free nouns I and II) according to the type of possessive constructions they can form. Verbal classification mainly hinges on valency. The predicative function can be filled by other parts of speech than verbs. The main features of Caac phonology and morphosyntax are presented in this chapter. Except for the accusative system (section the typological profile of Caac is typical of a language from the extreme north of New Caledonia (see Brill, 2002: 17-20 for Nêlêmwa, and Ozanne-Rivierre, 1998a: 33-63 for Nyelâyu; see also Moysse-Faurie & Ozanne-Rivierre, 1983: 113-130).

2.1 Phonological sketch

2.1.1 Caac phonological system

Twenty-seven consonantal phonemes are attested, comprising 9 stops, 5 nasals, 5 prenasals, 6 fricatives, 1 trill, 1 lateral approximant (Table 1).

		<i>Labio-velar</i>	<i>Bilabial</i>	<i>Alveolar</i>	<i>Palatal</i>	<i>Velar</i>	<i>Glottal</i>
Stop	non aspirated	p ^w	p	t	c	k	
	aspirated		p ^h	t ^h	c ^h	k ^h	
Nasal		m ^w	m, n		ɲ	ŋ	
Prenasal		^m b ^w	^m b	ⁿ d	ⁿ j	ⁿ g	
Trill				r			
Fricative		w	β	ð	j	ɣ	h
Lateral approximant				l			

Table 1: Caac consonantic system

As a rule, the first syllable of Caac words is stressed, e.g. *'tabo* 'sit down', *'aremaa-n* 'his/her face' (face-3SG.POSS). New words formed by derivation carry stress on the second syllable, e.g. *man-'tabo* 'chair' (PLACE-sit.down). Caac syllables typically have the structure V(C) (e.g. *o* 'at; to', *âc* 'man') or CV(C) (e.g. *te* 'go down', *pum* 'smoke'). Aspirated consonants occur in initial position only. Aspirated

consonants in intervocalic position are unstable: e.g. *nehen*~*neen* ‘all’, *tehen*~*teen* ‘these two’. Hollyman in his dictionary (1999b: 133) already reports two transcriptions e.g. “*taahen* = *taaen* ‘these’”. The nasal /ŋ/, the trill /r/ and the lateral approximant /l/ are rarely found in initial position. Most of the occurrences of /r/ and /l/ in this position occur in grammatical words e.g. *re* ‘3DU.S’, *le* ‘DEF’ or borrowed lexemes e.g. *lakau* ‘papaya’ (from Polynesian origins; Hollyman, 1999: 46). Likewise, the fricative /v/ is attested at the beginning of very few words instead of a former /k/.¹⁹ /v/ is in turn being replaced by ø, e.g. *koni*²⁰ > *xoni* > *oni* ‘and, but’.

Vowels can be either oral or nasal, and either long or short. Very few words show the presence of two central vowels (in brackets in Table 2), e.g. *jöü* ‘kaori tree’ /jø̃u/, *anaö* ‘delicious’ /anaø/.

	Oral			Nasal		
	Front	Central	Back	Front	Central	Back
Closed	i	(u)	u	ĩ		ũ
Mid	e	(ø)	o	ẽ		õ
Open	a			ã		

Table 2: Caac vocalic system

Nasality is orthographically represented by a circumflex accent: <hâp> /hã:p/ ‘spider’. Vowels are doubled to signify a long vowel e.g. <coor> /co:r/ ‘to stand’. Table 3 presents the correspondences between Caac phonemes and the graphemes used nowadays. They are based on the orthography promoted by the Association Vaalija in Pouebo itself partly based on F. Ozanne-Rivierre’s work on Nyelâyu (1998a: 19). This is the orthographic representation that will be used in this thesis.

Graphemes	Phonemes	Graphemes	Phonemes
a	/a/	k	/k/
e	/e/	kh	/k ^h /
i	/i/	l	/l/
o	/o/	m	/m/
u	/u/	mw	/m ^w /
ö	/ø/	n	/n/
ü	/ũ/	ny	/ɲ/
â	/ã/	ng	/ŋ/

¹⁹ The same phenomenon has been observed in Nêlêmwa (Bril, 2000: 29).

²⁰ *Koni* ‘and, but’ has been documented in the 19th century tales (Hollyman, 1999b: 151-185).

ê	/ɛ̃/	p	/p/
î	/ĩ/	ph	/p ^h /
ô	/õ/	pw	/p ^w /
û	/ũ/	r	/r/
b	/ ^m b/	t	/t/
bw	/ ^m b ^w /	th	/t ^h /
c	/c/	v	/β/
ch	/c ^h /	w	/w/
d	/ ⁿ d/	x	/ɣ/
g	/ ⁿ g/	y	/j/
h	/h/	z	/ð/
j	/ ⁿ j/		

Table 3: Orthography in Caac

2.1.2 Realization of aspirated consonants and realization of nasalisation

Aspirated consonants are rather weak in Caac. The weakness of the aspiration seems to be a recurrent phenomenon in some Northern languages. The neutralization between aspirated and non-aspirated consonants is reported in the neighbouring languages, Nyɔlɔy (Ozanne-Rivierre, 1998a: 20-21) as well as in Bwato (Rivierre, Ehrhart & Diéla, 2006: 27) but not in Nêlêmwa or Nixumwak (Bril, 2000: 25-27). But as a rule, many words are transcribed either with an aspiration or not, depending on the person recorded. In this study, only the following stops are analyzed as contrastive: /p^h/ vs /p/, /t^h/ vs /t/, /c^h/ vs /c/, and /k^h/ vs /k/.

As in other northern languages²¹ the nasality of a vowel is a phonological feature either in word-initial position (e.g. *âc* ‘man’) or after an oral consonant in an open or closed syllable (e.g. *câ* ‘1PL.INCL.S’, ‘*wââk*’ ‘crow’). The nasality of a vowel in a vocalic cluster can spread over the whole diphthong, the nasalisation being weak if the second vowel is (mid-)closed e.g. *khôê* ‘to adopt’. Phonologically nasal vowels are not very frequent, notably /ũ/ and /õ/ which are particularly rare. In contrast, oral vowels are often nasalized in two particular contexts:

(i) when preceded by a labio-velar nasal consonant: *mwa* [m^wã] ‘house’

(ii) when followed by a nasal or a prenasal consonant e.g. *(h)ena tena* [(h)ɛna tɛna] ‘now’, *higon* [hɪⁿgôn] ‘(a type of) narrative’.

²¹ See for instance Nêlêmwa (Bril, 2000: 36-39) and Nyɔlɔy (Ozanne-Rivierre, 1998a: 27-28).

Although not systematic, Caac vowels are more likely to be subject to nasalization after /h/ and after the labiovelar consonants /p^w/ and /m^w/.²² Only phonologically nasal vowels have been transcribed here (by a circumflex accent).

2.1.3 Sandhi and apocope phenomena

In the context of various morphological phenomena such as transitivization or possession, some final consonants or final vowels can undergo:

i) apocope, e.g. *merip* 'life' > *meri-n* 'his/her/its life'

or ii) sandhi such as:

-c > -z- e.g. *ulaac* 'adult' > *ulaaz e-rô* 'my parent' (adult IND-1SG.O)

-t > -r- e.g. *jiget* 'hunt (with a rifle)' > *jiger-eni* 'hunt sth (with a rifle)' (verb + transitivizing suffix)

-t > -l- e.g. *ot* 'sing' > *ol-eni* 'sing sth'

-k > -x- e.g. *cuk* 'sugar' (noun) > *cux-eni* 'to sweeten, to put sugar in'

-a > -e- e.g. *pela* 'talk' > *pele-n* 'his/her/its talk'

When a free form triggers a sandhi on the preceding word, the two free forms are transcribed separated by a blank, e.g. *wet* 'string' > *wet o he-ny* 'the vein of my leg' (string at leg-1SG.POSS), *wet e-rô* 'my string' (string IND-1SG.O).

2.2 Grammatical sketch

2.2.1 Parts of speech

The parts of speech that can be distinguished in Caac are the following: bound nouns and free nouns, possessive classifiers, bound and free personal pronouns, definite and indefinite articles and demonstratives, numerals, nominal quantifiers, prepositions and relational nouns, adverbs, adjectives and adjectival verbs, verbs and fluid bases. These word classes are defined in the subsections below except for definite and indefinite articles and demonstratives which are presented in sections 2.2.2.3 and 2.2.2.4.

²² This has been already observed in Nêlêmwa (Bril, 2000: 38).

2.2.1.1 Classification of nouns

As in other Northern New Caledonian languages (see Moyse-Faurie & Ozanne-Rivierre, 1983: 117-120); Brill (2012) for Nêlêmwa; see also Hollyman (1999a: 59-63) on Caac nominal classification), nouns in Caac are divided into two main classes: bound nouns and free nouns depending on the type of possessive construction that they occur in.

2.2.1.1.1 Bound nouns

Bound nouns are nouns which cannot occur without a possessor. The latter can take the form of a possessive suffix (1) or a nominal possessor (2, 3). They are always cited in their third person singular form i.e. with the possessive suffix *-n* '3SG.POSS' (1).

- (1) **he-n**
leg/foot-3SG.POSS
'his/her/its leg/foot'
- (2) **he** *Jiluk*
leg/foot Jiluk
'the leg of Jiluk'
- (3) **he** *na* *kabe*
leg/foot DIST child
'the leg of that child'

A bound noun can also take a free pronoun for emphatic purposes (4 vs 5).

- (4) *Kô-n* *na* *we* *mia*.
drink-3SG.POSS DIST water be.red
'That wine (lit. red water) is his drink.'
- (5) *Kô* **ni** *na* *we* *mia*.
drink 3SG.INDPT DIST water be.red
'That wine is *his* drink.'

As in Nyelâyu (Ozanne-Rivierre, 1998a: 36), a few bound nouns can take the possessive suffix *-k* 'NON.PERS.POSS' when the possessor is indefinite and animate. This non-personal possessive suffix occurs in the same position as a personal possessive suffix, e.g. *aa-k* 'one's heart', *aa-ny* 'my heart', *aa-m* 'your heart', *aa-n* 'his/her/its heart' etc. Up to now, this suffix has been found with a few body part nouns: *aa-k* 'one's heart', *hi-k* 'one's arm/hand', *he-k* 'one's leg/foot'. Note that inanimate

'possessors' are expressed by the suffix *-n*. As in this context *-n* expresses a relation of meronymy rather than possession, the suffix *-n* is glossed -DET (determination) and not -3SG.POSS, e.g. *cii-n ceec* 'tree bark' (skin-DET tree), *he-n pioc* 'handle of a mattock', lit. 'leg/foot of a mattock' (leg/foot-DET mattock).

Bound nouns comprise many kinship terms (e.g. *evi-n* 'his/her sister, cousin'), body part terms (e.g. *thivaa-n* 'his/her/its eye'), nouns referring to food and drinks (e.g. *kô-n* 'his/her/its drink'), nouns expressing the notions of time, space, accompaniment (e.g. *pwili-n* 'with him/her/it', *tuu-n* 'behind him/her/it') and other abstract notions such as *aa-n* 'his/her/its desire/will'. The latter is derived from the body part noun *aa-n* 'his/her/its heart'.

2.2.1.1.2 Free nouns I

Free nouns I can take the possessive suffix (6) or a nominal possessor (7) but unlike bound nouns, they can also occur without any possessor (8).

(6) *mwe-n*
house-3SG.POSS
'his/her/its house'

(7) *mwe te=le ulaaz e-rô*
house DU=DEF adult IND-1SG.O
'the house of my two parents'

(8) *le mwa*
DEF house
'the house'

The suffixation sometimes triggers morphological modification of the stem (for more details see Hollyman, 1999a: 61-62). When the free noun ends in a vowel, (i) either the vowel remains the same (9), or (ii) the vowel changes when followed by the possessive suffix (10), or (iii) another vowel is added (11). These morpho-phonological modifications are triggered by all possessive suffixes.

(9) *cia* 'yam field' -> *cia-ny* 'my yam field'
(10) *mwa* 'house' -> *mwe-n* 'his/her house'
(11) *me* 'left (hand)' -> *meu-n* 'his/her left (hand)' < POC *mauRi/*mawiRi²³

²³ In this case, the etymological vowel /u/ is added. The POC forms *mauRi and *mawiRi 'left (hand)' are given by Pawley and can be found in Greenhill et al. (2008).

When the free noun ends in a consonant, four morphological modifications have been observed: (i) either the consonant is dropped (12); or (ii) the consonant is replaced by another consonant and a final vowel is added; in this case, the extra combination Noun-**CV**-POSS is not predictable (13); or (iii) the consonant is replaced by an etymological vowel (14; for more details, see Ozanne-Rivierre, 1995); or (iv) a vowel, which may or may not reflect an etymological vowel, is added (15).

- | | | | | | | |
|------|--------------|---------|----|-----------------|----------------|----------------------------|
| (12) | <i>merip</i> | 'life' | -> | <i>meri-n</i> | 'his/her life' | |
| (13) | <i>noor</i> | 'money' | -> | <i>noole-la</i> | 'their money' | |
| (14) | <i>dek</i> | 'leaf' | -> | <i>deu-n</i> | 'its leaf' | < PAn *dahun ²⁴ |
| (15) | <i>pun</i> | 'hair' | -> | <i>puni-n</i> | 'his hair' | |

2.2.1.1.3 Free nouns II

Possession can be marked on free nouns II by means of the indirect markers *le* or *e* in combination with the paradigm of object suffixes (16, 18) or followed by an NP (17, 19) whose nominal head can be a proper noun (19) or a common noun (17). In contrast to bound nouns and free nouns I, free nouns II cannot take any possessive suffix. *E* 'IND' is used when the lexeme it follows ends with a consonant (18, 19) while *le* 'IND' is utilized when the lexeme it follows ends with a vowel (16, 17).

- | | | | | |
|------|-----------|------------------|--------------|---------------------|
| (16) | <i>le</i> | <i>wa</i> | <i>teevo</i> | <i>le-rô</i> |
| | DEF | grandparent | woman | IND-1SG.O |
| | | 'my grandmother' | | |

- | | | | | | |
|------|-----------|-------------------------|------------------|-------------|------------------|
| (17) | <i>le</i> | <u><i>loto</i></u> | <i>le</i> | <i>â=le</i> | <i>abaa-ny</i> |
| | DEF | car | IND | M=DEF | sibling-1SG.POSS |
| | | 'the car of my brother' | | | |

- | | | |
|------|-------------|--------------------|
| (18) | <i>nek</i> | <i>e-zo</i> |
| | fish | IND-2SG.O |
| | 'your fish' | |

- | | | | | |
|------|----------------------------|-------------|-----------------|------------------|
| (19) | <i>le</i> | <i>film</i> | <i>e</i> | <i>Kassovitz</i> |
| | DEF | film | IND | Kassovitz |
| | 'the film of/by Kassovitz' | | | |

2.2.1.1.4 Remarks on alienable/inalienable possession and noun classes

As the examples above show, one cannot entirely rely on the semantic criteria of alienability vs inalienability to categorize Caac nouns. As in other Kanak languages (Ozanne-Rivierre, 1991: 322-324; for a detailed analysis in Nêlêmwa, see Bril, 2002; 2012), bound nouns in Caac are mainly found in the

²⁴ See Evans (1998: 103); see also Ozanne-Rivierre (1995: 67).

lexical fields which are frequently treated as an inherent or inalienable possession in languages making this distinction, e.g. body parts, kinship, food, drinks, but two words of the same lexical field, e.g. kinship, can be treated differently:

- (20) **Bound noun** *came-n* 'his/her father' -> direct possession
 (21) **Free noun II** *ulaaz e-i* 'his/her parents/ancestors' -> indirect possession

Following Ozanne-Rivierre (1991: 326), the term '(in)direct possession' refers to the type of construction that is allowed by a noun when marked by a pronominal possessor. The construction [N+ possessive suffix] is called 'direct possession' while the construction [N + indirect marker + object pronoun] is labelled 'indirect construction'.

A noun can also take two or three different possessive strategies, its meaning varying with the type of possession (direct possession in (22) and indirect possession in (23)) or more generally with the type of determination (24) employed by the speaker.

- (22) *we-n* *hi-ny*
 rope-3SG.POSS arm-1SG.POSS
 'my watch/bracelet'

- (23) *wer* *e-rô²⁵*
 rope IND-1SG.O
 'my rope'

- (24) *wer* *o* *he-ny*
 rope at/to leg/foot-1SG.POSS
 'the vein of my leg/foot' (N.B. One cannot refer to a vein without mentioning the body part where the vein is located, **we-ny* 'my vein'.)

2.2.1.2 Possessive classifiers

Nouns referring to drinks, starchy food, meat and baskets are preceded by a possessive classifier. The latter takes a possessive suffix.

- i. *kô-*: a classifier for drinks, e.g. *kô-ny we* 'my (glass of) water' (< bound noun *kô-n* 'his/her drink')
- ii. *ca-*: a classifier for starchy food, e.g. *ca-m kumwala* 'your portion of sweet potatoes' (< bound noun *ca-n* 'his/her starchy food')

²⁵ See sandhi -t > -r + Vowel in section 2.1.3.

- iii. *wee-*: a classifier for animal flesh used as food (meat and fish), e.g. ***wee-nya dube*** ‘our portion of stag’ (< bound noun *wee-n* ‘his meat’)
- iv. *kee-*: a classifier for baskets, e.g. ***kee-ny keala*** ‘my *keala* basket’ (< free noun *keer* ‘basket’)

Note that the classifier is sometimes replaced by indirect possession [N+ *le~e* ‘IND’ + object suffix], e.g. *le kerewala le-rô* ‘my *kerewala* basket’ (DEF type.of.basket IND-1SG.O) rather than *le kee-ny kerewala* ‘my *kerewala* basket’ (DEF CLASS-1SG.POSS type.of.basket).

2.2.1.3 Free and bound personal pronouns

Personal pronouns do not express gender but distinguish three numbers i.e. singular, dual and plural.

Table 4 presents an overview of pronouns in different syntactic functions.

	Free pronouns	Subject pronouns	Object suffixes	Possessive suffixes
1 Singular	<i>tô</i>	<i>no</i>	<i>-rô</i>	<i>-ny</i>
2 Singular	<i>co</i>	<i>zo</i> (variant <i>yo</i>)	<i>-zo</i>	<i>-m</i>
3 Singular	<i>ni</i>	<i>i</i>	<i>-i</i>	<i>-n</i>
1 Dual Inclusive	<i>cin</i>	<i>nyi</i>	<i>-nyin</i>	<i>-nyin</i>
1 Dual Exclusive	<i>chebet</i>	<i>zi</i>	<i>-bet</i>	<i>-bet</i>
1 Plural Inclusive	<i>câ</i>	<i>nya</i>	<i>-nya</i>	<i>-nya</i>
1 Plural exclusive	<i>caa</i>	<i>za</i>	<i>-za</i>	<i>-a</i>
2 Dual	<i>ciun~ceun</i>	<i>zi</i>	<i>-zuun</i>	<i>-un</i>
2 Plural	<i>caa</i>	<i>za</i>	<i>-za</i>	<i>-a</i>
3 Dual	<i>te</i>	<i>re</i>	<i>-re</i>	<i>-le</i>
3 Plural	<i>ta</i>	<i>ra</i>	<i>-ra</i>	<i>-la</i>

Table 4: Free and bound personal pronouns

Subject pronouns are always found preceding the predicate. As a rule, the pronoun *i* ‘3SG.S’ is omitted (i) when the subject of the sentence is a dummy subject but it can be retrieved: *Kola* or *I kola* ‘(it) is raining’, (ii) when the subject refers to an inanimate, and (iii) with non-personal constructions (e.g. *kêêk* ‘be.possible’; 2.2.1.9). The pronoun *i* ‘3SG.S’ can also be dropped when the fully-fledged nominal subject is found following the predicate: (s)VOS²⁶ (section 2.2.3.1). Inanimate entities can be coded by the plural subject pronoun *ra* ‘3PL.S’ or alternatively the singular subject pronoun *i* ‘3SG.S’.

²⁶ Thus, subject pronouns do not necessarily replace a nominal subject. In the interests of clarity, as its primary role is to substitute the nominal subject, the term *pronoun* is retained in this study.

Note that the 1st person exclusive (25b) and 2nd person dual forms (25a) are coded by the same morpheme *zi*; the same syncretism applies to the plural forms of the 1st person exclusive and 2nd person pronouns (*za*).

- (25) a. Sp1: **Zi** *pora?*
 2DU.S do.what
 ‘What do **you** do?’
- b. Sp 2: **Zi** *te re pwec.*
 1DU.EXCL.S go.down in river
 ‘**We** (exclusive) go down to the river.’ (Fldnt3_AT)

Subject pronouns²⁷ can amalgamate with some TAM markers in Caac with the perfective marker *u* e.g. *n_u* ‘1SG.S_PERF’ < *no* ‘1SG.S’ + *u* ‘PERF’, *ny_u* ‘1DU.INCL.S_PERF’ < *nyi* ‘1DU.INCL.S’ + *u* ‘PERF’. The first person singular pronoun *no* can also amalgamate with the verb *ap~a* ‘go’: *n_a* ‘1SG.S_go’, i.e. ‘I go’.

Object suffixes are found coding direct objects and indirect objects²⁸ (sections 2.2.1.9 and 2.2.1.3) as well as possessors in indirect possessive constructions (section 2.2.1.3) and the only argument of one class of verbs (section 2.2.1.9). Thus, they refer to any non-agent regardless of the syntactic position of the corresponding NP (section 2.2.1.3).

Free pronouns are not case-marked and can replace any personal pronoun including possessive suffixes (4, 5 above). They are used for contrastive (26) and emphatic purposes. One often resorts to free pronouns in strategies of focalization and topicalization (section 2.2.5.6).

- (26) **Tô**, *no kêdek te: ni came i kêdek te.*
 1SG.INDPT 1SG.S drink tea 3SG.INDPT NEG 3SG.S drink tea
 ‘I drink tea, he doesn’t.’ (GramQuest_JP)

²⁷ Except for *i* ‘3SG.S’.

²⁸ Except for beneficiary-referents which are encoded by possessive suffixes attached to the relational noun *hi-n* ‘arm/hand’.

2.2.1.4 Numerals

2.2.1.4.1 Numeral classifiers

Caac has a set of numeral classifiers which are prefixed to a numeral:

GLOSS	FORMS	TRANSLATION
'CLASS1'	<i>he-</i>	general classifier
'CLASS2'	<i>yara-</i>	to count people
'CLASS3'	<i>wa-</i>	to count heaps of food
'CLASS4'	<i>puu-</i>	to count plants
'CLASS5'	<i>maa-</i>	to count a heap of 3 yams or 3 taros brought in a customary ceremony
'CLASS6'	<i>mele-</i>	to count the heap of 5 fish brought in a customary ceremony
('CLASS7'	<i>tede-</i>	to count groups of warriors (Hollyman, 1999b: 139)

Table 5: Numeral classifiers

When combined with the general classifier *he-*, the suffix *-neen* 'how much / how many' forms the interrogative pronoun *he-neen* 'how many/how much?'. *He-neen* is used to count any kind of entity.²⁹

2.2.1.4.2 Cardinal numerals

A numeral classifier is always prefixed to cardinal numerals except for *ceec* 'one' and *paidu* 'ten', which are the only numerals that can occur as free morphemes. When no semantic parameter is relevant, cardinal numerals from 2 to 9 –which are bound roots– are attached to the default classifier *he-*, *he-ru ba-chemo* 'two books' (CLASS-two MEANS-learn). When *ceec* 'one' is combined with a classifier, its first consonant /c/ undergoes spirantization and becomes /ð/ e.g. *wa-zeec* 'one heap'.

FORMS	GLOSS
<i>cee(c)</i>	'one'
<i>ru</i>	'two'
<i>cin</i>	'three'
<i>pac</i>	'four'
<i>nim</i>	'five'
<i>nizec</i>	'six'
<i>nidu</i>	'seven'
<i>nicin</i>	'eight'
<i>nipac</i>	'nine'
<i>paidu</i>	'ten'

Table 6 : Numerals

²⁹ Hollyman (1999b: 163) documents *-neen* 'how much/many' with the classifier for men *yara-* i.e. *yara-nen* 'how many men?' but it seems that this is not in use anymore. Instead the general classifier *he-neen* is used.

Numbers between 10 and 20 are formed on *paidu* and the bound noun *bwa-n* ‘head-DET’, followed by a number between 1 and 9 e.g. *paidu bwa-n he-ru* ‘twelve’, *paidu bwa-n he-cin* ‘thirteen’. However, Caac speakers frequently use the French numeral system and few speakers know more than the first five numerals; very few can tell the numbers from 10 to 19. As for the numeral ‘twenty’, it seems that this number is not known anymore.

2.2.1.4.3 Ordinal numerals

Ordinal numbers are composed of the prefix *ba-* ‘ORD’ + general classifier *he-* ‘CLASS1’ + numeral + *-on* ‘ORD’, e.g. *ba-he-cin-on* ‘third’. Following a general phonological rule in Caac (see section 2.1.3), the final stop /c/ of the numerals *ze(e)c* ‘one’ and *-pac* ‘four’ undergoes lenition to the fricative /ð/ e.g. *he-pac* ‘four’ -> *ba-he-paz-on* ‘fourth’. The word for ‘first’ is expressed by *wavaen* or *wavaze*. The equivalent of ‘last’, *ba-ôjing-on*, is based on the fluid basis³⁰ *ôjin~ôjing* ‘end’.

Expressions meaning ‘once, twice, three times etc.’ are composed of *wara-* + numeral e.g. *wara-cin* ‘three times’ except for ‘once’ and ‘twice’ which are encoded by *oâ-zeec* ‘x-one’ and *ba-ô-ru* ‘ORD-x-two’, respectively. As for phrases such as ‘the third/fourth/fifth time etc.’, they are expressed by ordinal numerals. Note that ‘the first time’ is encoded by *wavaen*.

2.2.1.5 Nominal quantifiers

Two quantifiers occurring within an NP have been identified: *meneen~meen* ‘all; the whole’ and *exe* ‘each’, e.g. *exe bwe* ‘each day’. Nominal quantifiers modify the head of a noun phrase. When *meneen* occurs before the noun it determines, it refers to the total sum of the items in questions i.e. ‘all’ (27), while in post-nominal position, *meneen* refers to the entirety or wholeness of an item i.e. ‘the whole’ (see also Nêlêmwa; Bril, 2002: 399-400). In both positions, *meneen* can be combined with a definite article.

- (27) *No taamwi [ta=le meneen nek]_{NP}*
 1SG.S catch PL=DEF all fish
- na re le kuun we.*
 from in DEF bottom water
 ‘I took all the fish from the bucket.’ (GramQuest_JP)

³⁰ The term ‘fluid bases’ refers to lexical items which are used as heads of referential expressions as well as heads of predicative expressions without undergoing any morphological change (see section 2.2.1.9).

2.2.1.6 Prepositions and relational nouns

Relational nouns and prepositions express particular relationships between entities or events, primarily spatial relationships but also the notions of time, cause, accompaniment and instrument. Relational nouns are bound nouns (see section 2.2.1.1) and function as the head of a nominal phrase. They are followed by their possessor, a possessive pronoun (28, 29) or an NP. Some relational nouns such as *bwe* ‘on’ and *re* ‘in(side); at; to’ are on their way to be grammaticalized into prepositions (section 5.2.1.2). Some relational nouns have been recruited to encode grammatical relationships: e.g. *hi*-POSS ‘BENF’ < *hi-n* ‘his/her/its arm/hand’ (29). Table 7 provides an overview.

- (28) *No ap [pwili-m]_{NP}.*
 1SG.S go with-2SG.POSS
 ‘I go with you.’ (Fldnt2)
- (29) *I na [hi-ny]_{NP} le kile.*
 3SG.S give BENF-1SG.POSS SPEC key
 ‘He gives me the key.’

FORMS	GLOSS
<i>mehe</i> (-POSS)	‘for’
<i>pwili</i> (-POSS)	‘with’ (accompanying)
<i>hi</i> (-POSS)	‘BENF’ (beneficiary)
<i>cele</i> (-POSS)	‘at, to’
<i>bwe</i> (-POSS)	‘top side’ (on)
<i>re</i> (-POSS)	‘in(side)’
<i>aria</i> (-POSS)	‘next to’
<i>bweriva</i> (-POSS)	‘facing’
<i>tuu</i> (-POSS)	‘behind’
<i>jere~jele</i> (-POSS)	‘beside’
<i>o/bwe jure hi</i> (-POSS)	‘to/on the right’
<i>o/bwe me~meu</i> (-POSS)	‘to/on the left’
<i>bwe daan</i>	‘windward’
<i>are daan</i>	‘leeward’
<i>re pire</i> (-POSS)	‘under’
<i>re pene</i> (-POSS)	‘in the middle of’

Table 7: Relational nouns

Prepositions occur as the initial element and head of a prepositional phrase (hereafter PP). They introduce an NP or take a pronominal complement in the form of an object suffix attached to the indirect marker *le~e*. Spatial prepositions can be preceded by the pre-locative marker *na* ‘PRE.LOC’; the latter is used to draw the attention of the addressee³¹ to a particular place (section 5.4).

³¹ *Na* ‘PRE.LOC’ may be related to the deictic determiner and pronoun *na* ‘DIST’.

Prepositions cannot take any inflectional or derivational affixes. A list of Caac prepositions can be found in Table 8.

FORMS	GLOSS
<i>amena</i>	'because of'
<i>a</i>	'ADD' (addressee)
<i>o</i>	'at; to; by (instrument)'
<i>na</i>	'from'
<i>na</i>	'about; PAT' (patient)
<i>re</i>	'at; to'
<i>bwe</i>	'on; onto'
<i>bwe o</i>	'above + INANIM'
<i>bwe-n e</i>	'above + ANIM'
<i>pûr o</i>	'after; behind; at the rear of' + INANIM
<i>pûr e</i>	'after; behind; at the rear of' + ANIM
<i>habur o</i>	'before; in front of' + INANIM
<i>habur e</i>	'before; in front of' + ANIM
<i>re pire(-POSS)</i>	'under'
<i>re pene(-POSS)</i>	'in the middle of'
<i>o jele~jere(-POSS)</i>	'beside'
<i>na re(-POSS)</i>	'from inside, out of'

Table 8: Prepositions

Some NPs headed by a relational noun and PPs headed by a preposition function as obligatory complements (e.g. those encoding semantic roles such as the addressee, patient or beneficiary). Some NPs and PPs function as adjuncts (see *na re le kuun we* 'from the bucket' in (27) above). Finally, spatial NPs and PPs can function either as spatial complements or as adjuncts. Spatial prepositions and relational nouns are described in detail in sections 5.1 and 5.2.

2.2.1.7 Adverbs

One distinguishes time and location adverbs whose scope is either predicative or clausal and adverbs of degree and quantity which function as modifiers of the predicate. Their position and their semantic properties differentiate these two types of modifiers. The adverbs identified up to now belong to the domains of space, time, degree and quantity. The notion of manner is mainly expressed via stative verbs, e.g. *oba* 'be slow', or prefixes of posture (section 4.1).

2.2.1.7.1 Time and location adverbs

Time and location adverbs modify the whole clause. As adjuncts, they add some information about the circumstances of an event and they can be omitted. Adverbs take no morphological affixation. They usually tend to occur either in clause-initial position or after the predicate and its arguments. The list of adverbs in Table 9 includes deictic adverbs and other spatial forms which will be discussed in more detail elsewhere (section 5.3).

FORMS	GLOSS
<i>tebwin</i>	'yesterday'
<i>mwamen</i>	'tomorrow'
<i>eleek</i>	'earlier'
<i>hen</i>	'soon, now'
<i>cuyek</i>	'soon'
<i>(h)ena tena</i>	'now'
<i>hule</i>	'in the old days, formerly'
<i>pât</i>	'behind; afterwards' (section 5.1.4)
<i>habut</i>	'at the front; before' (section 5.1.4)
<i>pwâ</i>	'inside'
<i>pwap</i>	'outside'
<i>iek</i>	'close'
<i>(h)eut</i>	'far'
<i>ja</i>	'here' (section 5.3.3.1)
<i>tena</i>	'there' (section 5.3.3.1)

Table 9: Spatio-temporal adverbs

2.2.1.7.2 Anaphoric expression of spatial phrases

Le is a resumptive marker found in lieu of a spatial phrase (nominal, prepositional or adverb phrases).

In (31), *le* replaces the toponym *Bwe o ciia* (30).

(30) *No gaa mo da=me Bwe o ciia.*
 1SG.S DUR stay.PST upward=CENTRIP Bwe o ciia
 'I've just come back inland from *Bwe o ciia*!' (SpaceScen_JP_DN)

(31) *No gaa mo da=me le.*
 1SG.S DUR stay.PST upward=CENTRIP RES
 'I've just come back inland from there!' (SpaceScen_JP_DN)

Another resumptive marker is attested: the suffix *-on*. The latter becomes *-an* if it is preceded by the vowel [a], e.g. *=da + -on > =da-an* (upward-RES) (32).

- (32) *Zo no=da-an le ba-chemo?*
 2SG.S see=upward-RES DEF MEANS-learn
 ‘Do you see the book upwards there?’

The difference in use of the two resumptive markers *le* and *-on* is not clear yet. The resumptive *le* may replace toponyms and prepositional phrases expressing space. It seems that *le* also replaces causal and instrumental adjuncts preceded by the preposition *o* ‘at; to; with’. The suffix *-on* is used in other syntactic contexts.

2.2.1.7.3 Adverbs of degree and quantity

Adverbs of degree and quantity modify a predicate and are found immediately before the predicate (scope on the right; 33). They cannot have a predicative function and are never used on their own.

FORM	GLOSS
<i>juru</i>	‘very’, ‘only’ (restrictive)
<i>chen</i>	‘very’, ‘much/many’, ‘too much/too many’ (quantity)
<i>pwen</i>	‘a little bit’
<i>mwa</i>	‘rather’
<i>ca</i>	‘really’

Table 10: Adverbs of quantity and degree

- (33) *Mwa a-yo ne zo juru hûn.*
 rather PROPERTY-good IRR 2SG.S very keep.silent
 ‘You rather keep very silent.’ (lit. ‘It’s rather good if you keep very silent.’) (GramQuest_JP)

2.2.1.8 Property specifiers: adjectives and adjectival verbs

Adjectives modify the head of an NP and always precede the noun they modify (34, 35), thereby diverging from Caac typical word order [head-modifier]. As many Oceanic languages (Moyse-Faurie, 2005: 162; 2004: 47-50; Bril, 2009: 1-4), this word category has very few members; it includes *neze* ‘small’, *hulaaze* ‘big, tall, adult’, and *jure* ‘true, right’.

- (34) *Za taamwi [ta=le (ca) neze nek]_{NP}.*
 2PL.S catch PL=DEF really small fish
 ‘You caught the very small fish.’ (GramQuest_JP)

- (35) *No taamwi [ta=le hulaaze nek]_{NP}*
 1SG.S catch PL=DEF big fish
 'I caught the big fish.' (GramQuest_JP)

A more common strategy in nominal composition consists in resorting to adjectival verbs. Adjectival verbs are stative verbs which can be used as predicates on their own. Within an NP, they follow the nominal head, adhering therefore to the usual word order [head + modifier] (36, 38). They can be preceded by an adverb of quantity (37) or a TAM marker. This construction differs from relative clauses without any relativizer (39; see section 2.2.2.5) in that no subject pronoun precedes the stative verbs (compare (36) with (39)). Like adjectives, they provide information about a quality or a property of the referent, e.g. *dalaen* 'be white (e.g. European)', *mawat* 'be small, be young/juvenile', *hâc* 'be big, be tall', *welic* 'be long', *dedo* 'be black'.

- (36) *Za taamwi [ta=le nek mawat]_{NP}*
 1PL.EXCL.S catch PL=DEF fish be.small
 'We caught the small fish.' (GramQuest_JP)

- (37) *No taamwi [ta=le nek chen mawat]_{NP}*
 1SG.S catch PL=DEF fish very be.small
 'I caught the very small fish.' (GramQuest_JP)

- (38) *Bwa tô, [kôôk dedo]_{NP}*
 PRES 1SG.INDPT type.of.heron be.black
 'It's me, the black heron.' (I_pa_le_niang_IP_DN)

- (39) *No taamwi [ta=le nek [ra chen mawat]_{REL.CL}]_{NP}*
 1SG.S catch PL=DEF fish 3PL.S very be.small
 'I caught the fish which are very small/juvenile.' (GramQuest_JP)

2.2.1.9 Classification of verbs

There is a clear distinction between the two major classes of transitive and intransitive verbs. Various affixes allow some intransitive verbs to be transitivized. This section presents only a limited part of the verb classification and some of the morphemes playing a role in valency. As a rule, inherently transitive verbs have only one form and therefore no inflections (as in Nêlêmwa, Bril, 2002: 199). They are always followed by a direct object (40). Intransitive verbs cannot take any object (41). Some verbs can be used transitively and intransitively without any morphological change (e.g. *thiin* 'write').

- (40) *Zo wii [le nek]_{Obj}*
 2SG.S eat(animal).TRN DEF fish
 'You eat the fish.' (**Zo wii*. 'You eat.')(Fldnt1)

- (41) *Zo huu.*
 2SG.S eat.INTRN
 ‘You eat.’ (**Zo huu le nek/ari* etc. ‘You eat the fish/rice.’) (Fldnt1)

Transitive verbs comprise:

- transitive verbs whose object directly follows the verb (sometimes triggering a morphophonological modification on the verbal stem): *noje-i* ‘see him/her’, *noja le film e Kassovitz* ‘see (watch) the film by Kassovitz’. The inanimate pronominal object is $-\emptyset$: *noja-\emptyset* ‘see it/them’
- spatial verbs obligatorily followed by a spatial complement: *te* ‘go down’ in *i te Pwai* ‘he went down to Pwai’ (**i te* ‘He went down’)
- trivalent verbs, the beneficiary being encoded by *hi-n* ‘to him/her/it’ (29 above), and the addressee by *le* ‘IND’ or *a le* (ADD IND; 42).

- (42) *No phaaja le pooz [a le o=le nei-ny teevo]_{ADD}.*
 1SG.S ask DEF thing ADD IND F=DEF child-1SG.POSS woman
 ‘I asked something to my daughter.’

Another category of verbs can take an object which is necessarily introduced by the morpheme *le~e* ‘IND’: *alô le-i* ‘look at her/him’, *alô le Maxat* ‘look at Maxat’ (and *Nya alô*. ‘We are looking.’). When the object is realized as an NP headed by a common noun, no indirect morpheme is required: *alô na teevo* ‘look at that girl’. The inanimate pronominal object is $-on$: *alô-on* ‘look at it/them’.

Some intransitive verbs can be transitivized:

- verbs transitivized by a suffix $-(e)ni$, e.g. *kaza* ‘pinch’ > *kaza-ni* ‘pinch sth’.³² The suffix is only used when the object is coded by a nominal phrase headed by a noun, and expresses the third person, singular or plural, animate and inanimate (43). In cases of animate object pronouns, the transitivizing suffix $-(e)ni$ is not required; it is substituted by the personal object suffix (44, 45).

³² This suffixation often triggers the following morpho-phonological changes in the verbal stem: *yalaap* ‘jump’ > *yalaav-eni*, ‘jump over sth’, *go* ‘cry’ > *goo-ni* ‘cry about sth’ (see section 2.1.3).

- (43) *I kaza-ni [Maxat]_{Obj} [o pwirip]_{Subj}*
 3SG.S pinch-TR Maxat SBJ budgerigar
 'The budgerigar pinched Maxat.'
- (44) *I kaza[-i]_{Obj}*
 3SG.S pinch-3SG.O
 'It pinched her.'
- (45) *I kaza[-rô]_{Obj}*
 3SG.S pinch-1SG.O
 'It pinched me.'

Caac also has an applicative transitivizing suffix *-ve* 'APPL' (< *phe* 'take') which is followed by an object suffix in case of pronominal objects, e.g. *tamwa* 'wait' > *tamwa-ve-zo* 'wait for you'. The inanimate object is marked by *-ø*: *carua* 'run' > *carua-ve-ø* 'take it quickly (running)'.

The reciprocal construction is: *pe* + Vb (46, 47). The causative construction is: *pa-* 'CAUS' + Vb + *(e)ni* 'TR' (48; see also Moyse-Faurie, not dated).

- (46) *Nyi pe-yage.*
 1DU.INCL.S REC-help
 'We help each other.'
- (47) *Nyi pe-uvi.*
 1DU.INCL.S REC-buy
 'We share the costs.'
- (48) *I a pa-kêdek-eni [le chovan]_{Obj}*
 3SG.S go CAUS-drink-TR DEF horse
 'She took the horse to make it drink.'

A few monovalent and bivalent verbs cannot take any personal subjects. Impersonal verbs include the existential verbs *pwa* 'EXIST', *cia* 'NEG.EXIST' (section 2.2.3.3.2), the deictic predicative forms *(h)ien* 'EXIST.PROX', *(h)ina* 'EXIST.DIST', *(h)ile* 'EXIST.ANAPH1' (section 2.2.3.3.2), the presentative *eni* (section 2.2.3.3.1) and verbs expressing quantity e.g. *hai* 'be a lot', *haxe* 'be many', *heruek* 'be some'. They take a single argument expressed by an NP following the verb: *cia ari* 'there is no rice' (NEG.EXIST rice).

Finally, a small category of verbs express their experiencer (when pronominal) with the paradigm of object suffixes directly attached to the verb, and do not allow any subject marker. The argument

expressed by the object suffix encodes an experiencer or an entity to locate, e.g. *bu-rô* 'I refuse/disagree', *e-rô* 'I'm [somewhere]'.

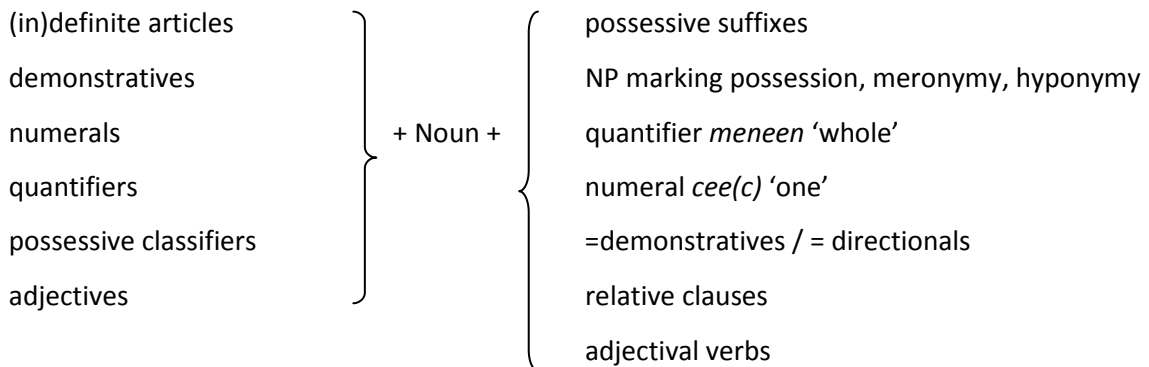
Some lexemes called 'fluid bases' (Bril, 2009: 2-3) are used as heads of referential expressions as well as heads of predicative expressions with no morphological change. Then, only the syntactic context is criterial,³³ e.g. *mweju* 'work', *kola* 'rain'.

2.2.2 Noun phrases

2.2.2.1 Constituents and structure of the nominal phrase

In accordance with other Northern Kanak languages, the order of an NP in Caac is [Head-Modifier]. Possessors and modifiers follow nouns and nominalized verbs while most determiners precede them. Nouns, nominalized verbs, pronouns, and numerals can function as the head of a NP.³⁴ The elements occurring in a nominal phrase have been partly described in section 2.2.1. Section 2.2.2 provides more information on the head of an NP and its determination.

The structure of an NP is the following:



2.2.2.2 Nominal composition

Two main strategies have been identified to form new nouns:

i) Composition: [N + Vb] or [N₁ + N₂] in juxtaposition

we tabo 'water hole' (n) (water sit down)

³³ Similarly in English, *talk* is undifferentiated on the morphological level and can be used as such in a verb phrase ('I **talk** to them.') as well as in a noun phrase ('I found his **talk** too lengthy.').

³⁴ Note that as mentioned just above, fluid bases can also function as the head of referential expressions; in this particular case, the latter would be more accurately described Determiner Phrases (than *Nominal* Phrases) but for space reasons, I will not elaborate on this topic in this grammatical sketch.

*kabe reevo*³⁵ 'girl' (child woman)

ii) Derivation triggering a word-class change (a) or not (b):

a. The following prefixes are used to nominalize verbs (occasionally with its direct object):

- *ba-* 'MEANS' expressing instruments, e.g. *pu kape* 'to make coffee' -> *ba-pu kape* 'a coffee machine' (lit. 'the means to make coffee')
- *man-* 'PLACE', 'ACTION', 'WAY' expressing location and action/manner, e.g. *kôgo~kêgo* 'to lie down' -> *man-kôgo~kêgo* 'a bed' (lit. 'the place to lie down')
- *a-* 'PROPERTY' used with dynamic and stative verbs and expressing the property of an object or an agent, e.g. *yalaap* 'to hunt' (dynamic verb) -> *a-yalaap* 'a hunter' (lit. 'the one who hunts'); *yo* 'to be good' (stative verb) -> *a-yo* 'the goodness' (lit. 'that is good')

b. The following prefixes can precede a noun and create thereby new nouns:

- *yan-* 'CONTENT', e.g. *yan-boc* 'cooked food; meal' (CONTENT-cooking pan)
- *ba-* 'MEANS',³⁶ e.g. *ba-têa* 'people of the chiefdom' (MEANS-son of the chief)
- *man-* 'PLACE; ACTION; WAY', e.g. *man-he-k* 'footprint' (PLACE-foot-NON.PERS.POSS)

2.2.2.3 Definiteness

Nominal determination can be achieved by definite and indefinite articles, demonstratives (including anaphoric markers), possessive classifiers (section 2.2.1.2) and possessive suffixes (section 2.2.1.1).

This section focuses on definite and indefinite articles and demonstratives.

2.2.2.3.1 Definite articles

Le 'DEF' introduces definite referents.³⁷ Referential NPs are considered to be definite when i) the referent has already been established in the discourse, ii) the referent has not necessarily been

³⁵ From the free noun *teevo* 'woman'.

³⁶ So far, no example has been found with *a-* 'PROPERTY'.

³⁷ *Le* 'DEF' is not related to the French definite determiner *le* 'DEF.M'. The paradigm of definite forms based on *le* in Caac probably originates in the paradigm based on the anaphoric *=ile* which refers to entities known by the speaker. One of my language consultants (in her late twenties) recognized the forms *â=ra=ile* 'those (masculine)' (M=PL=ANAPH1), *o=ra=ile* 'those (feminine)' (F=PL=ANAPH1) etc. but observed that she rather use the forms *â=ra=le* 'the (masculine)' (M=PL=DEF), *o=ra=le* 'the (feminine)' (F=PL=DEF) etc. instead. Anaphoric (and deictic) forms functioning as definite markers have been described in the neighbouring languages, e.g. Nêlêmwa (Bril, 1994: 214). In Caac, *le* 'DEF' is attested in only one 19th century narrative

previously established but is immediately recognizable by the hearer through common knowledge. The free form *le* determines singular referents only. It is preceded by the morphemes *te*= ‘DU’ and *ta*= ‘PL’ (49) to form the dual or plural definite determiners (Paradigm I in Table 11).

- (49) *ta=le teevo*
 PL=DEF woman
 ‘the women’

It can also attach to the morphemes expressing gender (*o*= ‘NEUT’ and *â*= ‘M’) and number (\emptyset ‘SG’, *re*= ‘DU’, *ra*= ‘PL’ (50; Paradigm II in Table 11):

- (50) *o=ra=le teevo*
 NEUT=PL=DEF woman
 ‘the women’

Nominals with unique referents (e.g. *negat* ‘sun’) do not usually take a determiner.

2.2.2.3.2 Indefinite articles

Indefiniteness can be expressed by the absence of any determiner (51) or by the indefinite marker *za*. The indefinite marker *za* can also occur with the numeral *ceec* ‘one’ in post-nominal position, e.g. *za habwen ceec* ‘one side’ (INDEF side one).

- (51) *A-bu-rô [∅ cuk]_{NP}.*
 PROPERTY-refuse-1SG.O INDEF sugar
 ‘I don’t like sugar’ lit. ‘I’m somebody refusing sugar.’ (Fldn2)

Za can also express non-specificity. It is frequently found in interrogative, negative and hypothetical sentences when the existence of the referent is not asserted (52).

- (52) *Zo noja [za pooç]_{NP?}*
 2SG.S see INDEF thing
 ‘Do you see anything?’

entitled *Igon le ciiya ma ciibwi ma yaaek*, Hollyman, 1999b: 151-152). However this narrative exhibits another grammatical feature which is different from other narratives written down by Father Gagnière in 1850, such as the use of the subject marker *o* instead of the older subject marker *we*. It is possible that this narrative is not as old as the other ones (or may have been translated from another language?), and may reflect a more recent state of the Caac language.

Table 11 summarizes the various forms of (in)definite determiners along with the deictic (see below) and directional determiners. One paradigm specifies number while a second paradigm allows the expression of gender in addition to number and definiteness, deixis or directionality (chapter 6).

	Gender +	Number +	Definiteness OR Deixis OR Absolute directions
Paradigm I	∅	<i>ni</i> = 'SG' <i>te</i> = 'DU' <i>ta</i> = 'PL'	<i>le</i> 'DEF' <i>=(i)en</i> 'PROX' <i>=(i)na</i> 'DIST' (also free form <i>na</i> in SG) <i>=ile</i> 'ANAPH1' <i>=ili</i> 'ANAPH2' <i>=(i)da~=(i)ra</i> 'upward' <i>=(i)de</i> 'downward' <i>=(i)zin</i> 'transverse, crosswise' <i>=(i)za</i> 'INDEF'
Paradigm II	<i>â</i> = 'M' <i>o</i> = 'NEUT'	<i>=∅</i> = 'SG' <i>=re</i> = 'DU' <i>=ra</i> = 'PL'	<i>le</i> 'DEF' <i>=(i)en</i> 'PROX' <i>=(i)na</i> 'DIST' <i>=ile</i> 'ANAPH1' <i>=ili</i> 'ANAPH2' <i>=(i)da~=(i)ra</i> 'upward' <i>=(i)de</i> 'downward' <i>=(i)zin</i> 'transverse, crosswise'
Free (IN)DEF forms	∅	∅ 'SG'	<i>le</i> 'DEF'
	∅	∅ 'SG/PL'	<i>za</i> 'INDEF'

Table 11: Definite, deictic and directional determiners

Determiners in paradigms I and II can be used as pronouns. The indefinite and definite articles *za* 'INDEF' and *le* 'DEF' are attested as determiners only. Finally, note that the spatial deictic *na* 'DIST' is often used to introduce entities that are new to discourse but are immediately identifiable in the context.

2.2.2.4 Demonstratives

2.2.2.4.1 Semantic features

Demonstrative clitics encode two degrees of distance in relation to the speaker: proximal (*=(i)en* 'PROX') and distal (*=(i)na* 'DIST'). In addition, a third form, the free determiner *hî* 'S.PROX', is utilized when the entity is so close to the speaker that the latter can touch the entity in question when

pointing at it. The clitic *=(i)en* is not analyzed as a medial form as in all syntactic contexts (except when used as a preposed determiner, see below) *=(i)en* 'PROX' is opposed to *=na* 'DIST' only, and indicates that the referent is close to the deictic centre. The proximal-distal opposition is also encoded in the deictic adverbs *ja* 'PROX' and *tena* 'DIST' (section 5.3.3.1). The morpheme *=ile* can also refer to absent but already mentioned or acknowledged referents. By contrast, the anaphoric clitic *=ili* marks referents unknown to the speaker. Table 12 gives a brief overview of the deictic morphemes used in the composition of demonstratives.

	FORMS	SPATIAL USES	TEMPORAL USES
SPATIAL DEIXIS only	<i>hî</i> 'S.PROX'	super proximal, salient referent, shown (with gesture)	n/a
	<i>=(i)en</i> 'PROX'	proximal, close to the speaker	close in time, past or future reference <i>cemen=ien mwamen</i> 'next week' (week=PROX tomorrow) <i>cemen=ien tebwin</i> 'last week' (week=PROX yesterday)
SPATIAL DEIXIS + ANAPHORA	<i>=(i)na</i> 'DIST'	(i) distal, far from the speaker (ii) new to discourse but immediately identifiable by the hearer	further in time (later) <i>cemen=ina</i> 'one (future) week' (week=DIST) <i>jek=ina 2018</i> 'in the year 2018' (year=DIST 2018) <i>*cemen=ina mwamen</i> 'next week' (week=DIST tomorrow)
ANAPHORA only	<i>=ile</i> 'ANAPH1'	(i) shared knowledge anaphoric: referring to an entity known by the speech-act participants, the referent may have already been mentioned in the discourse	further in time (earlier) + non-specific <i>cemen=ile habit</i> 'one (past) week' (week=ANAPH1 before) <i>le jex=ile</i> 'one (past) year' (DEF year=ANAPH1) <i>*cemen=ile tebwin</i> 'last week' (week=ANAPH1 yesterday) <i>*le jex=ile 2003</i> 'in 2003' (past) (DEF year=ANAPH1 2003)
	<i>=ili</i> 'ANAPH2'	(i) making reference to an unknown referent	n/a

Table 12: Forms and meanings of deictic morphemes

The morpheme *=ile* signals that the referent is known by the speaker and the addressee but absent while the morpheme *=ili* refers to referents which are unknown to the speaker. For instance, in (53) the speaker joins a group of people and he does not know who the person is that they are talking about.

- (53) *I pa [â=ili]_{NP} za pela na le-i ?*
 3SG.S where M=ANAPH2 2PL.S talk PAT IND-3SG.O
 ‘Where is the one you are talking about (him)? (GramScen_SI_JP) (unknown referent)’

In (54), the speaker was speaking with a group of people. He leaves for a short period and joins them again. He knows the person whom they are talking about.

- (54) *I pa [â=ile]_{NP} za pela na le=i?*
 3SG.S where M=ANAPH1 2PL.S talk PAT IND-3SG.O
 ‘Where is the one you are talking about (him)? (GramScen_SI_JP) (known and absent referent)’

In (55), the speech-act participants are near a community house where many people are gathered (inside and outside the house) for a customary ceremony. The speaker’s question is to help him identifying who the grandmother in question is as he does not know the children. He knows that their grandmother is here and asked indirectly about her identity to know which family or clan these children belong to.

- (55) *I pa [o=ili wa le ta=en kabe]_{NP?}*
 3SG.S where NEUT=ANAPH2 grandparent IND PL=PROX child
 ‘Where is the grandmother of those children?’ (GramScen_SO_JP)

Alternatively, another speaker suggested (56) resorting to the anaphoric clitic *=ili*. The definite form *=le* ‘DEF’ could also be used in this context. Most speakers think that *=ili* is ‘Old’ Caac, implying that it is now falling out of use.

- (56) *Ti [ni=ili / o=le / le wa le*
 who SG=ANAPH2 / NEUT=DEF / DEF grandparent IND

ta=en kabe=ra=en]_{NP?}
 PL=PROX child=PL=PROX
 ‘Who is the grandmother of those children there?’ (GramScen_SO_JP)

The demonstrative *ni=ile* for example is used to refer to someone one knows but in an indirect way. Out of respect for the person they talk about (or they talk to), Caac speakers rather use indirect ways

of naming someone by periphrasis.³⁸ *Ni=ili* would not be used in this context as the speaker knows whom (s)he refers to (57).

(57) *l pa [ni=ile [i a mo Calvaire]_{REL.CL}]_{NP?}*
 3SG.S where SG=ANAPH1 3SG.S go live Calvaire
 ‘Where is the one who lives at Calvaire?’ (GramScen_SI_JP)

2.2.2.4.2 Distribution

There are basically two paradigms of forms which are used as determiners as well as pronouns. One paradigm follows the following pattern: [Number stem + Deictic clitic], e.g. *ta=na* ‘those’ (PL=DIST) (Table 13). The demonstrative *hî* ‘S.PROX’ is used as a determiner only and always precedes a noun. It can co-occur with the clitic *=(i)en*, e.g. *hî mwa=ien* ‘this house here’. The distal morpheme can be used with *ni* ‘SG’ (*ni=na* ‘that’) or on its own *na* (‘that’).

STEM	+ DEICTIC or DIRECTIONAL CLITICS
<i>ni</i> ‘SG’	<i>=ien</i> ‘PROX’ <i>=na</i> ‘DIST’ and <i>na</i> ‘DIST’ <i>=ile</i> ‘ANAPH1’ <i>=ili</i> ‘ANAPH2’ <i>=(i)DIR</i> (<i>=da~ra</i> ‘upward’, <i>=de</i> ‘downward’, <i>=zin</i> ‘crosswise’)
<i>te</i> ‘DU’	<i>=ien</i> ‘PROX’ <i>=na</i> ‘DIST’ <i>=ile</i> ‘ANAPH1’
<i>ta</i> ‘PL’	<i>=ili</i> ‘ANAPH2’ <i>=(i)DIR</i> (<i>=da~ra</i> ‘upward’, <i>=de</i> ‘downward’, <i>=zin</i> ‘crosswise’)

Table 13: Demonstratives coding Number + Deixis OR Directionals

The second paradigm is built on: [Gender marker + Number marker + Deictic or Directional marker] (Table 14).

(58) *â=ra=na (âc)*
 M=PL=DIST man
 ‘those (men)’

³⁸ Another periphrastic way to refer to someone is mentioning his/her parenthood (e.g. ‘the mother of X’).

		â= Masculine morpheme	o= Neutral morpheme
SG	=DX	<i>â=∅=ja</i>	<i>o=∅=ja</i>
		<i>?â=ien³⁹</i>	<i>?o=ien⁴⁰</i>
		<i>â=∅=na~â=∅=ina</i>	<i>o=∅=na / o=∅=ina</i>
		<i>â=∅=ile</i>	<i>o=∅=ile</i>
		<i>â=∅=ili</i>	<i>o=∅=ili</i>
	=DIR	<i>â=ida</i>	<i>o=ida</i>
		<i>â=ide</i>	<i>o=ide</i>
		<i>â=izin</i>	<i>o=izin</i>
DU	=DX	<i>â=re=ja~â=re=ija</i>	<i>o=re=ja~o=re=ija</i>
		<i>â=re=en~ (but *â=re=ien)</i>	<i>o=re=en~ (but *o=re=ien)</i>
		<i>â=re=na</i>	<i>o=re=na</i>
		<i>â=re=ile</i>	<i>o=re=ile</i>
		<i>â=re=ili</i>	<i>o=re=ili</i>
	=DIR	<i>â=re=ida</i>	<i>o=re=ida</i>
		<i>â=re=ide</i>	<i>o=re=ide</i>
		<i>â=re=izin</i>	<i>o=re=izin</i>
PL	=DX	<i>â=ra=ja~â=ra=ija</i>	<i>o=ra=ja~o=ra=ija</i>
		<i>â=ra=en~ (but *â=ra=ien)</i>	<i>o=ra=en~ (but *o=ra=ien)</i>
		<i>â=ra=na</i>	<i>o=ra=na</i>
		<i>â=ra=ile</i>	<i>o=ra=ile</i>
		<i>â=ra=ili</i>	<i>o=ra=ili</i>
	=DIR	<i>â=ra=ida</i>	<i>o=ra=ida</i>
		<i>â=ra=ide</i>	<i>o=ra=ide</i>
		<i>â=ra=izin</i>	<i>o=ra=izin</i>

Table 14: Demonstratives coding Gender + Number + Deixis or Directionals

The second paradigm coding gender allows the use of the proximal morpheme *ja* ('PROX', section 5.3.3.1). The resulting combinations function as pronouns only, e.g. *â=∅=ja* 'this one (M)'. Note that no demonstrative can be formed on the distal adverb *tena* (**â=∅=tena* 'that', **â=re=tena* 'those two' etc.)

The pair *=(i)en* 'PROX' and *=na* 'DIST' can also be cliticized to a noun in an NP for emphasis. Based on the demonstrative *ni=ien* 'this (one)' (SG=PROX), the functions and distributions of demonstratives are tabulated below.

³⁹ People have different views about this form. Some speakers accepted this form, but some did not.

⁴⁰ Idem.

Functions	Possible NP structure (omitting any modifiers)		
Determiner	<i>ni=ien</i>	N	
	<i>ni=ien</i>	N	<i>=ien</i> (emphatic use)
	<i>*ni=ien</i>	N	<i>ni=ien</i>
Pronoun	<i>ni=ien</i>	∅	

Table 15: Distribution and functions of *=(i)en* 'PROX' and *=na* 'DIST'

- (59) *ni=ien mwa*
 SG=PROX house
 'this house'
- (60) *ni=ien mwa=ien*
 SG=PROX house=PROX
 'this house here'
- (61) *ni=ien*
 SG=PROX
 'this (one)'

2.2.2.5 Relative clauses

Relative clauses are a type of dependent clause whose main property is to function as the modifier of the head of a noun phrase. In Caac, a relative clause is always positioned after the head, in line with the general constituent order in this language i.e. head-modifier. A relative clause can have a verbal (62, 63) or non-verbal predicate (64); the head can be a noun (64), or a definite or deictic/anaphoric pronoun. As a rule, relative clauses are not preceded by any marker (62, 64); the main clause and the relative clause can occur in juxtaposition or the relative clause can be found embedded in the main clause. Based on the prosody, the absence of pitch fall and pause between the head of the NP and its modifying clause allows us for the identification of the relative clause.

- (62) *l pa [le mâg [i mo ja]_{REL.CL}]_{NP?}*
 3SG.S where DEF mango 3SG.S stay PROX
 'Where is the mango that was here?' (Fldnt 1)

- (63) *Ce za cia [ne i texec]_{REL.CL}*
 NEG INDEF field IRR 3SG.S burn
 'There is no field that has burnt.' (ElicitRel1_JP)

The function that the head would have within the relative clause is filled whatever function this is. The constituent order within a relative clause corresponds to the word order in the main clause: sVOS.

(64) *Na re na wan aa-ny, (h)ile*
 PRE.LOC in DIST opening desire-1SG.POSS EXIST.ANAPH1

[le yep [[a-yo]_{NP_PRED} [yale-n aa-k]_{NP.SUBJ}]_{REL.CL}]_{NP}
 DEF fire PROPERTY-be.good name-3SG.POSS heart-NON.PERS.POSS

‘Inside my heart (i.e. the place of my desire/will), there is the fire whose name of ‘heart’ (i.e. the organ) is lovely.’ (I_pa_le_yep_DN)

A noun phrase consisting of a headless relative clause preceded by the definite determiner *le* can be employed in an identificational statement (‘the (one) who(m)/that’; 65). A relative pronoun is only found in relative clauses whose antecedent is a temporal adjunct or a spatial adjunct; the relative pronouns employed are *rele* ‘ANAPH.TP’ and *tele* ‘ANAPH.SP’ (65) respectively.

(65) [...] *ra [ja eze pe (h)uri=mwa kumaac]_{Main.CL} [m_i*
 and ASS again moving follow=completely beach PURP_3SG.S

ja te=wa cele o=le abaa-n na
 ASS go.down=far at/to NEUT=DEF sibling-3SG.POSS PRE.LOC

ja=maade [tele re pwa a mo le]_{REL.CL}_{Sub.CL}
 PROX=downward ANAPH.SP 3DU.S used.to go live RES

bwa [le [re pwa a mo Maze det]_{REL.CL}]_{NP}
 PRES DEF 3DU.S used.to go live Maze det

‘and (she) follows again the sea in order to arrive leeward at her sister’s place seaward where they used to live there; that’s the (ones) who used to live at Maze det.’ (Higon1_WH)

2.2.3 Independent basic clauses

A simple clause consists of an independent clause containing a single predicate to which adjuncts can be added. Verbs usually take the predicative function but other parts of speech can also function as predicates (section 2.2.3.3).

2.2.3.1 Word order

In affirmative declarative clauses, the unmarked word order is (s)VOS. Any marked word, phrase or clause is typically fronted (second sentence in (66); see section 2.2.5.6). In Present-Day Caac, a subject when pronominal (s) is always pre-verbal: sVO (66) while a fully-fledged nominal subject (S) is post-verbal: sVOS (67). As a rule, the object and the spatial complement immediately follow the verb and precede the nominal subject when there is one.

- (66) [No]_{Subj} [na=da]_{Vb} [le thiin]_{DIR.O} [cele-n]_{IND.O}
 1SG.S give=upward DEF letter at/to-3SG.POSS
 ‘I send a letter to her windwards (to his daughter in Noumea).’
- (67) [Habur (o) me [ra]_{Pronominal.subj} [ta]... [ta=le dalaen]_{NP.Subj...}
 before at/to when 3PL.S go.up PL=DEF white.people
- [ta=le missionaire]_{NP.Subj} Sub.CL. Pwame ni(=en) mwa
 PL=DEF missionary TOP SG=PROX house
- Pweevo,... i ja po jure âc re-n.
 Pouebo 3SG.S ASS get true man in(side)-3SG.POSS
 ‘Before the white people... the missionaries arrived (lit. went up), the chiefdom of Pouebo here, there as a chief in here.’ (Pweevo_DI)

2.2.3.2 Argument structure and valency

Although (split-)ergativity is a typical feature of some Northern Kanak languages, Caac is an accusative language. Some traces of a different marking for experiencers are still visible in a class of verbs which cannot take a subject pronoun but encode experiencers by object suffixes directly attached to verbs (see section 2.2.1.9). Nowadays Caac has a subject marker *o*⁴¹ which is indifferent to valency. *O* ‘SBJ’ remains optional and its use is probably related to information structure. Due to space restrictions, this topic is not further described in this study.

2.2.3.3 Types of predicates

The predicative function can be filled by a verb phrase in (68) or a noun phrase in (69). The predicate follows the subject pronoun, and precedes the nominal subject.

- (68) [No]_{Pronominal.Subj} [phai ari mehe-nya hen e barep]_{VP.Pred.}
 1SG.S cook rice for-1PL.INCL.POSS today IND evening
 ‘I cooked some rice for us (for) tonight.’
- (69) [Mwe-n kola le-rô]_{NP.Pred} [ni=ien]_{NP.Subj}
 house-DET rain IND-1SG.O SG=PROX
 ‘This is my umbrella.’ (GramQuest_AN_AG)

⁴¹ A former subject marker *we* was attested in the tales collected by the missionaries in the 19th century and described by Hollyman as the “former particle of animate subjects or subjects treated as such” (1999b: 157; see also 1999a: 106-107). As the present-day subject marker *o*, *we* was used indifferently to encode subjects of monovalent constructions as well as subjects of bivalent constructions.

Noun phrases in predicative function can be headed by a noun (69, 70), a nominalized verb, a numeral, a demonstrative, or free pronoun. No copula is attested in Caac. Nouns susceptible to be used as predicates belong to the lexical fields of judgement or tastes (e.g. *aa-n* ‘he/she/it likes’ lit. ‘his/her/its will/desire’), states, quantity and orientation (e.g. *duu-n* ‘to have his/her/its back (towards)’; 70).

- (70) [I]_{NP.Subj} [ta-wan=da] [bwe daan]_{Pred.}
 3SG.S sitting-opening=upward windward
 ‘It (the house) is sitting facing (lit. ‘it has its opening/entrance towards’) windward.’
 (GramQuest_AN_AG)

2.2.3.4 Presentative constructions

One presentative construction is based on [*bwa* + NP.Predicate] (71b). This strategy is also used to express contrastive focus (see 2.2.5.6.2).

- (71) a. Sp1: *Oni film o da?*
 but film at/to what
 ‘And what kind of film? (lit. and a film of/for what?)’
- b. Sp 2: ***Bwa [film o kabe]***_{NP.Pred.}
 PRES film at/to child
 ‘It’s a cartoon.’ (lit. It’s a film to/for children). (GramQuest_JP)

Another strategy consists of the pronoun *eni* in predicative function followed by a nominal phrase composed of a demonstrative determiner and a noun or a demonstrative pronoun (72, 73).

- (72) [***Eni***]_{Pred} [ta=na cee(c)=ra=en [ra coor da le
 PRES PL=DISTwood=PL=PROX3PL.S stand upwards DEF

*mwa]*_{REL.CL}]_{NP.}
 house
 ‘These are the wood-posts which stand upwards (support) the house.’ (StructHouse_JP)
- (73) *Jo [eni]*_{Pred} [*na*]_{NP.} *Jo u ôjin.*
 then PRES DIST then PERF end
 ‘That’s it, that’s over.’ (said at the end of an explanation) (Mwelebeng_JP)

2.2.3.5 Existential constructions

The construction with *pwa* ‘EXIST’ is used for introducing referents which are new to the discourse. The referent can be present or absent from the context of utterance. The existential marker *pwa* is followed by an NP, which often includes a relative clause without any relativizer (section 2.2.2.5): ‘there is X who/which...’ (74).

- (74) *No taamwi ta=le nek; oni [pwa]_{Pred}*
 1SG.S catch PL=DEF fish and/but EXIST
- [ta=le mei-n [ra mwarô]_{REL.CL}]_{NP}*
 PL=DEF half-3SG.POSS 3PL.S be.off
- ‘I caught some fish but there are half of them which are off.’ (GramQuest_JP)

Existential sentences introducing generic or indefinite referents can only be formed with *pwa* (75).

- (75) *[Pwa]_{Pred} [za âc]_{NP} [na re wan mwe chire-ni]_{pp?}*
 PRES INDEF man PRE.LOC in opening house forbid-TR
- ‘Is there anyone at the entrance of the church?’

By contrast, definite referents can also be introduced by a construction based on a predicative deictic (*(h)ile* ‘EXIST.ANAPH1’ (74), (*(h)ien* ‘EXIST.PROX’, (*(h)ina* ‘EXIST.DIST’). This construction is also employed when the referent is expected by the hearer, and therefore contextually retrievable. This existential construction always encodes the location as well as the existence of an entity and requires two arguments: Deictic predicate + NP + spatial complement (76).

- (76) *[Ave=da=zin na le pont]_{Sp.Compl} [ile]_{Pred} [le*
 side=upward=crosswise from DEF bridge EXIST.ANAPH1 DEF
- kolec]_{NP}*
 school
- ‘On the other side of the bridge, there is the school.’ (I_pa_le_mwa_JP)

Finally, the negative existential construction consists in the verbs *cia* ‘there is no’ and *cii* ‘be absent; disappear’ used with animate referents. *Cia* is followed by an NP (and \emptyset when there is anaphoric reference, section 2.2.1.9). The verb *cii* is followed by a pronominal or nominal argument; the latter are preceded by *le* ‘IND’.

(77) **(I)** ***cii*** [*le* [*o=le* *nei-ny* *reevo*]_{NP}]_{subj}.
 3SG.S NEG.EXIST IND NEUT=DEF child-1SG.POSS girl
 ‘My daughter is not here.’

2.2.4 Constituents and structure of the predicate

A predicate in Caac can consist of the elements listed below. They can be combined with some restrictions explained in the sub-sections below. Serial verb constructions are discussed in section 2.2.4.3.

- i. the morphemes pre-posed to the predicative head:
 Negation + Mood + Subject pronoun + Aspect+ posture prefix + **Verb**
- ii. the head of the predicate
- iii. the morphemes post-posed to the predicative head:
 Directionals + Deictic Directionals
- iv. objects or spatial complements

Negation is described in section 2.2.4.2, directional/ deictic directional clitics in (chapter 6) and TAM in section 2.2.4.1. The various types of predicates are given in section 2.2.3.3. As for the arguments of the predicates, a brief discussion can be found in section 2.2.1.9 (for argument structure and valency) and section 2.2.5.1 (for complementation).

2.2.4.1 TAM marking

Tense, aspect and mood have scope over the predicate –whatever the part of speech of the predicate– to the extent that the predicate and the TAM marker(s) are semantically compatible. Caac TAM markers are only sketched here.

2.2.4.1.1 Expression of time

Caac does not show any verbal inflection, and past, present and future are therefore not morphologically marked. Temporal information is inferred from the context or from the presence of temporal adverbs (78). These features are characteristic of Northern Kanak languages.

(78) ***Mwamen,*** ***no*** ***eze*** ***te=wa*** ***Bwe o ciiā***
 tomorrow 1SG.S again go.down=back Bwe o ciiā
 ‘Tomorrow I’ll go back to *Bwe o ciiā*.’

For the recent past and the near future, *eleek* ‘earlier’ and *hen* ‘today; now; soon’ respectively are used, e.g. *eleer e waak* ‘(earlier) this morning’ (earlier IND morning), *hen e barep* ‘tonight’ (today IND evening). Three deictic/anaphoric determiners can also provide information on the temporal frame (79; section 2.2.2.4.1).

(79) *Ne ave nya ta burem Colnettt [cavato=ien*
 IRR say 1PL.INCL.S go.up bath Colnett Saturday=PROX

mwamen]_{NP_Adjunct}

tomorrow

‘Let’s/what about going windward to swim at Colnett next Saturday?’

2.2.4.1.2 Expressions of modality

As in Nêlêmwa (Bril, 2002: 199- 211; to appear: 4), the primary modal dichotomy in Caac rests on the irrealis and realis modalities. Realis is expressed by the bare predicative form. It is used to make generic statements (80) or to refer to past, present but also future events.

(80) [*He-pac ta=le mwa [ra coor na re*
 CLASS1-four PL=DEF house 3PL.S be.standing PRE.LOC in

ni=ide mwa Mwelebeng]_{REL.CL}]_{NP.PRED}

SG=downward house Mwelebeng

[*ta=le mwa yan-meevu*].

PL=DEF house CONTENT-family

‘They are four houses which are standing in the downward chiefdom of Pouebo, four

‘tribes’.’ (Mwelebeng_JP)

Irrealis modality is encoded by two main morphemes: *wa* ‘VIRT’ and *ne* ‘IRR’. *Wa* establishes a virtual frame in which the event described by the predicate takes place. The use of *ne* in simple/independent clauses is restricted to sentences expressing (positive or negative) orders. It occurs otherwise in dependent clauses, including relative clauses, complement clauses and adverbial clauses (81). In this context, *ne* either occurs on its own (*ne* ‘if’) or combines with various lexical means and expresses a wide range of modalities, e.g. the directive mood with the stative verb *yo* ‘be good’ (*yo ne* ‘should’), the conditional mood with the subordinator *pwame* ‘when’ (*pwame ne* ‘if; when’). *Ne* conflates with the third singular pronoun *i* ‘3SG.S’ (*ne i > n_i* ‘IRR_3SG.S’) and the perfect morpheme *u* (*ne u > n_u* ‘IRR_PERF’) when the latter are present in the verbal phrase.

Mood markers are positioned before the subject pronoun and the predicate: Mood + s + Predicate.

Wa is found either before the abbreviated negative particle *ca~ce* (section 2.2.4.2) or after: *ca + wa + s + Predicate* or *wa + ca + s + Predicate*.

(81) ***N_i*** *kêâza* *nei-ny,* ***wa*** *no* *ôjin*
 IRR_3SG.S be.a.lot.of child-1SG.POSS VIRT 1SG.S end

o *mweju.*

CMP work

'If I had had a lot of children, I would have stopped working.' (GramQuest)

Table 16 lists a few ways of expressing other modal meanings.

MODALITIES		FORMS
EPISTEMIC	Certainty	assertive marker <i>ja</i>
DEONTIC	Imperative	imperative construction (verb used on its own)
DISPOSITION	Ability	<i>kêêk</i> 'be able to, be possible', <i>keraac</i> 'not be able to, be impossible'

Table 16: Marking mood

2.2.4.1.3 Expression of aspect

Aspect markers are found between the subject pronoun and the predicate: s + ASPECT + Predicate.

Table 17 provides an overview of the forms expressing an aspect. Due to space restrictions, only the markers *u* 'PERF' and *mwa* 'completely' are discussed below.

FORMS	ASPECTS
<i>u</i> 'PERF'	perfect
<i>gaa</i> 'DUR'	durative (continuity)
<i>ma</i> 'recently'	close in time (past or future time)
<i>eze~e</i> 'again'	iterative, regressive
<i>te</i> 'at once'	'already; immediately, at once'
<i>mwa</i> 'completely'	accomplishment of an action or change of state
<i>ma gaa</i> 'just' (recently / DUR)	recent completion 'just'
<i>wa + s + ma + PRED</i>	future
fluid basis <i>ôjin</i> 'end' + complement clause	end of an action
verb <i>taavun</i> 'start' (in SVC)	beginning of an action
<i>taa da</i> 'arrive upward'	'until'

locative verb <i>e</i> 'be at' + object suffix + <i>re man-</i> (nominalizer) + Vb	progressive ⁴²
--	---------------------------

Table 17: Aspectual markers

The morpheme *u* is a perfect marker. It seems that Caac *u* has a very similar use to Nêlêmwa *(k)u~(x)u* 'PERF' and following Brill in her analysis of Nêlêmwa, the perfect aspect in Caac can be defined as follows:

In discourse contexts, the perfect refers to a process anterior to present speech time (t_0), but relevant to it. In narratives, the perfect refers to a process (t_n) anterior to another past reference point (t_{past}), in a temporal frame which is disconnected from (t_0). The process in the perfect may be complete or incomplete, i.e. it may or may not have reached its final instant, as in English for that matter, he has/had worked a lot does not signal completion. On the other hand, especially when used with telic verbs such as break, the action may be complete or completed and may have a resulting state, as in 'he has/had broken the vase'; [...]. (Brill, to appear: 14)

As in Nêlêmwa, *u* 'PERF' is used in realis (82) and irrealis (83) reference frames. In an irrealis context with future reference (83), *u* signals the "imminent completion of a process"; "[the] future action [is] expressed as if completed" (Brill, to appear: 14, 23).

(82) *Pwame ne no tho=da-zo, pwame Laurent,*
when IRR 1SG.S call=upward-2SG.O TOP Laurent

u te ap.
PERF at.once go

'When I phoned you, Laurent had already left.' (GramScen)

(83) *Aurélie, wa u ta=me.*
Aurélie VIRT PERF go.up=CENTRIP
'Aurélie, she will soon have come here.' (GramScen)

The clitic *=mwa* 'completely' is the only aspectual morpheme which is placed after the (verbal or non-verbal) predicate: s + Predicate + *=mwa*. It refers to the completion of an action (84, 85) and probably

⁴² A very similar strategy is used in Nyelâyu: locative pronoun + nominalized verb [*ma-* 'place of, action of' + Verb] (Ozanne-Rivierre, 1998a: 42).

originates in the spatial term =*mwa* ‘far; back’⁴³ (section 6.3.2, see also Nyelâyu⁴⁴) from which it kept its position (i.e. following the element in predicative function).

(84) *A-yo=mwa.*
 PROPERTY-good=completely
 ‘I’m better/completely recovered.’ (Fldn4)

(85) [[*Pwam_i taa de=wa* [*â=le nei-n*]_{Sub.CL} [*oni*
 when_3SG.S arrive downward=back M=DEF child-3SG.POSS and/but

i taa de=ve=mwa]_{Main.CL1}; [*came i eze*
 3SG.S arrive downward=CENTRIP=completely NEG 3SG.S again

pela=mwa â=le came-n]_{CL2}.
 speak=completely M=DEF father-3SG.POSS

‘When his son came back and he arrived downward there, his father did not talk anymore.
 (i.e. he was dead).’ (GramQuest)

2.2.4.2 Negation

Verbal (86) and non-verbal (87) clauses are negated by adding the negative particle *came* (or *ceme*) in clause-initial position. In a negative clause, word order is the following: *came* + pronominal subject (+TAM) + predicate + Object + Nominal Subject.

(86) *Came no ap.*
 NEG 1SG.S go
 ‘I don’t leave.’ (Fldnt3)

(87) *Came aa-ny=mwa.*
 NEG desire-1SG.POSS=completely
 ‘I don’t love it/her/him anymore/at all.’ (Fldnt3)

The third singular personal pronoun *i* and *came* ‘NEG’ conflate into *cam_i* ‘NEG_3SG.S’. In spontaneous speech, *came* is most often reduced to *ca* and varies with *ce* and *ci*. To express the fact that something has not yet happened, one resorts to the discontinuous negative phrase *came*

⁴³ Contrary to the spatial form =*mwa* ‘back; most’ (from which the aspectual marker may have grammaticalized; see section 6.3.2), =*mwa* ‘completely’ can occur after the verb *te* ‘go down’ and the directional =*de* ‘downward’.

⁴⁴ In Nyelâyu, *mwa* is also found in post-verbal position meaning ‘back’, ‘again’ and marking perfect aspect (“l’aspect révolu”; see Ozanne-Rivierre, (1998a: 126)).

(~variants)... *cu* ‘not yet’ (88). In this context, the word order is the following: *came* + pronominal subject + *cu* + Predicate.

(88) *Ce zo cu ôjin.*
NEG 2SG.S yet end
‘You have not yet finished.’ (Fldnt3: 84)

‘Never’ is expressed by *came* + *s* + *cu* + (*yau*) + V and ‘not anymore’ by *came* + *s* + *eze* + V.

2.2.4.3 Serial Verb Constructions

This section provides a description of the main features allowing the identification of serial verb constructions and, briefly, their functions. The relations of serial verb constructions (SVCs) with clause-linkage strategies, processes of grammaticalization and lexicalization, albeit complex and interesting in Northern Kanak languages for synchronic and diachronic reasons, are not addressed here.⁴⁵

Serial verb constructions in Caac refer to a series of verbs forming a single predicate and are very frequently used. Caac SVCs follow the nuclear layer serialization pattern with contiguous serial verbs: sVV(o), the only type of SVCs identified in Kanak languages (Bril, 2007: 276). It generally refers to a sequence of events happening either simultaneously or successively but can be viewed as a chronological and logical succession of sub-events composing one unique event. The distinguishing features of this construction are the following:

- i. the verbs within this construction are not linked by any overt connector
- ii. each verb must have lexical autonomy
- iii. the sequence of verbs constitutes a single prosodic unit
- iv. they share tense-aspect and mood, and usually polarity
- v. they share arguments; there are only same-subject SVCs: pronominal Subject + Vb1 + Vb2 + (Object).

In the available data, both co-ranking predicates and hierarchized predicates are found in SVCs. Hierarchized predicates possess “a main verb (the head) and a modifying verb that do not obligatorily share the same subject”, and whose modifying verb has scope over “either the main verb or on one of the arguments of the main verb” (Bril, 2007: 270). In contrast, none of the co-ranking predicates “determines the semantic or syntactic property of another predicate in the sequence” (Bril, 2007: 269). As observed in Bril (2007: 270-271), co-ranking predicates in Caac generally comprise SVCs

⁴⁵ See Bril (2004b and 2007) for a detailed analysis.

expressing a succession of actions (89, 90) and a sequence of action-purpose, while hierarchized predicates tend to express notably manner of action (91), posture,⁴⁶ similative, direction and location, Aktionsart with the ingressive verb *taavun* ‘start’ and the terminative fluid basis *ôjin* ‘end’ or a temporal limit with the verb *taa=da* ‘arrive=upwards’ in V₂ position meaning ‘until’. Verbs in SVCs have their fully-fledged form except for *ap* which is reduced to *a*.

In (89), two successive actions are expressed by the co-ranking predicate: the action of taking an object via the transitive verb *phe* ‘take’ and the action of coming towards the speaker with the intransitive verb *a=me* ‘come’. The direct object of the verb *phe* ‘take’ does not immediately follow the transitive verb but it is post-posed to the complex predicate.

- (89) [[**Phe a=me**]_{Vb1+Vb2} [na ba-kêdek]_{DIR.O}]_{SVC}.
 take go=CENTRIP DIST MEANS-drink
 ‘Bring that glass.’ lit. ‘Take come that glass.’ (Fldnt 3)

The same remark holds for the position of spatial complements (obligatory arguments of spatial verbs). In (90), the speaker went seawards to a place called *Dau* and came back to his starting point (inland). The toponym *Dau* is the spatial complement of the first verb of motion *te* ‘go down’ (by contrast, if the toponym was the spatial complement of *ta* ‘go up’, *Dau* would be introduced by the preposition *na* ‘from’). The spatial complement is found after the co-ranking predicate.

- (90) No [[**te ta**]_{Vb1+Vb2} [**Dau**]_{SP.Compl}]_{SVC}.
 1SG.S go.down go.up Dau
 ‘I went to *Dau* and back.’ lit. ‘I went down (to *Dau*), went up (from) *Dau* (back here).’

In (91), the second predicate specifies how to do the action the first verb refers to: (i) in the first complex predicate, how to dig out the bamboo post by pulling it off the ground, (ii) in the second complex predicate, how to pull the bamboo post (slowly). Example (91) includes two SVCs with hierarchized predicates.

- (91) *Camwan ne zo [puri taaze]_{SVC1} oni ne zo*
 PROH IRR 2SG.S dig.out pull.off and/but IRR 2SG.S

[chei oba-ni]_{SVC2}
 pull be.slow-TR
 ‘Don’t pull it off but pull it slowly/carefully.’ (ElicitVbMorpho_JP)

⁴⁶ The construction is analyzed as SVC with the full posture verb only (and not the posture prefix).

2.2.5 Complex and non-basic clauses

2.2.5.1 Complement clauses

Complementation is the syntactic process whereby a clause functions as the argument of a predicate. The overall structure consists in a main (or matrix) clause and its dependent clause (i.e. complement clause). As part of the argument structure of the sentence, complement clauses are therefore obligatory. This feature differentiates them from subordinate (or adverbial) clauses. However, this distinction is often not apparent in the morphology of the clause, as often the same grammatical morphemes allow the identification of complement clauses and of adverbial clauses (e.g. in Caac *me* is a complementizer as well as a purposive marker). Caac complement clauses can be introduced by the complementizers *have*, *me*, *ne*, *o*. Note that several complement constructions can be licensed by a predicate. Only complement clauses with *o* are reduced; other complement clauses have the same structure as main clauses sVOS.

FORMS	Used with	Introduces	Features
<i>(h)ave</i> (< <i>have</i> ⁴⁷ 'say') 'QUOT' <i>(h)ave~a</i> 'CMP'; can be optional	utterance verbs (e.g., <i>phaaja</i> 'ask', <i>heli</i> 'say'), verbs of cognition/knowledge and acquisition of knowledge (e.g. <i>hîna</i> 'know', <i>nemi</i> 'think', <i>yang</i> 'wonder, <i>yagala</i> 'try to find out') and verbs of perception (e.g. <i>noja~noje</i> 'see')	- full clause - direct speech (s + Vb + <i>(h)ave</i> : "...") and reported speech	- subjects of both clauses not necessarily co-referent - <i>(h)ave+ me</i> to report an order
<i>me</i> 'CMP'	verbs with epistemic or deontic value; verbs expressing ability/inability; desiderative nominal predicates (e.g. <i>aa-ny</i> desire-1SG.POSS)	- full clause	- deontic modality, epistemic modality, ability/inability, and purposive and jussive value - subject obligatory
<i>ne</i> 'IRR' ⁴⁸	verbs with epistemic value (e.g. <i>waa</i> 'seem to'), the hortative predicate (<i>a-)</i> yo 'be good, should' (50), desiderative nominal predicates (e.g. <i>aa-ny</i> desire-1SG.POSS); <i>neo</i> 'forget'	- full clause	- in irrealis context - subject obligatory
<i>o</i> 'CMP'	<i>yage</i> 'help', <i>ôjin</i> 'end', some verbs of perception	- reduced clause	- no subject

Table 18: Main complementizers

⁴⁷ *(H)ave* is used as a full verb meaning 'say' in Present-Day Caac.

⁴⁸ To some extent, in relative, complementive and adverbial clauses *ne* 'IRR' could also be accounted as a subordinator, a function probably derived from its irrealis value.

2.2.5.2 Coordination and linking words

The distinction drawn here between coordinators and linking words rests on their distribution, the nature of the entities they coordinate and the degree of syntactic integration there is between the coordinated entities. From the standpoint of semantics, coordinators and linking words could be grouped together as both types of connectors convey chronological and logical meanings.

‘Coordinators’ refer to connector morphemes operating at least on the phrasal level and none of these coordinators is found in a clause-initial position. Linking words differ from coordinators in that they operate on the clausal level only (see *oni* ‘and/but’ in (91) above). Unlike coordinators, they can occur in simple clauses in which they are found clause-initially. The subject (be it co-referential or not) is always mentioned.⁴⁹ The type of coordinators and linking words, their meaning and constructions are tabulated below.

Coordinators	Meaning	Construction
<i>ra</i>	Sequential, accumulation of events ‘and, then’	coordinating two predicates; (co-referent) subject not repeated
<i>ta</i>	purpose ‘and, to’	
<i>a</i>	alternative ‘or’	coordinates NPs and clauses; subject repeated when co-referent
<i>ma</i>	addition ‘and’, comitative ‘with’	coordinates NPs
Linking words	Meaning	Construction
<i>oni</i>	addition ‘and’, contrast ‘but’, alternative ‘or’	linking clauses; subject repeated when co-referent
<i>jo</i>	addition, sequential ‘and, then’	
<i>pwa pûr o</i>	chronology ‘afterwards, then’	

Table 19: Coordinators and linking words

2.2.5.3 Subordination: adverbial clauses

Subordinate adverbial clauses preferentially occur after the main clause adding some information on the circumstances of the event reported in the main clause. They do not have any argument function in the sentence; it follows that adverbial clauses can be omitted in most cases. So far, only dependent

⁴⁹ Except for the third singular pronoun which can be omitted in any type of clauses but relative clauses (section 2.2.2.5).

temporal and conditional clauses in (*pwame*) *ne* ‘when’ and *ave ne* ‘if (counterfactual)’ have been found preceding as well as following the main clause. Adverbial clauses require the presence of a subject and have the same internal syntactic structure as an independent clause. Here follows a table summarizing the subordinator morphemes or phrases identified up to now.

FORMS	MEANING
<i>me</i>	purposive ‘for, in order to’; temporal ‘when’; contrastive ‘whereas’
<i>me camwan</i> ~ <i>me came</i> (<i>me</i> ‘PURP’ + <i>camwan</i> ‘PROH’)	negative purpose ‘in order not’ apprehensive ‘lest’
<i>pwame</i>	temporal ‘when; as long as’; iterative ‘each time’ purposive ‘in order to’; causal ‘since, because’; resultative ‘then’ (in sequence)
<i>pwame ne</i> (when + IRR)	hypothetical and conditional ‘if’; temporal ‘when’ in which case the adverbial clause precedes the main clause, and reduced to <i>ne</i> ‘IRR’ (‘were, should’) when the adverbial clause occurs after the main clause
<i>ave ne</i> ⁵⁰ (<i>ave</i> ‘QUOT ; say’ + <i>ne</i> ‘IRR’)	counter-factual
<i>bwa</i>	explicative ‘thus’, causal ‘because’, purposive ‘for’, contrastive ‘however’
<i>dua</i>	temporal ‘when’ used for past events
<i>habut me</i> (adverb <i>habut</i> ‘before’ + <i>me</i> ‘when’)	chronology ‘before’
<i>taa da</i> (arrive + upward)	‘until’

Table 20: Subordinators

(92) *Ina tam na bwe na taap mehe-m*
EXIST.DIST plate PRE.LOC top.side DIST table for-2SG.POSS

[*ne zo aavuk*]_{Adverbial.CL}

IRR 2SG.S be.hungry

‘There is that plate on the table for you, should you be hungry.’ (F1dn4)

⁵⁰ Similar to Nêlêmwa o *khabwe* (Bril, 2002: 438).

2.2.5.4 Interrogative clauses

2.2.5.4.1 Polar questions

Polar questions do not require any change in terms of word order (93); only the higher final pitch distinguishes a yes/no question from an affirmative declarative clause. They can be either negative or affirmative clauses and they are answered by *â* ‘yes’, *eelo* ‘ok, all right’ or *ai* ‘no’.

- (93) *Zo tena bo-n?*
 2SG.S smell smell-3SG.POSS
 ‘Do you smell his/her/its (good) smell?’ (Flnt 3)

2.2.5.4.2 Content questions

In content questions, an interrogative pronoun is required. Some are found at the beginning of the clause. Others are positioned in situ (94), in the position of the requested information in which case it takes the function of an argument, complement of a preposition, or an adjunct. Caac also exhibits a set of interrogative verbs (e.g. *pora* ‘do what’) which can be used only in interrogative sentences (95).

- (94) *I da re na boc?*
 3SG.S what in DIST cooking.pot
 ‘What is in that cooking pot?’
- (95) *No pavange-ni uva na nek?*
 1SG.S prepare-TR do.how DIST fish
 ‘How do you prepare that fish?’ (ElicitMorpho1_JP)

Interrogative pronouns	Gloss
<i>da</i>	‘what’, ‘which’
<i>ti</i>	‘who(m)’
<i>-ri</i>	‘who(m)’
<i>i/ni za</i> (3SG.S / 3SG.INDPT + INDEF)	‘which’ (animates and inanimates)
<i>puu-n da (me)</i> (cause-3SG.POSS / what / (CMP))	‘why’ (reason)
<i>me da</i>	‘what for’ (purpose)
<i>pa</i>	‘where’
<i>na pa</i>	‘from where’
<i>a pa</i>	‘where to’
<i>aveniza</i> ⁵¹	‘be where / be in which’

⁵¹ This interrogative word may originate in *ave* ‘side’ + *ni=za* ‘SG=INDEF’ although the word order does not correspond to the typical word order [determiner + Noun] in a nominal phrase in Caac (sections 2.2.2.1 and 2.2.2.3).

	place'
<i>têên</i>	'when'
<i>ô he-neen</i> (x CLASS1-how.much/many)	'how many times'
<i>odamwa</i>	'why'
Interrogative verbs	Gloss
<i>ae</i>	'go where'
<i>camwa</i>	'do/be.what/how'
<i>pora</i>	'do what'
<i>uva</i>	'do/be how'
<i>he-neen</i> (CLASS1-how.much/many)	'how much, how many'

Table 21: Interrogative morphemes

2.2.5.5 Imperative clauses

2.2.5.5.1 Order

In a clause expressing an order, the verb is in first position, followed by its complements (95); its subject is omitted. The agent can occur as a free pronoun in preverbal position (96). As a rule the verb and pronoun are prosodically separated by a pause.

- (96) **Te** **tabo** *cele-ny.*
 go.down sit.down at/to-1SG.POSS
 'Go down (and) sit down next to me.' (Fldnt2)

- (97) **Co,** *te* *tabo!*
 2SG.INDPT go.down sit.down
 'You sit down!' (ElicitMorpho2_JP)

2.2.5.5.2 Invitation or weak order

A weak order is expressed by the irrealis morpheme *ne* followed by a subject pronoun and a verb (97).

- (98) **Ne** *zo* *chalení* *le* *yep.*
 IRR 2SG.S light DEF fire
 'You should light the fire/switch on the light.' (Fldnt3)

Another strategy with (*i* '3SG.S' or *a-* 'PROPERTY') *yo ne* '(it) is good if' (be.good IRR) is also commonly found as an invitation to do something (98).

- (99) **Yo** **ne** *zo* *pare-ni* *le* *poka* *me*
 be.good IRR 2SG.S feed-TR DEF pig PURP

camwan i waji waria le babec.
 PROH 3SG.S smash all.the.time DEF fence
 ‘You should feed the pig, otherwise/lest it will smash the fence.’ (ElicitMorpho1_JP)

2.2.5.5.3 Prohibition

Prohibition is expressed by the negative particle *camwan* followed by the irrealis marker *ne*, a subject pronoun and a verb (99).

(100) ***Camwan ne zo puri taaze oni ne zo***
 PROH IRR 2SG.S dig.out pull.hard and/but IRR 2SG.S

chei oba-ni.
 pull be.slow-TR
 ‘Don’t pull it out but you should dig it out slowly’ (ElicitMorpho1_JP)

2.2.5.6 Information structure

2.2.5.6.1 Topicalisation

Topicalization in Caac is formally very similar to other Northern Kanak languages (Moyses-Faurie & Ozanne-Rivierre, 1983: 116-117). Topic markers consist in the pair: *pwame* [+ TOPIC] *o* [+ comment clause],⁵² they are glossed in this function as ‘TOP’. Topics are introduced by *pwame*,⁵³ detached to the front of the clause and often separated by a pause (100). One of the two topic markers is sometimes dropped.

(101) ***Pwame alevââ, ra ta bwe kam me***
 TOP group.of.men 3PL.S sit.down top.side mat PURP

ra vaange ta=le hêji; pwame
 3PL.S prepare PL=DEF customary.money TOP

o=ra=le teevo, o ra ja ta-yele.
 NEUT=PL=DEF woman TOP 3PL.S ASS sitting-be.different
 ‘As for the men, they are sitting on the mat so that they prepare the customary money; as for the women, they are sitting a bit further.’ (FuneralsCustom_AN)

⁵² For instance in Nyelâyu, one resorts to the presentative *wam* and coordinator *ka* ‘and’ (Ozanne-Rivierre, 1998a: 57-58). In Caac, one of the presentative morphemes is *pwa*, probably a reduced form of *pwame*.

⁵³ *Pwame* ‘when, if’ is also a subordinator used in time and condition adverbial clauses (section 2.2.5.3).

2.2.5.6.2 Focalisation

The focused NP is in predicative function; it is followed by an identificational relative clause: ‘it is X the (one) that/who/which’ (101-102, 104).

- (102) [Te ma Jiluk]_{NP} [le [re ta joor]_{REL.CL}]_{NP}.
 3DU.INDPT with Jiluk DEF 3DU.S go.up mountain
 ‘It’s him and Jiluk the [ones that] they went up the mountains.’ **Focus** (GramScen_AN_AG)

A contrastive focus is introduced by the presentative marker *bwa* (95). *Bwa* is in clause-initial position.

- (103) Ai came [Gina]_{NP}; **bwa** [Lulu]_{NP} [le [i te
 no NEG Gina PRES Lulu DEF 3SG.S go.down
 Numia]_{REL.CL}]_{NP}.
 Noumea
 ‘No, it’s not Gina; Lulu who [lit. the (one) that he] went down to Noumea.’ **Contrastive focus** (GramScen_AN_AG)

The speakers also resort to the assertive marker *ja*. In (104), the first clause consists of *ja* followed by a nominal predicate [Determiner + Noun + Relative clause].

- (104) I kâdia le-i o=le wa le-i.
 3SG.S take.care IND-3SG.O NEUT=DEF grandparent IND-3SG.O
 ‘Her grandmother brought her up.’ **Unmarked sentence** (GramScen_AN_AG)

- (105) [Ja [o=le wa le-i]_{NP} [le [i kâdia
 ASS NEUT=DEF grandparent IND-3SG.O DEF 3SG.S take.care
 le i]_{REL.CL}]_{NP}]_{CL1}; [came [o=re=le ulaaz e-i]_{NP}]_{CL2}.
 IND-3SG.O NEG NEUT=DU=DEF parent IND-3SG.O
 ‘It’s her grandmother who [lit. the (one) that she] brought her up; it’s not her parents.’
Contrastive focus (GramScen_AN_AG)

2.2.6 Concluding remarks

Caac shares many typological features of the Northern New Caledonian languages in terms of word order, nominal morphology, verbal classification, the TAM system for instance. The loss of a (split-)ergative system may confirm a current tendency towards accusativity in these languages. However, some differences can be observed between Caac as documented in the 1960s and in the 2010s. Thus, several aspirated consonants, although subject to inter-speaker variation, documented by Hollyman (e.g. aspirated nasals) are not phonologically distinguished anymore

nowadays. Another example is the non-aspirated alveolar fricative /ð/. This new phoneme⁵⁴ seems to replace /j/ which in turn replaced the former aspirated fricative /j^h/. The change of subject marker (from *we* to *o*) observed by Hollyman (1999: 106-107) and the optional use of the subject marker *o*, the near-disappearance of most numeral classifiers, the development of a definite marker (forms based on *le* 'DEF', section 2.2.2.3.1) shows a rapid evolution of Caac grammatical system. Changes are also attested on the lexical level as speakers observe that they do not recognize a great number of words⁵⁵ documented by Hollyman in his lexicons (1999a: 125-162, 163-165) and dictionary (1999b: 25-167).

⁵⁴ /ð/ is not attested in the data Hollyman collected in the 1960s.

⁵⁵ i.e. Caac words, and, of course, Caawac words which are even less recognized by Caac speakers living in Pouebo).

Part II: LINGUISTIC RESOURCES FOR SPATIAL REFERENCE IN CAAC

Part II describes the linguistic resources involved in the expression of space in Caac. Starting with Basic Spatial Constructions (chapter 3), Part II then focuses on the semantic distinctions and compatibility features of each form involved in the encoding of spatial concepts. Spatial verbs, relational nouns, prepositions, adverbs and directionals are treated in detail in chapters 4, 5 and 6.

I will make regular reference to six spatial concepts and three spatial domains throughout Part II. The concepts of interest here are the following: the Figure i.e. the entity about which spatial information is given, and various spatial bearings in relation to which the Figure is found: the Ground in locative descriptions, the Goal, the Source and the Path in motion descriptions and the Cue in orientation descriptions. In location descriptions,⁵⁶ speakers provide information about the place where the Figure is to be found. In motion descriptions, the Figure is typically described as moving away from a Source and/or towards a Goal. In orientation descriptions, speakers communicate on the direction in which a Figure is oriented (e.g. facing/turning his/her back against a Cue). Throughout Part II, I will also refer to the Deictic Centre, i.e. a reference point present in the context of utterance (typically the speech participants), and three Frames of Reference (FoRs), i.e. three systems of coordinates projecting a search region off a reference object. This search region can be based on the inherent facets of the reference object as in 'in front of', 'to their left' (intrinsic FoR), on the speaker's viewpoint such as in 'in front', 'to the left' (relative FoR), on an environmental bearing, e.g. 'north', 'downhill' (absolute and geomorphic FoRs). These notions are defined in detail in Part III, chapter 7.

⁵⁶ Note that in this study, 'locative descriptions' or 'location descriptions' are considered to be synonymous terms and are used interchangeably. The same remark applies to 'orientational descriptions' and 'orientation descriptions'.

Chapter 3: Overview of Location, Motion and Orientation Constructions

This chapter reviews the types of basic constructions used to express location, motion and orientation and describes which spatial concepts are expressed in each construction and how they are encoded. This will facilitate the discussion about the role of the spatial terms described in chapters 4, 5, and 6.

3.1 Basic Locative Constructions (BLCs)

The Basic Locative Construction (BLC) is the construction providing spatial information in response to a *where*-question. The degree of details and the density of information conveyed in BLCs vary enormously across languages. Some languages may systematically give precise information about the relation between the Figure and the Ground encoding for instance the shape of the Figure, e.g. Kwak'wala⁵⁷ (Wakashan language, Canada; Berman 1990: 52-56 cited in Grinevald, 2006: 40), or the configuration of the Ground, e.g. Tzotzil⁵⁸ (Mayan language, Haviland, 1992: 558 cited in Grinevald, 2006: 44). In Caac, the locative constructions do not provide such a detailed description of the spatial relationship between the Figure and the Ground, but focus either only on the location of the Figure (BLCs i, ii) or on the posture and the location of the Figure (BLC iii) or on both the existence and location of the Figure in presentative and existential constructions. Three constructions expressing location are examined below:

1. BLC with the verb *e* 'be at' followed by object suffixes
2. BLC with the verb *mo* 'stay; live' for past reference
3. BLC with posture verbs

3.1.1 BLC with the locative verb *e* 'be at'

The main Basic Locative Construction in Caac consists of the locative verb *e* 'be at' obligatorily followed by object suffixes encoding the entity to locate (the Figure) and by a spatial complement (106, 107). This construction is the answer to the question: *I pa X?* 'Where is X?' (section 3.1.4).

⁵⁷ The location of flat, bulky, hollow, human Figures is specified by specific locative stems.

⁵⁸ E.g. *lep* 'seated on something elevated above the ground'.

- (106) [E-nya]_{LOC+FIG} [re ni=en mwe-n alevââ]_{Ground}
 be.at-1PL.INCL.O in SG=PROX house-DET group.of.men
 ‘We are in the men’s house here (lit. in this men house).’
- (107) **Came** [e-ra]_{LOC+FIG} [re pire pont]_{Ground}
 NEG be.at-3PL.O in under bridge
 ‘They are not under the bridge.’

The BLC with [e + object suffix] encodes spatial concepts in the following schema.

Construction 1:

e+Obj	{	ABS.DIR(=DX.DIR)	(NP)
Location+Figure		Direction(Direction+Ground[deictic⁵⁹])	(Figure)
		and/or AdvP, NP or PP	
		Ground	

The verb *e* with its object suffix encodes both the Location and the Figure and occurs at the beginning of the sentence. It is followed by a directional with an optional deictic directional clitic encoding the Direction in which the Figure can be found, and/or an Adverb Phrase, a Noun Phrase or a Prepositional Phrase that expresses the Ground. An optional Noun Phrase at the end of the construction may be added to express the Figure.

The paradigm of verbal form is the following:

<i>e-rô</i>	be.at-1SG.O	‘I’m [somewhere]’
<i>e-zo</i>	be.at-2SG.O	‘You are [somewhere]’
<i>i</i>	be.at.3SG	‘He/she/it is [somewhere]’
<i>e-nyin</i>	be.at-1DU.INCL.O	‘We (2, inclusive) are [somewhere]’
<i>e-bet</i>	be.at-1DU.EXCL.O	‘We (2, exclusive) are [somewhere]’
<i>e-nya</i>	be.at-1PL.INCL.O	‘We (plural, inclusive) are [somewhere]’
<i>e-za</i>	be.at-1PL.EXCL.O	‘We (plural, exclusive) are [somewhere]’
<i>e-zuun</i>	be.at-2DU.O	‘You (2) are [somewhere]’
<i>e-za</i>	be.at-2PL.O	‘You (plural) are [somewhere]’
<i>e-re</i>	be.at-3DU.O	‘They (2) are [somewhere]’
<i>e-ra</i>	be.at-3PL.O	‘They (plural) are [somewhere]’

The locative verb *e* ‘be at’ is part of the same category of verbs that take their first argument as an object suffix, i.e. expressing the Figure for the verb *e* ‘be at’, and the experiencer for the verb *bu*

⁵⁹ The Ground is the Deictic Centre.

‘refuse, disagree’ (see section 2.2.1.9). Like other verbs, aspect markers precede the verb *e* ‘be at’ (108, 109).

- (108) **Gaa** [**e-nya**]_{LOC+FIG} [**La Foa**]_{Ground}
 DUR be.at-1PL.INCL.O La Foa
 ‘We are still in La Foa.’
- (109) **U** [**e-ra**]_{LOC+FIG} [**de=ve**]_{DIR} [**Pwerabi**]_{Ground}
 PERF be.at-3PL.O downward=CENTRIP Pwerabi
 ‘They are up (lit. down towards⁶⁰) in Pwai.’

The third singular form is defective (110) and is identical to the subject pronoun *i* ‘3SG.S’. However, because it has a few formal properties which differ from subject pronouns, *i* is treated here as a homophone of the subject pronoun and glossed ‘be.at.3SG’. Thus, unlike the pronoun *i* ‘3SG.S’, *i* ‘be.at.3SG’ does not conflate with the negation marker *came* when followed by a directional morpheme (**cam_i de=ve*, lit. ‘he is not downward towards us’). Aspect markers precede *i* ‘be.at.3PL’ (111) (but cannot precede subject pronouns).

- (110) [**i**]_{LOC+FIG} [**o** **jle-m**]_{Ground}
 be.at.3SG at/to beside-2SG.POSS
 ‘He/she/it is beside you.’
- (111) **U** [**i**]_{LOC+FIG} [**de**]_{DIR} [**Pwai**]_{Ground}
 PERF be.at.3SG downward Pwai
 ‘She is already / has gone down to Pwai.’

Unlike some other Northern languages (e.g. Nêlêmwa; Bril, 2002: 102-105), Caac does not encode referents differently depending on their animacy or their (in)definiteness. In Caac, both animate and inanimate referents are encoded the same way: (i) by the form *i* ‘be.at-3SG.O’ when the referent is singular, and (ii) by the form *e-ra* ‘be.at-3PL.O’ when the referent is plural. The Figure can occur as a fully-fledged NP. It typically follows the spatial complement (112, 113).

- (112) **Pwame ni** **ja,** **wa** [**e-ra**]_{LOC+FIG}
 TOP 3SG.INDPT PROX VIRT be.at-3PL.O

⁶⁰ See section 8.3.5 for more information about the use of directionals in this context.

[*le*]_{Ground} [*o-ra=le* *ceez* [*o-ra=le* *pu*
 RES NEUT=PL=DEF tree NEUT=PL=DEF do

pwe-n]_{REL.CL}]_{FIG.Subj}.

fruit-DET

‘As for this (side) here, the trees which bear fruits are here.’

(113) [*l*]_{LOC+FIG} [*aria le man-tabo*]_{Ground} [*le*
 be.at.3SG next.to DEF PLACE-sit.down DEF

mobilis *e-zo*]_{FIG.Subj}.

mobile.phone IND-2SG.O

‘Your mobile phone is next to the chair.’

The location of the Figure can be specified by more than one element, including directionals. Spatial complements such as *ad hoc* landmarks tend to follow the directionals (114).

(114) [*l*]_{LOC+FIG} [*ja=de*]_{DIR} [*bwe* *kumaac*]_{Ground}.
 be.at.3SG PROX=downward top.side beach
 ‘She is seawards on the beach.’

3.1.2 BLC with *mo* ‘stay; live’

The BLC in *mo* consists of [subject pronoun + *mo* + spatial complement].

Construction 2 with *mo* ‘stay; live’:

Subject	<i>mo</i> _{Pred}	(ABS.DIR(=DX.DIR))	AdvP, NP or PP	(NP)
Figure	Location.Past	(Direction(Direction+Ground [deictic ⁶¹]))	Ground	(Figure)

Contrary to other types of verbs, *e* ‘be at’ cannot be used for past reference (115). Caac speakers resort to the verb *mo* ‘stay; live’ in this context (116, 117). The verb *e* ‘be at’ is found in sentences with present and future reference (118).

(115) **E-zo* *pa* *tebwin?*
 be.at-2SG.O where yesterday
 ‘Where were you yesterday?’

⁶¹ Ground[deictic], i.e. the Deictic Centre.

- (116) *Zo* ***mo*** *pa* ***tebwin?***
 2SG.S stay.PST where yesterday
 ‘Where were you yesterday?’
- (117) *Zo* ***mo*** *pa* ***cavato*** *bwa*
 2SG.S stay.PST where Saturday because
- za* ***mo*** ***da=me*** *re* ***Kumwaak?***
 1PL.EXCL.S stay.PST upwards=CENTRIP in Koumak
 ‘Where were you on Saturday as we went leeward to Koumak (and came back here⁶²)?’
- (118) ***E-zo*** *pa* ***mwamen?***
 be.at-2SG.O where tomorrow
 ‘Where will you be tomorrow?’

Note that the restriction applies to the locative verb *e* only; the verb *mo* is allowed in sentences with past, present or future reference when it refers to the act of staying or living somewhere (122 below).

3.1.3 Basic Locative Construction with posture verbs

Posture prefixes (section 4.1) cannot be combined with the locative verbs *e* ‘be at’ or *mo* ‘stay; live’. Instead, a set of three posture verbs is used in locative descriptions: *coor* ‘stand up; be standing up’, *tabo* ‘sit down; be sitting down’ and *kêgo~kôgo* ‘lie down; be lying down’.

- (119) [*I*]_{Pronominal.Subj} [***kôgo***]_{Vb} [*e* *ciâ*]_{NP.Subj} [*bwe* *koc*]_{Sp.Compl.}
 3SG.S be.lying.down DEF dog top.side grass
 ‘The dog is lying down on the grass.’

The locative construction with a posture verb adheres very much to the same pattern as the BLC in *mo* ‘stay; live’: the Figure is encoded in a subject pronoun; it is located in relation to a Ground which can be encoded by prepositional, nominal and adverb phrases or in relation to a direction coded via directionals.

Construction 3 with posture verbs:

Subject	Posture verb	(ABS.DIR(=DX.DIR))	AdvP, NP or PP	(NP)
Figure	Posture	(Direction(Direction+Ground [deictic]))	Ground	(Figure)⁶³

⁶² See section 8.3.5 for the translation of *mo=da=me*.

⁶³ The NP subject encoding the Figure can be found before or after the spatial complement.

As a rule, in Caac the BLCs allow the expression of the Figure, one or several Grounds (including deictic Grounds) and/or directions based on the absolute system of reference (see section 7.2.1.4.3) and a deictic Ground (in the case of deictic directional; section 6.2). A first difference between the constructions lies in the way the Figure is encoded, either an object pronoun (BLC in *e* ‘be at’) or a subject pronoun (BLC in *mo* ‘stay; live’ and BLC with posture verbs). The second difference is found in the additional information brought by the posture verb (the posture of the Figure cannot be expressed in the other two BLCs).

3.1.4 Interrogative sentences expressing location

The general interrogative word referring to space is *pa* ‘where’. It occurs in situ (120), that is where the spatial complement is typically found in declarative sentences (121). The constituent order in an interrogative BLC in *pa* ‘where’ is therefore identical to the one in the declarative BLC: (i) Locative verb *e* + object suffix + *pa* (120) / spatial complement (121) or (ii) subject pronoun + *mo* OR posture verb + *pa* (122) / spatial complement (123).

(120)	[<i>l</i>] _{LOC+FIG} be.at.3SG	[<i>pa</i>] _{Sp.Compl} where	[<i>e</i> DEF	<i>keer</i>] _{NP.Subj?} basket	
	‘Where is the basket?’ (FlDnt 1:7)				
(121)	[<i>l</i>] _{LOC+FIG} be.at.3SG	[<i>bwe</i> top.side	<i>le</i> DEF	[<i>taap</i>] _{Sp.Compl} table	[<i>na</i> PRE.LOC
	<i>habur</i> in.front	<i>e</i> IND	[<i>tô</i>] _{Sp.Compl!} 1SG.INDPT		
	‘It’s on the table in front of <i>me</i> !’				

Another interrogative marker expressing location is *aveniza* ‘where, in which place’.⁶⁴ Literally, it means ‘on which side’ (*ave* ‘side’ *ni* ‘SG’ *za* ‘INDEF’) (32) but the answer does not necessarily convey spatial information by making reference to the notion of region conveyed by the morpheme *ave* ‘side’ in the question. One can answer *aveniza*-question (122) with toponyms, adverb phrases, prepositional phrases as well as with a directional adverb in *ave* side’ (123).

(122)	<i>Zo</i> 2SG.S	<i>mo</i> live	<i>aveniza?</i> in.which.place
	‘Where do you stay/live?’		

⁶⁴ Similarly, French possesses two interrogative pronouns, *où* ‘where’ (general) and *à quel endroit* ‘in which place’ (specific).

- (123) *No* *mo* ***Bwe o ciia / ja=da / ave=da.***
 1SG.S live Bwe o ciia / PROX=upward / side=upward
 ‘I live at *Bwe o ciia* / inland / on the inland side’.

3.2 Basic Motion Constructions

The present review of Basic Motion Constructions mainly focuses on intransitive motion verbs.

According to Talmy (2000: 25), a motion event consists of a Figure moving along a Path or Trajectory in relation to an entity, i.e. from a Source and/or towards a Goal, in a certain Manner. Example (124) illustrates how some of the key components of motion events can be expressed in Caac. Thus, the verb *a* ‘go’ codes a motion without further specification, the verb ‘arrive’ denotes the idea of moving towards an endpoint while the verb *kule* ‘pour’ co-refer to a motion event and the manner in which such motion is performed. The direction of three events (expressed by the verbs *phe* ‘take’, *a* ‘go’ and *kule* ‘pour’) is specified by the centripetal *=me* and the directional *de* ‘downward’. Finally, the spatial phrase *re le bassin* ‘into the bowl’ expresses the goal and endpoint of the motion event. As we will see below, the use of serial verb constructions, directionals and spatial phrases (NPs, PPs, AdvPs) in the expression of motion events is very common in Caac.

- (124) *A...* *za* ***phe=me*** [*na* *chio*]_{Obj} ***a=me*** ***taa*** ***kule***
 mm 1PL.EXCL.S take=CENTRIP DIST bucket go=CENTRIP arrive pour
- [***de***]_{DIR} [***re*** ***le*** ***bassin***]_{Goal} *we (za?)* *ja* *u*
 downward in DEF bowl x ASS PERF
- prepa-*... *ja* *u* *pavang-eni.*
 prepare ASS PERF prepare-TR
- ‘Mm... we brought the bucket here, came here, arrived, poured it down into the bowl, (we) *prepa-*... we would prepare it.’ (Coffee_OD)

Talmy classifies languages into two broad categories according to the way the Path is encoded. If the latter is preferentially encoded in motion verbs, then the language in question is characterized as “verb-framed”, e.g. French *sortir*, Italian *uscire*. On the contrary, if Path is lexicalized outside the verbal root, in a “satellite”, the language in question is considered “satellite-framed”, e.g. Dutch *uitgaan* (out + go), English *go out*. By satellite, Talmy refers to “[...] the grammatical category of any constituent other than a noun-phrase or prepositional phrase complement that is in a sister relation to the verb root” (Talmy, 2000: 102)”. Languages exhibiting both patterns (encoding Path in satellites

/ away from it) is encoded in deictic clitics (satellites in Talmy’s terminology) only. No verbs have been found encoding both Motion and Path with regard to the Deictic Centre.

Cases of “double-framing” (Croft et al., 2010: 6) are also attested in Caac although the co-occurrence of a motion verb and a directional specifying a Path is not exactly redundant. Double-framing occurs when Path is expressed in both verb and satellite e.g. French *descendre en bas* ‘go down downward’. In Caac, expressions such as *te pwap* ‘go out outside’ are common. However, this expression is not totally redundant. Indeed the spatial adverb *pwap* serves to specify the verb *te* ‘go down’ which, as explained above, could mean ‘(go) down (towards the ground)’, ‘(go) seawards’, ‘(go) leeward’, ‘(go) downhill’, ‘(go) downriver’ and ‘(go) out’. *Pwap* ‘outside’ narrows the choice of interpretations of *te* down to the in-out opposition; in these circumstances, *te* is to be understood as ‘go out’. Complete redundancy such as *ta ja=da* ‘go up upwards’ tends to be avoided and direct collocations of a motion verb and its equivalent directional are not allowed (**ta=da*). Finally, motion verbs can also co-express Motion and Manner, e.g. *yua* ‘creep, climb’. The concept of Manner can also be coded in prepositional phrases (e.g. *bwe wang* ‘by boat’).

To summarize, spatial information in Basic Motion Constructions is encoded as following:

(i)	Subject	DIR verbs ₁ (=DX DIR)	AdvP, NP or PP
	Figure	Motion_Path(=Path[deictic])	Path / Goal / Source / Manner

=> verb-framed-constructions

(ii)	Subject	Manner of motion OR Posture verbs	(ABS.DIR(=DX.DIR))	AdvP, NP or PP
	Figure	Motion_Manner OR Posture	(Path(=Path[deictic]))	Path / Goal / Source

=> satellite-framed-constructions

A third construction can be used to express motion:

(iii)	Locative verb+Object suffix =DIR	AdvP, NP or PP
	Location+Figure=Path	Goal (atelic / telic reference point)

In comparison with constructions with directional verbs (i. above), this construction does not allow the expression of the Source of the Motion event. This third construction consists of the locative verb [e+ object suffix] and a directional morpheme. This particular construction with a directional can therefore be used in dynamic settings in addition to locative settings. On the syntactic level, it does

not differ from a BLC (see section 3.3.1) and only the context seems to help the reader to interpret the sentence as dynamic or static. The encoding of some more spatial information, for example via prepositional phrases does not help to disambiguate the sentences as the spatial prepositions *o* ‘at; to’ and *re* ‘at; to’ and the absence of spatial preposition can be found in both dynamic and static settings (127). More details are given in section 8.3.4.3.

- (127) *E-ra* *de* [*o* *kumaac*]_{PP}.
 be.at-3PL.O downward at/to beach
 ‘They are downward at the beach / They go down to the beach.’

3.2.2 Encoding of Source

In answer to a question on the source of the motion event (‘from where’), the spatial complement is introduced by the ablative preposition *na* ‘from’. *Na* can introduce spatial nominal phrases (128), directional adverbs (e.g. *ja=da* ‘upward’, *ave=da* ‘on the upward side’ etc.) and prepositional phrases, but does not occur preceding a directional morpheme alone (**na da* ‘from inland’). The combination with a spatial adverb such as *pwâ* ‘inside’, *pwap* ‘outside’ (?/**na pwâ* ‘from inside’) is not attested in my data; speakers resort to the directional verbs *te* ‘go down//outside’ and *ta* ‘go upward//inside’ in that context.

- (128) *No* *te=ve* *na* *Tuho*.
 1SG.S go.down=CENTRIP from Touho
 ‘I come from Touho’ (speaker in Pouebo)

As explained above, the encoding of Source is not allowed with the third construction with the verb *e* ‘be at’ (see (iii) above).

3.2.3 Encoding of Goal

The Goal of a motion event can be encoded by prepositional phrases, adverb phrases and nominal phrases (129, 130).

- (129) *Pûr* *o* *na* *mweju le-nyin,* *no* *ma*
 after at/to DIST work IND-1DU.INCL.O 1SG.S recently

oze *ta* [*Bwaep*]_{NP}.
 again go.up Bwaep
 ‘After that work of ours, I’ll go again to *Bwaep*.’

- (130) *Pûr o na mweju le-nyin, no a a=wa*
 after at/to DIST work IND-1DU.INCL.O 1SG.S go go=back
- [*cele Ne Kalin*]_{NP}.
 at/to mother Kalin
 ‘After that work of ours, I’ll go back to Ne Kalin’s place.’

The relational noun *cele-n* ‘at / to somebody’s place’ and the prepositions *bwe* ‘on, onto’, *re* ‘at; to’ and *o* ‘at; to’ can be used in goal-encoding NPs and PPs; alternatively, a goal can be encoded by an unmarked NP. They are not dynamic per se for they can also refer to a reference object in static contexts. The collocation of a preposition with the name of a town seems to be conventional and arbitrary. Some have to be introduced by the allative/essive preposition *re* ‘in, at; to’ while some cannot (\emptyset), e.g. *No te re Kumwaak* ‘I go down to Koumak’ vs *No ta Hienghene* ‘I go up to Hienghene’ (**No te \emptyset Kumwaak*, **No ta re Hienghene*). Place names preceded by *re* always occur with this preposition whatever spatial concept the place name in question encode: Ground in locative descriptions, Source (131) or Goal (132) in motion descriptions, and in the case of motion events, whatever the motion verb is, e.g. following a directional verb *ta* ‘go up’ (132, 133) or following *ciec* ‘go back’ (134).

- (131) *No [carua [na re Jawe] PP.Source a*
 1SG.S run from in Jawe go

[*Pweevo*]_{NP.Goal}]_{SVC}.
 Pouebo
 ‘I ran from *Jawe* (go) to Pouebo.’

- (132) *No ta [re Jawe] Goal*
 1SG.S go.up in Jawe
 ‘I go windward to *Jawe*.’ (**No ta o Jawe*. and **No ta \emptyset Jawe*.)

- (133) *No [te ta [re Jawe] Goal of Vb1] SVC*
 1SG.S go.down go.up in Jawe
 ‘I went leeward⁶⁶ to *Jawe* and came back.’ lit. ‘I went leeward (to), went windward (back from) *Jawe*.’

⁶⁶ The location of the speaker is not in Pweevo but southern (windward in Caac’s absolute directions) to *Jawe*.

(134) *No* [*te* *ta* *ciec* [*re*
 1SG.S go.down go.up go.back in

Jawe_{Goal of Vb1/Source of Vb2}SVC-

Jawe

‘I went leeward to *Jawe* (and) came back.’ lit. ‘I went leeward (to), went windward (and) went back from *Jawe*.’ (**No te ta ciez o re Jawe.* and **No te ta ciez o Jawe.*)

By contrast, some toponyms e.g. *Dau*, *Hienghen* cannot take *re* and are preceded by the preposition *o* ‘at; to’ with certain verbs (e.g. *ciec* ‘go back’, 135), and by \emptyset with the directional verbs *te* ‘go down’ and *ta* ‘go up’ (136).

(135) *No* [*te* *ta* *ciez* [*o* ***Dau***]_{Goal of Vb1}SVC-
 1SG.S go.down go.up be.back at/to *Dau*

‘I went seaward to *Dau* and came back.’ lit. ‘I went seaward (to), inland (from) *Dau*.’

(136) *No* [*te* *ta* [***Dau***]_{Goal of Vb1}]_{SVC-}
 1SG.S go.down go.up *Dau*

‘I went seaward to *Dau* and came back.’ lit. ‘I went seaward (to), went inland (from) *Dau*.’

As for the deictic directionals, they can either express the Goal of a motion event e.g. ‘he comes upwards to us’ (Deictic centre = Goal), its Path, e.g. *i ta=me* ‘he comes upwards towards us’ (Deictic centre = Path), or the Source of the motion event, e.g. *i ta=ec* ‘he goes away from me’ (Deictic Centre = Source).

Source and Goal are often expressed in two clauses, the Source in the main clause and the Goal in the subordinate clause (in iconic order with the order of events) (137).

(137) [*l* *yamwan* [*o* *he-ny*]_{PP.Manner} [*na* ***Balaar***]_{Source}]_{Main.CL}
 3SG.S walk by foot-1SG.POSS from Balade

[*m_i* *taa* *da=me* [*ja*]_{Goal}]_{Sub.CL}
 CMP_3SG.S arrive upward=CENTRIP PROX

‘He walked by foot from Balade so that he arrives up (windward) here.’

The Path, Source and Goal of a motion event are also often expressed by a sequence of verbal phrases as in (138). Following the chronological and spatial order, the combination [*taa* + Goal] comes last in the sequence.

- (138) *Pwame le maison commune Re Caac,... pe-chabezec;*
 TOP DEF community.house Re Caac REC-be.same
- zo [te=uc [na ja]_{Source}]VP... [taa [re le*
 2SG.S go.down=CENTRIF from PROX arrive in DEF
- ni=maade... mwa kabe kolec le [abri scolaire]_{NP.Goal}]VP...*
 SG=downward house child school DEF school.bus.shelter
- [taa [de]_{DIR} [le puur e waadan]_{NP.Goal}]VP, jo*
 arrive downward DEF origin IND path then
- zo [ap [bwe are daan]_{NP.DIR}]VP.*
 2SG.S go top.side leeward
- ‘The community house of Re Caac, it’s the same; you go seawards away from here...
 (you) arrive where the seaward... house for pupils, the schoolbus shelter (is)... (you)
 arrive seawards at the start of the path then you go leeward.’ (IpaReCaac_JP)

When Source and Goal are expressed, the speakers resort to two predicates: the verb of the first predicate coding the Manner of Motion followed by a PP coding the Source, and the verb of the second predicate coding the Goal (again in iconic order; 139, 140). The third predicate is a repetition of the second predicate (the speaker specifies the name of his place).

- (139) *No [yamwan [na Balaar]_{Source}]PRED1 [a [howa]_{Goal}]PRED2...*
 1SG.S walk from Balade go home
- [a [Bwaep]_{Goal}]PRED3.*
 go Bwaep
 ‘I walked from Balade to (lit. went) my place... (lit. went) to Bwaep.’
- (140) *No [carua [na Balaar]_{Source}]PRED1 [taa da*
 1SG.S run from Balade arrive upward
- [Col d’Amos]_{Goal}]PRED2*
 Col d’Amos
 ‘I ran from Balade up to (lit. arrive windward) Col d’Amos.’

The PP expressing the Source of the motion event can be fronted (141).

- (141) *[Na Balaar]_{Source} no carua a [Col d’Amos]_{Goal}.*
 from Balade 1SG.S run go Col d’Amos
 ‘From Balade I ran to (lit. I ran went) Col d’Amos.’

Source and Goal cannot occur within the same clause if the latter consists of a simple predicate only followed by a prepositional NP coding the Goal of the motion event (142).

- (142) **No carua* [*na Balaar*]_{Source} [*o / cele Col d'Amos*]_{Goal}.
 1SG.S run from Balade at/to /at/to Col d'Amos
 'I ran from Balade to Col d'Amos.'

3.2.4 Where-questions and motion events

The interrogative *pa* is the general morpheme for *where*-questions. It is combined with the verb *a* (~*ap*) 'go' when the question bears on an allative movement (going towards sth): *a pa* 'to(wards) where'. The complex interrogative is found in situ (143).

- (143) *I to a pa na we?*
 3SG.S run go where DIST water
 'Where does that water run? (TypProp_DT)

A *pa* can be substituted by the interrogative verb *ae* 'go where'. However, *ae* seems to be less common and it may be more formulaic than *a pa* (144).

- (144) *Zo u ae?*
 2SG.S PERF go.where
 'Where do you go?'

When the interrogation bears on the source of a particular motion event, the interrogative word *pa* occurs as the complement of the ablative preposition *na* (145).

- (145) *Zo a=me na pa?*
 2SG.S go=CENTRIP from where
 'Where do you come from?'/ Where are you coming from? (TypProp_DT)

3.3 Basic Orientation Constructions

3.3.1 Basic Orientation Construction

In orientation descriptions, speakers communicate on the direction in which a Figure is oriented, e.g. turning his/her back against a spatial bearing labelled 'Cue' in this context. The concept of orientation is described in detail in section 7.3.3. The Basic Orientation Construction informs the addressee about

- (i) the nature of the Figure,
- (ii) the facet of the Figure about which orientational information is given,

- (iii) the Cue and/or Direction towards which the facet is oriented,
- (iv) and optionally, the Posture of the Figure.

The Basic Orientation Construction encodes spatial elements as follows:

1a. Subject Predicate [(posture prefix-)Verb(=DIR(=DX.DIR))] AdvP, NP or PP
Figure [(Posture-)Facet.Fig(=Direction(=Direction_Cue[deictic]))]_PRED **Cue**

-> see example (146) below

1b. Subject Predicate [(posture prefix-)Noun(=DIR(=DX.DIR))] AdvP, NP or PP
Figure [(Posture-)Facet.Fig(=Direction(=Direction_Cue[deictic]))]_PRED **Cue**

-> see example (147) below

Examples (146) and (147) illustrate these two constructions. In (146, 147), the Figure is coded in the subject pronoun, the facet of the Figure in the verb (146) or in the noun with a predicative function (*wan* ‘opening, entrance’ in (147)), the posture in the posture prefix (*cu-* ‘standing’ in (146) and *ta-* ‘sitting’ in (147)) and the Cue in the prepositional phrases introduced by the preposition *o* ‘at; to’. In both sentences, the directional morphemes following the predicate provide further information on the direction towards which the facet is oriented.

(146) [Re]_{FIG} [cu-]_{Posture}[alô]_{Facet} [da]_{DIR} [o te=le ceec]_{Cue}
 3DU.S standing-look upwards at/to DU=DEF tree
 ‘They (the pigs) are standing looking upwards at the two sticks.’ (see 1a. above)

(147) [l]_{FIG} [ta-]_{Posture}[wan]_{Facet} [de]_{DIR} [o pezeng]_{Cue}
 3SG.S sitting-opening downward at/to road
 ‘It (the house) is sitting its entrance facing seawards, towards the road.’ (see 1b. above)

The encoding of the facet of the Figure, the Cue and Direction are examined in more details in the sub-sections below.

3.3.1.1 Encoding the facet of the Figure

In orientational descriptions, the Figure is divided into facets in which the orientation description is anchored. More precisely, the Figure in Caac is divided along the sagittal axis, that is, the Figure is partitioned into a front facet and a back facet. The lateral axis, i.e. left side vs right side, is not used at all for orientational reference in the data examined so far. The facets of both animate and inanimate Figures are coded by body parts e.g. *duu-n* ‘his/her back’ (and the free noun *bweriva* ‘facing’ originating in a body part terms, section 5.2.1.8) and by verbs of looking. The front side of the Figure is the most common facet selected in orientation descriptions and can be expressed in various ways. Table 22 below displays the various linguistic means to code the front or back facet of an oriented Figure.

Reference to the front facet of the Figure	
verbs expressing the direction of gaze	<i>alô</i> ‘look’, <i>no=DIR</i> ‘look in such direction’ or ‘direct gaze at’
bound nouns, body part terms (in predicative function)	<i>bwa-n</i> ‘head-3SG.POSS’, <i>aremaa-n</i> ‘face-3SG.POSS’ (148)
free noun I (in predicative or prepositional function)	<i>bweriva-n</i> ‘facing-3SG.POSS’
free noun II (in predicative function)	<i>wan</i> ‘opening, entrance’
verbs ‘turn (oneself)’	<i>bira-</i> + object suffix <i>beve-</i> + object suffix
Reference to the back facet of the Figure	
body part term (dependent noun in predicative function)	<i>duu-n</i> ‘back-3SG.POSS’ (72, 78, 79)

Table 22: Encoding the front/back facet of a featured Figure

Only the word *bweriva-n* encodes the notion of facing⁶⁷ per se. The reference to the facet of the Figure is more explicit, although metonymic, in the use of body part terms e.g. *duu-n* ‘his/her back’, and more implicit in the use of verbs of looking. With verbs of looking, the gaze -and metonymically the face of the Figure- is described to be oriented towards some point or direction.

⁶⁷ As we will see in section 5.2.1.8, it may result from the grammaticalization of the prepositional phrase *bwe thivaa-n* ‘on his/her eyes’.

The Figure's facet is generally encoded by the predicate (to which can be attached a posture prefix; 141-142). One exception is the use of the NP headed by *bweriva-n* 'facing it/her/him' which can also function as an adverbial phrase (section 5.2.1.8).

Note that the Figure is marked twice in two particular predicative contexts, (i) with bound nouns and (ii) with reflexive verbs. When bound nouns function as the predicate of the orientational description, the Figure is not only coded in the subject pronoun but also in the possessive suffix attached to the body part noun (e.g. – *ny* '1SG.POSS' in *aremaa-ny* 'my face' (148) and *-n* '3SG.POSS' in *duu-n* 'his/her back' in the dependent clause in (149)) or in the NP encoding possessor of the bound noun (*â=le cee(c)* '(of) the man' following *duu* 'back' in the main clause in (149)).

(148) **[No]_{FIG}** **ta-aremaa[-ny]_{FIG}** *av* **[e-zo]_{Cue}**
 1SG.S sitting-face-1SG.POSS CENTRIF IND-2SG.O
 'I'm sitting my face towards (facing) you.'

(149) **[[I]_{FIG}** **cu-[duu** **[â=le cee(c)]_{NP_Possessor}NP.Pred.FIG**]**Main.CL**
 3SG.S standing-back M=DEF man

[waa **n_[i]_{FIG}** **cu-duu[-n]_{FIG}** **[e-nya]_{Cue}]****Dedendent.CL**
 like IRR_3SG.S standing-back-3SG.POSS IND-1PL.INCL.O
 'The man is standing his back (turned) as if he was standing his back turned towards us.' (ManTree_DN_DI)

In (150) and (151), the speaker resorts to a posture prefix *ta-* 'sitting' and the reflexive verb *beve* 'turn (oneself)'. *Beve* is obligatorily followed by an object suffix; both subject pronoun (*no* '1SG.S') and object suffix (*-rô* '1SG.O') encode the Figure.

(150) *Pwame* **[no]_{FIG}** **ta-beve[-rô]_{FIG}** *i* *bweriva-ny*
 when 1SG.S sitting-turn-1SG.O 3SG.S facing-1SG.POSS

o *â=le pone-ny.*
 at/to M=DEF uncle-1SG.POSS
 'When (while) sitting I turned around, my uncle was facing me.'

(151) *No* **ta-beve-rô** *o* *le* *tele.*
 1SG.S sitting-turn-1SG.O at/to DEF television
 'I'm sitting my back towards the TV.' (SpaceScen_JP)

Other terms can be selected to refer to the Figure's facet although they occur less frequently in the corpus. Thus, some speakers chose to refer to the body part *bwa-n* 'his/her/its head' (152) when

describing the orientation of pigs in an elicitation game, or the entrance of a house *wan* ‘opening; space’ (153).

(152) *Â, i bwa-la de o meu-nya.*
 yes 3SG.S head-3PL.POSS downward at/to left-1PL.INCL.POSS
 ‘Yes, it is their head seaward, on our left.’ (ManTree_DN_DI)

(153) *I ta-wan de o pezeng.*
 3SG.S sitting-opening downward at/to road
 ‘It (the house) is sitting its opening seawards towards the road.’ (SpaceScen_AG)

3.3.1.2 Encoding a Cue and/or direction (towards which the facet of the Figure is oriented)

In Caac, the facet of the Figure is oriented with respect to i) a concrete point or entity including the Deictic Centre, ii) a particular direction with e.g. *towards us, seawards, our right*.

Oriented towards	
DIRECTIONS	
absolute directions (Absolute Frame of Reference; see section 7.2.1.4.3 for a definition of the Absolute Frame of Reference)	= <i>da</i> ‘upward’ / = <i>de</i> ‘downward’ deictic adverbs e.g. <i>ja=da</i> ‘upward’, NPs e.g. <i>bwe daan</i> ‘upwind’
left and right facets of the speech-act participants (Intrinsic Frame of Reference ; section 7.2.1.4.1 for a definition of the Intrinsic Frame of Reference)	prepositional phrases <i>o meu-nya</i> ‘on our left’, <i>o jure hi-nya</i> ‘on our right’
CUES	
<i>ad hoc</i> landmarks	Spatial NPs and PPs e.g. <i>habur o na loto</i> ‘in front of that car’, possessive suffix on the relational noun <i>bweriva-n</i> ‘facing him/her/it’ For INANIMATE Cues only: spatial nominal and prepositional phrases in <i>bwe</i> ‘top side’ <i>o</i> ‘at; to’ For ANIMATE Cues only: object suffix or NP introduced by the indirect markers <i>le~e</i> Deictic adverbs, e.g. <i>ja</i> ‘PROX’, deictic morpheme = <i>ap</i> ‘CENTRIF’
both a DIRECTION and a CUE (Deictic Centre)	
Absolute direction and the Deictic Centre	Deictic directionals = <i>me</i> ‘(up) toward DC’, = <i>ve</i> ‘(down) toward DC’, = <i>ec</i> ‘(up) away from DC’, = <i>uc</i> ‘(down) away from DC’

Table 23: Directions and Cues with respect to which the Figure can be oriented

With the relational noun *bweriva-n* ‘facing him/her/it’, the Cue is marked by the possessive suffix of the nominal predicate *bweriva* ‘facing’ (154; compare with the possessive suffix of bound nouns which encodes the Figure, see examples (148) and (149) above).

- (154) [No]_{FIG} *ta-bweriva[-m]*_{Cue}.
 1SG.S sitting-facing-2SG.POSS
 ‘I’m sitting facing you.’

Landmarks expressing Cues can be expressed by spatial NPs (section 5.2) and spatial PPs (section 5.1; 155).

- (155) *No cu-duu-ny* [habur o na loto]_{PP_Cue}.
 1SG.S standing-back-1SG.POSS in.front at DIST car
 ‘I’m standing my back towards the front of (lit. my back in front of) the car.’

PPs with the preposition *o* ‘at; to’ are commonly used to introduce a landmark functioning as a Cue in orientational descriptions (156, 157).

- (156) *No cu-aremaa-ny* [o na loto]_{Cue}.
 1SG.S standing-face-1SG.POSSat/to DIST car
 ‘I’m standing facing (lit. my face towards) the car.’

- (157) *No cu-alô*⁶⁸ [o na loto]_{Cue}.
 1SG.S standing-look at/to DIST car
 ‘I’m standing looking towards the car.’ (Elicit_Orient1)

However, with *duu-n*, the Cue is encoded differently depending on whether it is animate or inanimate. An inanimate Cue is preceded by the preposition *o* (158) while an animate Cue (rendered as a pronoun or NP) follows the indirect marker *e* (159).

- (158) [I]_{FIG} *ta-duu[-n]*_{FIG} [o na wang]_{Cue.INANIM}.
 3SG.S sitting-back-3SG.POSS at/to DIST boat
 ‘He is sitting his back turned towards the boat.’

- (159) [I]_{FIG} *cu-[duu ô=le cee(c)]*_{NP.Pred.FIG} *waa n_[I]*_{FIG}
 3SG.S standing-back M=DEF man like IRR_3SG.S

⁶⁸ Note that when used in non-spatial descriptions, the verb *alô* takes a direct object which is not preceded by the preposition *o* ‘at; to’: *No alô [Ie wang]*_{DIR.OBJ}, ‘I look at the boat.’ (1SG.S look DEF boat).

*cu-duu[-n]*_{FIG}

standing-back-3SG.POSS

[e-nya]_{Cue.ANIM·}

IND-1PL.INCL.O

‘The man is standing his back (turned) as if he was standing his back turned towards us.’

3.3.2 Interrogative sentence expressing orientation

There is no specific question to enquire about the orientation of a Figure. Speakers resort to the general locative question: ‘Where is X?’ (160a), and can specify a reference object: ‘Where is X with respect to Y?’ (161).

(160) a. Sp1: *l pa le âc?*
be.at.3SG where DEF man
‘Where is the man?’

b. Sp2: *l ta-bweriva-nya.*
be.at.3SG sitting-facing-1PL.INCL.POSS
‘He is sitting facing us.’

(161) a. Sp1 : *E-za pa na le wang?*
be.at-2PL.EXCL.O where from DEF boat
‘Where are you with regard to the boat?’

b. Sp2 : *Za ta-duu-a o le wang.*
1PL.EXCL.S sitting-back-1PL.EXCL.POSS at DEF boat
‘We are sitting our back (turned) towards the boat.’

Chapter 4: Spatial Verbs

This chapter presents the verbs frequently used in the expression of space in Caac. Some verbs, by their notional or semantic characteristics, are primarily dedicated to encoding spatial relationships (e.g. verbs describing motion events), some play a role in spatial expression but are not limited to this domain (e.g. verbs of looking used in orientational descriptions). Motion events are mostly coded by a clause headed by a verb, or in a particular construction, by the locative verb *e* ‘be at’ (section 8.3.4.3). Location and orientation can be expressed in verbal or verbless clauses (e.g. clauses with nominal predicates or with the verb *e* ‘be at’). The properties of the lexemes having a predicative function in spatial verbless clauses are described in other sections (section 3.3.1.1 for nominal predicates, section 3.1.1 for the locative verb *e* ‘be at’, and section 2.2.3.3). Existential and presentative constructions making reference to spatial information are reviewed in section 2.2.3.2 and 2.2.3.1. For convenience, posture verbal prefixes are described in section 4.1 with posture verbs from which they are derived and with which they share the same semantic properties. Posture prefixes occur preposed to the lexeme in predicative function (verb or noun in the examples) only.

4.1 Posture verbs and posture prefixes

Caac has three main posture verbs from which are derived three verbal prefixes encoding the same basic postures as their verbal equivalent. Posture verbs refer to the configuration of the Figure, the latter being either in the position in question or reaching this position. Posture verbs are therefore used in both static and dynamic settings. The dynamic interpretation is often signalled by the presence of a motion verb (e.g. *te tabo* ‘sit down’, lit. ‘go down sit down’) or the presence of the Source of the motion event (162). To facilitate readability of the examples, the gloss of posture verbs alternates depending on the context (Table 24).

FORMS	GLOSS
<i>coor</i>	‘be standing’ or ‘stand up’
<i>tabo</i>	‘be sitting’ or ‘sit down’
<i>kôgo~kêgo</i>	‘be lying.down’ or ‘lie down’

Table 24: Posture verbs

In (162), the speaker cannot get out of bed because she is sick. The context and the prepositional phrase referring to the Source of the motion event (*na bwe le balaba-ny* ‘out of my bed_{Source}’) induce the addressee to interpret the posture verb *coor* as dynamic.

- (162) *Pwame* *rele* *no* *phaalic,* *keraac* *me*
 when ANAPH.TP 1SG.S be.sick be.impossible CMP
- no* *coor* [*na* *bwe* *le* *balaba-ny*]_{pp?}
 1SG.S stand.up from top.side DEF bed-1SG.POSS
- ‘When I was sick, it was impossible for me to stand up/get out of my bed.’ DYNAMIC

In (163), the speaker reports that he saw a bus parked on the side of the road. No movement is expressed here: the bus does not (and obviously cannot) change posture to reach a standing position. *Coor* allows a locative reading⁶⁹ expressing the idea that the bus is to be found at such place (*na ja=de* down there’).

- (163) *Tebwin,* *no* *noja* *le* *wang*⁷⁰ *i* *coor*
 yesterday 1SG.S see DEF boat 3SG.S be.standing
- na* *ja=de.*
 PRE.LOC PROX=downward
- ‘Yesterday, I saw the bus which was standing down there.’ STATIC only

Caac exhibits three verbal posture prefixes which originate in the main posture verbs. They refer to the posture in which such action (encoded by its host in predicative function) is performed. Unlike posture verbs which are commonly found with static and dynamic reference, posture prefixes have been attested in static settings only (Table 25).

FORMS	GLOSS	VERBAL ORIGINS	
<i>cu-</i>	‘standing’	< <i>coor</i>	‘be standing’
<i>ta-</i>	‘sitting’	< <i>tabo</i>	‘be sitting’
<i>kê-</i>	‘lying’	< <i>kôgo~kêgo</i>	‘be lying down’

Table 25: Posture prefixes

Posture prefixes are attached either to verbs (164) or nouns in predicative function (165). More precisely, their occurrence is attested with stative verbs (164) and action verbs depending on the semantic compatibilities of the prefix and its hosts (posture prefixes cannot occur with motion verbs which impose certain restrictions on the configuration of the Figure (e.g. the action of running cannot be done sitting or lying down)).

⁶⁹ As, for instance, the locative use of German posture verbs: see the posture verb *stehen* ‘stand’ in *Die Schuhe stehen unter dem Tisch*. ‘The shoes are under the table.’

⁷⁰ The noun *wang* originally means ‘boat’ but its meaning is extended to other new means of transport including cars and coaches.

- (164) *Ra cu-mwek.*
 3PL.S standing-be.bent
 ‘They (the posts) are bent.’
- (165) *I ta-aremaa-n o na wang.*
 3SG.S sitting-face-3SG.POSS at/to DIST boat
 ‘He is sitting facing that boat.’

Posture prefixes can occur on the predicative lexeme of the clause only. However, they are optional (167) and do not therefore verbalize a noun in predicative function (a noun can be predicative without the presence of the posture prefix).

- (166) *I (cu-)duu-n o na ceec.*
 3SG.S (standing-)back-3SG.POSS at/to DIST tree
 ‘(Standing) he has his back to that tree.’

Posture verbs and prefixes are a feature shared by most Northern New Caledonian languages, for instance in Bwatoo (Rivierre, Ehrhart & Diéla, 2006: 60-61), Nemi, Jawe, Pije and Fwâi (Haudricourt & Ozanne-Rivierre, 1982: 79) and Nêlêmwa (Bril, 2002: 67). The verbal prefixes of posture in these languages identify the same basic postures as in Caac, i.e. ‘standing’, ‘sitting’ and ‘lying down’, and most are clearly historically related (Table 26).

Posture prefixes	Caac	Jawe	Bwatoo	Nêlêmwa
‘standing’	<i>cu-</i>	<i>cu-</i>	<i>cu-</i>	<i>ku-</i>
‘sitting’	<i>ta-</i>	<i>ta-</i>	<i>ta-</i>	<i>taa-</i>
‘lying down’	<i>kê-</i>	<i>khê- or kne-</i>	<i>mi-</i>	<i>kâ-</i>

Table 26: Postures prefixes in Caac, Jawe, Bwatoo and Nêlêmwa

In addition to posture prefixes, the lexeme in predicative function can also give information about the posture by mentioning a specific body part playing a role in the configuration e.g. *ta-jele-n* ‘be sitting on the flank’ (‘sitting’ prefix + bound noun ‘side/flank-3SG.POSS’) or referring to a specific shape or configuration, e.g. *kê-bwoep* ‘be lying down in the way/crosswise’ (‘lying down’ prefix + verb ‘be crosswise’). Here follow examples of posture phrases (Table 27).

Posture phrases	Gloss	Translation
<i>ta-phe na bwe he-n</i>	sitting-take from top.side foot ⁷¹ -3SG.POSS	'be sitting cross-legged'
<i>ta-bwaalek</i>	sitting-be.flat ⁷²	'be sitting legs together'
<i>ta-jele-n</i>	sitting-side ⁷³ -3SG.POSS	'be sitting on one side'
<i>ta-bire-ni he-ny</i>	sitting-turn-TR foot-1SG.POSS	'be sitting cross-legged'
<i>ta-azoor</i>	sitting-post ⁷⁴	'be sitting squatting'
<i>ta-pwala he-n</i>	sitting-spread foot-3SG.POSS	'be sitting with his/her legs spread out'
<i>ta-waaga</i>	sitting-have.legs.outspread ⁷⁵	'be sitting with legs outspread'
<i>cu-bavala</i>	standing-be.side.by.side	'be standing side by side'
<i>cu-ciiada (le-rô)</i>	standing-lean	'be standing leaning (against me)'
<i>cu-ciea</i>	standing-bend	'be standing bending over sth'
<i>cu-cibo</i>	standing-be.on.all.fours	'be standing one's back bent'
<i>cu-bazoor</i>	standing-be.upright	'be standing upright'
<i>kê-waworap</i>	lying.down-cross ⁷⁶	'be lying down head-to-foot'
<i>kê-cea</i>	lying.down-bend ⁷⁷	'be lying down leaning on one's elbow'
<i>kê-cibo</i>	lying.down-be.on.all.fours	'be lying down on all fours or curled up'
<i>kê-bwoep</i>	lying.down-be.crosswise	'be lying down in the way/crosswise'

Table 27: Posture phrases

The use of posture verbs with inanimate Figures depends on the shape of that particular Figure.

There is inter-speaker and intra-speaker variation, but as a rule, flat and long entities such as a yard is said to 'be lying down' (*kêgo~kôgo*). As a surface, a yard is described as being in the horizontal position. By contrast, a large volume such as a house is said to be standing or sitting. Smaller entities such as a chair are often described as sitting or lying down.

4.2 Locative verbs

Location is expressed either in existential and presentative constructions (which will not be explored in this study) or in BLCs with the locative verb *e* 'be at', BLCs with the verb 'stay; live' or BLCs with posture verbs. A description of these verbs and their use in the Basic Locative Construction is given in section 3.1.1, 3.1.2 and 3.1.3 respectively.

⁷¹ Noun.

⁷² Hollyman (1999b: 38).

⁷³ Noun.

⁷⁴ Noun.

⁷⁵ Hollyman (1999b: 154).

⁷⁶ Hollyman (1999b: 156).

⁷⁷ Hollyman (1999b: 45).

4.3 Motion verbs

In this analysis, motion verbs refer to verbs denoting the movement of the Figure along a Path. Caac motion verbs are divided into several categories based on semantic and formal grounds: (i) depending on which spatial components they encode (e.g. Path, Goal etc.) and (ii) concerning formal properties, depending on whether they are transitive, i.e. taking obligatorily a direct object or a spatial complement, or intransitive verbs (with an optional NP/PP encoding spatial information, in this case functioning as an adjunct). Motion verbs are also divided according to whether they can be followed by spatial morphemes (absolute directionals, deictic directionals, and reverse movement/degree clitics =*wa/=mwa*) and whether they can combine with other motion verbs and form one predicate in serial verb constructions. The encoding of the Goal and Source follows similar patterns from one category of motion verbs to another (see also sections 3.2.1.2 and 3.2.1.3). In the case where some information about the Source and Goal is added, Source is encoded by adverb phrases, nominal phrases or prepositional phrases introduced by means of the preposition *na* (167) while the Goal is marked by a prepositional, adverb and nominal phrase.

- (167) *Te=mwa* *ta...* *phe-i* *o* *â=le* *kabe* *alek*
 go.down=completely go.up take-3SG.O S M=DEF child boy
- [*na* *tele* *pwap*]_{PP.Source}... *mm* *bwa-* ***ap*** [*le* *bocal*]_{NP.SUBJ}
 from ANAPH.SP outside mm x go DEF jar
- [*na* *bwa-n*]_{PP.Source}
 from head-3SG.POSS
 ‘The young boy goes down goes up takes it (the dog) from there outside, mm.... x-
 the jar goes away from his head (his head is not in the jar anymore).’

4.3.1 Verbs encoding Motion only

Caac has one verb encoding Motion only, i.e. the verbal root does not provide any information on Path, Manner; this is *ap* ‘move, go’. *Ap* ‘move, go’ can take a spatial complement but the latter is not mandatory. The idea of travelling (Motion only) without any specification on the Source or Path of the motion event can be conveyed by the fluid basis (section 2.2.1.9) *phiina* ‘travel’ and the free noun I *pano≈pane-* + POSS ‘trip; committee (group of people moving to some place)’ following the verb *phe* ‘take’ (168).

- (168) *Ne* *no* *hina* *ave* *i* *te* *Numia,*
 IRR 1SG.S know CMP 3SG.S go.down Noumea

o *u* ***phe*** ***pane-bet.***
 x⁷⁸ PERF take trip-1DU.EXCL.POSS

‘If I had known she went down to Noumea, I would have done the trip with her.’ lit. I would have taken our travel’

4.3.2 Verbs encoding Motion + Path

Verbs encoding Motion + Path comprise the directional verbs: *te* ‘go downward’ (169) and *ta* ‘go upward’ (+ *ap* ‘go [crosswise]’, section 6.2.1.1), the verbs *tawa* ‘fall, drop’, *tiiluk* ‘fall’ (170), *camwa* ‘turn/be toward’ and *kening* ‘go around’. The verb *kening* ‘go around’ co-expresses the ideas of Motion and a circular Path. In (169), *kening* refers to the whirling movement the river sometimes makes on its way to the sea.

(169) *Jo* ***te*** ***te*** ***te*** ***taa=de***
 then go.down go.down go.down arrive=downward

tele,... [...] *i* ***kening,...*** *i* *ja* *e* *ta* *ap.*
 ANAPH.SP 3SG.S go.around 3SG.S ASS again go.up go

‘Then it (the river) goes down, goes down, goes down arrive/until downhill where [...] it whirls, it whirls, (and) it goes up again.’

The verbs *te* ‘go downward’, *ta* ‘go upward’, *tawa* ‘fall, drop’ and *tiiluk* ‘fall’ encode an oriented direction based on the absolute frame of reference (section 7.2.1.4.3). The notion of downward Path in *tawa* ‘fall, drop’ and *tiiluk* ‘fall’ rests on the vertical axis (up vs down) based on gravity. As for the verbs *te* ‘go down’ and *ta* ‘go up’, they are used in both the vertical and horizontal planes and refer to paths along the up/down axis (vertical plane) or along the leeward/windward axis and the inland/seawards axis (for the horizontal plane; section 6.1.2.2).

(170) *Bare* ***tiiluk*** [*na* [*re* [*le* *wan* *kurace*]_{NP}]_{NP}]_{PP.Source-}
 x fall from in DEF opening window

Jo *wan* *kurace* *ra* ***te*** [*bwe*
 then opening window and go.down top.side

dilic]_{NP.Goal-}
 land

‘It (the dog) falls from the window. Then the window (from the window?), and (the dog) goes down on the ground.’

⁷⁸ Possibly *jo* ‘then’.

The verb *ap* with the more generic meaning of ‘go, move’ has been classified as a Motion (only) verb (section 4.3.1); however, depending on the context, it is complementary to *te* ‘go downward’ and *ta* ‘go up’ and by pragmatic inference, interpreted as the verbal equivalent to the third directional (*z*)*in* ‘transverse’. Like the directional (*z*)*in*, *ap* can refer to a movement along the secondary axis perpendicular to the axis with differentiated ends encoded by *ta/da* ‘upward, i.e. inland/ uphill/ upriver’ and *te/de* ‘downward, i.e. seaward/ downhill/ downriver’. It is therefore interpreted ‘go along the coast’, ‘go on flat terrain’ or ‘go crosswise’ (section 6.2.1.1). *Te* ‘go down’, *ta* ‘go up’ and *ap* ‘go crosswise’ are extremely common in everyday speech. *Ap* is often reduced to *a*.

Tawa ‘fall, drop’ and *tiiluk* ‘fall’ are intransitive verbs. The Source or Goal of the motion event they describe can be specified by an NP, PP or AdvP which then function as spatial adjuncts. By contrast, the verbs *te* ‘go down’ and *ta* ‘go up’ are always followed by a spatial complement. The latter is either an NP, a PP or AdvP expressing the Goal, or a PP encoding the Source (171) (with the preposition *na* ‘from’). The spatial complement is left implicit when the directional verbs are followed by the clitics =*wa/ =mwa* ‘back’ (section 6.3.2) as the Goal of the return journey is known by the addressee and has already been mentioned in the course of the interaction.

(171)	U	ta=me	ap	[na	[re	le	<u>bocal</u>] _{NP}] _{PP.Source}	<i>o...</i>
	PERF	go.up=CENTRIP	go	from	in	DEF	jar	S
	<i>a...</i>	<i>â=le</i>	<u><i>grenouille</i></u>	<i>ra</i>	<i>u</i>	<i>chalep.</i>		
	mm...	M=DEF	frog	and	PERF	escape		
		‘The... mm... the frog came up went (out) of the jar and escaped.’						

The spatial complement is also implicit when a deictic directional clitic is hosted by the directional verbs indicating that the Goal (with centripetal⁷⁹ clitics) or the Source (with centrifugal⁸⁰ clitics) is the Deictic Centre. For instance, a verbal form such as *ta=me* ‘come inland’ codes the notions of Motion, Path (inland) and Goal (to the Deictic Centre) or Direction (towards the Deictic Centre).

The particularity of languages from the Oceanic branch is that the pair of directional verbs can express several distinctions that are often kept separate in other languages. Thus, *te* ‘go down’ and *ta* ‘go up’ encompass directions which are expressed by different motion verbs in English for instance (see section 6.1 for more details):

⁷⁹ i.e. towards the Deictic Centre.

⁸⁰ i.e. away from the Deictic Centre.

1. vertical axis-oriented verbs: to descend/ to ascend;
 2. enclosure-oriented verbs: to exit/ to enter;
- and 3. absolute direction-oriented verbs: to go leeward/ to go windward; to go seaward/ to go inland.

The absolute directional verbs cannot combine with their corresponding directional morphemes (section 6.1): **ta=da* 'go (up) upward', **te=de* 'go (down) downward', **a(p)=in* 'go transversally'. But they can co-occur with their corresponding directional adverbs in the same sentence: *ta ja=da* 'go (up) upwards', *te ja=de* 'go (down) downward', *ap ja=in* 'go along the coast'. As it also functions as the generic verb for motion, *ap* 'go, move' is also acceptable with other absolute directional adverbs: *ap ja=da* 'go upwards' and *ap ja=de* 'go downwards' (172).

- (172) *Cale* *le* *na* *waadan* *da* *howe* *Mika*
 leave RES DIST path upward home Mika
- (*jjo* *zo* *ja* *phe* *le* *i* ***ap*** ***ja=de***.
 then 2SG.S ASS take DEF 3SG.S go PROX=downward
 'Leave the path inland to Mika's house, then take the one which goes seawards.'
 (Paara_Route_AN)

Both directional verb and clitic can be found within a single serial verb construction (as long as the clitic does not attach to its equivalent verbal form as explained above). In (173), the sun is described going from its highest position at midday downwards (*te* 'go down') to the point it reaches the mountain range (*u* 'cross') and downward setting behind the mountains (*de* 'downward').

- (173) *U* ***te*** *u* ***de*** *o* *negat*.
 PERF go.down cross downward S sun
 'The sun goes down, crosses (and goes) downwards (downhill).'

Directional verbs are commonly found in serial verb constructions (174).

- (174) *Jo* *â=le* *ja* *u* *phuz* *o* *o=le* *yaaek*
 then M=DEF ASS PERF fly S NEUT=DEF swamp.hen
- re* *ja* *u* *a=mwa* *re* *ja* *u/* *a...* ***a=mwa***
 ?and ASS PERF go=back ?and ASS PERF mm go=back

taa jere kumaac

arrive beside beach

'Then this one, the swamp hen flew away and went back home and went back arrived on the beach' (Higon2_FT)

If *te* 'go down' and *ta* 'go up' occur together in a SVC and refer to a return journey (175), i.e. going to some place (B) and going back to the initial place (A), the spatial complement following the complex predicate refers to the destination of *Vb₁* (and therefore the Source of *Vb₂*; section 8.3.5).

- (175) *No te ta Dau.*
1SG.S go.down go.up Dau
'I went to *Dau* and came back.' lit. 'I went down (to *Dau*), went up (from) *Dau* (back here).'

There are no deictically-anchored verbs in Caac (i.e. 'come', 'go away', 'bring', 'take'), which shares this feature with other Northern New Caledonian languages (e.g. Nemi, Fwâi, Pije and Jawe; Haudricourt & Ozanne-Rivierre, 1982: 82, 88; e.g. Nêlêmwa, Bril, 2004a: 111). Anchoring a motion event with regard to a Deictic Centre is achieved by adding a deictic directional morpheme to the verbal stem. The absolute directional verbs *te* 'go down', *ta* 'go up' and *ap* 'go; go crosswise' can take the deictic clitics directly. Other verbs (i.e. non-directional verbs) can either be followed by the verb *ap* to which a general centrifugal =*uc* or centripetal =*me* is attached (section 6.2.1), or require the combination of an absolute directional and a deictic directional morpheme (e.g. *tawa de=ve* 'fall down towards the Deictic Centre', *a=uc* 'go away along the coast/on flat terrain/crosswise'). The specification of an absolute direction is mandatory to anchor a motion event with respect to the speaker.

- (176) *Pwa pûr o ta=me ap na re we.*
x⁸¹ after at/to go.up=CENTRIP go from in water
'Afterwards, (they) come up out of the brook.' (Frog_Story1)

4.3.3 Verbs encoding Motion + Goal

Two verbs encode the notions of Motion and Goal: *taa* 'arrive' and *ciec* 'go back'. The motion verb *taa* 'arrive' encodes both Motion and the idea of termination (arriving at/reaching some destination/goal). It signals that the postposed spatial adjunct (if expressed) is the final goal of some motion event; the verb itself does not give any details about the Goal per se. In (177), the directional

⁸¹ *Pwa pûr o* functions as one unit and means 'afterwards'.

- (180) *No yamwan=me le i ta Re Pwec.*
 1SG.S walk=CENTRIP ID.REL 3SG.S go.up Re Pwec
 'I walked here (on) the one (path) that goes inland to Re Pwec.'
- (181) *I carua da=e(c) cele-m.*
 3SG.S run upward=CENTRIF at/to-2SG.POSS
 'He runs uphill towards you.'

Manner is expressed in various ways: other verbs of manner that are not restricted to motion events can occur with motion verbs, e.g. *oleec* 'be slow' (182), *taru* 'be quick', as well as prepositional phrases referring to some means of performing a particular movement, e.g. *bwe loto* 'by car'.

- (182) *No oleez a=wa.*
 1SG.S be.slow go=back
 'I go back home slowly.'

Some stative verbs describe the shape of a path, e.g. *bazoor* 'be straight', *mwek* 'be bent'. They are also often used in SVCs as Vb₂ (183) when the sub-events described in the SVC are simultaneous. They add information on the way of performing the action described by Vb₁. These verbs are not restricted to depicting the configuration of paths and can describe the shape of objects other than paths.

- (183) *Pwa tele cam_i carua bazoor na le*
 EXIST ANAPH.SP NEG_3SG.S run be.straight PRE.LOC RES
- bwa i carua mwek.*
 but 3SG.S run be.bent
 'There are (those places) where it (the river) does not run straight there but it runs meandering.'

4.3.5 Transitive Motion verbs with Passed Grounds

Places that are located on the way to some destination are labelled here Passed Grounds. Verbs with Passed Grounds comprise motion verbs involving a Ground one goes past, a Ground one goes across, or a Ground one goes through. Passed Grounds occur as the spatial complement postposed to the motion verbs *wedan* 'go past', *yau* 'pass, go beyond' and *u* 'cross; bend down; lean'. With the latter two, which denote a crossing movement, the Passed Ground can be encoded either as a spatial complement introduced by the preposition *o* (184) or as a direct object (185).

- (184) *Ra ta u=de o paze.*
 3PL.S go.up cross=downward at/to ridge
 ‘They go up cross down the ridge.’ (Space_Scen)
- (185) *Jo ta yau le mwa chire-ni men*
 then go.up pass DEF house forbid-TR and

dispensaire men kolec.
 clinic and school
 ‘Then go up past the church and the clinic and the school.’

The idea of crossing a river can be expressed by the verb *caagar* ‘cross’ (186).

- (186) *Zo te cagaar-eni le pwec.*
 2SG.S go.down cross-TR DEF river
 ‘you go down (and) cross the river.’

The verb *yelaap~yalaap* ‘jump’ can also be used to refer to a crossing movement without necessarily implying a jumping motion. In (187), the Wazuk is the biggest river in Pouebo, too large to be crossed by a simple jump. Moreover, the speaker makes reference to the place where the road crosses the river via a bridge, hence no jumping motion is implied here.

- (187) *Pwa ne zo ap na ja, o zo te*
 when IRR 2SG.S go from PROX ?SBJ 2SG.S go.down

taamwi de pezeng, pwa pûr o yo ne
 catch downward road x after at/to be.good IRR

zo ta yaa- o... yalaap o ni=izin Wazuk.
 2SG.S go.up x x jump at/to SG=crosswise Wazuk
 ‘If you go from here, you go down take downward the road, then you should go up xx... cross to the other side of the river Wazuk.’ (Pweevo_DI)

The spatial complement of the verb *wedan* ‘go past’ entails that the Ground is a step or intermediary landmark on the journey towards some destination. The Passed Ground is also introduced by the preposition *o* (188).

- (188) *Za ta wedan o Palau bwa za*
 1PL.EXCL.S go.up go.past at/to Palau because 1PL.EXCL.S

tapwe *pwap.*
 fish.with.rod outside
 ‘We went past Palau because we fished with a rod outside (further towards the ocean).’

Finally, Caac speakers very commonly resort to the French verbs *passer* ‘go past, go through’ and *traverser* ‘cross, go across’ within a Caac clause and sometimes find it very difficult to find an equivalent expression in Caac.

4.3.6 Reflexive verbs *beve* ‘turn around’ and *bira/bire* ‘turn around’

The transitive motion verb *beve* ‘turn around; turn over; invert; be turned’ refers to a turning motion. It takes an object suffix which is co-referent with the subject. A second verb *bira* (variant *bire*) ‘turn; be turned’ is also used in the same reflexive construction and in the same context although it appears less frequently in the data. Example (189) is a description collected in response to a picture of the Man & Tree game (Levinson et al., 1992). This picture shows a particular configuration of toys the speech-act participants are asked to describe. The pigs are described walking around the man in the middle.

(189) *Oni* *ra* *mwa* ***beve-ra*** *de* *o*
 and/but 3PL.S rather turn-3PL.O downward at/to

meu-nya.
 left-1PL.INCL.POSS
 ‘And they (the pigs) turn around seawards on our left.’ (ManTree_DIDN)



Picture 1: Man & Tree Game, PP4_04

4.3.7 Verbs of transport and *kuri~huri* ‘follow, chase’

Other transitive motion verbs are verbs of caused motion, denoting the idea of displacement (e.g. *na* ‘give’, *phe* ‘take’) in a particular manner (e.g. *meje* ‘throw’, *kule* ‘pour’). The direct object codes the entity being carried and moved (190, 193). As for other motion verbs, the Source is introduced by the preposition *na* ‘from’ and the Goal is coded by prepositional, adverbial and nominal phrases following the verb of transport (190, 192, 194).

- (190) *I* ***phe*** [***da***]_{DIR} [***ta=le tâhi-n***]_{DIR.O} [***Numiâ***]_{NP.Goal}
 3SG.S take upward PL=DEF stuff-3SG.POSS Noumea
 ‘She took her belongings windwards, to Noumea.’

Another transitive motion verb, *kuri~huri* ‘follow, chase’, takes a direct object, denoting the entity followed. In (191), the latter is implicit as it has been expressed immediately before in the discourse (Tolinan is following Bwak).

- (191) *Ja* *eze* ***kuri*** ***de*** ***tena*** ***kuri*** ***de*** ***tena***
 ASS again follow downward DIST follow downward DIST
- ra* *taa* *de* *ja=de* *Balaar jo* *u...*
 and arrive downward PROX=downward Balade then PERF
- eze* ***meje*** *le* *cee* *pei-n*.
 again throw DEF one stone-3SG.POSS
 ‘(Tolinan) goes on following (Bwak) there leeward, following there leeward and arrived (until) leeward, leeward there at Balade, then (Tolinan) threw again her stone (to Bwak).’ (Higon1_FT)

Verbs of transport occur very frequently with absolute directionals coding the direction of the motion event. The same information can also be expressed by an SVC (*phe* ‘take’ + *ta* ‘go up’ in (193)) instead of the simple predicate (*phe* + *da* ‘upward’ in (192)). Like with other motion verbs, the Deictic Centre can be specified in addition with an absolute directional (194).

- (192) ***Phe*** ***da=mwa***.
 take upward=back
 ‘Take it back inside.’
- (193) [***Phe*** ***ta=mwa*** *na* *ari*]_{SVC}.
 take go.up=back DIST rice
 ‘Take that rice (and) go inside.’

- (194) *No cape de=ve le pooc zo thila-ni.*
 1SG.S grasp downward=CENTRIP DEF thing 2SG.S ask-TR
 'I brought down here the thing you asked me.'

The verb of transport *phe* 'take' has been grammaticalized into the applicative suffix *-ve*. The form *-ve* can attach to manner of motion verbs adding the notion of transporting/carrying something. It also allows the verb to take an additional argument (a direct object in (195) and (196)).

- (195) *Camwa da=me o le dube... ra taamwi*
 turn/be.toward upward=CENTRIP SBJ DEF stag and catch

le... kabe ma le cawak e-i.
 DEF child with.SG DEF dog IND-3SG.O

Jo... carua-ve[-re]_{DIR.O}
 then run-APPL-3DU.O

'The stag goes upward to him and catches the... boy with his dog. Then it (the stag) runs carrying them two.'

- (196) *I carua-ve [ta=le papier]_{DIR.O} da re mairie.*
 3SG.S run-APPL PL=DEF paper upward in townhall
 'She ran carrying the documents up to the townhall.'

4.4 Verbs of looking

The verbs of looking *alô* 'look' and *no* 'view' denote the way the Figure's gaze is directed. In orientation descriptions, *alô* and *no* + DIR encode by metonymy the front facet of the Figure: 'X has its gaze directed towards Y' = 'X is facing Y or Y's direction'. *Alô* 'look' is sometimes reduced to *a*. Absolute and deictic directional morphemes indicating the Path of the Figure often follow the verb *alô* (197). Unlike *alô* 'look', *no* cannot appear on its own except in a transitive form *noja* 'look at something'. Otherwise it occurs only in combination with a directional clitic (198, 199).

- (197) *Pwa ne zo ta Bwaep, ca alô ap me*
 when IRR 2SG.S go.up Bwaep really look CENTRIF left

o le waadan.
 at/to DEF path
 'When you go up to Bwaep, look away on the left at the path.'

(198) *Yo* *n_i* ***ta-no=de=ve*** *ni=en*
be.good IRR_3SG.S sitting-view=downward=CENTRIP SG=DX1

mwa.

house

'It is good if this house is sitting facing downward towards us.' (Bwaep_JP)

(199) *Pwa* *le* *man-tabo,* *i* ***kê-no=me.***
TOP DEF PLACE-sit 3SG.S lying.down-view=CENTRIP
'As for the chair, it is standing (lit. lying down) facing me.' (TopRelMyPict_JP;
Bowl_Chair1)

Chapter 5: Nominal, Prepositional and Adverb Phrases encoding Spatial Bearings

Spatial information about the Figure is given with respect to a reference object. As explained in more details in section 7.1.1, the Figure can be located in relation to a Ground or oriented with respect to a Cue or moving from a Source to a Goal, respectively the origin point and destination of a motion event. There are three main ways in Caac to encode this reference object (hereafter labelled ‘spatial bearing’) in relation to which the Figure is to be located, oriented or moving: nominal phrases (spatial NPs), prepositional phrases (spatial PPs) and adverb phrases (spatial AdvPs). The location, orientation or motion of a Figure is further anchored in the environment of the speakers by specifying an absolute direction in which the Figure can be found (sections 6.1 and 8.1.3). Directionals represent a prominent strategy in Caac. Because of their importance as well as their distinct formal and semantic properties, they are treated separately (see chapter 6).

This chapter explores the formal properties of the nominal, prepositional and adverb phrases involved in the expression of the Ground, Goal, Source and Cue. In addition to their similar function in the expression of space, spatial NPs, PPs and AdvPs are related in two other ways, on the syntactic level and, to some extent, morphological level. Thus, some spatial nouns (called below ‘relational nouns’) grammaticalize into prepositions. Certain forms are also used as both prepositions and adverbs. On the syntactic level, spatial NPs, PPs and AdvPs can function as the spatial complement of spatial verbs or as adjuncts. If used as a spatial complement or spatial adjunct in unmarked clauses, spatial NPs, PPs and AdvPs appear in the same slot i.e. typically, immediately after the verb or nominal predicate and directional morphemes when there are any. This chapter investigates the following categories:

Spatial PPs	prepositions	Section 5.1
Spatial NPs	relational nouns	Section 5.2.1
	determiners marked with absolute directions	Section 5.2.2
	toponyms	Section 5.2.3
Spatial AdvPs	non-deictic adverbs	Section 5.3.1
	region adverbs	Section 5.3.2
	deictic (and directional) adverbs	Section 5.3.3
Pre locative marker	<i>na</i> ‘PRE.LOC’ preposed to spatial NPs, PPs and AdvPs	Section 5.4

5.1 Spatial prepositional phrases

5.1.1 General characteristics

Prepositions cannot take any inflectional or derivational affixes. They take a nominal phrase as a complement. The resulting spatial PPs can function as spatial complements (200) or spatial adjuncts.

(200)	<i>l</i>	[<i>habur</i>	<i>o</i>	<i>le</i>	<i>loto</i>] _{Sp.Compl-}
	be.at.3SG	in.front	at/to	DEF	car
	'He is in front of the car.'				

Table 27 gathers Caac spatial prepositions.

FORMS	MEANINGS	
<i>o</i>	'at; to'	section 5.1.2
<i>na</i>	'from'	section 5.1.3
<i>re</i>	'at; (in)to'	section 5.2.1.2
<i>bwe</i>	'on; onto'	section 5.2.1.2
<i>camwa</i>	'(be/turn) towards'	section 5.1.5
<i>pûr o</i>	'behind; at the rear of' + INANIM	section 5.1.4
<i>pûr e</i>	'behind; at the rear of' + ANIM	
<i>habur o</i>	'in front of' + INANIM	section 5.1.4
<i>habur e</i>	'in front of' + ANIM	

Table 27: Prepositions

Caac encodes both allative and essive values in the same morphemes: the preposition *o* 'at; to', and two grammaticalized relational nouns: *bwe* 'on; onto' and *re*-POSS 'at; (in)to'. The ablative value is encoded in the morpheme *na* 'from'. Some prepositions and relational nouns are used in other domains than spatial reference, providing for instance other circumstantial information e.g. time: *habur o* 'before sth', *pûr o* 'after sth', instrument: *o* 'with, by means of'. Some have been further grammaticalized and now encode grammatical relationships, e.g. *o* (the patient).

5.1.2 *o* 'at; to'

The simple preposition *o* 'at; to' is the most general spatial preposition. It leaves unspecified the spatial relationship between the Figure and the reference object. It is used in a wide range of situations, from signaling that the Figure is in contact with the Ground (201) to less canonical spatial relationships such as encirclement, e.g. a ring on a finger. *O* introduces a Ground in locational descriptions (201), and a Goal in motion events (202). With only one exception (see section 3.3.1.2 for more details), the Cue in orientational descriptions is, likewise, preceded by *o* 'at; to' (203), e.g. *(cu-)duu-n o + Cue* '(standing) have one's back toward + Cue', *alô o + Cue* 'look towards + Cue', *(cu-)aremaa-n o + Cue* 'be (standing) having one's face towards + Cue'.

(201) *Ra yua da ta=na he-cin... poo(c) le... bep*
 3PL.S climb upward PL=DIST CLASS1-three thing DEF animal

[*o [na mwa]*]_{NP}]_{PP.Ground*}
 at/to DIST house

‘Those three things... animals climb up on the house (wall).’

(202) *I te [o kumaac]*_{PP.Goal*}
 3SG.S go.down at/to beach

‘He goes to the beach.’

(203) *No cu-duu-ny [o [na loto]*]_{NP}]_{PP.Cue*}
 1SG.S standing-back-1SG.POSS at/to DIST car

‘I’m standing my back towards the car.’

O ‘at; to’ is also the preposition which combines with relational nouns (preceding the latter, e.g. *o jere~jele* ‘beside’) and other prepositions (following it, e.g. *habur o* ‘in front of’) or relational nouns, which are on their way to being grammaticalized into prepositions (e.g. *bwe o* ‘above’). As the second part of complex prepositions, *o* is chosen to introduce inanimate spatial bearings (*bwe o* + INANIM ‘above’, *pûr o* + INANIM ‘behind’ and *habur o* + INANIM ‘in front of’).

5.1.3 *na* ‘from’

The source of a motion event is encoded by the preposition *na* ‘from’. It can take an NP (204, 205), including an NP headed by a relational noun, a prepositional phrase or an adverb phrase (206) as a complement.

(204) [*Na [Pwerabi]*]_{NP}]_{PP} *zo ap bwe vélo re mââcâ.*
 from Pwerabi 2SG.S go top.side bicycle in shop

‘From Pwerabi you go to the shop by bicycle.’

(205) *Jo pwame ra ui le jaara(k) (j)o ra tena*
 then when 3PL.S blow DEF conch then 3PL.S hear

da le guun [na [re [le ne-n ceec]]_{NP}]_{NP}]_{PP-}
 upward DEF noise from in DEF mother-DET tree

‘Then when they blew the conch shell, then they heard the noise inland (coming) from inside the forest.’ (Higon_FT)

- (206) *Pwa re na bwe cee(c),... o ra*
 EXIST in DIST day one S 3PL.S
- te=ve=mwa [na [ja=ira]_{PP}]_{NP} Colnett.*
 go.down=CENTRIP=completely from PROX=upward Colnett
 ‘One day (lit. there is in one day), they came down (i.e. leeward) here from up
 (i.e. windward) (from) Colnett.’ (Higon_WH)

When used in a locative description, *na* introduces a second reference point in relation to which one can find the Figure and Ground (here *howa* ‘home’). In this static context, *na* indicates the Source of the Fictive Path one needs to follow to find the Figure (section 8.3.4) and could be translated as ‘with regard to; with respect to’ (207, 208).

- (207) *[Na [howa]_{NP}]_{PP}, Pwerabi ma Mazaxen,*
 from home Pwerabi and Mazaxen
- [e-re]_{LOC+FIG} re [dac]_{Ground}.*
 be.at-3DU.O in plain
 ‘With regard to home, Pwerabi and Mazaxen, they are in the plain.’ (SpaceScen5)

- (208) *Pwame ta=le poka, o ra pu tur [na [le*
 TOP PL=DEF pig S 3PL.S do encircling from DEF
- âc]_{NP}]_{PP}.*
 man
 ‘As for the pigs, they make a circle with regard to (they are around) the man.’
 (Man&Tree_DI_DN)

5.1.4 *habur e/o* ‘in front of’ and *pûr e/o* ‘behind’

Two prepositions are based on the adverbs *habut* ‘in front’ and *pûr* ‘behind’ and the spatial preposition *o* ‘at; to’ (the adverbs usually undergo a sandhi whereby the final *-t* becomes *-r* when followed by a vowel, as in this case). With both *pûr* ‘behind’ and *habur* ‘in front’, the prepositional complement is introduced by the indirect marker *e* when the Ground is animate. Either an object suffix is attached to *e* or an NP follows the indirect marker (209). When the Ground is inanimate, *pûr* is followed by the preposition *o* (210). When the reference object is a collective entity, either *e* or *o*

can be used, e.g. *habur e/o o=ra=le CM2* ‘in front of the CM2 class’.⁸³ *Habur e/o* ‘in front’ and *pûr e/o* ‘behind’ can be used in locative (209) and motion (210) descriptions.

(209) *I* *ja* [***habur*** ***e-rô***]_{PP}.
 be.at-3SG PROX in.front IND-1SG.O
 ‘It’s on the table just in front of me!’

(210) *Nya* *te* [***pûr*** ***o*** [***le*** ***mwa***]_{NP}]_{PP}.
 1PL.INCL.S go.down behind at/to DEF house
 ‘We go seaward behind the house.’

Habur ‘in front’ and *pûr* ‘behind’ take the anaphoric suffix *-on* (see section 2.2.1.7.2) when the Ground has already been mentioned (211).

(211) *I* *pa* *le* *butec?* *Ni* ***habur-on***.
 be.at.3SG where DEF bottle 3SG.INDPT in.front-RES
 ‘Where is the bottle? *It* (this one) is in front of it (the computer).’

5.1.5 *camwa* ‘(be/turn) towards’

Camwa ‘(be/turn) towards’ can be described as a verb which is probably evolving towards a prepositional status. It is usually found in SVCs (212) and is followed by a prepositional phrase (*camwa re mairie* ‘be/turn towards the townhall’), a directional adverb (*camwa ja=in* ‘be/turn in the transverse direction’ (212), *camwa bwe daan* ‘be/turn in the windward direction’) or a directional morpheme (*camwa de=ve* ‘be/turn in the seaward direction towards us’ (213), *camwa=me* ‘be/turn in this direction’ and *camwa=ap* ‘be/turn in the other direction (away from me)’).

(212) *Jo* *camwan* *ne* *zo* *ap* ***camwa*** ***ja=in***
 then PROH IRR 2SG.S go be/turn.toward PROX=transverse

 re *mission*.
 in mission
 ‘Then don’t go in the transverse direction (along the coast) to the Mission/church.’
 (PaaraRoute_AN)

⁸³ *CM2* corresponds to the name of the last grade in primary schools in the French educational system. The pupils of this class are called by their grade: *les CM2* ‘the CM2 form/year’.

- (213) *re pe-coor tuu-le oni re me*
 3DU.S REC-stand.up behind-3DU.POSS and/but 3DU.S x
- alô de=ve camwa de=ve ja.*
 look downward=CENTRIP be/turn.toward downward=CENTRIP PROX
 ‘They are standing behind each other but they look seawards towards us in the direction here.’

The fact that *camwa* is in a sequence of spatial complements as in (214) or as the spatial complement of the locative verb *e* ‘be at’ (215) indicates its potential for grammaticalizing into a preposition.

- (214) *l pa le wang? l ja=in o*
 be.at.3SG where DEF boat 3SG.S PROX=transverse at/to
- Maze det.** *Are daan [camwa o Maze det]_{2PP}.*
 Maze det leeward toward at/to Maze det
 ‘Where is the boat? It’s along the coast, at Maze det. Leeward towards Maze det.’
- (215) *E-rô [camwa [re mairie]_{PP}].*
 be.at.1SG.O toward in townhall
 ‘I’m towards the townhall.’

5.2 Spatial nominal phrases

5.2.1 Relational nouns

5.2.1.1 General characteristics

A category of nouns (labelled ‘relational nouns’) encode spatial relations between entities like Caac prepositions do. The main difference between prepositions and relational nouns lies on the morphological level, in that a preposition cannot take possessive affixes. In contrast, relational nouns are typically bound nouns (two free nouns have been identified: *howa≈howe*-POSS ‘at home’ and *me≈meu*-POSS ‘left’, see below) and function as the head of the spatial nominal phrase. The spatial bearing can be expressed either by a possessive pronoun (216) or by an NP (217). In (216), the bound noun *bwe* is the head of the NP *bwe-n*; the Ground is rendered by a possessive suffix on the relational noun *bwe* in substitution for the NP ‘the shelf’ (*bwe l’étagère* top.side / shelf ‘on the shelf’).

- (216) *Phe na taac [bwe-n]_{NP} ja=da.*
 take DIST cup top.side-3SG.POSS PROX=upward
 ‘Take that cup (which is) on it (the shelf) upward (there).’

In example (217), *bwe* is the head of the NP *bwe na wan kurace* ‘on the window(-sill)’ and introduces the possessor NP *na wan kurace* ‘the window’. The embedded NP encodes the Ground (the window) and the bound noun expresses the spatial relationship the Figure has in relation to the Ground.

- (217) *E-ra* *tena*
 be.at-3PL.O DIST
- [[*bwe* [*na* *wan* *kurace*]_{NP_Possessor}]_{NP}
 top.side DIST opening window
 ‘They are there on that window(-sill) (lit. the top side of the window).’

In opposition to bound nouns in common NPs, relational nouns cannot occur with any specifier (definite and indefinite specifiers, demonstratives etc.) except for the possessive suffix, and they do not take any modifier. The only exception is the phrase *jure hi-k* ‘right’ as the relational noun *hi-k* ‘one’s arm/hand’ takes the adjective *jure* ‘true, right [fair]’ and literally means ‘one’s true hand/arm’. As the phrase *jure hi-k* has lost its original meaning and acquired an idiomatic meaning (‘one’s true arm’ > ‘one’s right’, a phenomenon very common cross-linguistically), *jure hi-k* is analyzed as one unit under the relational nouns’ category. Moreover, the initial aspiration in *hi-k* ‘one’s arm’ is not always produced by speakers. Given that aspirations are only found in word-initial position, the disappearance of the aspiration may indicate the speakers’ tendency to conflate *hi-k* with *jure* and form a single word, *jurei-k* ‘one’s right’. This process of conflating two lexemes to create a relational noun has also been attested in the relational noun *bweriva*(-POSS) ‘facing’ (section 5.2.1.8).

Relational nouns cover a wide range of spatial relationships, specifying either a relationship of contiguity between the Figure and the reference object (topology) or a spatial relationship relying on the intrinsic system (a region projected off a part of a reference object; section 7.2.1.4.1). Two relational nouns (*bwe daan* ‘windward’ and *are daan* leeward’) encode absolute directions (section 6.1.2.2.1). The list of relational nouns is tabulated below.

	FORMS	MEANINGS
Topological relationships (section 7.2.1.1)	<i>bwe(-POSS)</i>	'top side' ('on')
	<i>cele(-POSS)</i>	'at/to somebody's place'
	<i>re(-POSS)</i>	'in(side)'
	<i>aria(-POSS)</i>	'near, next to'
	<i>pwili(-POSS)</i>	'with' (accompaniment)
	<i>pire(-POSS)</i>	in <i>re pire(-POSS)</i> 'under'
	<i>pene(-POSS)</i>	in [<i>re pene(-POSS)</i>] _{PP} 'in the middle of'
	<i>wan bwa(-POSS)</i>	in [<i>re wan bwa(-POSS)?</i>] _{PP} 'between; amongst'
	<i>jele(-POSS)~jere</i>	in [<i>o jele(-POSS)~jere</i>] _{PP} 'beside'
	<i>howa=howe-n</i>	'(at) home', 'at his/her place'
Intrinsic FoR (section 7.2.1.4.1)	<i>bweriva(-POSS)</i>	'facing'
	<i>tuu(-POSS)</i>	'behind'
	<i>jure hi(-POSS)</i>	'to/on the right' in [<i>bwe/o jure hi(-POSS)</i>] _{PP}
	<i>me~meu(-POSS)</i>	'to/on the left' in [<i>bwe/o me~meu(-POSS)</i>] _{PP}
Absolute FoR (section 7.2.1.4.3)	<i>bwe daan</i>	'windward'
	<i>are daan</i>	'leeward'

Table 28: Relational nouns

Pire-n (under.side-POSS), *pene-n* (middle-POSS), *me~meu-POSS* 'left' and the nominal phrases *wan bwa-n* (opening head-POSS) and *jure hi-k* 'right' (lit. 'one's right arm/hand') share the same properties as other relational nouns: they cannot be specified except by a possessive suffix, and have to be marked as possessed either via a possessive suffix or an NP (which encodes the spatial bearing; 218-219). But they are obligatorily preceded by a preposition, either *o* 'at; to', *bwe* 'on; onto' or *re* 'at; (in)to' (the latter two result from the grammaticalization of the relational nouns *bwe* 'top side', *re* 'in(side)'). Together the morphemes form a prepositional phrase (section 5.2.1.2).

(218) *Ta=le puun e cika, i [re*
 PL=DEF base IND cigarette be.at.3SG in

[pire-ny]_{NP.Possessor}]_{PP}.
 under.side-1SG.POSS
 ‘The ash, it’s under me.’ (the Figure is sitting on it)

(219) *Came e-ra [re [pire [pont]*_{NP.Possessor}]_{NP.Possessor}]_{PP}.
 NEG be.at-3PL.O in under.side bridge
 ‘They are under the bridge.’

The phrases *bwe daan* ‘windward’ and *are daan* ‘leeward’ literally mean ‘surface, upper part’ + ‘wind’ and ‘surface’ + ‘wind’ respectively. They are used as spatial markers and lexicalize the absolute directions based on the direction of the trade winds. The same meaning can be expressed by the directional morphemes *da* ‘upward/windward’ and *de* ‘downward/leeward’ (section 6.1.2.2.1). *Bwe daan* ‘windward’ and *are daan* ‘leeward’ function as NPs, the first noun of the NP (*bwe* and *are*) being possessed by the free noun *daan* ‘wind’. *Are daan* ‘leeward’ is sometimes attested being preceded by *bwe*. Like other relational nouns that are preceded by a preposition, it forms a prepositional phrase: **[bwe [are [daan]**_{NP.Possessor}]_{NP}]_{PP}. Spatial NPs headed by a relational noun can function as a spatial complement (220) or a spatial adjunct.

(220) *Te=wa=me [cele-ny]*_{NP}.
 go.down=back=CENTRIP at/to-1SG.POSS
 ‘Come back down to my place.’

Much diachronic work has been done on the origins and evolution of the most common adpositions including *inside/outside*, *in front of/behind* in languages. Heine (1997: 37-40) and Svorou (1994: 71-74; 81) identify the anthropomorphic model (to a lesser extent the zoomorphic model) and the landscape model as the major source domains from which adpositions develop. This grammaticalization pattern is widely attested (see Heine, 1989; de León & Levinson, 1992 and Bowden, 1992 for African, Mesoamerican and Oceanic languages respectively). In Caac, three relational nouns draw on the body part terminology:

- jele* ‘flank, side, edge’ > *jele-n* ‘on the side of him / her , > *jere* ‘on the side of, beside’
it beside him/ her / it’ (relational noun)
- bwe* ‘top side’ + *thivaa-n* > *bweriva-n* ‘facing him/ her/ it’
‘his/her/its eye’
- duu-n* ‘his/her/its back’ > *tuu-n* ‘behind him/her/it’
(from POC **takuRu*⁸⁴ ‘back’)

Some relational nouns can fully function as a common noun outside the spatial phrases, e.g. *hi-k* ‘one’s arm, hand’, *daan* ‘wind’, *are* ‘surface, (hand) palm’, *me* ‘part’. Some have undergone some degree of phonological modification in the shift from the original noun to a relational noun, e.g. *jele* ‘side, edge’ -> *jere*(-POSS) ‘on the side of, beside’.⁸⁵ Other relational nouns do not seem to be used outside the spatial phrase, e.g. *re*(-POSS) ‘inside, in’, *aria*(-POSS) ‘next to, near’. It is actually the fact that in its pronominal form, the Ground or Goal is coded as a possessive suffix that indicates their nominal origins. The next section explores the evolution of two relational nouns which grammaticalized into prepositions: *re*-POSS ‘in(side)’ > *re* ‘at; to’ and *bwe*-POSS ‘his / her/ its top side’ > *bwe* ‘at; to’. The remainder of the section gives an overview of the formal and syntactic behaviour of each relational noun.

5.2.1.2 From relational nouns to prepositions: the case of *re* ‘in(-side); at; to’ and *bwe* ‘top side; onto’

As other relational nouns, *re*(-POSS) ‘in(side); at; to’ and *bwe*(-POSS) ‘top side/on’ are either followed by a possessive suffix (221, 222) or an NP (223, 224) which encodes the Ground.

(221) *Kule de [re-n]_{NP}.*
pour downward in-3SG.POSS
‘Pour it (the coffee beans) down in it (the bucket).’ (Coffee_OD_ed1)

(222) *Phe na taac [bwe-n]_{NP} ja=da.*
take DIST cup top.side-3SG.POSS PROX=upward
‘Take that cup (which is) up (there) on it (the shelf).’

(223) *Jo eze meze le ba-he-ru-on pei(c).*
then again throw DEF ORD-CLASS1-two-ORD stone

⁸⁴ Ross (1998: 263).

⁸⁵ As for the relational noun *bwe*-POSS ‘top side’, it may originate from the bound noun *bwa-n* ‘head-3SG.POSS’.

Eni=ili *i* *tabo* *ja=in*
 PRES=ANAPH2 3SG.S sit.down PROX=transverse

[*re* *dac*]_{NP} *na* *cââ Louis* *de* *ja=de*.
 in plain PRE.LOC Saint Louis downward PROX=downward

Ja=de [*re* *le* *dac*]_{NP}.
 PROX=downward in DEF plain

‘Then (she) threw again a second stone. That is the one which is sitting downward along the road in the plain in St-Louis seawards. Seawards in the plain.’ (Higon1_FT)

(224) *I* [*bwe* *na* *taap*]_{NP} *i* *re* *pire* *na*
 be.at.3SG top.side DIST table 3SG.S in under DIST

nu.

coconut.tree

‘It is on that table which is under that coconut tree.’

However, there is clear evidence that they are undergoing a process of grammaticalization. This is particularly visible when both spatial terms precede other relational nouns in a slot that can otherwise only be filled by a preposition (*re pire-n* ‘under him/her/it’, *bwe o* + NP ‘above sth’, Tables 27 and 28). The association of *re-n* ‘in(side)’ with other relational nouns in *re pire-n* ‘under’, *re pene-n* ‘in the middle of’, *re wan bwa*-POSS ‘amongst, between’ may originate in its potential to present the space in question as a volume. For instance, in (225) the space in which one can find the Figure can be represented as a volume delimited by the location of two or more reference objects.

(225) *Jo* *na* *âz*, *i* [*re* [*wan* *bwa* [*ta=le*
 then DIST man be.at.3SG in opening head PL=DEF

poka]_{NP}]_{NP}]_{PP}.

pig

‘Then the man, he is amongst the pig (surrounded by pigs).’ (Man&Tree_DI_DN)

Re-POSS ‘in(side); at; to’ departs from other relational nouns in that it is the only relational noun allowed to precede toponyms (*re Wegoa* ‘at/to Wegoa’). Along with *bwe*(-POSS) ‘top side’, *re* ‘in(side)’ is only used as a relational noun and not as a common noun outside the spatial NPs. The grammaticalization of *re-n* ‘in(side) him/ her/ it’ is also observed in the semantic bleaching that the relational noun has undergone. Along with the preposition *o*, the form *re* is used as an allative and essive marker (at; to). The schema below summarizes the grammaticalization path followed by *bwe-n*

‘top side’ and *re-n* ‘in him/her it, inside’. This cline adheres to the grammaticalization chain described by Heine (1997: 39): body part or landmark (1) > relational concept (2) > spatial reference point (3).

1	2	3
Common bound nouns >>	Relational nouns >	Prepositions
<i>bwe</i> ‘upper part, surface’ >>	<i>bwe</i> -POSS ‘top.side’ >	<i>bwe</i> in <i>bwe o/bwe-n e</i> ‘above’ and <i>bwe</i> ‘on, onto’ in local constructions <i>bwe oon</i> ‘on beach/sand’
? >>	<i>re</i> -POSS ‘inside; at; to’ >>	<i>re</i> ‘at; to’, e.g. in <i>re pire</i> -POSS etc. and in local constructions <i>re kolec</i> ‘at school’

Bwe ‘top side; at; to’ and *re* ‘at; to’ can take a Ground NP without any determiner when the Ground is part of common knowledge by the speakers, e.g. *bwe joor* ‘on (the) mountain’, *bwe oon* ‘at the beach’ (lit. ‘on (the) sand’). *Re* also licenses the absence of specifiers with common-knowledge bearings e.g. *re kolec* ‘at school’, *re dac* ‘in the plain’. Compare *re dac* and *re le dac* in (223 above), *re na mwa=ina* (226) and *re mwa* in (227).

(226) *Came i* [*re* [*na* *mwa=ina*]_{NP}]_{NP}
 NEG be.at.3SG in DIST house=DIST
 ‘She is not in that house there.’

(227) *E-zo* [*re* [*mwa*]_{NP}]_{NP/PP}
 be.at-2SG.O in house
 ‘You are in (the) house’.

The frequently used preposition *o* ‘at; to’ also allows this type of construction, e.g. *o joor* ‘to/at (the) mountain’, *o kumaac* ‘to/at (the) beach/sea’. The latter is similar to set phrases in English e.g. *at work*, *at uni*, *in bed*. This construction [Relational Noun + \emptyset + N] is most probably a variant of the local construction that is widely attested in Oceanic languages and POc (Ross, 1998: 231-237). In POc, the local construction consists of the preposition *i followed by a spatial noun labelled ‘local noun’ (e.g. *i Rumaq ‘at home’, *i qutan ‘in the bush’) (Ross, 2004: 298-299). In Caac, three prepositions (including two grammaticalized relational nouns) are nowadays available for the local construction. Note that the spatial nouns that occur in the local construction in Caac (e.g. table, mountain, garden, sea) do not constitute a distinct class (‘local nouns’, Ross, 1998: 232-235) as, except for the absence of determiners, the common nouns in question do not exhibit any particular formal properties in the spatial phrases with *re/bwe/o*.

5.2.1.3 (o) *jele~jere*(-POSS) ‘beside’ and *aria*(-POSS) ‘next to’

The relational noun (o) *jele~jere*(-POSS) ‘beside’ is usually restricted to Figures which can be partitioned into facets (228), although there is inter-speaker variation. Unlike (o) *jele~jere*(-POSS) ‘beside’, *aria*(-POSS) ‘next to’ can take Grounds that have facets (229) as well as Grounds that have no facets (230).

(228) *I* [***o jere le mwa/pwec***]_{pp}.
 be.at.3SG at/to beside DEF house/river
 ‘It (the house) is next to the house/river.’

(229) *I* [***aria le man-tabo***]_{NP} *le mobilis e-zo*.
 be.at.3SG next.to DEF PLACE-sit.down DEF mobile IND-2SG.O
 ‘Your mobile phone is next to the chair.’

(230) *I* [***aria le wawe***]_{NP}.
 be.at.3SG next.to DEF columnar.araucaria
 ‘It (the house) is next to the columnar araucaria tree.’

Jele~jere(-POSS) is generally preceded by the preposition *o* ‘at; to’, although *jere* can also occur without one when it is followed by an NP possessor: *I (o) jere le mwa*. ‘It’s beside the house.’

5.2.1.4 *cele*(-POSS) ‘at/to somebody’s place’

The lexeme *cele*(-POSS) can be categorized as a relational noun, in which case it is marked by a possessive suffix (231) or NP (232). It refers to the place of someone and can express a location (‘at someone’s place’; 231) or the destination of a motion event (‘to someone’s place’; 232).

(231) *I* ***cele-n*** *le ba-chemo*.
 be.at.3SG at/to-3SG.POSS DEF MEANS-learn
 ‘The book is at his place.’

(232) *Pûr o na mweju le-nyin, no a a=wa*
 after at/to DIST work IND-1DU.INCL.O 1SG.S go go=back

 [***cele [Ne Kalin]***]_{NP}_{NP}.
 at/to mother Kalin
 ‘After that work of ours, I’ll go back to Ne Kalin’s place.’

5.2.1.5 *bwe-n e/bwe o* ‘above’ versus *bwe(-POSS)* ‘top side’ (‘on’)

When the Figure is in direct contact with the Ground, the Ground directly follows *bwe* as an NP or as a possessive pronoun: *bwe-POSS* or *bwe* + NP ‘top side’ (233). It can express the Ground in location descriptions (233) or the Goal in motion events (234).

- (233) *I* **[*bwe*** **[*na* *taap*** *[i* *re* *pire* *na*
 be.at.3SG top.side DIST table be.at.3SG in under DIST

nu]_{REL.CL}]_{NP}]_{NP}.
 coconut.tree
 ‘It is on that table which is under that coconut tree.’

- (234) *Ra* *carua* *a* **[*bwe*** ***oon***]_{NP/PP}.
 3PL.S run go top.side sand
 ‘They ran to the beach.’ (lit. ‘They ran went to (the) sand.’)

When the spatial relationship between the Figure and the Ground does not involve any contact, an animate Ground is preceded by *bwe-n e* ‘above’ while an inanimate Ground is preceded by *bwe(-n) o* ‘above’ (235; section 5.2.1.5). So far, only *bwe(-n) e/o* ‘above’, *pûr e/o* ‘behind’ and *habur e/o* ‘in front of’ (section 5.1.4) have been found to distinguish between animate and inanimate Grounds. This differentiation between animate and inanimate Grounds also occurs in other Northern languages (see Nêlêmwa; Bril, 2002: 306).

- (235) *Na* *yep=na,* *i* **[*bwe*** ***o*** **[*na* *taab*]**]_{NP}]_{PP}.
 DIST fire=DIST be.at.3SG top.side at/to DIST table
 ‘That lamp there, it is above that table.’

An alternative way of expressing ‘above’ with both animate and inanimate bearings is to resort to *bwe-n* plus the preposition *na* ‘from [with regard to]’ and the indirect marker *le*: *bwe-n e Cibun* or *bwe-n na le Cibun* ‘above Cibun’; *bwe-n na na taap* and *bwe o na taap* ‘above that table’. Only the third person singular in its pronominal form does not obey this pattern between *bwe* ‘top side’ and *bwe(-n) e/o* ‘above’. For both spatial arrangements (with or without contact), the pronoun will be the possessive suffix directly attached to *bwe* (236).

- (236) *I* **[*bwe-n*]**]_{NP}.
 be.at.3SG top.side-3SG.POSS
 ‘It (the lamp) is above it (the table).’ [No contact]
 OR ‘It (the cup) is on it (the table).’ [Contact]

A similar phenomenon has been described in Nêlêmwa (1996: 194) where some locative nouns (“noms locatifs”) take indirect possession marking when the spatial relationship does not imply any contact between the Figure and the Ground, but some relative/unspecific localization (“une simple localisation relative”).

5.2.1.6 *jure hi-k* ‘one’s right’ and *me=meu-POSS* ‘left’

The NP *jure hi-k* ‘one’s right’ and the noun *me* ‘left’ are preceded by the preposition *o* (237, 238) or the relational noun/preposition *bwe(-n)* ‘on (him/her/it)’ (top side-POSS), although less frequently, in both static (238) or dynamic settings (237). One hypothesis is that the use of *bwe* ‘top side’ could be due to language contact. In French, one can say *à ta gauche/droite*, *vers ta gauche/droite* but also *sur ta gauche/droite*. The speakers might be influenced by the French phrase *sur ta gauche/droite*. An additional vowel is added to *me* ‘left’ when a possessive suffix encodes the Ground: e.g. *meu-ny* ‘on my left’, *meu-nya* ‘on our left’.

- (237) [...] *jo zo phe le i ta o meu-m.*
 then 2SG.S take DEF 3SG.S go.up at/to left-2SG.POSS
 ‘Then you take the one (the path) that goes on your left.’

The Ground is expressed either by a possessive suffix (237), or an independent pronoun for purposes of contrast or emphasis (238), or a nominal phrase.

- (238) *Waa na i- i o jure hi tô*
 be.like DIST be.at.3SG be.at.3SG at/to true hand 1SG.INDPT

 le ceec?
 DEF one
 ‘Like that (one)... this one, is he on *my* right?’ (ManTreeG2_DNDI)

In the spatial descriptions using *jure hi-k* and *me*, the Figure is not coincident or directly in contact with the Ground. *Jure hi-k* ‘(one’s) right’ and *me* ‘left’ refer to regions projected off the Ground (intrinsic FoR;⁸⁶ section 7.2.1.4.1 for more details).

⁸⁶ Some particular occurrences of *jure hi-k* ‘one’s right’ and *me* ‘left’ are ambiguous and leave room for an interpretation in terms of intrinsic and relative FoRs; those occurrences are discussed in section 8.1.2.

5.2.1.7 *tuu-n* ‘behind him/her/it’

Tuu-n designates a region projected off the back facet of the Ground (intrinsic FoR; section 7.2.1.4.1). It can be translated as ‘behind’. *Tuu-n* ‘behind him/her/it’ contrasts with the noun *duu-n*. *Tuu-n* and *duu-n* have the same origins, the Proto-Oceanic reflex *taku⁸⁷ (Ozanne-Rivierre, 1995: 53). *Tuu-n* has not undergone any change in its initial consonant while the initial /d/ in *duu-n* is a non-etymological pre-nasalized consonant resulting from its assimilation of the article *na (Ozanne-Rivierre, 1995: 53). In this doublet, the word closer to the etymological root *taku (on the phonological level only as far as Caac is concerned) has specialized into a locative lexeme ‘(at the) back’ while the second element of the doublet with the non-etymological consonant /d/ inherited the meaning of the body part ‘back’. Note that the POc word *taku has developed into a doublet in several Northern languages.⁸⁸ Both lexemes are based on the back facet of an entity but the possessive suffix in *duu-n* and *tuu-n* does not refer to the same type of possessor. The possessive suffix of *duu-n* refers to the possessor of the body part e.g. *duu-ny* ‘my back’, *duu-m* ‘your back’ etc., and in spatial settings, it refers to the back facet of the Figure whereas the possessive suffix in *tuu-n* signals the Ground with respect to which the Figure is positioned e.g. *tuu-ny* ‘behind me’, *tuu-m* ‘behind you’. The noun *duu-n* functions as a predicate in orientation descriptions (section 3.3.1.1), while *tuu-n*, like other relational nouns, can be used as a spatial complement and spatial adjunct (239).

- (239) Zo yalaap [na [tuu le wang]_{NP}]_{PP}.
 2SG.S jump from behind DEF boat
 ‘You jumped from behind the boat.’ (Questions_CA_24April2014)

Tuu-n is also distinct from the preposition and adverb *pût≈pûr* ‘behind’. Unlike *tuu-n*, the Ground and complement of the preposition *pûr* is indirect and introduced by the indirect marker *e* ‘IND’ or *o* ‘at’. *Pûr* ‘behind’ also differentiates animate from inanimate Grounds (section 5.1.4). Like *tuu-n*, *pût* is employed for location and motion, and not for orientation.

⁸⁷ Alternatively, the POc form *takuRu has been reconstructed by Ross (1998: 263).

⁸⁸ Here follow some examples given by Ozanne-Rivierre (1995: 60):

POc	*taku ‘back’	
Caac	<i>tuu-n</i> (loc)	<i>duu-n</i> (body part)
Nemi, Pije, Fwâi	<i>tai-</i> (loc)	<i>ndai-</i> (body part)
Jawe, Pwaamei, Pwapwâ,	<i>cai-</i> (loc)	<i>ɲjai-</i> (body part)
Hmwaeke, Hmwaveke		

5.2.1.8 *bweriva-n* ‘facing him/her/it’

The relational noun *bweriva-n* means ‘facing sth’; the possessive suffix refers to the entity (Cue) the Figure is facing (240, 241). *Bweriva-n* comes from the amalgam of the lexemes *bwe* ‘top side’ and *thivaa-n* ‘eye’ (lit. ‘on one’s eyes’) after having undergone the sandhi (-t > -r + vowel, which is frequent in Caac)⁸⁹ and a vowel shortening ([a:] > [a]).

(240) *Ra* *tabo* [*bweriva-nya*]_{NP}.
3PL.S be.sitting.down facing-1PL.INCL.POSS
‘They are sitting facing us.’

(241) *No* *coor* [*bweriva* *le* *cantine*]_{NP}.
1SG.S stand.up facing DEF canteen
‘I’m standing facing the canteen.’

5.2.1.9 Free noun I *howa=howe-POSS* ‘home’

As a relational noun *howa* ‘home’, the free noun I can take an NP or a possessive suffix, e.g. *howe wa Agnès* ‘at/to grandma Agnès’ place’, *howe-m* ‘at/to your place’, but it cannot precede a specifier or take a modifier. The full paradigm of possessed forms is regular (with a phonological modification *howa* > *howe* + NP or -POSS which is commonly observed for free nouns I, section 2.2.1.1.2): *howe-ny* ‘at my place, at home’ etc. These forms share the same meaning with the relational noun *cele-n* ‘at/to his/her/its place’, e.g. *cele-m* ‘at/to your place’ and *howe-m* ‘at/to your place’. The forms of this paradigm can therefore be classified as relational nouns. The non-possessed form *howa* ‘(at) home’ functions as a spatial term on its own and shares the same meaning as *howe-ny* (in a similar way to the English PP ‘at/∅ home’ with regard to ‘at/to my place’). With many relational nouns, *howa* does not occur in a non-spatial NP and does not refer to the building itself; the word for ‘house’ is coded by the free noun I *mwa≈mwe-POSS* and the notion of ‘dwelling’ by the free noun *avono*.

5.2.2 Absolute directions expressed in PPs

Some spatial information can be specified in terms of absolute directions in the NP embedded in the spatial prepositional phrase, by means of a directional clitic expressed in the determiner (242). Only absolute directions can be expressed, and no deictic directional clitics (CENTRIP/CENTRIF) are allowed in the determiner.

⁸⁹ Another example of amalgam with the noun *thivaa-n* ‘his/her/its eye’ has been reported by Hollyman (1999b: 75-76): *jelerivaac* ‘look sideways’ (“regarder de côté”) < *jele* ‘side’ + *thivaac* ‘his/her/its eye’.

(242) / [re [ni=izin /ni=ida mwa]_{NP}]_{NP}.
 be.at.3SG in SG= transverse/ SG=upward house
 ‘It’s in the house along the coast / inland.’

Likewise, the concept of proximity or distance can be expressed via demonstratives in the NP found in the spatial prepositional phrase (243).

(243) / [re [ni=en mwa]_{NP}]_{PP}.
 be.at.3SG in SG=PROX house
 ‘It’s in this house.’

5.2.3 Toponyms

A toponym is the name of a place; it functions as the head of an NP. Toponyms are preceded by the preposition *na* ‘from’ when they express the Source of a motion event (*Bwe o ciia* in (244)). When they refer to the Goal of a trajectory or, in location description, if they denote the Ground, toponyms are preceded by the preposition *o* ‘at; to’ (section 5.1.2), *re* ‘in; at; to’ (section 5.2.1.2) or left unmarked (*Kareon* in (244)) depending on the toponym and predicate (see section 3.2.3 for more details on this issue). They usually function as spatial complements or spatial adjuncts.

(244) [[No carua [na **Bwe o ciia**]_{Source}]_{Main CL} [me no taa de
 1SG.S run from Bwe o ciia PURP 1SG.S arrive downward

 [**Kareon**]_{Goal}]_{Subord CL}.
 Kareon
 ‘I run from *Bwe o ciia* to *Kareon* seawards.’ lit. ‘I run from *Bwe o ciia* so that I go until
 Kareon seawards.’

Some toponyms are direct borrowings from New Caledonian French e.g. *Calédonie*; *Col d’Amos*, others are Caac, e.g. *Re pwec*, *Bwe o ciia*, *Dau*, *Maze det*. Toponyms in Caac can be quite new due to colonial forced migration of families and some recent re-distribution of land to the Kanak people. Caac toponyms can also respond to the modern needs of French administrative division of land. Thus the village is currently divided into several areas called ‘tribes’ (*tribus* in New Caledonian French). These areas have two names, a French one based on the names given by the missionaries (St-Denis, St-Joseph, St-Ferdinand, Ste-Marie, St-Louis etc.) and a recent name in Caac to match these divisions: St-Louis is also called *Re caac*, St-Joseph and St-Denis *Re pwec*, Ste-Marie *Pwai* etc. Caac tribes’ names can be a descriptive name (e.g. *Re pwec* ‘in (the) river’) or refer to the name of a clan. A lot of

the toponyms in Caac have a transparent etymological origin, e.g. *Dau* ‘islet’, *Bwe o ciia* ‘above the octopus’.

In the Kanak culture, a place name not only conveys some geographical information, it is also the depositary of the history of a clan. Thus, a toponym enables the speakers to trace their lineage back to their ancestors and founding member of their clan: “[in New Caledonia] place names are the spatial projection of social and political hierarchy⁹⁰” explains the ethnologist A. Bensa (1997: 87). Spatial itineraries refer to the history of a group’s migration and the mythological narrative of their origins. They provide information about social and clan relationships and justify one’s place and integration in a community within a bigger group of people.⁹¹ Due to restrictions of time and space, place names in Caac are not being explored in the present analysis. However, an in-depth investigation of the social and spatial organisation of the Mwelebeng chiefdom written by a native speaker is available (Pidjo, 2003); this study brings a culturally-embedded insight of a community member on the toponymic system in Caac.

5.3 Spatial adverb phrases

Spatial adverb phrases in Caac can be headed by three different forms: 1) non deictic adverbs composed of a single free morpheme, 2) region adverbs based on a stem denoting a region followed by a directional morpheme, and 3) deictic adverbs.

5.3.1 Non-deictic spatial adverbs

Non-deictic spatial adverbs consist in a single morpheme. They usually function as spatial complements (245, 246). Six non-deictic spatial adverbs have been identified up to present: *pwap* ‘outside’, *pwâ* ‘inside’, *pût* ‘behind; after’, *habut* ‘in front; before’, *iek* ‘close’ and *(h)eut* ‘far’. Most of the non-deictic spatial relationships are covered by prepositions and relational nouns in Caac (sections 5.1 and 5.2).

(245) *Came* *i* *pwâ.* *l* *pwap.*
 NEG be.at.3SG inside be.at.3SG outside
 ‘He is not inside. He is out.’

(246) *l* *pa* *le* *bol* *kari ?* *l* *ja* *habut.*
 be.at.3SG where DEF bowl yellow be.at.3SG PROX in.front
 ‘Where is the yellow bowl? It’s here in front.’

⁹⁰ English translation mine.

⁹¹ For further information and in-depth case studies, see Bensa & Rivierre (1982).

Two adverbs *iek* ‘close’ and (*h*)*eut* ‘far’ specify proximity or distance from a reference object. The latter can be encoded by a PP with *na* ‘from’ or *o* ‘at; to’. Both adverbs cannot occur with subject pronouns (***No** *iek na le mairie* ‘I’m close to the townhall.’), i.e. they are only attested functioning as complements of spatial verbs such as the locative verb *e* ‘be at’ (247, 248).

(247) *I* ***iek*** *o* *le* *mwa* *chire-ni*.
 be.at.3SG close at/to DEF house forbid-TR
 ‘It is close to the church.’

(248) *E-rô* *iek* *na* *le* *mairie*.
 be.at-1SG.O close from DEF townhall
 ‘I’m close to the townhall.’

5.3.2 Region adverbs

Adverbs denoting a region consist of a spatial stem and a directional morpheme. Two spatial stems have been attested: *ave* ‘side’ and *yoo* ‘side’.

5.3.2.1 *ave* ‘side’ and *yoo* ‘side’

Ave ‘side’ and *yoo* ‘side’ cannot be used without a directional clitic (= *da* ‘upward’, = *de* ‘downward’, = (*z*)*in* ‘crosswise’), or a deictic clitic (= *ap* ‘CENTRIF’, with *ave* only) or a combination of directional and deictic clitics. Therefore, region adverbs specify the location in terms of absolute directions (for *ave* only) and/or in relation to the Deictic Centre (for *ave* and *yoo*). *Ave* and *yoo* rest on the division of the space into two regions based on an obstacle. *Yoo* is generally used when the obstacle is a river while *ave* is typically used to refer to two regions separated by an elevated obstacle (hill or mountain). However, both stems are not restricted to one type of obstacle. For instance, *ave* can be used more generally to denote two regions separated by a road or the speech-act participants’ location (e.g. *ave=me* ‘on this side’ and *ave=ap* ‘on the other side’) or in some circumstances, an imaginary line dividing a space into two regions (this last case is discussed in detail in 8.3.4.5). *Ave* can also be found when a river is used as the point of separation of the two regions but as a rule, *yoo* is preferred in most cases involving a riverine landscape.

Example (250) illustrates the use of *yoo* +DIR ‘on the side=DIR’. In (250), the obstacle implied by the use of *yoo=da=zin* is the mouth of the river Waazuk which reaches the sea near the beach where both speech-act participants are standing.

(249) Sp1: *Zo yeum a pa?*
 2SG.S swim go where
 'Where do you swim?'

(250) Sp2: ***Yoo=da=zin.***
 side=upwards=crosswise
 'To the other side (the other bank of the Waazuk river)'

The only prison of the island is situated in Noumea on the south western coast. More precisely it is located on the peninsula of Nouville in Noumea, in a bay at some distance from the city and opposite one of the harbours of the city. The obstacle here is the water of the bay. Caac speakers always refer to the prison by its location and say *yoo=da=zin* (251).

(251) *Camwan ne zo âji te=na nei-m bwa*
 PROH IRR 2SG.S beat DU=DIST child-2SG.POSS because

zo ap yoo=da=zin.
 2SG.S go side=upwards=crosswise
 'Don't beat those two children of yours⁹² because you are going to prison (lit. to the other side).'

In (252), the speaker is locating Bonde in relation to Pouebo. Bonde is a town located inland to Pouebo and in the mountain range. In contrast, Pouebo is on the coast, seawards. The adverb *ave=da=izin* is used here to refer to the other side of the mountain.

(252) *Pweevo ja. Pwame ave=da=izin, o Bode.*
 Pouebo PROX TOP side=upward=crosswise TOP Bonde
 'It's Pouebo here. On the other side it's Bonde.'

In (253), both participants are in Pouebo. The speaker is asking about the location of an area of Pouebo where the people of *Re Caac* live. Both the current location of the speech-act participants and *Re Caac* are along the coast and one can follow the road on a flat surface to reach *Re Caac*. The use of *=in* coincides with the topographical parameter 'on flat land' and the transverse axis, i.e. 'along the coast' (section 6.1.2.2).

(253) *I kola ja=in?*
 3SG.S rain PROX=transverse
 'Is it raining there?'

⁹² Elicited example; this is an imagined scenario.

The speaker did not accept **i kola ave=da=i=zin?* ‘is it raining on that side?’ as no obstacle was identified between the participants’ location and the location under discussion (*Re Caac*). By contrast, the sentence *i kola ave=da=i=zin?* ‘is it raining on that side?’ is the correct formulation for asking about the weather in Koumak (on the western coast) because a topographical obstacle, the mountain range, lies between this town and Pouebo (on the eastern coast), the location of the speech-act participants.

Both spatial stems *ave* and *yoo* have small-scale (i.e. from the table top to the village) and large-scale (i.e. intra-island scale) uses, in location and motion descriptions. The following combinations have been identified (Table 29).

FORMS	TRANSLATION	GLOSS
<i>ave=da</i>	‘on the upward side’	side=up
<i>ave=de</i>	‘on the downward side’	side=down
<i>ave=de=ve</i>	‘on this downward side’	side=down=CENTRIP
<i>ave=da=me</i>	‘on this side’ (typically, an elevated obstacle)	side=up=CENTRIP
<i>ave=da=(i)zin</i>	‘on the other side; crosswise’ (typically, an elevated obstacle)	side=up=transverse
<i>ave=me</i>	‘on this other side’ (non-elevated obstacle)	side=CENTRIP
<i>ave=ap</i>	‘on the other side’ (non-elevated obstacle)	side=CENTRIF
<i>ave a=uc</i>	‘on the other side; crosswise’	side / go=CENTRIF (grammaticalized verb <i>ap</i> ?)
<i>yoo=da=me</i>	‘on this side’	side=up=CENTRIP
<i>yoo=da=(i)zin</i>	‘on the other side; crosswise’	side=up=transverse

Table 29: Spatial forms with *ave* ‘side’ and *yoo* ‘side’

Ave=da=(i)zin and *yoo=da=(i)zin* ‘on the other side’ lit. ‘on the upward crosswise side’ are the only words which allow two different (absolute⁹³) directional clitics to be attached to the same stem. Semantically it may be explained by the fact that to go ‘to the other side’ may include an uphill movement (=da) and a crossing movement =(i)zin, =in). It could also be explained by the deictic value of =(z)in in these adverb phrases: *yoo/ave=da=zín* functions as the clear opposite of *yoo/ave=da=me* (with the centripetal =me). To some extent, this exceptional use and meaning of =(z)in serve a purpose similar to the centrifugal =ap which has an absolute and a deictic reading: (i) ‘go in the transverse direction’, and (ii) ‘go away (from speaker)’ (see also Ross, 1998: 289-290 on the

⁹³ Two absolute directionals, i.e. non-deictic directional clitics =da ‘upward’, =de ‘downward’, =(z)in ‘transverse’, are not allowed in any other context.

POc etymon *pano; section 6.2.1.1). *Yoo* occurs in the data followed by the combination of directionals =*da*=(*i*)*zin* or =*da*=*me*. It does not provide any information in terms of absolute directions but signals that the local topography is divided into two regions by a river, and both regions are situated in relation to the Deictic Centre. The adverb *yoo=da=me* ‘on this side of the river’ denotes the bank where the Deictic Centre is to be found. This is made explicit by the presence of the centripetal morpheme =*me*. *Yoo=da=me* contrasts with *yoo=da=(i)zin* which refers to the opposite bank ‘on the other side’ and although *yoo* does not take any centrifugal suffix, by pragmatic inference it refers to the bank where the Deictic Centre is not located. The same applies to *ave=da=me* ‘on this side’ and *ave=da=zin* ‘on the other side’: it defines the place as two regions separated by an obstacle. Those two regions are distinguished in relation to the Deictic Centre: ‘on this side’ vs ‘on the other side’. The side towards the Deictic Centre is expressed by =*me* while the opposite side (i.e. where the Deictic Centre is not) is signaled by the absolute directional clitic =(z)*in*. There is a second pair based on the Deictic Centre which does not resort to any absolute directional clitic: *ave=me* ‘on this side’ and *ave=ap* ‘on the other side’. The space is here divided into two regions: one where the Deictic Centre is and one where the Deictic Centre is not, but no physical obstacle (hill, road etc.) is utilized as the anchoring point here. In contrast to *yoo* ‘side’, *ave* ‘side’ also occurs with absolute directionals only: *ave=da* ‘on the upward side’ and *ave=de* ‘on the downward side’ (254). A reference object can also be expressed as a spatial complement of *ave* ‘side’, in which case *na* ‘from’, *o* ‘at; to’ or *le* ‘IND’ introduced the Ground expression (254).

(254)	<i>Pwame Pwerabi,</i>	<i>i</i>	[<i>ave=de</i>	[<i>le/ o/ na</i>
	TOP Pwerabi	be.at.3SG	side=downward	IND/ at/to/ from

Mazaxen]].

Mazaxen

‘Pwerabi, it is on the seaward side from Mazaxen.’

5.3.3 Spatial deictic adverbs

5.3.3.1 *ja* ‘PROX’ and *tena* ‘DIST’

Two deictic adverbs have been identified in Caac. *Ja* is used when an item is located in the proximity of the speaker (255). *Tena* signals that the referent is far from the speaker (256). The Ground implied here is the Deictic Centre (the speaker). Spatial deictic adverbs are used in static (255) and dynamic context (256).

(255) *Waa ja Pweevo.*
 be.like PROX Pouebo
 'It's like here in Pouebo.'

(256) *Ap na tena, tawa de re alen taru.*
 go from DIST fall downward in ground be.quick
 'Go away from there, come down on the ground quickly.'

The deictic system situates the Figure in terms of its distance from the speaker only. Thus, *tena* refers to a Figure located either far from both the speaker and the addressee or far from the speaker but close to the addressee (260, 262 below).

In (257), Speaker 1 is looking for his glasses. As Speaker 2 tells him that his glasses are next to her, the adverb *ja* is used (258, 259).

(257) a. Sp1: *E-ra pa ta=le thivaa-ny?*
 be.at-3PL.O where PL=DEF eye-1SG.POSS
 'Where are your glasses?'

(258) b. Sp2: *E-ra ja.*
 be.at-3PL.O PROX
 'They are here.'

(259) c. Sp2: *Alô na ja habur e-rô.*
 look PRE.LOC PROX in.front IND-1SG.O
 'Look here in front of me.'

If the glasses are far from Speaker 2, she resorts to the distal adverb *tena* (260, 262). If the glasses are far from Speaker 2 and close to Speaker 1, she can use *tena* and add a prepositional phrase such as *aria-m* 'at your side; next to you' (262) or *tena co* 'there next to you i.e. where you are' (DIST at 2SG.INDPT).

(260) *E-ra tena.*
 be.at-3PL.O DIST
 'They are there.'

(261) *Alô na tena.*
 look PRE.LOC DIST
 'Look there.'

(262) *E-ra tena aria-m.*
 be.at-3PL.O DIST next.to-2SG.POSS

‘They are there next to you.’

Like other spatial adverbs but also spatial NPs and PPs, deictic adverbs can function as spatial complements.

5.3.3.2 Deictic directional adverb *ja* ‘PROX’ + directional clitic

Ja ‘PROX’ can host the directional clitics =*da* ‘upwards’, =*de* ‘downwards’ and =*in* ‘on the transversal axis. More information about the semantic properties of these directional adverbs is provided in chapter 6. The distal adverb *tena* ‘DIST’ is not used in combination with directional clitics.

FORMS	GLOSS
<i>ja=da</i>	‘upward’
<i>ja=de</i> and its variants <i>ja=maade</i> and <i>maa=de</i> ⁹⁴	‘downward’
<i>ja=in</i> ⁹⁵	‘transverse, crosswise, on flat land’

Table 30: Directional adverbs

Deictic directional adverbs are used on the small and large scales. In a large-scale setting, i.e. intra-island, the spatial-deictic component of *ja* is almost absent. The sole relevant spatial information is the directional, *ja* ‘PROX’ being the means of forming a directional adverb with a directional clitic. In this context, the observation that the parameter of proximity/remoteness is overridden by the parameter of absolute directionality would explain the absence of its antonym *tena* + =DIR. In (263), the speech-act participants are in Pouebo and the speaker enquires about the weather in Koumac, a city on the north western coast of New Caledonia. *Ja* ‘PROX’ loses its proximal meaning in this context.

- (263) *I kola ja=in? (*tena=in)*
 3SG.S rain PROX=transverse
 ‘Does it rain (over) there?’ (Fldnt 3)

5.4 *na* ‘PRE.LOC’

The pre-locative morpheme *na* ‘PRE.LOC’ can precede deictic adverbs (e.g. *na tena* ‘there’), directional adverbs (264, 265) and other prepositions (266) except for the prepositions *na* ‘from’ and *o* ‘at/to’. *Na* ‘PRE.LOC’ is attested in static settings (265, 266) and in dynamic settings (264) preceding the Ground or Goal in locative and motion descriptions, but its presence is not obligatory.

⁹⁴ *Maa=de* is less common than *ja=maade*. It seems to occur with *i* ‘be.at.3SG’ only: *i maa=de / ja=de / ja=maade na âc*. ‘A man is downhill.’ (see section 6.1.1.2).

⁹⁵ Note that *ja* ‘PROX’ can only take =*in* (**ja=zin*).

(264) *m_i* *ja* *te=wa* *cele* *o=le* *abaa-n*
 PURP_3SG.S PROX go.down=far at/to NEUT=DEF sibling-3SG.POSS

na *ja=maade* *tele* *re* *pwa* *a*
 PRE.LOC PROX=downward ANAPH.SP 3DU.S used.to go

mo *le* *bwa* *le* *re* *pwa* *a* *mo* *Maze det.*
 live RES PRES ID.REL 3DU.S used.to go live Maze.det

‘[...] so that she go far down to her sister’s very much seaward (down there) where the two used to live, because they are the ones who used to live in Maze det.’

(265) [*Pwame* *Bwero*]_{TOPIC.Subj} [*yale* *ja=in* *tele*
 TOP Bwero name PROX=transverse ANAPH.SP

[*le* [*le* *ancienne* *mairie* *na*
 EXIST.ANAPH1 DEF former townhall PRE.LOC

ja=in *waa* *Re caac*]_{NP}]_{EXIST}]_{REL.CL}]_{Sp.Comp}]_{NP.PRED}
 PROX=transverse be.like Re caac

‘Bwero, it’s the name along the coast where there is the former townhall along the coast like Re Caac.’ (Higon1_WH_4Dec2012)

(266) *l* *bwe* *le* *taap* *na* *habur*
 be.at.3SG top.side DEF table PRE.LOC in.front

e *tô!*
 IND 1SG.INDPT

‘It’s on the table just in front of me!’

Note that there is the same morpheme *na* in Nêlêmwa (Bril, 2002: 310) which is used for encoding the Source ‘he comes **from** X’ and as a morpheme (“pré-locatif”) preposed to locative words including spatial prepositions (*na bwa*; *bwa* meaning ‘on’). Caac speakers seem to resort to *na* ‘PRE.LOC’ to draw the addressee’s attention to that particular location, a function that could originate in the deictic determiner *na* ‘DIST’ if *na* ‘PRE.LOC’ and *na* ‘DIST’ are cognate. This could explain why *na* obligatorily precedes the deictic adverbs after the verb *alô* ‘look’ (270, 271) as the verb is directing the addressee’s attention towards a particular place. This function could also explain why in (272) *na* ‘PRE.LOC’ can precede the PP which, moreover, occurs after two spatial complements. However, the fact that *na* ‘PRE.LOC’ cannot precede a deictic adverb in a BLC (269) as it does in the sentence with *alô* ‘look’ in (270) is difficult to explain.

(267) *E-ra* *pa* *ta=le* *thivaa-ny?*

be.at-3PL.O where PL=DEF eye-1SG.POSS
 ‘Where are my glasses?’

(268) *E-ra ja / tena / ja=in.*
 be.at-3PL.O PROX / DIST / PROX=transverse
 ‘They are here / there / along the coast.’

(269) **E-ra na ja / na tena / na*
 be.at-3PL.O PRE.LOC PROX / PRE.LOC DIST / PRE.LOC

ja=in.
 PROX=transverse
 ‘They are here / there / along the coast.’

(270) *Alô na ja / na tena / na*
 look PRE.LOC PROX / PRE.LOC DIST / PRE.LOC

ja=in.
 PROX=transverse
 ‘Look here/ there/ along the coast.’

(271) **Alô ja / tena / ja=in.*
 look PROX / DIST / PROX=transverse
 ‘Look here/ there/ along the coast.’

(272) *l [ja=in]_{DX.DIR} [bwe na taap]_{PP}*
 be.at.3SG PROX=transverse top.side DIST table

[na re na kioc]_{PP}.
 PRE.LOC in DIST traditional.house
 ‘It is along the coast on that table in that house.’

5.5 Concluding remarks

Most of the non-deictic spatial relationships are covered by prepositions and relational nouns in Caac; hence few non-deictic spatial adverbs are attested in Caac. A rich array of adverbs emerge from the combination of an adverbial stem and directionals. It is quite common to hear French spatial prepositional phrases in a sentence in Caac. The use of *droite/gauche* ‘right/left’ is not rare; the preposition *en face (de)* ‘opposite’ has also been attested. Example (273) is extracted from a description in which the speaker (in her early thirties) describes the route we took to arrive at their garden in the mountains. The speaker resorts to the French preposition *en face* ‘opposite’ (dropping the French preposition *de* which normally introduces the prepositional complement).

(273) *Pwa* *pût* *nya* *taa* *da* *le* *man-pepii* *re*
x after 1PL.INCL.S arrive upward DEF PLACE-separate in

le *waadan...* *pût* *me* *tele* **en face** ***howe***
DEF path after CMP ANAPH.SP opposite home

wa ***Agnes***

grandparent Agnès

‘Then, we arrived up at the crossroad on the path... then x at the place opposite the place of grandma Agnès’

Chapter 6: Directionals

Two sets of directionals play a major role in Caac spatial descriptions: absolute directionals (e.g. *de* ‘downward’) and deictic directionals (e.g. *=ve* ‘down towards Deictic Centre’). This chapter analyzes their morphosyntactic features, their meaning and uses. Absolute and deictic directionals operate in the absolute and geomorphic Frames of Reference, two spatial coordinate systems based on salient environmental bearings. These two strategies are defined in section 7.2.1 and described in great detail in sections 8.1.3 and 8.1.4. In many respects, Caac absolute directionals share many formal and semantic similarities with directionals in other New Caledonian languages. Nevertheless, the uses of directionals in location and motion descriptions have not been described in detail except in two Kanak languages, Nêlêmwa (Bril, 2004a) and Nengone⁹⁶ (Bearune, 2006; 2012). Certain usages, notably in orientation descriptions and in fictive motion descriptions (section 8.3), have never been examined in any Kanak language. Some deictic directionals in Caac co-express an absolute or geomorphic direction and the direction relative to the Deictic Centre. This system is not widespread in New Caledonian languages and in Oceanic languages in general and raises interesting issues related to the Frame of Reference typology (section 8.2.2).

6.1 Absolute directionals

A set of three absolute directionals is identified based on the vertical axis (up/down), the geography of the island and the wind directions: *da* ‘upwards’, *de* ‘downwards’ and *(z)in* ‘transverse’. Two free lexical forms based on winds are also used to express the wind-based directions: *bwe daan* ‘windward’ and *are daan* ‘leeward’. The forms, meanings and uses of these directionals are developed in this section. Note that the three directionals mentioned above can refer to absolute or geomorphic directions (sections 8.1.3 and 8.1.4); however, to be succinct, they are labelled ‘absolute directionals’ throughout the thesis.

As in other Kanak languages but in contrast to many Oceanic languages in which directionals are based on the lexemes ‘sea’ and ‘land’ (Bowden, 1992: 35-44; 57-58), in Caac the two directionals *da* ‘upward’ and *de* ‘downward’ do not originate from the lexical words for ‘mountain’ (*joor*) and ‘sea’ (*kumaac* ‘beach, low tide, sea’, *denec* ‘deep sea’ or *we* ‘water’). As in other northern New Caledonian languages, like Nêlêmwa and Nyelâyu (Bril, 2004a; Ozanne-Rivierre, 1998a: 51), the absolute

⁹⁶ For locative descriptions.

directionals *de* ‘downward’ and *da* ‘upward’ most likely originate from the directional verbs *te* ‘go down’ and *ta* ‘go up’. *Ta* ‘go up’ and *te* ‘go down’ make the same semantic distinctions along the vertical axis and on the horizontal plane as their corresponding two pairs *da* ‘upward’ and *de* ‘downward’. The forms coding up/down in Caac and in the neighbouring languages are related: *da/de* in Caac, *da/du* in Nêlêmwa (Bril, 2004a: 100), *-ta/-tic* in Jawe (Haudricourt & Ozanne-Rivierre, 1982: 254), *-da/-du* in Nyelâyu (Ozanne-Rivierre, 1998a: 51). As for the third directional (*z*)*in* ‘transverse’, no verbal cognate has been identified in Present-Day Caac. However, it is clear that (*z*)*in* is related to the forms encoding the transverse axis in other Northern New Caledonian languages: *-(h)en*, *-en*, *-(h)en*, *-(h)an* in Jawe, Nemi, Fwâi, Pije respectively (Haudricourt & Ozanne-Rivierre, 1982: 254), *han* in Bwato (Rivierre, Ehrhart & Diéla, 2006: 59), *van* in Nyelâyu (Ozanne-Rivierre, 1998a: 51), *ve* in Nêlêmwa (Bril, 2004a: 100). Based on the various usages of the directionals (described in detail below, in section 6.1.2), I use the same gloss throughout the examples, that is ‘upward’ for *da*, ‘downward’ for *de*, ‘transverse’ for (*z*)*in*, to indicate their basic meaning. Occasionally, a more specific gloss (e.g. *da* ‘inland’ instead of the overarching gloss ‘upward’) may be given at times in the analysis in order to facilitate the reading.

6.1.1 Distribution and combinations

6.1.1.1 Free forms and clitics

In Caac, absolute directionals are difficult to categorize because of their flexible syntactic behaviour and the variety of their combinations. This is particularly visible in the capacity of directionals to develop from free morphemes (the directional verbs *ta* ‘go up’ and *te* ‘go down’ in the case of Caac) and move along the grammaticalization cline towards cliticization and affixation. Indications of their grammaticalised status is their ability to integrate with the morphology of verbs, and including the ability to host verbal suffixes for instance (e.g. compound verb *tho=da-ni* ‘call upward’, verb *no=da* ‘look up’ see below). Ross (1998: 231, bold mine) observes the double status of directionals (verbs and grammaticalized morphemes) in Oceanic languages in general:

Directionals morphemes in verb phrases and in adjuncts are used in Oceanic languages to express geographic (vertical and valley-based) and deictic directions. In single-verb predicates and in serial verb constructions these morphemes are **verbs**. Elsewhere they are **morphemes grammaticised from verbs**. Grammaticisation had probably already occurred in some cases in POc [...].

As commonly occurs in Northern New Caledonian languages, Caac has two sets of forms, which are historically related (except for *(z)in* and *ap*) but not formally identical. Directionals refer to the direction of a motion, orientation or location event (to move/face/be *in such direction*).

Directional verbs	Directional morphemes
<i>te</i> 'go down'	<i>de</i> 'downward'
<i>ta</i> 'go up'	<i>da</i> 'upward'
<i>ap</i> 'go on the transverse axis'	<i>(z)in</i> 'transverse'

Table 31: Directionals

Unlike what is suggested by Ross's description, Caac absolute directional morphemes cannot be classified as verbs for the following reasons:

(i) they do not take the predicative function and do not form a single or (as Vb_1) complex predicate, and they cannot occur with the paradigm of subject pronouns: **No de/da/(z)in*. 'I'm upward/downward/along the coast.'

(ii) they follow locative verbs in BLCs, the latter are preceded by aspect markers following the usual word order [Aspect + Verb] (275, 276).

(274) **Came** *i* *da=me* *re* *Wegoa bwa*
 NEG be.at.3SG upward=CENTRIP in Ouegoa because

i *da=me* *Balaar.*
 be.at.3SG upward=CENTRIP Balade

'It (the coach) is not in Ouegoa (anymore) as it is (now) in Balade.' (the coach is still on its way to Pouebo, Balade being situated between Ouegoa and Pweevo)

(275) **U** *i* **de** *Pwai.*
 PERF be.at.3SG downward Pwai
 'She is already towards Pwai.' (**U de Pwai.*)

(276) **Ra** **u** **te** *re* *mââcâ.*
 3PL.S PERF go.down in shop
 'They went down to the shop.'

(iii) unlike their verbal equivalents which express separate motion events, directional morphemes *de*, *da*, *(z)in* cannot follow each other (**de da*; **da de*, **zin da* etc. but *te ta* 'go down, go up', *ta te* 'go up, go down', *ap ta* go, go up').

On the one hand, directionals behave like free forms and are transcribed as such. They tend to follow the predicative head (277); the latter can be a verb (277, 280, except for the directional verbs *te* 'go

phenomenon of apocope of the final consonant of the preceding word⁹⁸ in that position. Thus, the verb *ciec* ‘go back’ can undergo apocope in (281) whereas the nouns *âc* ‘man’ and *dep* ‘ash’ do not lose their final consonant when followed by the directionals *da* ‘upward’ and *de* ‘downward’ in (282-283).

(281) *U* *cie(c)* *da=me=mwa* *o* *Carine.*
 PERF go.back upwards=CENTRIP=back SBJ Carine
 ‘Carine is back.’ (in Pouebo, from France) (Flndt 3)

(282) *No* *âc* *da=me.*
 1SG.S man upward=CENTRIP
 ‘I’m a man from Belep (who came windward here).

(283) *Kule* [*na* *dep*]_{obj} *de=u(c)* *tena.*
 pour DIST ash downward=CENTRIF DIST
 ‘Pour the ashes down away there.’

On the other hand, directionals also take part in the formation of adverbs, determiners, pronouns and verbs. Directionals attach to other morphemes marking number or gender in determiners and pronouns (e.g. *ni=(i)zin* ‘the (one) on the transverse axis’, SG=transverse). They form spatial adverbs with the adverbial stems *ja* ‘PROX’, *yoo* ‘side’ (**yoo*) and *ave* ‘side’ (**ave*), e.g. *ja=da* ‘upward’⁹⁹ (PROX=up); *ave=da* ‘on the upward side’ (side=up). =*de* ‘downward’ and =*da* ‘upward’ are found as part of the verbal stems *no=da* ‘look up’ and *no=de* ‘look down’ (**no* ‘view’). Another instance of this morphological integration is illustrated by the verb *tho=da-ni* ‘call sth upward’ (284) in which the upward directional forms a compound with the verb *tho*; the resulting form can be followed by a verbal suffix (intransitive verb *tho* ‘call’, **tho-ni* ‘call sth’ and **tho=de-ni* ‘call sby downward’). In these contexts, directionals are described as clitics =*de* ‘downward’ and =*da* ‘upward’ and =(z)*in* ‘transverse’. When forming a determiner, pronoun and a few adverbs,¹⁰⁰ the absolute directional clitics can be preceded by [i], e.g. *te=ide* ‘the two (ones) downward’.

(284) *No* *tho=da-ni* *le* *numero* *le-zo.*
 1SG.S call=upward-TR DEF number IND-2SG.O
 ‘I call your number’ (GramQuest)

⁹⁸ In other verbal and nominal forms, a sandhi is triggered e.g. *merip* ‘life’ when such lexeme is followed by a bound form, here *-n* ‘3SG.POSS’ > *meri-n* ‘his/her/its life’).

⁹⁹ See sections 6.1.1.2 and 5.3.3.2 for the lack of translation of the deictic element in *ja=da* ‘upward’ (PROX=upward).

¹⁰⁰ See sections 2.2.2.4 and 5.3.2.1.

6.1.1.2 Directional adverbs

As will be explained in 7.3.3.3.2, although the directional adverbs are based on the proximal adverb *ja*, the use of *ja=da* ‘upward’, *ja=de* ‘downward’ and *ja=in* ‘transversally’ does not involve an interpretation in terms of proximity/remoteness and the deictic adverb seems to function as the adverb stem hosting the absolute directionals in order to form directional adverbs. Hence their translations are based on the directional only (e.g. *ja=da* ‘upward’). In (285), the speaker refers to the place close by the church is (*Micio* ‘Mission’) with the deictic adverb *ja* ‘PROX’, while two places further down the road and south of the church are located with directional adverbs. *Kavarik* is located along the coast (*ja=in* ‘transversally’) while *mwa Uvaac*, a place which is also found along the coast and in the same direction (southern to the speech-act participants’ location), is located by the speaker as windward (*ja=ira* ‘upward’).¹⁰¹

(285)	[<i>ta=le ja</i>	<i>le</i>	<i>Micio</i>] _{NP,...}	[<i>ta=le ja=in</i>	<i>Kavarik</i>] _{NP,...}
	PL=DEF PROX	DEF	Mission	PL=DEF PROX=transverse	Kavarik
	[<i>ta=le</i>	<i>ja=ira</i>	<i>mwa Uvaac</i>] _{NP,...}	<i>ave</i>	[<i>ta=na...</i>
	PL=DEF	PROX=upward	house Ubaac	that.is	PL=DIST
	<i>gewa</i>] _{NPi}	<i>yaga=mwa</i>	[<i>ta=le meneen...</i>	<i>ma</i>	<i>x</i>
	place 3SG.S	look.for=completely	PL=DEF all	and	<i>x</i>
					<i>le...</i>
	<i>ta=le man-mo</i>	[<i>ta=le dalaen ja</i>	<i>habur</i>] _{NP}] _{NP} .		
	PL=DEF PLACE-live	PL=DEF white	PROX before		
	‘Those (buildings) here at the Mission,... those along the coast at Kavarik,... those windward at the house of Ubaac,... that is those... places which are all... the dwellings of the white people here before.’ (Pweevo_DI)				

Two variants of the directional adverbs *ja=da* ‘upward’ and three variants of *ja=de* ‘downward’ can be used: *ja=da~ja=ira~ja=ara* and *ja=de~ja=maade* and less frequently *nyamade~maade*. Except for the form *maade*, no difference in meaning or use has been identified between these variants. They can be used in both dynamic and static contexts, to refer to visible or specific entities or not, distant or close-by entities. *Maade* occurs following the defective form of the verb *e* ‘be at’ only: *I maade* ‘She/he/it is downward’, and is allowed neither with the rest of the paradigm nor with subject pronouns: **E-nya maade* ‘we are downwards’ (be.at-1PL.EXCL.O downwards), **Nya maade* ‘We are downwards’ (1PL.EXCL.S downwards). *I maade* is found in static contexts only to refer to the location of an entity.

¹⁰¹ See section 6.1.2.2 for more details about the use of directionals.

6.1.1.3 Directional determiners and pronouns

The directional clitics can be combined with various morphemes marking gender, number and alternate with bound morphemes expressing spatial deixis (proximity and distance) to create two paradigms of directional determiners.

- (286) *E-ra* [re [te=*ira* *mwa*]_{NP}]_{NP}.
 be.at-3PL.O in DU=upward house
 'They are in the two upward houses.'

The first paradigm of determiners/pronouns is structured in the following way:

Number	Absolute directions / Spatial deixis
<i>ni</i> 'SG'	= <i>ida</i> ~(<i>i</i>) <i>ra</i> 'upward'
<i>te</i> 'DU'	= <i>ide</i> 'downward'
<i>tâ</i> 'PL'	= <i>izin</i> 'transverse'
	=(<i>i</i>) <i>en</i> 'PROX'
	=(<i>i</i>) <i>na</i> 'DIST' and 'ANAPH'

Table 32: Directional determiners/pronouns without gender markers

- (287) a. Sp1: *Kêêk me no phe he-ru keer?*
 can CMP 1SG.S take CLASS1-two basket
 'Can I take two baskets?'
- b. Sp2: *Te=iza?*
 DU=INDEF
 'Which (two) ones?'
- c. Sp1: *Te=ide.*
 DU=downward
 'Those two downward.'

The forms *tâ=ira* 'the (ones) upward' and *tâ=ide* 'the (ones) downward' allow speakers to answer a *where*-question without being specific about the location of the Figure and remain deliberately vague.¹⁰² In (288), the speaker alludes to the seawards direction, mentioning that the Figure went somewhere down towards the sea. They occur in nominal phrases starting with the relational noun *re* 'in(side); at; to', usually without any noun following them. Only the forms based on the plural morpheme (*tâ*= 'PL') have been found in this context.

¹⁰² Speakers believe that it is better to avoid saying where the people went when they are fishing or hunting as it brings them bad luck.

- (288) *Ra te=wa re t̂a=ide (denec).*
 3PL.S go.down=far in PL=downward (ocean)
 ‘They go down somewhere far downward (in the ocean).’

The second paradigm of determiners/pronouns is structured in the following way:

Gender	Number	Absolute Directions / Spatial deixis
<i>â</i> = ‘M’ <i>o</i> = ‘F’ ¹⁰³	=∅= ‘SG’ = <i>re</i> = ‘DU’ = <i>ra</i> = ‘PL’	= <i>ida</i> ‘upward’ = <i>ide</i> ‘downward’ = <i>izin</i> ‘transverse’ = <i>en</i> ‘PROX’ (except with ‘SG’ forms) = <i>na</i> ‘DIST’

Table 33: Paradigm of directional determiners/pronouns with gender markers

Note that the morphemes marking gender (*o*= ‘NEUT’ and *â*= ‘M’) cannot co-occur with the proximal morpheme =*en* ‘PROX’ without a number marker. Two forms have been found encoding gender and proximity *â*=∅=*ja* ‘this_{MASC} one’, *o*=∅=*ja* ‘this_{NEUT} one’ based on the clitics *o*= ‘NEUT’ or *â*= ‘MASC’ and the proximal adverb *ja*. They function as pronouns only.

6.1.2 Semantics

6.1.2.1 Use on the vertical axis

On the vertical plane, the use of the absolute directionals is based on gravity: =*da* and =*de* means ‘upward’ and ‘downward’ respectively. They are found in dynamic settings referring to a motion event (289, 290). In static settings, they can provide information on the location of the Figure or its orientation (291) on the vertical axis. No distinction in terms of scale of reference is made on the vertical axis. Thus, the notions of small-scale, large-scale and global scale (see below in section 6.1.2.2) do not apply on the vertical plane.

- (289) *Phe na taac ja=de re alen.*
 take DIST bag PROX=downward in ground
 ‘Put that bag down on the floor.’

- (290) *I yua da bwe na puur e mâg.*
 3SG.S climb upward top.side DIST origin IND mango
 ‘He climbed up that mango tree.’

¹⁰³ ‘M’ stands for ‘masculine’ and ‘F’ for ‘feminine’ (see 3.2.4 for more details).

- (291) *No* *ta-alô* ***de*** *o* *le* *cawak*.
 1SG.S sitting-look downward at/to DEF dog
 ‘I’m sitting looking downward towards the dog.’ (Figure up in a coconut tree, a dog is on the Ground under the coconut tree).

No use of *(z)in* on the vertical level has been identified up to now, although the use of *(z)in* on the horizontal plane and in relation to the local topography (section 6.1.2.2.3), i.e. locating the Figure ‘on the same level’ as the Ground, is closely related to the idea of gravity. In (289), *ja=de* ‘downward’ is used to refer to the downward movement to place a bag on the floor. In (290), *da* ‘upward’ refers to the movement towards the top of the tree.

6.1.2.2 Uses on the horizontal plane

As in other Oceanic languages, the spatial reference of absolute directionals used on the horizontal plane is based on some particular landmarks in the environment of the speaker (e.g. winds, sea vs land, river) and on the scale of reference. Three scales are identified: a small-scale (from table-top to the village), a large scale (beyond the village; intra-island), and a global scale (home, i.e. Mainland New Caledonia vs abroad). The directional *(z)in* ‘transverse’ is mainly used in the small and large scales while *da* ‘upward’ and *de* ‘downward’ are used in any scale.

6.1.2.2.1 Meteorological bearings: trade winds

One main use of *da* ‘upward’ and *de* ‘downward’ is based on the dominant wind (Figure 4).

Traditionally, one would travel by boat to cover short and long distances, above all along the coast as there was no coastal road as there is nowadays, but only paths. If the sailor follows the coast down towards the southern tip of the mainland, he is facing the prevalent wind blowing from the south-east (Ozanne-Rivierre, 1997: 87-88). In these circumstances, he goes in the south-east direction, that is against the trade wind, hence the use of *da* ‘upwards’. By contrast, in the same context, sailing back to Pouebo (in the northwest direction) implies moving leeward, hence the use of *=de* ‘downwards’. Thus, *da* ‘upward’ and *de* ‘downward’ are based on salient meteorological bearings i.e. the trade winds in this setting.

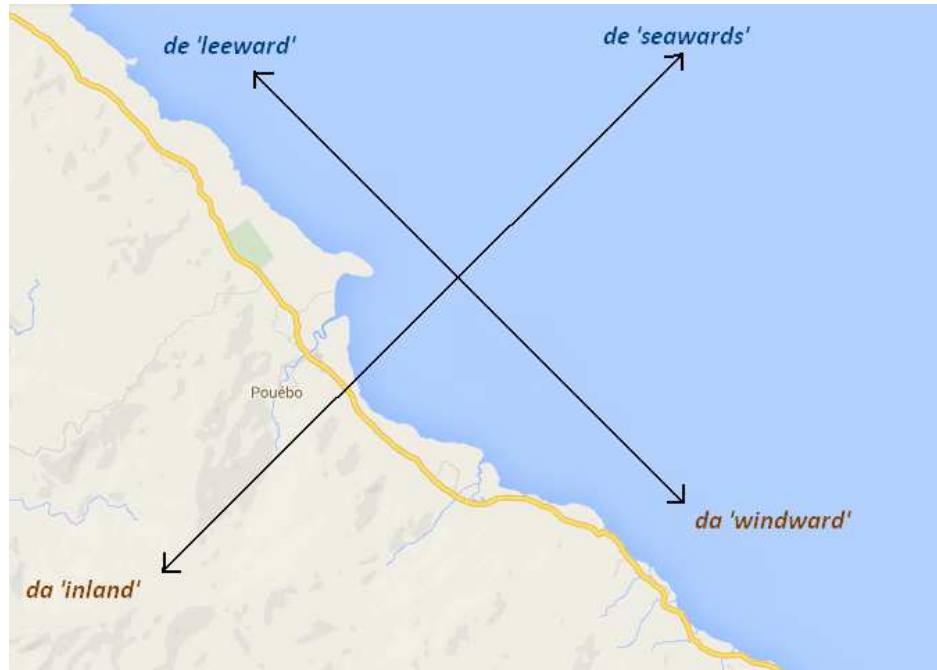


Figure 4: *da* 'upward' vs *de* 'downward' (modified from Google Maps¹⁰⁴)

This corresponds to the dominant spatial strategy in the languages of this region whereby a southeast-northwest axis based on the trade winds is encoded by the spatial terms 'upward' / 'downward' referring to the vertical axis (Ozanne-Rivierre, 1997: 86, 88; Francois, 2004).

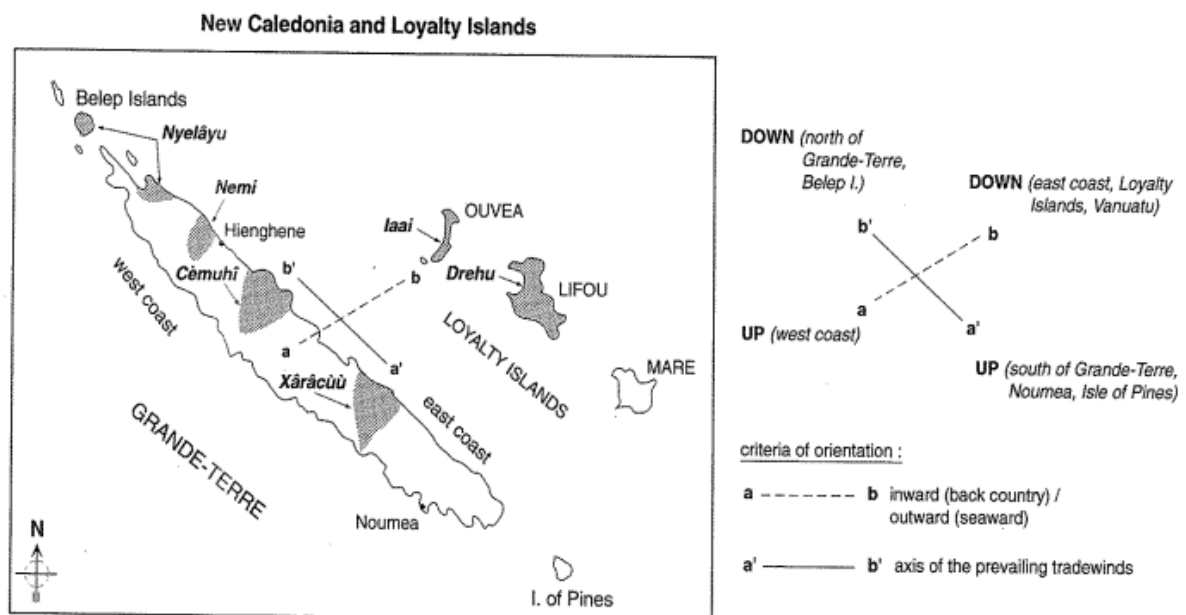


Figure 5: Wind-based used of directionals in Central and Northern New Caledonian languages (speaker located on the eastern coast; map copied from Ozanne-Rivierre; 1997: 88)

¹⁰⁴ Google Maps, last accessed 05/01/2015.

Generally speaking, present-day speakers cannot account for the use of *da/de* 'windward/leeward' as they do not identify the bearings underlying its use with the trade winds. In contrast, the logic of the sea-land axis behind the island-internal usage of the absolute directionals (section 6.1.2.2.2) is clearly identifiable by speakers. It is likely that with the reduction of seafaring to fishing and the use of boats with motors, the winds are not such a salient element in the speakers' life anymore. The absolute directionals in their 'windward/leeward' reading are mainly used in the large-scale setting. On the scale of the whole island, as a rule the use of the directional verbs and clitics to locate an entity on the eastern coast – where the speakers live – is consistent. When one goes north (on the east coast or inland) to Pouebo, one goes leeward (*te/de*), while for every entity located south to Pouebo, one goes windward (*ta/da*).

However, some examples in the data illustrate contradictory uses of the directional verbs and clitics in the large-scale setting (island-range). Some speakers in Pouebo say *te Numia* 'go down to Noumea' to refer to their travelling to the main city and *ta Belep* 'go up to Belep'. As a rule, most Caac speakers can speak French very well and went to school where almost every subject, including geography, is taught in French. It is most likely that the majority of speakers now conceptualise the location of Pouebo in relation to Belep for instance, in the same way as native French speakers do, i.e. through the visual representation of the north-south oriented map. The influence of French and the non-indigenous representation of the island on a map may have induced Caac speakers to reverse the use of *ta* 'go up' and *te* 'go down' by a direct mapping of the uses of the French verbs *monter* 'go up' with the northern direction (e.g. Belep) and *descendre* 'go down' with the southern direction onto the Caac absolute directionals. This may also be related to the age of the speakers: it is likely that old speakers, whose experience at school (which used to be run by missionaries) is very different from that of the younger generations,¹⁰⁵ retain the usage of directionals based on the direction of the trade wind. We will see an analogous phenomenon, again probably due to the influence of the dominant language of the country, when describing the use of the terms for left and right in Caac (section 8.1.2). Another factor is that many towns (including the main city Noumea) have emerged from the recent colonial history of the country, and even more recent are the trips by Kanak people to such places. Formerly, the need to express the location of these places might therefore not have been relevant in Caac. Expressing the locations of or routes to these towns is probably a recent innovation for the speakers.

There is a greater diversity in the use of *da/de* to locate an entity situated on the western coast (Figure 6). In general, places on the western coast northern of Kone (mid-way between northern and

¹⁰⁵ This is based on life stories I collected with speakers in their 50s and speakers in their 80s.

southern tips of the island) are considered to be leeward (*de*) from Pouebo. Towns situated south of Kone are considered as windward (*da*) from Pouebo. Several towns in the north or in the middle of the western coast are expressed by the transverse directional *ja=in* (PROX=transverse) i.e. Koumak, Voh, Kaala-Gomen, Kone, Bonde and the more southern town of Poya. Likewise, the trip from Pouebo to these towns is encoded by the corresponding motion verb *ap* 'to go'. The use of the directional *=in* 'transverse' and verb *ap* 'to go' here may be based on the topographical use of *(z)in* as 'crosswise, on the other side; transverse' as indeed these cities can be reached by roads crossing the mountain range (section 6.1.2.2.3). In general, a possible explanation for the diversity in expressing the location of an entity on the western coast may be as follows. Traditionally, in the (probably rare) cases one had to travel that far, the journey, by whatever means taken (by foot or by boat), would probably be broken down into intermediate destinations following the progress of the trip but also following the traditional customary path (which used to highly codify people's interactions and travel) and would not be described as a whole.

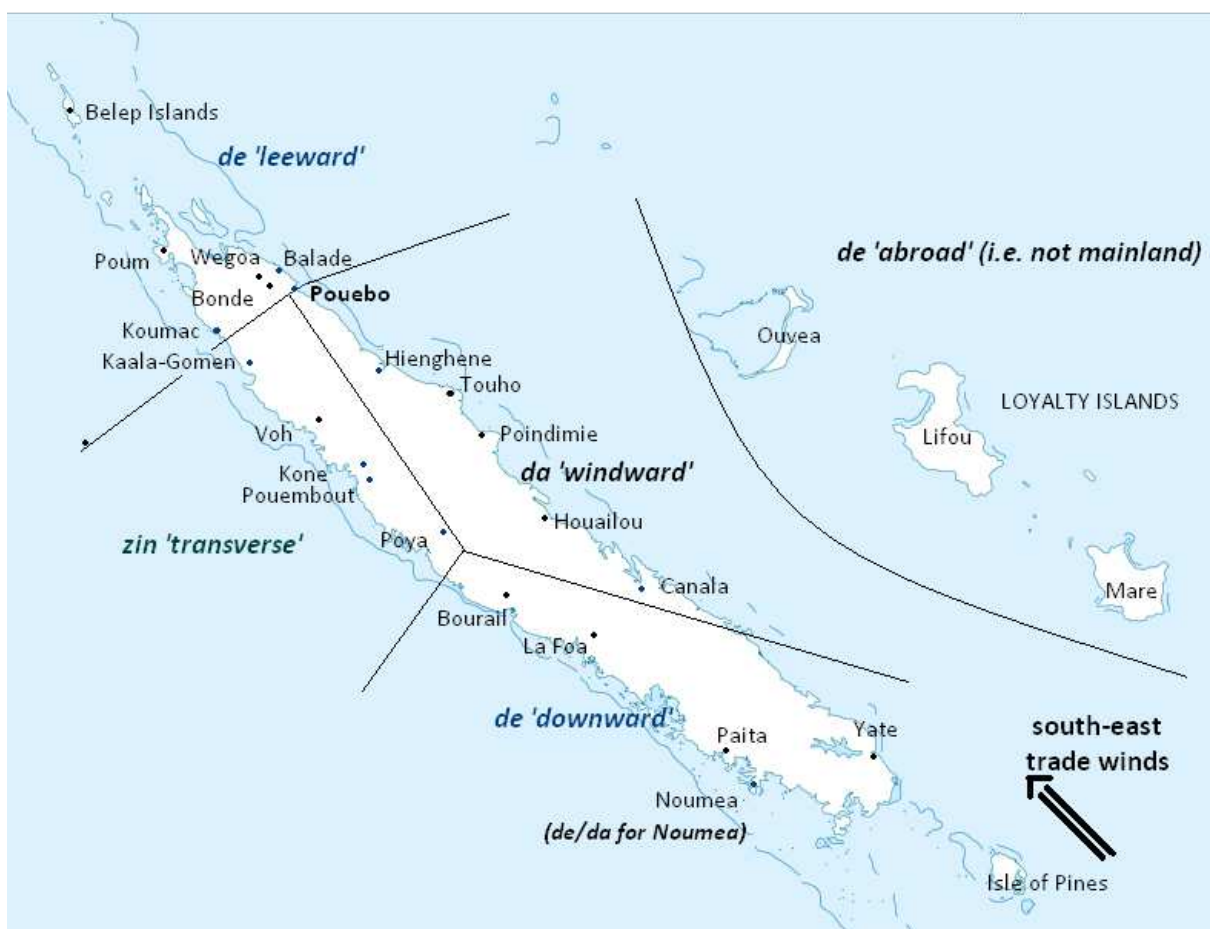


Figure 6: Use of the directionals on the large scale, speaker in Pouebo

The direction of the trade winds¹⁰⁶ is also lexicalized in the nominal phrases *bwe daan* ‘windward’ (292) and *are daan* ‘leeward’ (section 5.2.1). They refer to the same directions as the directionals in their wind-based uses, *da* ‘windward’ and *de* ‘leeward’ (Figure 7).

(292) *zo* *ca* *no=ap* *o* ***bwe daan*** *le*
 2SG.S really view=CENTRIF at/to **windward** DEF

maison commune *Pwerabi*.
 house common Pwerabi
 ‘you will see the community house of Pwerabi windward away from me.’
 (CommHousePwerabi_JP)

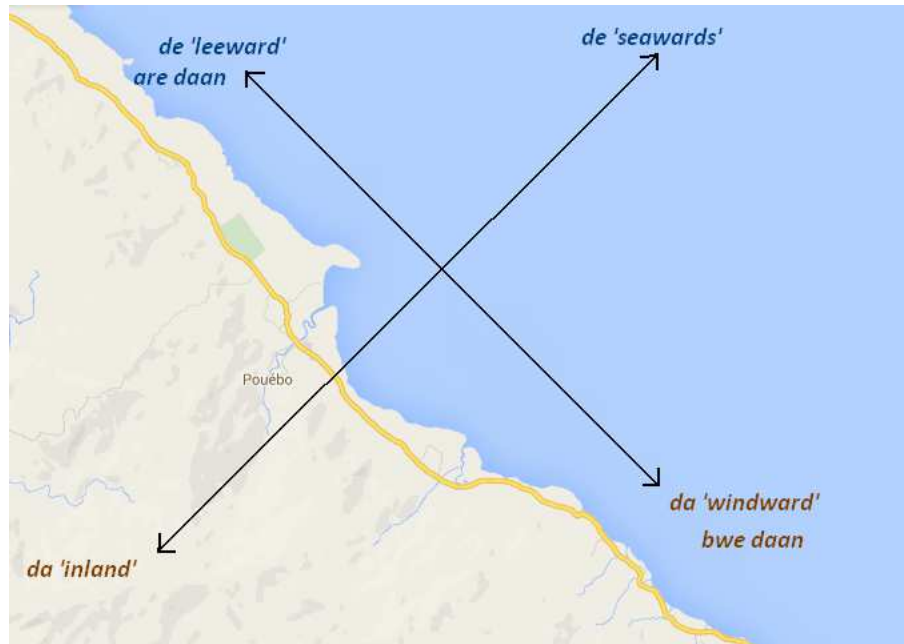


Figure 7: *bwe daan* ‘windward’ and *are daan* ‘leeward’ (modified from Google Maps¹⁰⁷)

The terms can be literally translated as *bwe* ‘surface, upper part; on’ + *daan* ‘wind’, and *are* ‘surface’ + *daan* ‘wind’. *Bwe* originally means ‘surface; upper part’ and also codes topological relationships, its usage partly corresponding to the uses of the preposition ‘on’ in English. *Are* also denotes a surface¹⁰⁸ and is found in body part terms such as *are hi-n* ‘palm of the hand’ (surface hand-3SG.POSS).

¹⁰⁶ And not the sea surface currents which run in the opposite direction to the trade winds.

¹⁰⁷ Google Maps, last accessed 05/01/2015.

¹⁰⁸ And possibly the lower part/surface.

zo ap [bwe are daan]_{PP}]_{VP}.

2SG.S go on leeward

'you go seawards away from here... (you) arrive where the seaward... house for pupils, the schoolbus shelter (is)... (you) arrive seawards at the start of the path then you go leeward.' (IpaReCaac_JP)

The forms *bwe daan* 'windward' and *are daan* 'leeward' are easily recognized by the speakers but occur quite infrequently in my data. I speculate that the terms *bwe daan* 'windward' and *are daan* 'leeward' may be used more frequently at sea because of their capacity to disambiguate the absolute directionals. Information on the wind is crucial (at least in a sailing tradition) in a landscape where there are few landmarks (reefs, islets, shore) to guide the hearer. I suspect that situating objects on a small-scale such as in (293) may be quite exceptional and perhaps artificially created by the speaker's awareness of my interest in space: (s)he may have been, consciously or not, tempted to give me the full range of possible spatial expressions instead of selecting the most intuitively natural expression that came to his/her mind. Other speakers approved sentence (293) although they chose other linguistic means to achieve the aims of this game (generally phrases for 'in front of', 'behind' and sometimes, directional clitics). Thus, example (293) is possible and understandable by speakers. But the actual usage of *are daan* and *bwe daan* is probably more restricted than *da/de* 'upward/downward' (with which they can collocate (293)).

Four wind names have been identified: *pareman*¹⁰⁹ 'south-eastern wind or trade wind', *dae* 'western wind from the mountains', *yaec* 'west-northern wind' and *de bazoor* 'eastern wind from the sea'.¹¹⁰ Among these names of winds, only *pareman* 'trade wind' seems to be occasionally used for spatial reference, generally to specify the location of an item on a large-scale setting (295). In contrast with Caac, the spatial system in Nêlêmwa is based on the names for winds, and not the lexification of the upwind/downwind directions¹¹¹ (in addition to the directionals 'upward' and 'downward').

(295) *Pweevo, i pareman na Balaar.*
 Pouebo 3SG.S **trade.wind** from Balade
 'Pouebo, it is *pareman* to (south-eastern of) Balade.' (Fldnt 2)

¹⁰⁹ It can also refer to Ouvea in the Loyalty Islands.

¹¹⁰ Lit. *de* 'downward' + *bazoor* 'upright'?

¹¹¹ As found in Caac with *bwe daan* 'upwind' (lit. upper part/on wind) and *are daan* 'downwind' (lit. surface wind).

6.1.2.2.2 Geographical bearings: sea and land

Pouebo is located on the north-eastern coast between the mountain range in the west and the lagoon in the east. In this context, *da* ‘upward’ and *de* ‘downward’ refer to the inland vs seaward directions respectively. Their association with ‘landwards/inland’ and ‘seawards’ is visibly motivated by the geography of the place: the rise of mountain range vs the lower level of the sea are the most salient landmarks in the environment. The third absolute directional (*z*)*in* encodes the direction perpendicular to the sea-land axis expressed by *de* ‘seaward’ / *da* ‘inland’. This transverse axis has no differentiated ends and refers to the direction ‘along the coast / parallel to the coast’.

In (296) and (297), the speaker and addressee are in the garden, a patch of land from which one can clearly see the sea on one side and the mountains on the other side. The addressee is looking for a tap; the speaker is guiding him. The direction encoded by the motion verb *ta* ‘go up’ refers to the inland direction (296) while the verb *te* ‘go down’ in (297) refers to the seaward direction.

(296) *Pwen* ***ta=ec.***
a.little.bit go.up=CENTRIF
‘Move a bit away inland.’ (speaker being seaward with respect to the addressee and the tap)

(297) *Pwen* ***te=uc.***
a.little.bit go.down=CENTRIF
‘Move a bit away seawards.’ (speaker being landward with respect to the addressee and the tap)

In (298), the speaker explains that once arrived on the coastal road which runs parallel to the coast (south-north axis), the addressee should not go towards the church (situated southern, along the coast). The transversal axis is the landmark chosen by the speaker to locate the church.

(298) *Jo* *camwan* *ne* *zo* *ap* *camwa* ***ja=in***
then PROH IRR 2SG.S go be/turn.toward PROX=transverse

re *Mission*
in mission
‘Then don’t go (and) turn in the direction *jain* (along the coast) to the church place/Mission.’ (PaaraRoute_AN)

In (299), the speaker explains the addressee how to go to the community house of *Re pwec*. The addressee needs to go downhill until he finds the coastal road. He then go along the coast (in the

transverse direction) and cross the river Waazuk (geomorphic use of =zin ‘transverse’; section 5.3.2 and 8.1.4).

(299)	<i>Le</i>	<u><i>maison commune</i></u>	<i>Re Pwec...</i>	<i>zo</i>	<i>te-</i>	<i>zo</i>	<i>ap</i>	
	DEF	house common	Re Pwec	2SG.S	go.down	2SG.S	go	
	<i>na</i>	<i>ja...</i>	<i>zo</i>	<i>te</i>	<i>taamwi pezeng hâc...</i>	<i>jo</i>	<i>zo</i>	<i>ap</i>
	DIST	PROX	2SG.S	go.down	catch road	be.big then	2SG.S	go
	<i>taa</i>	<i>ja=in</i>	<i>o</i>	<i>ni=izin...</i>	<i>wan</i>	<i>we</i>	<i>hâc..</i>	
	arrive	PROX=transverse	at/to	SG=transverse	opening	water	big	
	<i>le</i>	<i>wan</i>	<i>we</i>	<i>Waazuk.</i>				
	DEF	opening	water	Waazuk				

‘The community house of Re Pwec... you go down- you go from here, you go downhill take the big road (coastal road), then you arrive along the coast to the big waterway along the coast, the waterway (river) Waazuk.’ (IpaRePwec_JP)

Although the three directionals seem complementary, the geometrical description in terms of axis should not mislead us into thinking that they share the same properties. For example, one difference lies in the fact that the seaward direction is theoretically unbounded (*de* ‘towards/further into the ocean’) while the inland direction is limited by the mountain range which traverses the whole island on its longitudinal axis i.e. from north to south (Figure 8 below; see also section 8.1.3). Once the mountain top has been reached moving in the upward direction, one goes down towards the sea again as one reaches the western coast (Bril, 2004a: 115; see also Francois, 2004: 4). The use of the directional (*z*)*in* ‘transverse’ is restricted in a more subtle way, which is not dependent on visible geographical landmarks (unlike *da* and the mountain range and *de* and the sea). The axis encoded by (*z*)*in* ‘transverse’ seems at first sight boundless. But on the axis parallel to the coast, its actual use shows that it is restricted to small-scale settings. Thus, locating a town such as Hienghene or Balade which could be perceived as located ‘along the coast’ (they are situated on the same coast, south and north of Pouebo respectively) is outside the range of the directional (*z*)*in*. Another landmark is then conjured up, namely the trade winds for locating places outside the village, at a certain distance from Pouebo. Any place on the eastern coast outside Pouebo is generally located with the directionals *da/de* based on the winds’ system (section 6.1.2.2.1). The geographical use of directionals *da* ‘inland’/*de* ‘seawards’/(*z*)*in* ‘along the coast’ might be strengthened and complemented by other parameters such as social/customary parameters (does one go (*z*)*in* ‘along the coast’ as long as one has some socially strong family or clan links in that direction?).

6.1.2.2.3 Local topographical bearings

6.1.2.2.3.1 *da* 'upward' (i.e. 'uphill', 'upriver') vs *de* 'downward' (i.e. 'downhill', 'downriver')

The morphemes *da* 'upward' and *de* 'downward' can also refer to directions based on the local topography of a place such as the river course or the elevation of the terrain (e.g. a hill). In this context, *da* 'upward' can encode the upstream direction (300) or the uphill direction (301) while *de* 'downward' can refer to the downstream direction or the downhill direction (301).

(300) *Jo* *zo* *huri* ***da*** *le* *wan* *we*.
then 2SG.S follow upwards DEF opening water
'Then you follow the waterway upstream.' (CommHouseRePwec_JP)

In (301), the Figure is moving up a mountain (*ta* 'go up'), crosses the ridge (*u* 'cross') and goes down (*de* 'downward') the other side of the mountain. The use of *ta* 'go up' and *de* 'downward' are both motivated by the inclination of the land, i.e. the uphill and downhill directions.

(301) *Ra* ***ta*** *u* ***de*** *o* *paze*.
3PL.S go.up cross downward at/to ridge
'They go up, cross (and) down the ridge.' (SpaceQuest_DI)

Example (302) illustrates again a topographical use of *da*. The Source of the motion event is the beach Kareon. The Figure goes to the seaward end of a reef situated in the lagoon which becomes visible when the tide is low. In this context, although the speaker goes seawards (from the seaside to some place in the lagoon) and the use of *de* could be therefore expected, he resorts to the directional verb *ta* 'go up', either based on the relief (shallow waters, higher level of the seabed) or the internal structure of the reef (the 'head' of the reef).

(302) *No* ***ta*** *bwa-n* *Tiija*.
1SG.S go.up head-DET Tiija
'I go up to the head of (the) Tiija (reef).'

6.1.2.2.3.2 (*z*)in 'transverse; crosswise; on flat terrain'

On the topographical level, (*z*)in either refers to a horizontal direction 'on flat terrain, horizontally, on the same level' or to a crosswise direction 'crosswise, on the other side', depending on the topographical bearings it implicitly rests on. In both cases, (*z*)in is widely used with topographical bearings.

Example (303) illustrates the use of (*z*)in to refer to any direction on a flat zone (neither uphill/inland nor downhill/seawards). In (303), A, B and C are watching over children playing outside the school

buildings, on a flat area from which the mountains and the lagoon are clearly visible. Speaker 1 was in the school and walks down a path going seawards towards the coastal road along the playground when she sees B and stops to ask where she can find C. C is quite close to Speaker 1 (and B) but the latter has not seen C amongst all the children. B says:

(303) *Alô* *le-i* *na* *ja=in.*
 look IND-3SG.O PRE.LOC PROX=transverse
 ‘Look at her here!’

In (303), B resorts to the directional *ja=in*. However, B does not locate C in the transverse direction, as being along the coast. In terms of absolute directions, C would be described as inland (*da* ‘upward’). The use of *=in* in (303) is actually based on the fact that the terrain on which the speakers are located is flat. Example (303) is one example amongst many showing that the direction coded by *(z)in* is not necessarily ‘along the coast’ but could be any direction as long as the terrain in the vicinity of the speech-act participants is flat. When possible, the topographical landmarks (uphill/upstream, downhill/downstream, on flat terrain) are favoured for spatial reference in a small-scale setting. The use of *(z)in* as ‘on flat terrain, horizontally, on the same level’ is also reflected in its geographical usage: *(z)in* ‘along the coast’, i.e. ‘neither up nor down / neither inland nor seaward’. The directional verb *ap* occurs in the same contexts as the directional *(z)in* (304).

The directional *(z)in* can also refer to the idea of moving towards the other side of a reference object (‘crosswise’). In (304), the speaker refers to the path he had to follow to reach his destination, Bwaep. The main obstacle between the speech-act participants’ location and Bwaep is a hill the speaker has to go over.

(304) *No* *ap* ***ave=da=(i)zin*** *o* *Bwaep.*
 1SG.S go side=upward=transverse at/to Bwaep
 ‘I go on the other side, to Bwaep.’

As explained in section 6.1.2.2.1, occasionally *(z)in* is used in a wider scale (island-scale) in order to locate a few towns situated on the western coast approximatively on the same level to Pouebo, that is not distinctively south or north of Pouebo, but on the other side of the mountain range¹¹² (e.g. Koumac, Kaala-Gomen, Voh, Kone; Figure 6). Thus in (305), Voh is considered as being *ja=in* ‘transverse’ to Pouebo although Voh is not on the same coast as Pouebo. Here *=in* does not refer to some place ‘along the coast’ (roughly equivalent to the northwest-southeast directions) but to some

¹¹² Reminder: Pouebo is on the eastern coast.

lapin *i* *carua=me* *na* *heut.*
 rabbit 3SG.S run=CENTRIP from far
 'He looks out of the window at the rabbit which comes from far and is running
 towards him.' (Dube_DN)

In (308), the addressee is inside a house (consisting of a roof, posts but no walls) with the recording material on one end of a long table. The speaker is outside, walking towards the house where the addressee is. It is raining heavily and the speaker recommends that the addressee moves her material a bit further inside the house as it starts raining on the end of the table where the material has been placed.

(308) *Ta* *ave=da=e(c).*
 go.up side=upward=CENTRIF
 'Go inside, further inside.' (lit. 'Go up on the upward side away from me.')

Depending on the configuration of the reference object and its functional characteristics, one activates different landmarks of relevance for the use of =*de* 'downward' and =*da* 'upward'. Thus, in (309) and (310), the reference object or Ground is a container whose bigger part or surface is in contact with the ground and whose opening is on top. The use of *de* 'downward' relies on our interpretation of the directional on the vertical axis 'he puts it in downward (i.e. through the upward side of) the cup/bag/suitcase/freezer'. In (311), the fridge and wardrobe are rectangular objects whose facet in contact with the floor corresponds to the narrow side of the object and whose opening (the door) is placed on one side, typically the one facing the speaker. In (311), the speaker resorts to the directional *da* when describing someone putting something in the fridge or cupboard (wherever it is in the fridge/wardrobe). The collocation of *da* 'upward' and *re frigo/armoire* 'in the fridge/ wardrobe' can be explained by the use of *da/de* based on the inside/outside opposition.

(309) *I* *na* *de* *le* *taac/ cak/ valise.*
 3SG.S put downward DEF cup/bag/suitcase
 'He put (it) inside (lit. downward) the cup/bag/suitcase.' (vertical axis)

(310) *I* *na* *de* *re* *congelateur.*
 3SG.S put downward in freezer
 'He put (it) inside (lit. downward) the freezer.' (vertical axis)

(311) *I* *na* *da* *re* *frigo/ armoire.*
 3SG.S put upward in fridge/wardrobe
 'He put (it) inside (lit. upward) the fridge/wardrobe.' (inside/outside opposition)

6.1.2.2.5 home/abroad

Da ‘upward’ and *de* ‘downward’ are also used on a global scale. In this context, the morpheme *de* ‘downward’ and the directional verb *te* ‘go down’ express the idea of going abroad irrespective of the destination – whether one goes to France (312), Australia or the Vanuatu Islands. Likewise, *da* ‘upward’ and *ta* ‘go up’ refer to the action of coming back to the island and/or to Pouebo (313). One can find a similar use of directionals in Nêlêmwa as well (Bril, 2002: 297). This use probably originates from the extension of the enter/exit uses of *da/de* ‘inside/outside’ to a large-scale setting, i.e. to the distinction between being home (on the island) or abroad.

(312) *Aa-ny* *me* *no* *na* ***de=wa*** *kape*
 desire-1SG.POSS CMP 1SG.S give downwards=back coffee

Parâce.

France

‘I would like to take some coffee back to France.’ (F1dn5)

(313) *U* *cie(c)* ***da=me=mwa*** *o* *Carine.*
 PERF go.back upwards=CENTRIP=back S Carine
 ‘Carine is back.’ (in Pouebo, from France) (F1dn3)

The directional (*z*)*in* ‘transverse’ is not relevant in this setting (home/in the country vs abroad). Table 34 summarizes the uses of the directional suffixes *da*, *de* and (*z*)*in*.

6.1.3 Summary

Table 34 gives an overview of the different usage of the directionals *da* ‘upward’, *de* ‘downward’, and (*z*)*in* ‘transverse’ on the vertical and horizontal plane. Their uses on the horizontal axis are all variations on the up/down opposition of *da* and *de* on the vertical plane. Although (*z*)*in* is not used to locate an entity on the vertical axis, it is used in complementary distribution to *de/da* ‘downward/upward’, as ‘neither up nor down’ which means in terms of topographical and geographical use ‘on the same level; crosswise’ and ‘along the coast’, respectively.

	ORIENTED AXIS		UNORIENTED AXIS
DIRECTIONAL CLITICS AND VERBS 'general gloss'	<i>de</i> 'downward' <i>te</i> 'go down'	<i>da</i> 'upward' <i>ta</i> 'go up'	<i>(z)in</i> 'transverse' <i>ap</i> 'go'
VERTICAL PLANE			
GRAVITY	down	up	n/a
HORIZONTAL PLANE			
TRADE WIND	leeward (NW)	windward (SE)	n/a
GEOGRAPHY	seaward (E)	landwards/inland (W)	along the coast (NW-SE)
TOPOGRAPHY	(i) downhill (ii) downstream	(i) uphill (ii) upstream	(i) on flat land / on the same level / horizontally (ii) crosswise, on the other side (mountain, hill, river, road)
OUT/IN	outside a house	inside a house	n/a
ABROAD/HOMELAND	abroad	to the island and to Pouebo (as homeland)	n/a

Table 34: Directionals *da*, *de* and *(z)in*

As the previous discussion has shown, some salient elements in the environment of the speakers function as systematic bearings of a coordinate system (absolute FoR, section 7.2.1.4.3). In Caac, three directionals *da* 'upward', *de* 'downward', and *(z)in* 'transverse' designate directions based on the local topography such as the elevation of a hill, a river-course, or a plane surface: *de* 'downhill; downstream', *da* 'uphill; upstream', *(z)in* 'on the same level, on flat land; crosswise, on the other side'. They have correspondences, and in case of the up/down directionals, etymological origins in full verbs (*ta/da* 'go upward' / 'upward'; *te/de* 'go downward' / 'downward'). Major landmarks framing the territory of the Mwelebeng people serve as primary spatial bearings: the land, the sea and the trade winds. However, these axes have slightly different properties. The seaward axis is unbounded and refers to the direction towards the lagoon and further, the Pacific Ocean. By contrast, the landward axis is bounded and goes inland as far as the mountain range (which runs down the centre of the mainland). After that limit, the sea being visible on the other side of the island, one goes

downward, i.e. down towards the sea, towards the opposite coast. Depending on where the Figure is, the inland and seaward directions do not refer to the same cardinal points because the location of the mountain range and lagoon will be different in the cardinal system. Thus, the inland direction will refer to the western direction when the speaker is on the eastern coast, and to the eastern direction when the speaker is on the western coast. The transverse axis can also be considered as bounded in Caac, as locating something on this axis (running parallel to the coastline) is in practice limited to, roughly speaking, the boundaries of the chiefdom, i.e. the boundary with Jawe in the south and Balade in the North. For places further away, one obligatorily resorts to the upwind-downwind axis which lies in the same direction but allows the speaker to locate an entity on a large scale (Figure 8).

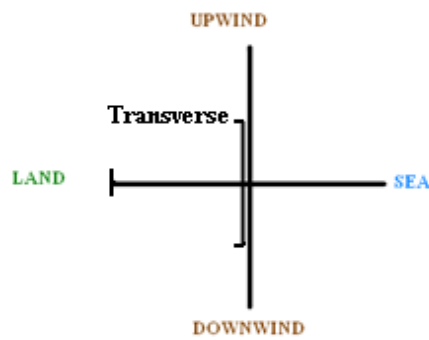


Figure 8: Geographical and meteorological bearings in the use of directionals (speaker located on the eastern coast)

The upwind-downwind axis is unbounded on each end, and it does not vary wherever one is on the island or at sea. The directions the wind-based axis refers to are fixed within the traditional cultural frame of the speakers, i.e. a community living on the mainland, in contact with other cultural and linguistic communities on the same island, and the neighbouring and distant islands in the Pacific that can be reached via seafaring. However, these wind directions do not hold outside this particular region of the Pacific and, to some extent, they are not as fixed as compass points are. Following Palmer (2003: 8) these directions can be considered as fixed “in the sense that they are invariant and constant directions within the system’s conceptual framework”, i.e. they make sense in the typical/traditional environment of the speakers. The fact that the upwind-downwind axis does not work outside a certain frame shows us that it cannot be used to locate places that are far away (e.g. Australia, New Zealand, Europe), in which case speakers resort to the home/abroad opposition (directionals *da* ‘upward, home’ and *de* ‘downward, abroad’).

6.2 Deictic directionals

Deictic directionals provide information on the spatial relationship between the Figure and the Deictic Centre, typically the speaker. The relationship can be specified as ‘away from the Deictic Centre’ (centrifugal value) or ‘towards the Deictic Centre’ (centripetal value). Two sets of deictic directionals can be identified: 1) the centrifugal and centripetal pair =*me* ‘towards the speaker’ and (=)*ap* ‘away from the speaker’, and 2) a system of 4 deictic directionals used in combination with the absolute directionals *da/de* ‘upward/downward’: the centripetal forms =*me* and =*ve* and the centrifugal forms =*ec* and =*uc*. The centripetal and centrifugal forms =*me* and =*ec* combine with the directional *da* ‘upward’ while the centripetal and centrifugal forms =*ve* and =*uc* can only combine with the directional *de* ‘downward’. In Caac, none of the deictic directionals can be cliticized to the transverse morpheme (*z*)*in*. Although common in Northern New Caledonian languages, the combination of an absolute directional with a deictic directional is not allowed in all languages of the area. Thus, in Mwotlap (Vanuatu islands; Francois, 2003: 411), the combination of an absolute directional and a centrifugal directional is not possible;¹¹⁵ other combinations are not possible. In Caac, the two sets of directionals are not restricted to specifying spatial directions in a dynamic setting. Directionals can express information about the direction of a motion event, but also about the location and orientation of an entity with regard to the Deictic Centre.

Set 1: Indifferent to absolute directions	
CENTRIP	CENTRIF
= <i>me</i> ‘towards the speaker’	(=) <i>ap</i> (and exceptionally, = <i>uc</i>)
Set 2: Absolute DIR + Deictic DIR	
CENTRIP	CENTRIF
= <i>me</i> ‘upward towards the speaker’ used with <i>ta/da</i> ‘(go) upward’	= <i>ve</i> ‘downward towards the speaker’ used with <i>te/de</i> ‘(go) downward’
= <i>ec</i> ‘upward away from the speaker’ used with <i>ta/da</i> ‘(go) upward’	= <i>uc</i> ‘downward away from the speaker’ used with <i>te/de</i> ‘(go) downward’

Table 35: Deictic directionals

¹¹⁵ “Incidentally, this sequence [(*lok* [‘again’]) + directional + *me* [‘hither’]] is the only context in which two directionals can be combined; all other combinations are forbidden in Mwotlap.” (Francois, 2003: 411).

6.2.1 =me ‘CENTRIP’ versus (=)ap ‘CENTRIF’

6.2.1.1 Meaning and use

The general deictic directionals =me ‘CENTRIP’ and (=)ap ‘CENTRIF’ are used when the absolute directions (*da/de* ‘upward/downward’) are not specified or not relevant, e.g. when the terrain is flat. In (314), the speaker describes the orientation of two toy men in the Man & Tree Game: one toy man is looking leeward towards the speech-act participants (*de=ve*); the other one is looking away from the speakers, in the opposite direction (windward). The equivalent opposite directionals (*da=ec* ‘windward away from us’) are not used to describe the orientation of the second man. The latter is left unspecified in terms of absolute directions but by default, the addressee can interpret the centrifugal directional as the opposite direction (the toy man is looking away from us, so windward).

(314)	<i>l</i>	<i>cu-alô</i>	de=ve		<i>le</i>	<i>câ</i>			
	3SG.S	standing-look	downward=CENTRIP		DEF	1PL.INCL.INDPT			
	<i>â=le</i>	<i>ceec</i> ;	<i>pwa</i>	<i>le</i>	<i>ceez</i>	<i>o</i>	<i>mwa</i>	<i>i</i>	<i>cu-alô</i>
	M=DEF	one	TOP	DEF	one	S	rather	3SG.S	standing-look
	ap		<i>o</i>	<i>mur</i> ;	<i>...</i>	<i>i</i>	<i>cu-alô</i>	<i>o</i>	<i>ni(=en)</i>
	CENTRIF		at/to	wall	3SG.S	standing-look	at/to	SG=PROX	

mwa.

house

‘One (man) is standing looking at us leeward towards here; as for the (other) one, he is rather standing looking away to the wall... he is standing looking to this house.’

(M&T G4, DN and DI)

The centripetal form =me is common to numerous Northern Kanak languages (section 6.2.2.2) and originates in the POc etymon *mai, *ma ‘come; towards speaker’ (Ross, 1998: 279). The centrifugal form (=)ap ‘away from DC’ is the grammaticalized form of the verb *ap* meaning ‘go, move’. Both verbal and directional forms (=)ap co-exist in Present-Day Caac. The same grammaticalization phenomenon is reported in Mwotlap where the centrifugal form *van* is derived from the verb *van* ‘to go’ (Francois; 2003: 411). By default, the verb *ap* ‘go, move’ and the general centrifugal (=)ap ‘CENTRIF’ can be used to refer to a movement away from the speaker along the transverse axis (section 6.2.1) and function therefore in complementary distribution to =ec ‘up away from DC’ and =uc ‘down away from DC’. The morpheme (=)ap has the same double usage as the Proto-Oceanic form *pano: (i) with an absolute directional value ‘go in the transverse direction’, and (ii) as a centrifugal ‘go away (from speaker)’ (Ross, 1998: 289-290). It is worth noting that the dyad =me/(=)ap occurs less frequently in the data. As a rule, the absolute directions followed by their specific deictic directionals (section 6.2.2) are more common.

6.2.1.2 Distribution

The directional =*me* ‘CENTRIP’ is found cliticized to the locative stem *ave* ‘side’ (315), the verb/preposition *camwa* ‘(be/turn) towards’, and a few verbs including *a=me* ‘come’, *taa=me* ‘arrive towards the Deictic Centre/on this side’, *mo=me* ‘stay; live’ (316), *alô=me* ‘look towards the Deictic Centre/towards this side’. In (315), the speech-act participants are leeward of the two Figures they are describing (two toy men). The centripetal =*me* is used to locate the toy as closer to the speech-act participants; the speaker makes no reference to the absolute directions. If he was, he would resort to the opposite centripetal =*ve*, locating the Figure as *de=ve* ‘leeward towards us’ as the speech-act participants are leeward to the Figure.

- (315) *Jo pwame tele ave=me, o le meu-n.*
 then TOP ANAPH.SP side=CENTRIP TOP DEF left-3SG.POSS
 ‘Then that place on this side/towards me, it’s his left.’ (Man & Tree G1)

Example (316) illustrates the use of =*me* as a general centripetal marker in a particular type of construction whereby the speaker specifies the place where (s)he was via the verb *mo* ‘stay; live’ used for past reference in Basic Locative Constructions (i.e. ‘was/were’) and a spatial complement (in (316), *Pwanyo*). An absolute directional and a centripetal directional follow the verb *mo* ‘stay; live’ and refer to the journey back to the place where the speech-act participants are located. The whole construction expresses two events, ‘I was in X and came back here’, in a condensed and non-iconic way (section 8.3.5). In (316), the speech-act participants are in *Dau*, a place close-by, located on the transverse axis (along the coast) to *Pwanyo*. Speaker 1 asks Speaker 2 where she has been. Speaker 2 replies that she is just coming back from *Pwanyo*. Speaker 2 resorts to the general centripetal =*me* only and does not employ the absolute directions *da/de* ‘upward, inland’/‘downward, seaward’ as the latter are not relevant. As the two places are located in Pouebo and very close to each other, there is no need to specify the location of *Pwanyo* on the wind-based axis either (*Pwanyo* is located slightly leeward to *Dau*).

- (316) *No mo=me Pwanyo.*
 1SG.S stay.PST=CENTRIP *Pwanyo*
 ‘I was in *Pwanyo* (and) came (back) here.’ lit. ‘I was towards here in *Pwanyo*’

The distribution of (*z*)*in* ‘transverse’ being much more limited than *de* ‘downward’ and *da* ‘upward’, (=)*ap* replaces the directional (*z*)*in* ‘transverse’ in various syntactic circumstances, such as after a verb: *alô da* ‘look upward’, *alô de* ‘look downward’, **alô (z)in* ‘look in the transverse direction’ but *alô ap* ‘look away i.e. neither in the upward nor downward direction’. It also occurs in complementary

distribution with *de/da* with the verbal stem *no* ‘view’¹¹⁶: *no=ap* ‘look away’ or ‘look in the transverse direction’. This property of *ap* is also illustrated in (317) wherein the speaker – who is in Pouebo – resorts to the directional *ap* to express the crosswise direction towards Kone, on the other side of the mountain range (geomorphic direction; section 6.1.2.2.3).

- (317) *No* *cabitoxi* **da** **Numia,** *no* *cabitoxi*
 1SG.S phone upward Noumea 1SG.S phone
- de** **re** **Kumwaak,** *no* *cabitoxi* **ap**
 downward at/to Koumak 1SG.S phone CENTRIF

Kone.

Kone

‘I phoned windward to Noumea, I phoned leeward to Koumak, I phoned across to Kone.’

The directional (=)*ap* ‘CENTRIF’ is also found cliticized to the adverbial stem *ave* ‘on the other side’ (318, 319) and the verb/preposition *camwa* ‘(turn/be) towards’. Like absolute directionals (section 6.1.1), *ap* is analyzed as a free form in other syntactic contexts. Unlike =*me* ‘CENTRIP’, *ap* ‘CENTRIF’ can follow the locative verb *e* ‘be at’ (320). In (318), the speaker is locating tombs in relation to the place where the addressee lives. With the regard to this place, the tombs are inland on the other side of the hill.

- (318) [*E-ra*]_{PRED} [**ave=ap**]_{sp_Obj}
 be.at-3PL.O side=CENTRIF
 ‘They are over there/ on the other side (of a hill).’ (Questions2_JP)

- (319) *tele* *ile* *le...* *a...* *ile* *le* *marché*
 ANAPH.SP EXIST.ANAPH1 DEF mm EXIST.ANAPH1 DEF market

le *Susu* [**ave=ap**]_{sp_Obj}
 DEF Susu side=CENTRIF

‘[...]where there is the... that market [place] of Susu on the other side [of the road]’ (Canalisation_AN)

The fact that (=)*ap* is used in static contexts with locational (320) and orientational reference (321) indicates the grammaticalization shift operating from the dynamic verb *ap* ‘to go’ to the directional *ap* functioning in opposition to =*me* ‘CENTRIP’.

¹¹⁶ *No-* cannot occur on its own (**Zo no*. ‘You see/look.’ **Zo no le ciâ*. ‘You see the dog’) but is always followed by =*de* ‘downward’, =*da* ‘upward’, =*me* ‘CENTRIP’ or =*ap* ‘CENTRIF’.

- (320) *Vélo le-zo, chen i ap o le ceec.*
 bike IND-2SG.O very be.at.3SG CENTRIF at/to DEF tree
 ‘Your bike, it’s right over there at the tree.’
- (321) *I cu-alô ap o ni=en mwa.*
 3SG.S standing-look CENTRIF at/to SG=PROX house
 ‘He is standing looking away (from us) to this house.’ (Man&Tree_DN_DI)

The general centrifugal form (=)ap cannot co-occur with the directional verbs *te* ‘go down’, and *ta* ‘go up’ (which combine with the centrifugal forms =uc and =ec respectively) nor with the motion verb *ap~a* ‘go, move’ from which it originates.¹¹⁷ With the verb *ap* ‘go; move’, the centrifugal =uc is used (322).

- (322) *A=uc!*
 go=CENTRIF
 ‘Go away!’

A=uc can also occur with one spatial verb on its way to grammaticalizing into a directional adverb, such as *camwa* ‘(be/turn) towards’ (323). The phrase [X *a=uc*] either functions as a predicate in SVCs (323), as a spatial complement following the locative verb *e* ‘be at’ (324, 325) or as a spatial adjunct (326).

- (323) *Camwa=me a camwa ap /*
 be/turn.towards=CENTRIF or be/turn.towards CENTRIF /
- camwa a=uc?*
 be/turn.towards go=CENTRIF
 ‘Is it (the kite) towards us or away from us?’
- (324) *[I]_{PRED} [ave=ap]_{Sp.Compl*}*
 be.at.3SG side=CENTRIF
 ‘It’s on the other side.’
- (325) *[I]_{PRED} [ave a=uc]_{Sp.Compl*}*
 be.at.3SG side go=CENTRIF
 ‘It’s on the other side.’ (SVC)

¹¹⁷ The reason for this restriction is not phonologically constrained. Thus, =ap can appear with other verbs ending in /a/ such as *taa=ap* ‘arrive=CENTRIF’.

(326) [Ave *a=uc* *na* *Terre sainte*]_{Sp.Adjunct} *zo* *texi* *le*
 side go=CENTRIF DIST Terre sainte 2SG.S find DEF

waadan *Bwe o ciia.*

path Bwe o ciia

'Beyond that (place) Terre Sainte, you find the path to Bwe o ciia.'

6.2.2 =me/=ve 'CENTRIP' versus =ec/=uc 'CENTRIF'

6.2.2.1 Meaning and use

The second set of deictic directionals consists of two pairs: two centrifugal clitics (=ec, =uc) and two centripetal clitics (=me, =ve). Their use is restricted to the motion verbs *ta* 'go up' and *te* 'go down' and their directional equivalent *da/de* 'upward' / 'downward'. *Ta* 'go up' and *da* 'upward' can only take the centrifugal =ec and the centripetal =me while *te* 'go down' and *de* 'downward' accept the centrifugal =uc and the centripetal =ve only. Consequently, one cannot attach =me 'CENTRIP' or =ec 'CENTRIF' to the verb *te* 'go down' and *de* 'downward' and vice versa, one cannot adjoin =ve 'CENTRIP' nor =uc 'CENTRIF' to *ta* 'go up' and *da* 'upward'.

<i>ta=ec</i> 'go up away from DC'	<i>da=ec</i> 'upward away from DC'
<i>te=uc</i> 'go down away from DC'	<i>de=uc</i> 'downward away from DC'
<i>ta=me</i> 'go up towards DC'	<i>da=me</i> 'upward towards DC'
<i>te=ve</i> 'go down towards DC'	<i>de=ve</i> 'downward towards DC'

Table 36: Combinations of absolute directionals and deictic directional

The combination of a directional verb and deictic directional clitic (e.g. *ta=ec* 'move up away from DC') expresses the direction of the movement, the location or orientation of the Figure in relation to the Deictic Centre (in most cases, the speaker), and simultaneously the direction of motion, location or orientation of the Figure on the absolute vertical axis (up/ down) or on the horizontal plane (upward i.e. inland-windward; downward i.e. seaward-leeward). The combination of an absolute directional and a deictic directional (*da=ec* 'upwards away from DC') is commonly found in motion, location and orientation events.

MOUNTAIN RANGE

'downward, toward the speaker' (**de**)=**ve** ↓↑ (**da**)=**ec** 'upward, away from the speaker'

EGO ap 'away from speaker on the transverse axis
or with absolute direction unspecified'

'downward, away from the speaker' (**de**)=**uc** ↓↑ (**da**)=**me** 'upward, toward the speaker'

SEA

Figure 9: Deictic directionals in Caac

Examples with *carua* 'to run':

i carua da=ec 'He runs up away from me' (3SG.S run upward=CENTRIF)

i carua de=uc 'He runs down away from me' (3SG.S run downward=CENTRIF)

i carua da=me 'He runs up towards me' (3SG.S run upward=CENTRIP)

i carua de=ve 'He runs down towards me' (3SG.S run downward=CENTRIP)

Note that the final /c/ of the centrifugal forms can be dropped and =ec and =uc are sometimes pronounced =e and =u respectively. It seems to depend on speakers: some use =e/=u, some =ec/=uc; some recognize that =ec/=uc are behind forms =e/=u, some do not. This may be part of the evolution of Caac – many speakers think people shorten words nowadays; if this is the case, e/=u might be part of this general process.

As explained above, the clitic =me is used either as a general centripetal if the topography is flat or if the absolute directions (windward/leeward or landward/seaward) are not specified (section 6.2.1). Otherwise, it collocates only with the upward directional (*ta=me / da=me* '(go) up towards the speaker'). The only context in which =me appears on the verb *te* 'go down' is when the bound form =wa 'back' is added e.g. *te=wa=me cele-ny* 'come back to my place', which suggests that the main centripetal morpheme is =me. This is confirmed by the fact that we find =me (and not =ve) in most of the Northern Kanak languages and its origins are identifiable in the POc etymon *mai '(come) towards speaker'. One can hypothesize that the second centripetal may have developed first as an allophone and, with time, has specialised as a centripetal form restricted to the absolute direction 'downward'. This specialisation has nearly been achieved, the only exception being the combination *te=wa=me* 'come back downward' (section 6.3.2). Along with centripetal forms, Caac also manifests a similar specialisation of the centrifugal forms to absolute directions. This further specialisation is not

observed in the neighbouring languages (section 6.3.2). The absolute direction can therefore affect the form and use of deictic directionals. The coding of spatial deixis and elevation within the same form has been attested crosslinguistically but it is usually compositional. In French for instance, the deictic adverb *là-bas* ‘there’ (there down) originally meant ‘down there’ including therefore elevation in the deictic system. In Present-Day French, the meaning of elevation is not active anymore and *là-bas* is used as a general distal deictic adverb¹¹⁸ (see also 8.2.2 for examples in other Oceanic languages). By contrast, the antonym *là-haut* ‘up there’ still encodes the idea of elevation (*haut* ‘up’) and distance (*là*). However, in Caac, the four centripetal and centrifugal forms have specialized: *da=ec* ‘up away from DC’ and *de=uc* ‘down away from DC’ versus Valais French *là-haut* and *là-bas*, the deictic element being coded the same way.

6.2.2.2 Deictic directionals in neighbouring northern languages

In three Northern Kanak languages – Nyelâyu, Nêlêmwa and Nemi – only one centrifugal form and one centripetal form have been attested. They are indifferent to the system of absolute directions and can be used with both directional verbs/bound form ‘go up/upward’ and ‘go down/downward’ (for Nyelâyu, Ozanne-Rivierre, 1998a: 51; for Nêlêmwa, Bril 2002: 301, 2004a: 101; for Nemi, Haudricourt & Ozanne-Rivierre, 1982: 83).

In four languages spoken to the south and west of Caac – Jawe, Pije, Fwâi, and Bwato – one centrifugal form is attested and two centripetal forms are recorded: *-me/-ve* in Jawe (Haudricourt & Ozanne-Rivierre, 1982: 83; my data), *-me/-vhê* in Fwâi (Haudricourt & Ozanne-Rivierre, 1982: 84), *-me/-phê* in Pije (Haudricourt & Ozanne-Rivierre, 1982: 84) and *-me/-pe* in Bwato (Rivierre, Ehrhart & Diéla, 2006: 59, 168). The first one of each pair (*-me* for the 4 languages) is the centripetal form co-occurring with the upward direction (as in Caac). The form *-me* is also used as the general centripetal, neutral to absolute directions e.g. Jawe *hen* ‘go, move’ > *he-me* ‘come’. The second form (*-ve*, *-vhê*, *-phê*, *-pe*) co-occurs with the downward direction. A particular constraint appears on the centripetal for the downward direction in Pije, Fwâi and Jawe; this will be developed below in the section on *=mwa/=wa* ‘back; most’ in Caac (section 6.3.2).

¹¹⁸ Note that this is the opposite phenomenon to Caac directional adverbs *ja=da* ‘upward’, *ja=de* ‘downward’ and *ja=in* ‘on the transverse axis’, where the deictic value (*ja* ‘PROX’) is not activated to the benefit of the directional: *ja=da* ‘upward’ (and not ‘here’) versus French *là-bas* ‘there-down’ > ‘there’ (see section 5.3.3.2).

	Nêlêmwa ¹¹⁹	Nyelâyü ¹²⁰	Caac	Nemi ¹²¹	Fwâi ¹²²	Pije ¹²³	Jawe ¹²⁴	Bwatoö ¹²⁵
CENTRIP	<i>me</i>	<i>-me</i>	= <i>me</i> (up) = <i>ve</i> (down) <i>ap</i> (unoriented)	<i>-me</i>	<i>-me</i> (up) <i>-vhê</i> (down)	<i>-me</i> (up) <i>-phê</i> (down)	<i>-me</i> (up) <i>-ve</i> (down)	<i>-me</i> (up) <i>-pe</i> (down)
CENTRIF	<i>xi</i>	<i>-ic</i>	= <i>ec</i> (up) = <i>uc</i> (down)	<i>-ec</i>	<i>-ec</i>	<i>-ec</i>	<i>-ec</i>	<i>-ʔ</i> ¹²⁶
up	<i>da</i>	<i>-da</i>	<i>da</i>	<i>-ta</i> (1 ¹²⁷), <i>-ra</i> (2) / <i>-da</i> (1,2)	<i>-ra /-da</i>	<i>-ta /-da</i>	<i>-ta /-ra /-da</i>	<i>-ta</i>
down	<i>du</i>	<i>-du</i>	<i>de</i>	<i>-tic</i> (1), <i>-ric</i> (2) / <i>-dic</i> (1,2)	<i>-rip /-dip</i>	<i>-tip /-dip</i>	<i>-ric /-dic</i>	<i>-hut</i>
transverse	<i>ve</i>	<i>han</i>	(<i>z</i>) <i>in</i>	<i>-hngen</i> (1) / <i>-en</i> (1,2)	<i>-(h)en</i>	<i>-(h)an</i>	<i>-hen /-en</i> (<i>-he-~e-</i>)	<i>-han</i>

Table 37: Directionals in Caac and several neighbouring languages

Only in Bwatoö, the allomorphy between the centripetal *-me* (used with the upward direction) and the centripetal *-pe* (used for the downward direction) has been clearly identified (Rivierre, Ehrhart & Diéla, 2006: 168). Thus, *-me* becomes *-pe* with the verb *hut* ‘go down’ (*hu-pe* <*hut* + *-me*) as a result of the cluster of consonants: a final stop on the stem (*hut*) and an initial consonant on the directional suffix (*-me*). The centripetal used for the downward direction in Jawe, Fwâi and Pije also seems to be resulting from the same phenomenon of allomorphy: the conflation of the centripetal starting with a consonant and the absolute direction for ‘downward’ ending in a consonant (Jawe *-dic~ -ric*, Fwâi *-rip~-dip*, Pije *-dip~ -tip*). However, this explanation does not hold for the centripetal =*ve* in Caac, at least synchronically, as the directional verb *te* ‘go down’ and clitic =*de* ‘downward’ do not end in a consonant and no phonological rule prohibits the collocation of =*me* with *te/de* ‘(go) downward’ or

¹¹⁹ Bril (2002 : 293).

¹²⁰ Ozanne-Rivierre (1998a : 51, 92, 87, 88, 123, 230, 240, 104).

¹²¹ Haudricourt & Ozanne-Rivierre (1982: 254, 82-83).

¹²² Idem.

¹²³ Idem.

¹²⁴ Idem.

¹²⁵ Rivierre, Ehrhart & Diéla (2006: 59, 168).

¹²⁶ It may be *-te(?)*, see *hute* ‘go down away from DC’ (Rivierre, Ehrhart & Diéla, 2006: 168). I could not find the opposite directional phrase ‘go up away from DC’.

¹²⁷ In this table, number (1) refers to the variety of Nemi spoken in Temala; number (2) refers to the variety of Nemi spoken on the Eastern coast.

the collocation of =ve with *ta/da* ‘(go) upward’ for instance. Thus, the words *phe=me* ‘take-CENTRIP’ and *(h)ave* ‘say; COMPL’ show that /e/ can be used with /me/ and /a/ with /ve/. It is likely that =ve originates in allomorphy which may not be identifiable anymore.¹²⁸ Furthermore, the centrifugal morpheme also manifests a specialisation (=uc/=ec) which is not attested in any Northern language I have examined up to now. It is also not possible to account for these two other pairs of deictic directionals in terms of allomorphy as the words *a=uc* ‘go=CENTRIF’ and *ceec* ‘one’ illustrate the co-occurrence of the vowel /a/ with /uc/ and /e/ with /ec/.

With regard to these four distinctions (2 centrifugal forms + 2 centripetal forms), Caac shares some similarities with another Kanak language, Nengone.¹²⁹ Nengone has a similar absolute system based on the sea-land axis. The forms *lo*, *lu* and *but~bot* can either refer to the absolute directions alone i) *lo* ‘upward’, *lu* ‘downward’, *but~bot* ‘transverse’ or to the combination of absolute directions and a centripetal value ii) *lo* ‘up to the speaker’, *lu* ‘down to the speaker’, *but~bot* ‘transverse towards the speaker’ (Bearune, 2012: 214). A second set of forms is used to express the centrifugal value and the absolute directions i.e. *zo* ‘up away from the speaker’, *luo* ‘down away from the speaker’ and *yo* ‘transverse, away from the speaker’.

6.2.2.3 Distribution

The specialised deictic directionals (combined with their respective absolute directionals) are found cliticized to the absolute directionals following verbs of motion (e.g. *carua* ‘run’, *yamwan* ‘walk’, *yua* ‘climb’ in (327)), verbs of perception (e.g. *tena* ‘listen’, *alô* ‘look’), verbs of saying (*heli* ‘say’) and verbs of transfer (e.g. *phe* ‘take’, *na* ‘give, send’).

(327)	<i>l</i>	<i>yua</i>	de=ve	<i>na</i>	<i>hââp</i>
	3SG.S	climb	downwards=CENTRIP	DIST	spider
	<i>ja=da</i>	<i>bwe</i>	<i>na</i>	<i>mwa.</i>	
	PROX=upwards	top.side	DIST	house	
	‘This spider is going down from the (roof of the) house.’ (TopRel_DN)				

They can also attach to the spatial stem *ave* ‘side, further’ (328) and the deictic adverb *ja* ‘PROX’ (e.g. *ja=da=me* ‘up here’).

¹²⁸ There is no record of older directional forms ending in a consonant in the documentation on Caac dating from the 19th century and in the work done on Caac by Hollyman in the 1960s.

¹²⁹ Loyalty Islands subgroup, New Caledonia.

(328)	<i>pwame</i>	<i>â=le</i>	<i>cu-alô</i>	<i>da</i>	<i>bwe</i>
	TOP	M=DEF	standing-look	upwards	top.side
	<i>waadan</i>	<i>o</i>	<i>i</i>	<i>ja</i>	<i>ave=de=ve.</i>
	<i>path</i>	TOP	3SG.S	PROX	side=downwards=CENTRIP
	'as for the one standing facing upwards towards the path, he is here on the downward side towards here.' (Man&Tree_G2)				

The distribution of (general and specialized) deictic directionals is more limited than that of the absolute directionals. Indeed, deictic directionals are not found in the paradigm of determiners/pronouns (e.g. *ni=da* 'the (one) upward' but **ni=da=me* 'the (one) upward here', **ni=de=uc* 'the (one) downward away', **ni=ap* 'the (one) away', **ni=me* 'the (one) towards here'). General deictic directionals would probably be redundant with deictic determiners such as *ni=en* 'this (one)' and *ni=na, na* 'that (one)' (section 2.2.2.4). In terms of spatial information, the determiner modifying a noun can specify either the distance with regard to the Deictic Centre (see example just above) or with regard to an absolute direction (e.g. *ni=zín* 'the (one) on the transverse axis') but does not co-express deixis and absolute directions within the same determiner/pronoun.

6.2.2.4 Use of centrifugal directionals =*ec* and =*uc*

As mentioned above, the use of the two centrifugal and centripetal morphemes in Caac is clearly dependent on the upward or downward directions. The centripetal forms =*me* and =*ve* unambiguously also locate the Figure with regard to the position of the Deictic Centre, i.e. the location of the speaker (or the position of a character in a narrative triggering deictic shift, section 6.2.3). If the addressee and the speaker are seen as a unit, then the Figure is located with regard to the location of both participants ('towards us [Sp + Add]'). When the speaker and addressee are in two different places and are therefore not seen as a unit, the Deictic Centre always coincides with the speaker's location ('towards me [Sp]').

The centrifugal clitics refer to a movement away from the speaker and depending on the context, can be interpreted either as 'away from the speech-act participants' or as 'towards addressee'. This issue is addressed in detail in this section. All examples given in this section are taken from dynamic contexts and they express motion only. The use of these deictic directionals in static settings conveying locational and orientational information will be developed in the sections 8.2.2 and 8.3.

6.2.2.4.1 'towards addressee'

Basically, in the context when there are the speaker and addressee only (and no third person), if the speaker comments on his/her own location or motion (Figure = speaker), then the addressee is the destination of the motion. The clitics =*ec*/*=uc* in this context are interpreted as 'towards the addressee' (329b, 330b).

In (329), A and B (both living in *Bwe o ciia*) are in *Dau*; A is in her car and wants to go back to *Bwe o ciia*; she asks B if she wants to come back home as well:

- (329) a. Sp. A: *Zo pora? Zo a=me?*
 2SG.S do.what 2SG.S go=CENTRIP
 'What do you do? Do you come?' (SpaceScen)
- b. Sp. B: *Â, no a=uc.*
 yes 1SG.S go=CENTRIF
 'Yes, I will come (to the addressee).' (*Â, no *a=me.*) (SpaceScen)

In (330), A and B are on the phone; B in *Bwe o ciia*, which is located seawards to A's place. A suggests to B to come and work together:

- (330) a. Sp. A: *Ta=me me nyi mweju.*
 go.up=CENTRIP PURP 1DU.EXCL.S work
 'Come (up) so that we work.' (SpaceScen)
- b. Sp. B: *Eelo, no ta=e(c).*
 OK 1SG.S go.up=CENTRIF
 'Ok, I'm coming up (to the addressee).' (SpaceScen)

In (331), A is in *Bwe o ciia* waiting for B to come and work with her. B is on the coastal road, at the beginning of the path leading to *Bwe o ciia* (*Bwe o ciia* is located seaward to the coastal road). B phones A and asks if she can come down now; A replies:

- (331) a. Sp. A: *Te=ve ja!*
 go.down=CENTRIP.speaker(down) PROX
 'Come down here!' (SpaceScen)

And B confirms:

- b. Sp. B: *Eelo, no te=u(c).*
 OK 1SG.S go.down=CENTRIF
 'OK, I'm coming (down, towards the addressee).' (SpaceScen)

Note that when there is a third person and the speaker is the Figure moving towards this third person and away from the addressee, then one cannot use the centrifugal forms =*ec*/*=uc*. One resorts to the absolute directions (2, 3) or the motion verb only.

In (332), A and B are at home in *Dau* and C is working with A; as C finished working with A, B is going to *Pwai* and offers C to bring her back to *Bwe o ciia* which is on his way; A stays in *Dau*.

If B asks C if she wants to come with him to have a lift home, C can answer to B:

(332) \hat{A} , *no* ***ta=e(c)***.
 yes 1SG.S go.up= CENTRIF
 ‘Yes, I come up [to the addressee].’ (SpaceScen)

A (who stays at home, in *Dau*) can ask C:

(333) *Zo* *ta* *pwili* *Didace*[B]?
 2SG.S go.up with Didace
 ‘Do you go up (i.e. inside the car) with Didace?’ (SpaceScen)

C can answer to A:

(334) \hat{A} , *no* ***ta*** *pwili-n*.
 yes 1SG.S go.up with-3SG.POSS
 ‘Yes, I go up (i.e. inside the car) with him.’ (SpaceScen)

but not

(335) **No* ***ta=e(c)*** (*pwili-n*).
 1SG.S go.up=CENTRIF with-3SG.POSS
 ‘Yes, I go up (with him).’ (SpaceScen)

6.2.2.4.2 ‘away from the speaker’

If the speaker communicates on the movement of the addressee (Figure = Addressee), then the centrifugal forms refer to the movement ‘away from the speaker’s current position’. In (336), the speech-act participants are in the garden; the addressee is looking for a tap in the garden to wash his feet. He is located between the speaker (who is inland) and the tap (which is seaward to both participants) when the speaker tells him:

(336) *Pwen* ***te=uc!***
 little.bit go.down=CENTRIF
 ‘Go down a little bit! (lit. ‘Go a little bit downward away from me’) (SpaceScen)

In (339), the speech-act participants are standing together under a coconut tree. The speaker asks the addressee to climb the coconut tree.

(337) *Ta=e(c)* *bwe* *na* *nu.*
 go.up=CENTRIF top.side DIST coconut.tree
 ‘Climb (lit. go up away from me) this coconut tree.’ (SpaceScen)

The centrifugal forms =*uc* and =*ec* are semantically analyzed as ‘away from the speaker’. The use of these forms as ‘towards the addressee’ is pragmatically inferred from the context: when the two speech-act participants are located at two different places (like in a typical phone conversation), the direction of the centrifugal clitics actually makes reference to the addressee’s location as the destination of the motion event.

6.2.3 Shifting the Deictic Centre

It is possible to shift the Deictic Centre to a third person who is neither the speaker nor the addressee. It is particularly common to anchor the spatial description in a character in narratives. This holds for absolute directionals (e.g. upwards from sth [\neq speech-act participants]), deictic directionals (e.g. away from sth [\neq speech-act participants]), and for the combination of absolute directionals and deictic directionals (e.g. upwards away from sth [\neq speech-act participants]). Example (338) is an extract from a narrative. The two main characters are cooking and watching over a woman and her child who are begging for food. The Deictic Centre is placed in the two begging characters (=me ‘CENTRIP’).

(338) *Re* *u* *no=me* *le-re.*
 3DU.S PERF view=CENTRIP IND-3DU.O
 ‘They looked towards (at) the two.’ (Higon2_WH)

Examples (339) and (340) are extracted from a tale. A woman has been chosen as the future bride of a chief and she goes to visit this chief in his village. In (339), she is asked to come closer. Then a man removes a shell from her belt. The use of the absolute directional =*da* and the centripetal =*me* (in the first and third clauses) is anchored in one character, the man who is going to remove the belt, and who is therefore the Deictic Centre in this spatial description.

(339) [*Jo* *u...* *tho=da* *o=le*]_{Main_CL} [*m_i* *ta=me*
 then PERF call=upward NEUT=DEF PURP_3SG.S go.up=CENTRIP

iek]_{Dependent.CL...} [*Jo chei=me le piin dia*]_{CL-}
 close then pull=CENTRIP DEF cover x
 ‘Then (he) called her upward so that she came here close. Then (he) pulled towards him the belt (here, the shell from her belt).’ (Higon_FT)

In (340), a man is ordered to leave the village and go seawards to visit a snake every morning.

Example (340) illustrates the use of a centrifugal form (=u(c)) and two absolute directional forms (=de ‘downward’ and *te* ‘go down’), with the village in the story functioning as the Deictic Centre: *te=u(c)* ‘go seawards away from the village’, *na jamaade* ‘seaward (of the village mentioned in the story and not seawards to the story teller and audience).

(340) *Pwam_i te=u ra taa chinô(k)*
 when_3SG.S go.down=CENTRIF and arrive watch

pwam_i gaa te n_i te=u,...
 TOP_3SG.S DUR go.down IRR_3SG.S go.down=CENTRIF

o keraac m_i te bwa i
 TOP be.impossible CMP_3SG.S go.down because 3SG.S

pwale... i pu maalen le poo(c) na ja=maade
 what.is.it.called 3SG.S do light DEF thing from PROX=downward

ra i... pwelex-eni thivaa-n.
 and 3SG.S rust-TR eye-3SG.POSS

‘When he went away downward and arrived (and) watched, he went on going down xx went down, it was difficult to go down because the what is it called... the thing was glowing from downward and it was painful to his eyes (lit. rusting his eyes).’ (Higon_FT)

6.3 Morphemes modifying directionals

6.3.1 =ek ‘further’

The morpheme =ek ‘further’ is found modifying the directionals *da* ‘upward’ and *de* ‘downward’ (341, 342) and the deictic directionals =uc (343) and =me (344).¹³⁰ It specifies some additional distance in the upward or downward direction with regard to some landmark. The landmark is often left implicit in the discourse but it has usually been clearly established or is easily retrievable from the immediate context of utterance. (341) and (342) are alternative answers. In the context of examples (341) and

¹³⁰ And possibly the two other deictic directionals =ec ‘CENTRIF’ and =ve ‘CENTRIP’, but the data collected up to now do not enable me to confirm this hypothesis.

(342), the speech-act participants are in the house A. The speaker locates the garage (the Figure) on the seaward axis, the intermediary landmark being the house B.

(341) *I* *de=ek.*
 be.at.3SG downward=further
 ‘It is further down.’ meaning ‘further than house B in the downward direction’
 (Questions2_JP)

(342) *I* *ave=de=ek.*
 be.at.3SG side=downward=further
 ‘It is further down/on the downward side.’ (Questions2_JP)

In (343), the speaker and the addressee are in the garden; the immediate surface around the speech-act participants is flat. The speaker encourages the addressee to go a bit further to find the tap.

(343) *Pwen* *a=uz¹³¹=ek.*
 a.little.bit go=CENTRIF=further
 ‘Move (lit. go away) a bit further.’

In (344), the speaker is guiding the addressee who is parking her car. The speaker asks her to bring the car a little bit closer to him.

(344) *A=me=ek.*
 go=CENTRIP=further
 ‘Come a bit closer’ (to the speaker)

6.3.2 =mwa and =wa

As explained above, the absolute directionals *da/de* ‘upward/downward’ are compatible with a particular deictic directional (section 6.2.2). Similarly, they are compatible with the morpheme =*wa* or the morpheme =*mwa*. Both have a reversive meaning i.e. ‘back to the starting point’ (‘back’; 345-346) or express the idea that the Goal is at some distance (in such direction) from the Deictic Centre, i.e. ‘far’ (347-349); they are glossed accordingly. While =*mwa* is attached only to *ta/da* ‘go upward/upward’, =*wa* is hosted by *te/de* ‘go downward/downward’ and *(z)in* ‘crosswise’ as shown in Table 38 and illustrated in (349). The verb *ap* ‘go; move’ can take either clitic.

¹³¹ Sandhi -c > -z- (see section 2.1.3).

FORMS	TRANSLATION
<i>da=mwa</i>	'back upward; far upward'; * <i>da=wa</i> , * <i>ta=wa</i>
<i>de=wa</i>	'back downward; far downward'; * <i>de=mwa</i> , * <i>te=mwa</i> ¹³²
<i>a=wa, a=mwa</i>	'go back; far on the transverse axis'

Table 38: Absolute directionals and the clitics =*mwa* / =*wa*

The neighbouring languages Jawe, Fwâi and Pije also have two different forms to convey similar meanings ("suffixe réversif, translatif, encore" Haudricourt & Ozanne-Rivierre, 1982: 254) depending on which absolute directional (upward/downward) is used. For instance, in Jawe, the morpheme =*wa* is used with the downward direction and =*mwa* with the upward direction, e.g. *ta=mwa* 'go back upwards', *ti=wa* 'go back downward'.¹³³

(345) *U te=wa Bwe o ciia.*
 PERF go.down=back Bwe o ciia
 'She goes (down) back to *Bwe o ciia*.' (from a place inland)

(346) *I ta=mwa Bwaep.*
 3SG.S go.up=back Bwaep
 'She goes (up) back to *Bwaep*.' (from a place seawards)

In (347), the speaker locates his place inland in relation to *Bwe o ciia*, located downhill and seaward from the place where the speaker is.

(347) *Chen ave=da=mwa.*
 very side=upward=far
 'It's way on the upward side.'

(348) *Ra te=wa re tâ=i=de (denec).*
 3PL.S go.down=far in PL=DIST=upward forest
 'They go down far on the ocean.'

(349) [*Zo a=wa ni=izin=wa bwa-n*
 2SG.S go=far SG= crosswise=far head-DET
joor ja=in, ni=izin=wa].
 mountain PROX=transverse SG=crosswise=far
 'You went on the hill way in the transverse direction, far in the transverse direction.'

Usually the clitic =*mwa* 'back; far' follows the deictic directional; however it can also precede it (350). The form *ta=mwa=me* 'come back upwards' in (350) was an alternative given spontaneously by a

¹³² Note that the forms *de/te* '(go) downward' followed by the aspectual marker =*mwa* 'completely' are acceptable (see section 2.2.4.2.3).

¹³³ Jawe and Caac share the same forms, i.e. =*wa*/=*mwa*.

speaker and confirmed by other speakers later on. It does not seem to be in use anymore although it is still understandable and recognized by people as correct. No difference in meaning or use has been identified between both orders except for their frequency as just mentioned.

- (350) *l* **ta=me=mwa** / **ta=mwa=me** *le* car.
 3SG.S go.up=CENTRIP=back go.up=back=CENTRIP DEF coach
 ‘The coach came back upwards.’

Likewise, the centripetal morpheme =*ve* ‘down towards DC’ and the clitic =*wa* can be combined in two ways: [downward + CENTRIP + =*wa*] or [downward + =*wa* + CENTRIP]. However, the general centripetal =*me* is retrieved in the second combination as the absolute directional and deictic directional are separated by a morpheme (**te=me=wa* but *te=ve=wa* and *te=wa=me*). This is the only context in which *de* ‘downward’ and =*me* ‘CENTRIP’ can co-occur in the same word.

This phenomenon can also be observed in Jawe where the use of =*wa* ‘back’ also triggers the use of the deictic directional =*me* ‘CENTRIP’ instead of =*ve* ‘CENTRIP’, e.g. *ti-ve* ‘come down here’ (go.down-CENTRIP) versus *ti-wa-me* ‘come back down here’ (go.down-back-CENTRIP) (Haudricourt & Ozanne-Rivierre, 1982: 82).

Likewise, =*mwa* is used rather than the specialized form =*wa* with the downward directional *de* if another morpheme, e.g. the centripetal =*ve*, intervenes, as in (353). This suggests that =*mwa* is the underlying form of =*wa* and re-appears as soon as the reversive/degree form is not contiguous to the directional =*de* ‘downward’.

- (351) *l* *taa* **de=wa** *o* *le* *peic*.
 3SG.S arrive downward=far at/to DEF stone
 ‘It goes down to/reaches the stone.’

- (352) *l* *taa* **da=mwa** *bwe* *pezeng*.
 3SG.S arrive upward=far top.side road
 ‘It goes up onto/reaches the road.’ (**taa=da=wa*)

- (353) *l* *taa* **de=ve=mwa**.
 3SG.S arrive downward=CENTRIP=back
 ‘He is back down here’ (from the road to Dau located seawards)

6.4 Conclusion

The directionals *da* 'upward' /*de* 'downward' /*(z)in* 'transverse' are central in the absolute Frame of Reference strategy and the geomorphic Frame of Reference strategy in Caac. They rely on salient topographical and meteorological landmarks namely the sea, the land and the trade winds. Thus, going 'upward' (*da*) is going towards the land (if on the sea) or inland (if on land) as well as going windward. By opposition, the directional *de* 'downward' refers to the seaward and leeward directions. Finally, in complementary distribution, the directional *(z)in* expresses the axis that runs parallel to the shore and crosses the sea-land axis in a perpendicular way. This transverse axis following the coastline is oriented the same way as the windward-leeward axes. The windward and inland directions are therefore co-lexified in the same morpheme (*da* 'upward') and the leeward and seaward directions are co-expressed in the directional *de* 'downward'. This polysemy between the upwind and inland directions, and between the downwind and seaward directions is very common in Oceanic languages.

In her article, Ozanne-Rivierre (1997) clearly demonstrated how New Caledonian languages shared these environmental bearings and how central they were to their spatial reference systems due to their high frequency and their flexibility in use, i.e. they cover the same distinctions: the 'upward' forms also mean 'inside', 'uphill', 'upriver', 'inland' and 'windward' (Ozanne-Rivierre, 1997: 86-87). Two factors favour the development of a similar absolute FoR in Mainland New Caledonian languages: (i) the fact that the various communities of speakers live in a similar environment and share the same salient landmarks, in particular the presence of the sea swept by trade winds on one side and the mountain range on the opposite side, (ii) the fact that those languages are related and have very probably inherited this absolute Frame of Reference system (Ross, 1998; François, 2004).

In the context of the New Caledonian languages, an innovation is attested in the system of directionals in Caac, more precisely in the deictic directionals which now encode not only a movement toward or away from the Deictic Centre but also specify if the direction occurs along the upward//inland/windward/uphill/upriver/to home axis or in the downward//seaward/leeward/downhill/downriver/abroad axis. This specification of the deictic movement in absolute terms is absent in some neighbouring languages (e.g. Nêlêmwa, Nemi) and only partially developed in some other Northern New Caledonian languages (e.g. Jawe, Fwâi, Pije and probably Bwato).

PART III: ANALYSIS OF SPACE IN CAAC

Chapter 7: Theoretical framework

In Part II I gave an overview of the linguistic resources Caac speakers can resort to when referring to space. In Part III I discuss spatial data with the notion of vectors. More precisely, I describe the theoretical framework (chapter 7) in which I will account for the Caac systems of spatial reference in Chapter 8. The first section of chapter 7 presents the concepts and terminology employed, in particular the concept of vector which allows us to give an abstract representation of the uses of most linguistic strategies¹³⁴ involved the expression of location, motion and orientation. The second section reviews the spatial strategies for spatial reference that are of interest for Caac data and discusses their properties within the vector framework. Finally, section 7.3 identifies three types of spatial information (called ‘spatial domains’): location (i.e. an entity (the Figure) is located in relation to some reference point), motion (the Figure is moving towards or away from a reference point) and orientation (the Figure is facing towards or away from a reference point). The status and relations between these spatial domains are discussed in that final section (7.3.3).

7.1 Terminological issues

7.1.1 Giving spatial information about what and with respect to what

A spatial expression is basically composed of two (or more) entities which are put into a spatial relation, the Figure and a reference object. The term Figure is defined by Talmy (1972: 11) as “The Figure is a moving or conceptually movable entity whose path, site, or orientation is conceived as a variable, the particular values of which is the relevant issue”; this definition explicitly covers descriptions of motion events, location and orientation. However in contrast to Talmy (1972: 11; 2000: 312), who subsumes any reference object in relation to which the Figure is to be found under the label of ‘Ground’, we distinguish several types of reference objects, and restrict the term Ground to the reference object with respect to which a Figure is located (354). The reference object from which the Figure moves is called Source, i.e. the origin of the path (355), while the reference object towards which the Figure moves is called Goal, i.e. the destination of the path or end point of the

¹³⁴ With the exception of topological means which, for space reasons, are not analysed in terms of vectors in this study (section 7.2.1.1).

movement (356). The reference object with respect to which the Figure is oriented is called the Cue (357) (based on Terrill & Burenhult, 2008: 98).

(354)	[The woman] _{FIG} <i>is in front of</i> [the church] _{Ground} .	LOCATION
(355)	[The woman] _{FIG} <i>is running out of</i> [the church] _{Source} .	MOTION
(356)	[The woman] _{FIG} <i>is running into</i> [the church] _{Goal} .	MOTION
(357)	[The woman] _{FIG} <i>is facing</i> [the church] _{Cue} .	ORIENTATION

Note that a Ground can also be specified in motion and orientation descriptions. In (358), *inside the church* is the place where a motion event takes place. The particle *around* designates the Path followed by the Figure. The Source and Goal of this motion event are not specified as the Figure's movement is non-directed. Example (359) illustrates an orientation description with specification of a Ground (*the square*).

(358)	[The woman] _{FIG} [<i>is running around</i>] _{MotionEvent} <i>inside</i> [the church] _{Ground} .	MOTION
(359)	[In the market square] _{Ground} , [people] _{FIG} [<i>were looking towards</i> [the town hall] _{Cue}] _{OrientationEvent} .	ORIENTATION

In motion descriptions, we will require an additional concept: the concept of Path (Talmy, 2000: 25). It designates the trajectory followed by the Figure and represents an important piece of spatial information in motion descriptions. In examples (360, 363), the Path component is encoded by the prepositions *into*, *out of* and *around*.

(360)	[The woman] _{FIG} <i>is running</i> [<i>into</i>] _{Path} [the church] _{Goal} .	MOTION
(361)	[The woman] _{FIG} <i>is running</i> [<i>out of</i>] _{Path} [the church] _{Source} .	MOTION
(362)	[The woman] _{FIG} <i>is running</i> [<i>around</i>] _{Path} [<i>inside the church</i>] _{Ground} .	MOTION

Location and orientation descriptions can also call upon the notion of Path. This is the case when a dynamic expression is used to describe a static scene (Fictive Motion; see section 8.3) as in (363) and (364):

(363)	[The woman] _{FIG} <i>is</i> [<i>up</i>] _{Path} [the road] _{Ground} .	LOCATION
(364)	[The woman] _{FIG} <i>is facing</i> [<i>seawards</i>] _{Path} .	ORIENTATION

Resorting to motion expressions to refer to a static scene when no actual motion takes place is referred to as Abstract/Subjective Motion (Langacker, 1986: 467), Subjective Motion (Matsumoto, 1996) or Fictive Motion (Talmy, 2000: 99-103). The event is linguistically represented as dynamic although factually static. We will explore Fictive Motion in great detail in chapter 8.

7.1.2 Representing spatial information in terms of vectors

7.1.2.1 Background information

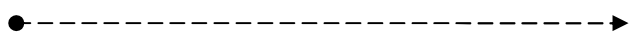
Caac spatial language is analyzed with the help of the notion of ‘vectors’ (Bohnmeyer & O’Meara, 2012; François, 2003). Vectorizing spatial information is used here as a way of representing and interpreting the use of linguistic material for spatial reference in geometrical terms. Although the concept of *vector* (as well as *axis*, *system of coordinates* etc.) is borrowed from another domain of study (mathematics, linear algebra) and is therefore marked culturally speaking, it remains an interesting conceptual tool to capture at an abstract level the uses of spatial terms. More globally, it enables us to compare spatial reference in unrelated linguistic systems. Nevertheless, one should keep in mind that first, the transfer from mathematics to linguistics, and second, the transfer from Western culture to the Kanak culture may have limitations which frame my analysis of Caac. The term *vector* is used here neither in the way in which it is used in the frameworks of Vector Grammar and the Cognitive Map Theory (O’Keefe, 1996), and Vector Space Semantics (Zwarts & Winter, 2000; Bohnmeyer, 2012) or in the vector-based analysis developed by Maillat within Discourse Representation Theory (Maillat, 2003). These frameworks have in common the use of algebraic notations to define vectors and various rules to analyze the semantic features of spatial terms. A vector algebra also entails other mathematical concepts such as knowing the distance between a Figure and a reference object (O’Keefe, 1996: 281). The analyses made within the frameworks mentioned above focus more specifically on decomposing the meaning of English spatial prepositions (see O’Keefe, 1996; Zwarts & Winter, 2000) except for Bohnmeyer (2012) who applies the Vector Space Semantics analysis to projective spatial relationships (Frame of Reference abbreviated FoR; section 7.2.1) in a non-Indo-European language (Yucatec, Mayan language). In this analysis, I use a very basic mathematical definition of vector (see section 7.1.2.2), and I do not refer to the notion of distance or resort to algebraic formula.¹³⁵ My understanding of vectors is partly based on the definition of vectors given in Bohnmeyer & O’Meara (2012: 239) in which they are described as “semantic and cognitive primitives for the representation of orientation and direction of motion”. By

¹³⁵ For a full mathematical definition of vectors, see O’Keefe (1996), Zwarts (1997), Zwarts & Winter (2000), and Kracht (2008) *inter alia*.

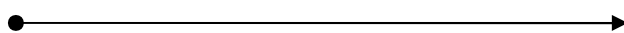
defining vectors as “semantic and cognitive primitives”, Bohnermeyer and O’Meara describe them within the cognitive semantics theory initiated by Jackendoff (1983). The notion of vector in the present work is employed as a device illustrating, in a more abstract way, the uses of linguistic expressions conveying spatial information. Although it is used as a concept, it remains a tool to analyze the object of my study (words and combinations of words used for spatial reference) and I do not wish to make any assumption on how fundamental and primary it is by giving it the status of a primitive.

7.1.2.2 Definition of a vector

A vector is a way of representing spatial arrangements defined by two locations, or alternatively one location and an angle. Vectors schematize the spatial relationships between the Figure and some bearing selected in the environment of the speakers. A vector is visually represented by an arrow. A dotted arrow represents a vector in static contexts:



An arrow composed of a continuous line represents a vector in dynamic contexts.



7.1.2.2.1 Nature of the direction of the vector

In their analysis of location and orientation Bohnermeyer & O’Meara (2012: 239) make a distinction between two types of vector which will be used in our examination of space in Caac. A vector can be defined either by a *Tail* i.e. the place where the vector originates, and a point called *Head*, i.e. the place the vector points towards, or by a *Tail* and an *Angle* in which case the vector aligns with an axis of a coordinate system. They are called head-anchored and angular-anchored vectors, respectively:

We assume that in language and cognition, there are two ways in which one can define a vector: as an ordered pair of places, Head and Tail [e.g. English *towards*, *away from*], and in terms of an ordered pair of a place, usually the tail, and an angle between the vector and the axis of some coordinate system [e.g. English *right*, *uphill*, *downstream*, and (160°) SSE]. (Bohnermeyer & O’Meara, 2012: 239; the examples in square brackets are given by Bohnermeyer & O’Meara in the same paragraph page 239)

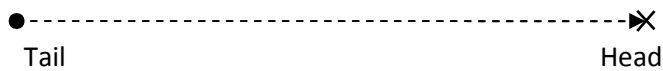
7.1.2.2.1.1 Head-anchored vector

The first type of vector, a head-anchored vector, is represented by an arrow, starting with a dot and ending with a cross. The dot and the cross (made of two short axes directed sideways) symbolize the Tail and the Head of the vector respectively.

In motion representations:



In location (including Fictive Motion) and orientation representations:



In the location description in (365), the Tail of the vector is the window (section 7.1.2.2.1); the Head is the couch (Figure 10a).

(365) *If you stand at the window, [the cat]_{FIG} is towards [the couch]_{Ground}.*

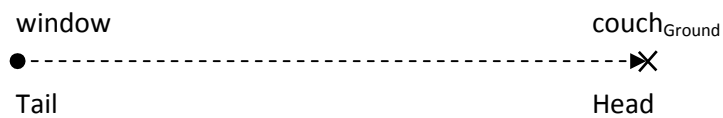


Figure 10a: Vector representing example (365)

The Figure is to be found on the line between the Tail and Head or in its very close proximity (i.e. the search space; see also Bohnemeyer & O’Meara, 2012: 240). Taking example (365) for illustration, the Figure (the cat) could realistically be found in the space (the grey area on the figure below) between the Tail (the window) and the Head (the couch), the leeway depending on the space occupied by the Head (in dark on Figure 11).

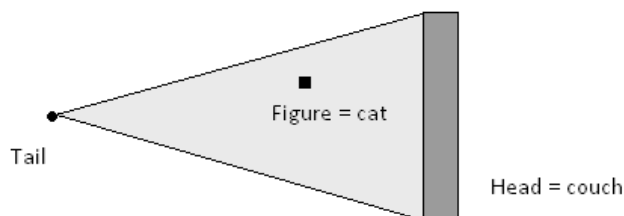


Figure 11: Representation of example (365)

In the vectorial diagrams representing location descriptions, the Figure is represented by this cross in upright position: \perp . The latter is positioned on the vector; its position illustrates one point amongst others on that particular vector where the Figure could be found (10b).



Figure 10b: Vector representing example (365)

The motion event described in (366) is represented by a vector whose Tail is in the Source, the location from which the cat moves (i.e. the door), and whose Head is in the Goal, the arrival point (i.e. the couch; Figure 12). All the points constituting the vector are a symbolic illustration of temporary locations through which the Figure goes in order to achieve a particular motion event (366, Figure 12).

(366) *[The cat]_{FIG} ran from [the door]_{Source} to [the couch]_{Goal}.*

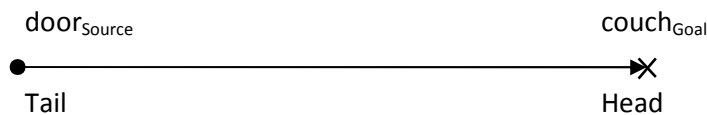


Figure 12: Vector representing example (366)

For the purpose of the analysis, the cross in upright position can be used to visually signal a particular location on the path occupied by the Figure such as the initial or final location of the Figure (see Figure 17 and Figure 13) in vectorial diagrams representing motion descriptions.

Note that the Head of a head-anchored vector does not necessarily coincide with the endpoint of the trajectory followed by the Figure.¹³⁶ Instead, it can express a direction towards which a motion is taking place (compare (367-368) with the Head as the final location of the Figure and (369-370) with the Head not functioning as the final location of the Figure).

(367) *He goes to [the café]_{Goal.EndPoint}.*

(368) *He goes to [Stockport]_{Goal.EndPoint}.*

¹³⁶ We will see in section 7.1.2.2.1.2 that conversely, the Tail of the vector does not necessarily coincide with the initial position of the Figure.

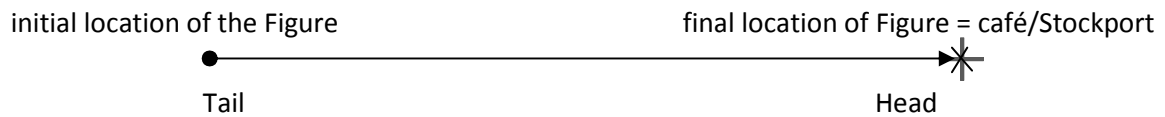


Figure 13: Vector representing example (367) and (368)

(369) *He goes towards [the café]_{Goal.Non-EndPoint}*

(370) *He goes in the direction of [Stockport]_{Goal.Non-EndPoint}*

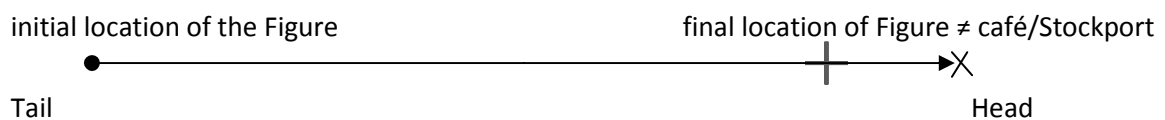


Figure 14: Vector representing example (369) and (370)

Note that in the vectorial representations presented in this analysis, the notion of Path represented by an arrow is not entirely reducible to a vector. The concept of vectors I use in this study provide some information about the Path, e.g. its Source, its Goal, and/or its general direction (Axis). However it does not capture the shape of the path such as the circular movement denoted in *around* in (371).¹³⁷

(371) *[The cat]_{FIG} is running [around]_{Path}*

Example (372) illustrates an orientational description in which the Tail and Head of the vector are respectively in the front facet of the cat and the couch. The faceted Figure¹³⁸ is represented by a white rectangle in the vectorial figures. An annotation specifies which facet of the Figure has been selected in the description (Figure 15).

¹³⁷ See Zwarts & Winter (2000) for an alternative analysis accounting for the shape of the path in the Vector Space Semantics framework.

¹³⁸ More precisely, this white rectangle is used to represent any faceted element: the faceted Figure in orientational descriptions (see for instance Figure 15), and the faceted Ground in intrinsic descriptions (see for instance Figure 32 below).

(372) [The cat]_{FIG} is facing [the couch]_{Cue}.

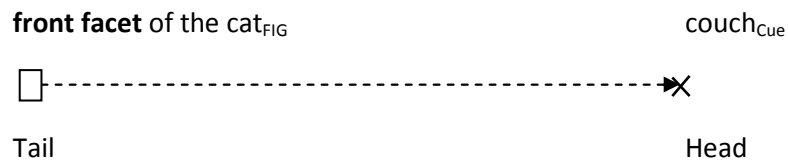


Figure 15: Vector representing example (372)

7.1.2.2.1.2 Head-anchored vector with an unspecified Head

Spatial relationships coded by a centrifugal form ('away from sth') are mentioned in passing in Bohnemeyer & O'Meara (2012: 239) as an example of head-anchored vectors. However, once one tries to represent with a vector spatial descriptions involving a centrifugal form, it becomes clear that depending on the context and the type of description (location, motion or orientation), the vector representing the spatial arrays expressed by a centrifugal form varies. Two types of spatial arrangements in motion descriptions expressed by the centrifugal form are discussed below. The cases of the vectorial representations of a centrifugal form in location and orientation descriptions are discussed in section 7.1.2.2.2.

Case 1: The Tail of the vector coincides with the initial location of the Figure (Source) in motion descriptions.

Example (373) below illustrates the use of a centrifugal form in a motion description. Thus in (373), if the otter is initially next to the big rock, then the rock is both the Source of the motion event and the Tail of the vector (Source = Tail = rock). As for the destination of the motion of the otter, i.e. the Head of the vector, it is left unspecified as no clues are given as to where the Figure moves. The array of potential motion events can be represented as various radiuses, here a vector heading in any direction from the Source (the rock, represented by a dot in Figure 16. However, to aid the readability of the vectorial figures, in this study the Head-unspecified vector will be represented by only one arrow representing one potential symbolic direction (Figure 17).

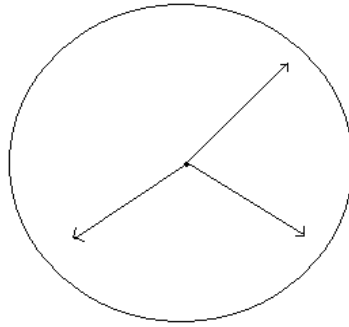


Figure 16: Representation of the Head-Unspecified vector in (373)

(373) [The otter]_{FIG} swam away from [the big rock]_{Source}.

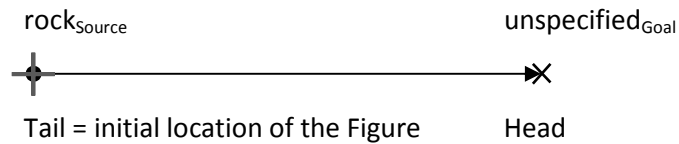


Figure 17: Vector representing example (373)

This type of vector also has the potential to represent spatial arrays coded by deictics such as *here* vs *there* in English or *and ja* 'PROX' vs *tena* 'DIST' in Caac (374, Figure 18). In this context, the vector is systematically anchored in the Deictic Centre (Tail). The difference with other types of spatial expressions such as *away from the big rock* in (373) resides in the fact that representing *here/there* requires symbolizing the distance with regard to the Deictic Centre: for instance, a short vector for *here* and a longer vector for *there*. Due to space constraints, I will not explore further the vectorial representation of Caac deictic adverbs.

(374) [Your bag]_{FIG} is **here**.

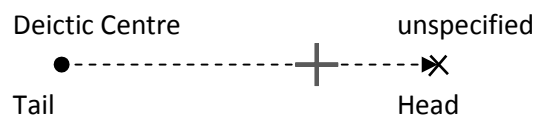


Figure 18: Vector representing example (374)

Case 2: The Tail of the vector does not coincide with the initial location of the Figure (Source) in motion descriptions.

Example (375) can encode a different motion event depending on the location of the otter at the starting point of the motion event. Thus, if the otter is not initially located at the rock and if it is only indicated that it moves away from the rock (meaning ‘further away’ in that context), then the Tail of the vector is identified with the rock and not the initial location of the Figure which is left unspecified in the sentence (Tail = rock, but Tail ≠ Source / Figure’s initial location). In the first interpretation (wherein the otter leaves the rock), the Source of the motion event (and Tail of the vector) is explicitly expressed (the rock) while the Goal (and Head of the vector) is not. In the second interpretation (wherein the otter goes anywhere except towards the rock), the same vector can be used, its Tail being placed in the rock and its Head being left unspecified. The difference lies in the fact that the Source of the motion event does not coincide with the rock (Tail) and could be found anywhere on the vector (see the upright cross in Figure 19).

(375) [*The otter*]_{FIG} swam away from [*the big rock*]_{(non)Goal}.

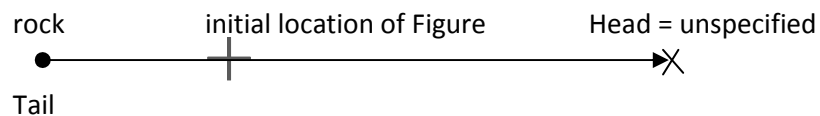


Figure 19: Vector representing example (375)

7.1.2.2.1.3 Angular-anchored vector

Vectors of the second type, angular-anchored vectors, are not determined by a Head but defined by an angle (“an ordered pair of a place, usually the tail, and an angle between the vector and the axis of some coordinate system”; Bohner & O’Meara, 2012: 239; Figure 20).

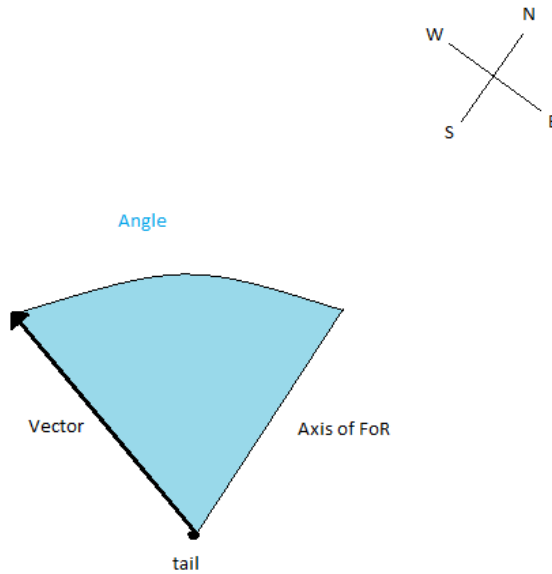


Figure 20: Representation of Vector_[Tail*Axis] with English cardinal points (absolute Frame of Reference)

This axis is part of a coordinate system (Frame of Reference, described in section 7.2.1.2 below) with which the vector aligns. The angle between the vector and the axis being unspecified, it is equivalent to 0° (Bohnmeyer & O’Meara, 2012: 240). The vector is therefore superimposed on an axis of the FoR (Figure 21).

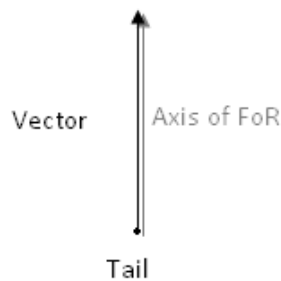


Figure 21: Superimposition of the vector and an absolute axis

Based on a FoR, the vector can project off a facet of the Ground in an orthogonal fashion (e.g. *in front of* => in the region defined by a vector projected off the front facet of an entity; *to the left* => in the region defined by a vector projected off the Ground’s region that is mirroring the left side of the observer (in the relative FoR, section 7.2.1.4.2). The term of ‘region’ here designates the search space in which one can find the Figure. Indeed, like in the case of head-anchored vectors (Figure 11, section 7.1.2.2.1.1), the Figure is not obligatorily placed on the axis itself and can be found in the vicinity of the direction determined by this axis (i.e. the search space; it is in grey colour in the schemas below). Thus, “interpretations under which [the Figure] is not merely located *on* the vector, but in an area near it” (Bohnmeyer & O’Meara, 2012: 242) are allowed.

For example in (376), the hearer has some leeway in determining the location/motion/orientation of the Figure. The latter can be found on the vector or nearby. In Figure 22, three dots symbolize three possible positions (amongst others) of the car based on the same spatial expression (*north*), in the zone that approximates the north axis (angular-anchored vector).

(376) [The car]_{FIG} is situated/moves [north]_{Axis}.

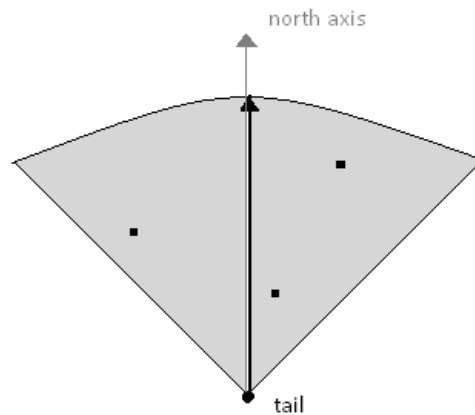


Figure 22: Representation of example (376)

In the next sub-sections, we introduce three sub-types of angular-anchored vectors relevant to the analysis of Caac spatial terms in chapter 8. The sub-types of angular-anchored vectors are distinguished on the basis of the system of coordinates (Frames of Reference) called upon by the speakers. They correspond to three FoRs Caac speakers make use of – the intrinsic (*The man is in front of the church*), absolute (372) and geomorphic FoRs (*The man is uphill*); they are analyzed in detail in sections 7.1.2.2.1.6, 7.1.2.2.1.4, and 7.1.2.2.1.5 respectively.

7.1.2.2.1.4 Angular-anchored vector and Absolute Frame of Reference

An angular-anchored vector can be projected off a reference object (Ground, Source or one facet of the Figure) and represented as an orthogonal axis directed in an absolute direction. In the three examples below (377, 378, 379), the vector consists of an axis determined by the east cardinal point (Figure 23).

(377) [The car]_{FIG} is situated [east]_{Axis}. Location

(378) [The car]_{FIG} moves [east]_{Axis}. Motion

(379) [The car]_{FIG} is facing [east]_{Axis}. Orientation

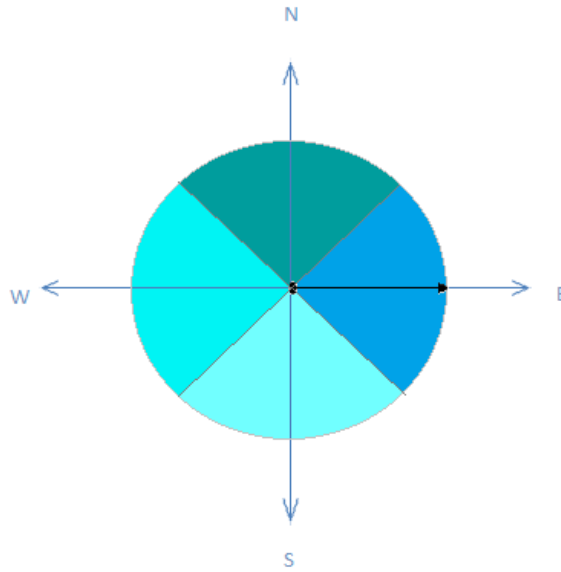


Figure 23: Representation of the absolute FoR in examples (377,378)

In (377), the Tail of the vector is either present in the implicit Ground that is the Deictic Centre (*The car is situated east of me* [i.e. the speaker's location], Figure 24) or retrieved from context (*The car is situated east* [of a reference object previously mentioned in the discourse]):

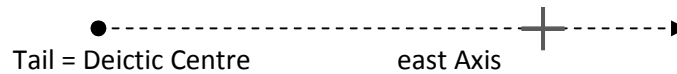


Figure 24: Vector representing example (377; Tail = Ground = DC)

In (378), the Tail of the angular-anchored vector can be found in the initial position of the Figure (the car represented by the upright cross on Figure 25). In (379) the Tail is in the front facet of the Figure (the car; Figure 26).

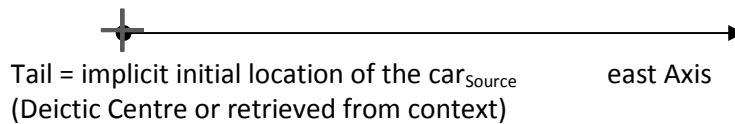


Figure 25: Vector representing example (378)

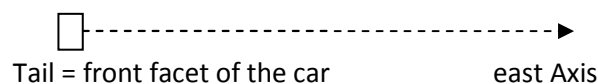


Figure 26: Vector representing example (379)

The cardinal system illustrates here one type of absolute FoR based on English examples; note that Caac absolute system does not rely on cardinal points but on the sea/land and wind directions (sections 6.1 and 8.1.3).

7.1.2.2.1.5 Angular-anchored vector and Geomorphic Frame of Reference

Another system of coordinates Caac speakers employ is called geomorphic FoR (section 7.2.1.4.4).

This system of coordinates consists of axes based on the physical features of an environmental entity, e.g. downhill/uphill, downriver/upriver. The system differs from the absolute system of coordinates in that it is dependent on the local topography and its directions are bounded (Figure 27).

(380) [The post office]_{FIG} is [uphill/downhill/across/on the other side of the hill]_{Axis}.

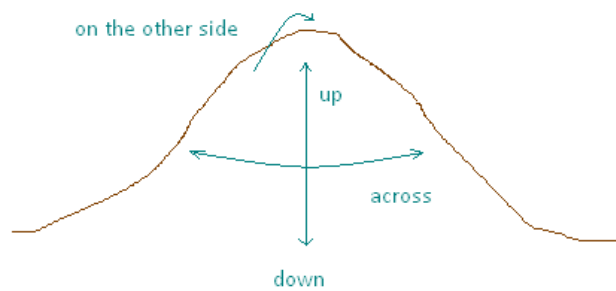


Figure 27: Geomorphic directions based on a hill (uphill/downhill)

(381) From [the road]_{Ground}, [the post office]_{FIG} is [uphill]_{Axis}.

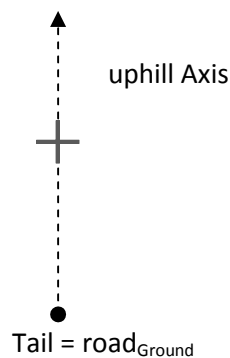


Figure 28: Vector representing example (381)

(382) From [the school]_{Source}, [the boy]_{FIG} went [uphill]_{Axis}.

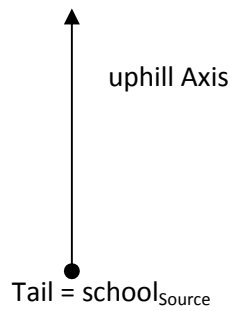


Figure 29: Vector representing example (382)

(383) [The post office]_{FIG} is oriented [uphill/upriver]_{Axis}.

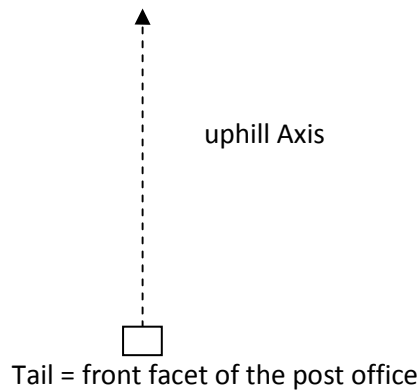


Figure 30: Vector representing example (383)

7.1.2.2.1.6 Angular-anchored vector and Intrinsic Frame of Reference

An angular-anchored vector can be projected off the facet of a reference object and represented as an orthogonal axis projected off this facet. This is attested when speakers resort to intrinsic expressions (section 7.2.1.4.1) such as *in front of the shop, behind the wall, to my left, on your right* in English. Thus, in (384-385) the front facet of the church is selected and the angular-anchored vector emerging from it can be represented as in Figure 31.

(384) [The car]_{FIG} is situated [in front of [the church]_{Ground}]_{Axis}.

(385) [The man]_{FIG} arrived [in front of [the church]_{Goal}]_{Axis}.

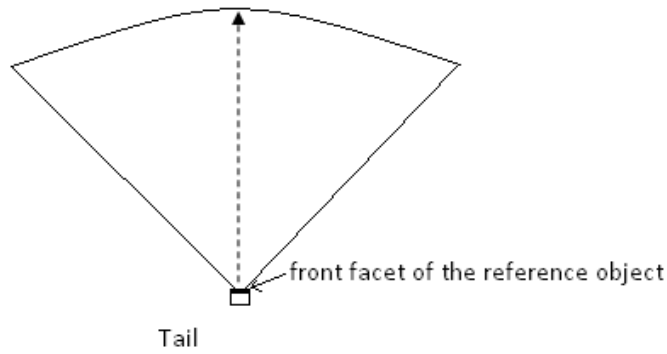


Figure 31: Representation of the Intrinsic FoR in examples (384/386)

(386) $[The\ car]_{FIG}$ is situated $[in\ front\ of\ [the\ church]_{Ground}]_{Axis}$.

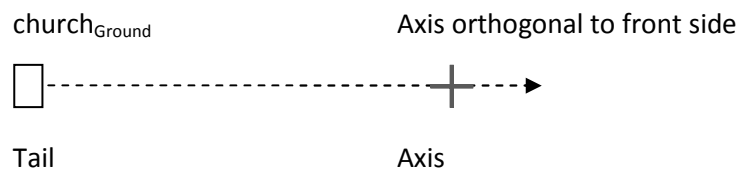


Figure 32: Vector representing example (384/386)

Motion descriptions based on angular-anchored vectors and the intrinsic expressions such as (385/387) require the combination of two vectors. One vector (represented by the non-dotted arrow in Figure 33) establishes the front region of the church, i.e. the search space for the end location (Goal) of the Figure. A second vector represents the motion event itself relating the Figure and the front region in a dynamic representation. In the motion event described in (385/387), the front region of the church is a search space (defined through another vector, as shown above in Figure 32) which functions as the destination of the man's trajectory. The Source in (385/387) corresponds to the initial location of the man which is not specified in this example.

(387) $[The\ man]_{FIG}$ arrived $[in\ front\ of\ [the\ church]_{Goal}]_{Axis}$.

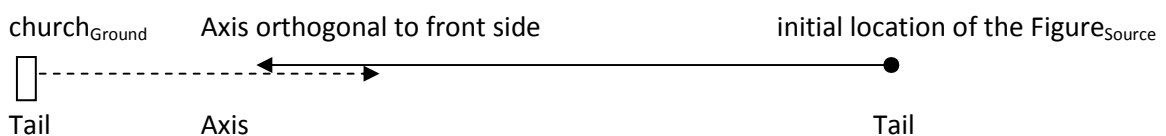


Figure 33: Vector representing example (385/387)

For the sake of brevity, only the second vectorial representation (symbolizing the motion event itself; Figure 34) will be given in Caac examples in the next chapter.

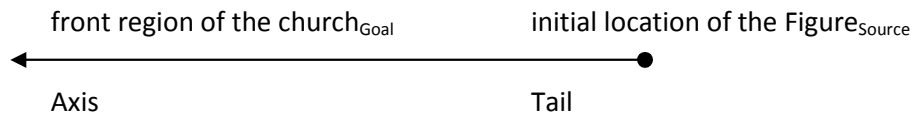


Figure 34: Vector representing example (385/387)

As for orientational descriptions, note that intrinsic expressions seem less felicitous in English (388-390) (but are very common in Dutch for instance; Levinson & Wilkins, 2006: 545).

(388) **[The car]_{FIG} is facing [in front of [the house]_{Cue}]_{Axis}.*

(389) **[The car]_{FIG} is facing [behind [the house]_{Cue}]_{Axis}.*

(390) ?*[The car]_{FIG} is facing [to the left of [the house]_{Cue}]_{Axis}.*

Instead, English speakers prefer resorting to the parts of the reference object without implying any projection from that part. The latter is analyzed as the Cue functioning as the Head of a head-anchored vector (391, 392).

(391) *[The car]_{FIG} is facing [the front of the house]_{Cue}.*

(392) *[The car]_{FIG} is facing [the back of the house]_{Cue}.*

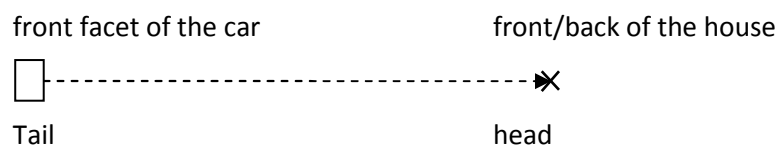


Figure 35: Vector representing examples (391) and (392)

7.1.2.2.2 Nature of the Tail

The Tail of the vector depends on the type of spatial descriptions: location, motion and orientation; it can be left implicit in location and motion descriptions (see below). In orientation descriptions, the Tail is always specified as the latter are by definition anchored in one facet of the Figure (Tail = a facet of the Figure). In motion and orientation descriptions, another factor comes into play when the spatial relationship is expressed by a centrifugal morpheme (see sections 7.1.2.2.1.2 and 7.1.2.2.2.3).

7.1.2.2.2.1 Location

In location descriptions, the Figure is located with respect to the Ground, the Tail of the vector coincides with the Ground. One first needs to identify the location of the Ground to situate the Figure. In (393) for instance, the addressee first identifies the Ground and its back region as a search space and can then compute the location of the Figure.

(393) [The museum]_{FIG} is behind [the cathedral]_{Ground}.

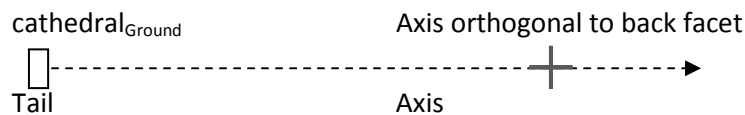


Figure 36: Vector representing example (393)

In example (394), the Ground and Tail of the vector is left implicit. In this case, the hearer assumes that the reference point is the location of the Deictic Centre, i.e. *The shop is inland (of me_{Ground/Tail})*. If a Ground has been made explicit before, then the Tail corresponds to the previously mentioned Ground: *You see where the community house is in Pweâ? Well, the shop_{FIGure} is inland (of it_{Ground/Tail})*. The difference of interpretation depends on the context; the hearer may ask for clarification if required (395).

(394) [The shop]_{FIG} is [inland_{Axis}].

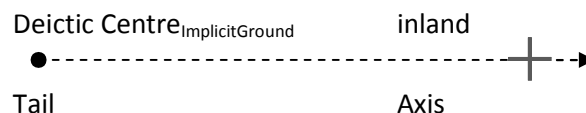


Figure 37: Vector representing example (394)

(395) *[The shop]_{FIG} is [inland]_{Axis} [of the community house]_{Ground}*.

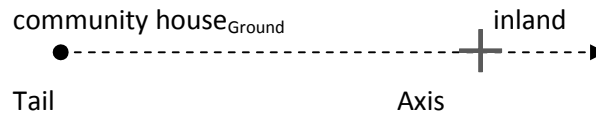


Figure 38: Vector representing example (395)

The nature of the Tail does not change with the nature of the vector. In both angular-anchored representation (394, 395) and head-anchored representation (396, 397), the Tail is in the Ground. However in head-anchored descriptions, two referent objects are required to identify the location of the Figure. The first is the location from which the vector is computed, which therefore functions as the Tail of the vector. The second Ground functions as the Head of the vector (the beach in (396) and (397)) and is specified. Again, the Tail can be made explicit as in (396) or left implicit, in which case the location of the Deictic Centre functions as the Tail of the vector (397).

(396) *From [the road], [the market place]_{FIG} is towards [the beach]_{Ground}*.

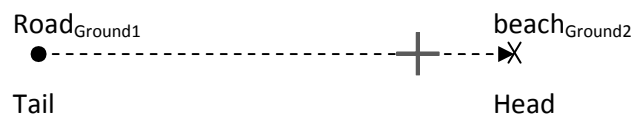


Figure 39: Vector representing example (396)

(397) *[The market place]_{FIG} is towards [the beach]_{Ground}*.

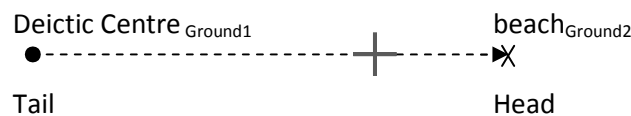


Figure 40: Vector representing example (397)

When the locative descriptions is expressed by a centrifugal form, the vector is anchored in the Deictic Centre (the Tail), and its Head is left unspecified (398, Figure 41).

(398) *[My daughter]_{FIG} is **away** (from [speech participants' location/DC]_{Ground})*.

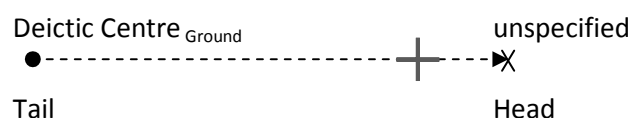


Figure 41: Vector representing example (398)

7.1.2.2.2 Motion

In motion descriptions, the Tail is equivalent to the Source of the motion event i.e. the Figure's initial location, except when the spatial relationship is encoded by a centrifugal morpheme (section 7.1.2.2.1.2). The Figure's initial location can be specified (399; Figure 42) or left unspecified (400; Figure 43) in which case it is identified either with the Deictic Centre or with a previously mentioned reference point. The destination or goal corresponds to the Head of the vector:

(399) $[He]_{\text{FIG}}$ took the train from $[Manchester]_{\text{Source}}$ to $[London]_{\text{Goal}}$.



Figure 42: Vector representing example (399)

(400) $[He]_{\text{FIG}}$ took the train to $[London]_{\text{Goal}}$.

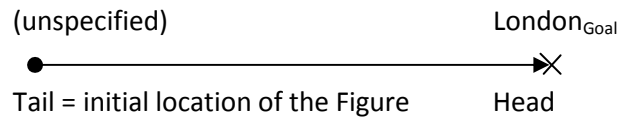


Figure 43: Vector representing example (400)

In this context (when no centrifugal form is used in the spatial description), the nature of the Tail does not change with the nature of the vector. In examples (401), the Tail is also found in the Figure's initial location. The axis is here defining a motion Path.

(401) *From* $[Manchester]_{\text{Source}}$ $[he]_{\text{FIG}}$ went $[north]_{\text{Axis}}$.

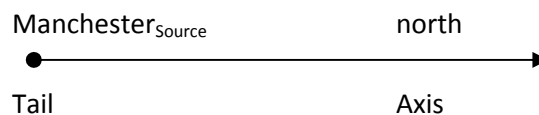


Figure 44: Vector representing example (401)

7.1.2.2.3 Orientation

In orientation descriptions, the Tail of the vector is placed in the Figure's selected facet. As in location and motion representations, the nature of the Tail remains the same whatever vector is employed in the orientational description (402, 403). The vector is orthogonal to one facet of the Figure (typically the front, back or one side) and aligns with a particular axis (angular-anchored) or points towards a particular reference object (head-anchored), giving thereby the orientation of the Figure:

(402) *Gathered in the market square, [people]_{FIG} were looking towards [the town hall]_{Cue}.*

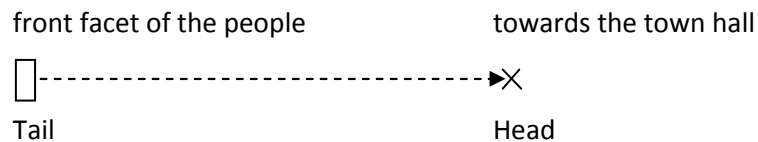


Figure 45: Vector representing example (402)

(403) *[The house]_{FIG} is facing [north]_{Cue}.*

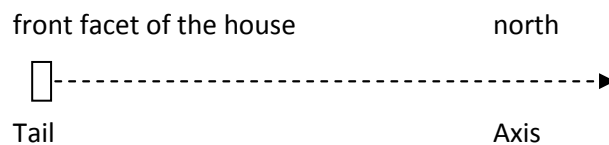


Figure 46: Vector representing example (403)

A second vector is needed in orientational descriptions relying on centrifugal morphemes; this second vector is anchored in the Cue (Tail) and pointing towards an unspecified Head. Thus, when the centrifugal form is used in orientation descriptions, two vectors are required: one vector anchored in the selected facet of the Figure (Tail = facet of the Figure) as explained above (see Figures 45 and 46 above) aligns with a second vector which is anchored in the Cue ('away from [Cue_{Tail}]'); the Head of this vector is left unspecified (Figure 47). In (404), the Figure (the girl) is oriented in any direction except in the direction of the camera. The front facet of the girl functions as the Tail of the first vector, the Cue (the camera) functions as the Tail of the second Head-unspecified vector.

(404) [The girl]_{FIG} is facing away from [the camera]_{Cue}.

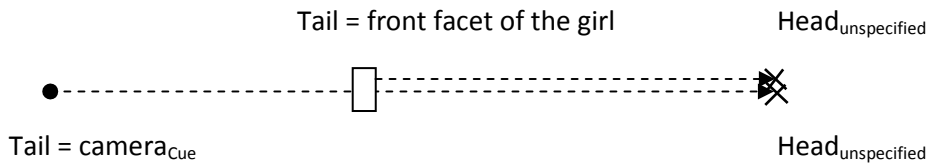


Figure 47: Vector representing example (404)

To aid the readability of the vectorial diagrams, orientation descriptions involving a centrifugal morpheme will be represented by a single vector such as in Figure 48.

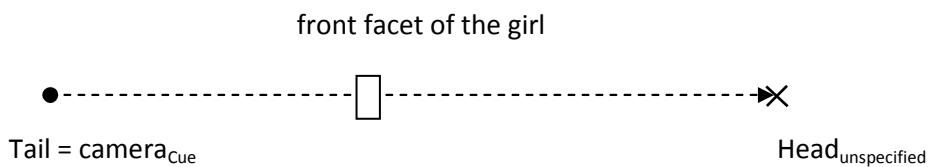


Figure 48: Vector representing example (404)

7.2 Introducing spatial strategies

To sum up, a vector is a concept used in order to represent spatial strategies. Two types of vectors have been employed in this chapter, building on the definition of head-anchored vectors and angular-anchored vectors developed by Bohnemeyer & O'Meara (2012) (section 7.1.2.2). The spatial strategies represented by vectors can be employed to convey three types of spatial information (called here 'spatial domains'): location, motion and orientation.

As we will see below (section 7.3), the relationship between spatial strategies (i.e. the linguistic means to express some spatial information) and spatial domains (i.e. the nature of the spatial information) is a matter of debate. The relationship between Frames of Reference (treated in this analysis as a strategy) and orientation (defined here as a spatial domain) is for instance the main issue of two recent papers (Terrill & Burenhult, 2008; Bohnemeyer & O'Meara, 2012; see also section 7.3.1).

Section 7.2 is dedicated to spatial strategies and their expression in terms of vectors. The section ends with a discussion of the relations between spatial deixis and head-anchored and angular-anchored strategies. One resorts to deictic expressions when one anchors the spatial description in

the speech event. The role of spatial deixis relative to Frames of Reference raises many questions which will be discussed below.

7.2.1 Frames of Reference versus topology

Frames of Reference and topology are well-established spatial strategies. They are generally defined in opposition to each other. We will first examine their properties (sections 7.2.1.1 and 7.2.1.2) before accounting for those two strategies in terms of vectors.

7.2.1.1 Topology

The distinction between topology and Frames of Reference goes back to the seminal work by Piaget & Inhelder (1956: vii), in which the authors show that children's acquisition of spatial concepts begins with topological relationships, defined as "based entirely on qualitative or "bi-continuous" correspondences involving concepts like proximity, separation, order and enclosure" (405). By contrast, "projective and Euclidean spatial relationships" are acquired later in the development of the child. For Piaget & Inhelder, projective and Euclidean spatial relationships refer to the process of "locating objects and their configurations relative to one another in accordance to general perspective or projective systems or according to coordinate axes" (1956: 153). Topology is now defined as the study of the spatial relationships based on a relation of contiguity between the Figure and a reference object (Levinson & Wilkins, 2006: 514). Many topological expressions also provide information on the Ground besides the (non-)contiguity of the Figure and Ground. In (406), the preposition *inside* indicates that the Ground is a volume for instance.

(405) *I have found [your wallet]_{FIG} [at]_{location} [home]_{Ground}.*

(406) *I have found [your wallet]_{FIG} [inside]_{containment} [my bag]_{Ground}.*

Topological relations can be encoded by a rich array of linguistic means such as adpositions (e.g. English prepositions *above, under, near, on, around* etc.), cases (e.g. essive, allative, ablative), spatial nominals (e.g. *at the side of, on the top of*), a set of verbs, preverbs, affixes. Languages can make some elaborate distinctions indicating the degree of contiguity and the kind of contact between the Figure and the reference object and potentially provide various types of information such as horizontality / verticality, adhesion, support, attachment, envelopment, containment, and encirclement. In addition, topological morphemes can encode other non-spatial information such as the shape of the Ground and the medium (Levinson & Wilkins, 2006: 15-17, 514-527). Cross-

linguistically, the encoding of topological relationships shows great variation. In English, the topological scenes described as ‘a cup on the table’, ‘a stamp on the letter’, ‘a ring on the finger’ and ‘an apple on a skewer’ require the same preposition (*on*) while in Yéli Dnye, these four scenes are described with different topological expressions (Levinson & Wilkins, 2006: 560, Fig. A12 and A8).

Topology is very commonly used in location (407) and motion (408) descriptions. I am not aware of any study on the use of topology in orientation descriptions. In English it seems that the topological strategy is not employed in orientation although some cases are problematic. For instance, a description of a complex spatial configuration which is expressed by a posture verb and a topological expression can convey information about the orientation of the Figure as in (409) (the man has his back turned towards the door). This type of description is very similar to orientation descriptions in that it focuses on a facet of the Figure (the back facet of the man in (409)); however, it slightly differs from typical orientation descriptions in the sense that the latter entail some distance between the facet of the Figure and the Cue, which is not the case in (409).

- (407) *The children spent the whole afternoon playing **in** [the swimming pool]_{Ground}.*
(408) *He ran **out of** [the building]_{Source} as fast as he could.*
(409) *The man was sitting, his back leaning **against** [the door]_{Cue}.*

7.2.1.2 Frames of Reference (FoRs)

Another major strategy to express space is what has been described as Frames of Reference. A FoR is defined here as a system of coordinates which enables the speaker to express the location, motion and orientation of the Figure by projecting a search region off the reference object by determining an angle from the reference object (Levinson, 1996; Pederson et al. 1998; Levinson & Wilkins, 2006). Unlike topology, a Frame of Reference is a strategy establishing angular relations between the Figure and a reference object, in the absence of contact. The definition in terms of a system of coordinates excludes expressions such as ‘right over there’, ‘here’, ‘near’, ‘with’ which involve a search region but without any angle narrowing this search space.¹³⁹ A FoR involves an origin point of the coordinate system which is centred on the Ground in locative descriptions.

FoRs are used in location (410), motion (411) and orientation (412) descriptions. Although they only discuss locative and orientational examples, I agree with Bohnemeyer & O’Meara (2012: 217) that “Frames of Reference play an equally important role in representations of the orientation of entities

¹³⁹ For discussion on this topic, see also Palmer (2003: 4).

as they do in representations of their location and direction of motion”. As we will see in section 7.2.1.4, all three descriptions (410, 411, 412) involve a coordinate system.

(410) *Your keys are just **in front of** the pile of books.*

(411) *When you arrive at the crossroad, go to **the left**.*

(412) *The conservatory is facing **south**.*

7.2.1.3 Frames of Reference vs topology re-analyzed within the vector analysis

Topology establishes a non-projective spatial relation between the Figure and the reference object (section 7.2.1.1); in this study, it is not represented in terms of vectors (i.e. ‘non-vectorized strategy’).¹⁴⁰ Since in this thesis we are primarily interested in projective spatial relations, this will not be pursued in this thesis. Given that a Frame of Reference is a coordinate system, it is itself composed of vectors (Bohnmeyer & O’Meara, 2012: 8.2). As explained in section 7.1.2.2.1.3, the axis on which angular-anchored vectors are based is projected orthogonally off the reference object and aligns with an axis of a Frame of Reference: “the angular direction expression effectively designates an axis of the FoR.” (Bohnmeyer & O’Meara, 2012: 239). A system of coordinates is imposed onto a reference entity, and one axis of this coordinate system is selected in the description; this axis corresponds to the vector in question. Descriptions involving a FoR are therefore represented by angular-anchored vectors. Contrary to Bohnmeyer & O’Meara (2012: 241-242), in this study the term Frames of Reference will be applied exclusively to angular-anchored vectors and not to head-anchored vectors. Unlike FoRs, head-anchored descriptions do not allow the formation of a coordinate system. The directions they point to are generally neither grammaticalized¹⁴¹ nor systematic (they vary from one speaker to another and within the speech of a single speaker). In addition, a head-anchored vector does not divide the scene the way FoRs do (there is no polar and balanced division of space; section 7.1.2.2.1.1). Finally, a head-anchored vector in a locative description needs two reference points: one functioning as the Head of the vector, and a second one as the Tail in which the vector is anchored (which, if left implicit, is the Deictic Centre; section 7.1.2.2.2). In spatial descriptions resorting to FoRs, the coordinate system is imposed directly onto a reference point (functioning then as the Tail of the vector); they therefore do not require any second reference point.

¹⁴⁰ Alternatively, non-projective spatial relations have been represented by zero vectors, that is, vectors that do not have any magnitude (Zwarts & Winter, 2000).

¹⁴¹ Except when the Deictic Centre is the point in relation to which the head-anchored vector is directed, directions are then more likely to be grammaticalized (centripetal and centrifugal morphemes).

Topology will not be further explored in this chapter. However, some information about Caac topological means is given in sections 5.1 and 5.2. The next section examines Frames of Reference in more details.

7.2.1.4 Classification of Frames of Reference

The concept and classification of Frames of Reference has been thoroughly developed and discussed in particular by Pederson et al. (1998), Levinson (1996, 2003), the contributions to Levinson & Wilkins (2006), Palmer (2003; not dated), Danziger (2010) and Bohnermeyer & Levinson (not dated). The analysis of Frame of Reference in Caac in chapter 8 will rest on the well-established typology as summarised in Levinson (1996, 2003) and further developed by Bohnermeyer & Levinson (not dated). The definitional properties of the absolute FoR will be more thoroughly developed with the help of Palmer (2003, not dated). We will first start with three types of Frames of Reference: intrinsic, relative and absolute Frames of Reference. I also include in this framework the geomorphic FoR as defined by Bohnermeyer (2011: 398) and Bohnermeyer & Levinson (not dated: 5).

7.2.1.4.1 Intrinsic Frame of Reference

In the intrinsic FoR, the search domain is based on the inherent facets of the Ground (413; Figure 49). According to Levinson (2003: 314) and Levinson & Wilkins (2006: 542), the intrinsic FoR is cross-linguistically universal.

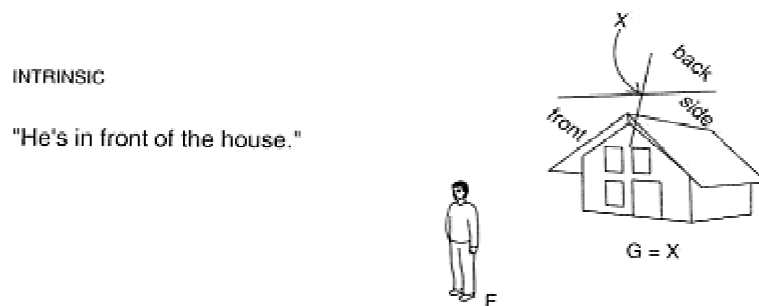


Figure 49: Intrinsic Frame of Reference (copied from Levinson, 2003: 40, Figure 2.2)

(413) *He's in front of the house.*

Although the facets 'front', 'back' and 'side' seem at first sight to be inherent to the reference object, their reference can vary from one language to another as the way of dividing the reference object and assigning facets can be motivated by several factors such as the asymmetry of the reference

object (e.g. body parts in human being and animals), the reference object's shape, the motion of the reference object (e.g. 'the front of the plane' or its function e.g. 'the front of the chair'; Levinson 2003: 76; Levinson & Wilkins, 2006: 543).

The categorization of spatial strategies is sometimes blurred, as a strategy can grade into another. Thus, by qualifying the nature of the spatial relationship between the Figure and the Ground, topological expressions can sometimes reveal some features of the Ground (in (414), the Ground is understood as a volume divided into facets). This is the first step towards the expression of a projective spatial relationship based on a facet of the Ground (and therefore, towards the intrinsic FoR), e.g. *in front of* in (415).

- | | | |
|-------|--|---------------|
| (414) | <i>He's at the front of [the house]_{Ground}.</i> | topology |
| (415) | <i>He's in front of¹⁴² [the house]_{Ground}.</i> | intrinsic FoR |

Intrinsic expressions are often grammaticalized from topological expressions (e.g. loss of the determiner from TOPOLOGY *at the front of* > INTRINSIC *in front of*. As Levinson & Wilkins (2006: 543) note, topology and intrinsic Frame of References¹⁴³ are the two extremities of a cline.

7.2.1.4.2 Relative Frame of Reference

In the relative Frame of Reference, the search domain is defined by a projection of the viewer's intrinsic coordinates onto the reference object (416; Figure 50). In opposition to the binary relationship between the Figure and the reference object in the intrinsic FoRs, the relationship in a relative system is ternary and involves the Figure, reference object and the viewer. If the latter changes his/her position or orientation, the relative description of the spatial situation will not hold. The relative FoR often develops from the intrinsic system when the latter fails in describing a spatial array, in particular scenes with non-faceted reference object (Levinson & Wilkins, 2006: 543).

¹⁴² Loss of the determiner *the* in the course of the grammaticalization process.

¹⁴³ 'Intrinsic FoR' in Levinson's terms.

RELATIVE

"He's to the left of the house."

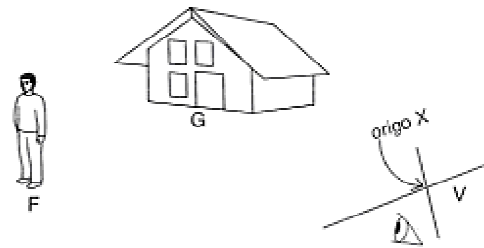


Figure 50: Relative Frame of Reference (copied from Levinson, 2003: 40, Figure 2.2)

(416) *He's to the left of the house.*

Relative coordinates can be assigned in various ways. A widely quoted example contrasts the relative FoR in Hausa and English (Hill, 1982). In *the ball is in front of the tree*, English speakers understand that the ball is between the speaker and the tree; the front of the tree is by mirror-image the facet of the tree facing the speaker. The same sentence in Hausa describes a very different spatial configuration where the ball is on the opposite facet. In that case, the 'front' of the tree is its most remote facet. This interpretation shows that Hausa speakers shift (or "align" in Hill's terms, 1982: 23) the speaker's coordinate to the Ground, assigning front and back facets that are oriented the same way as the speaker's.

7.2.1.4.3 Absolute Frame of Reference

In the absolute Frame of Reference, the search domain is typically based on some relatively immovable and fixed bearings (417, Figure 51; Levinson, 2003: 314). The axes encoding the absolute directions are abstracted from the location of the relevant environmental bearings, e.g. the sunset and sunrise as an *eastern* and *western* point, the sea in *seawards*.

ABSOLUTE

"He's north of the house."

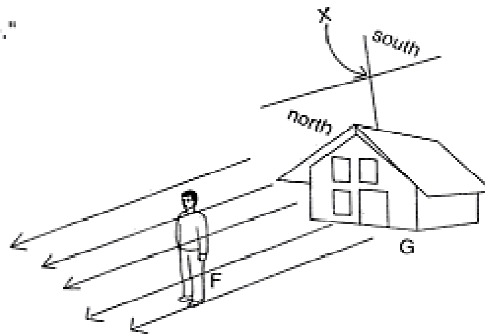


Figure 51: Absolute Frame of Reference (copied from Levinson, 2003: 40, Figure 2.2)

(417) *He's north of the house.*

There has been a debate on whether the absolute FoR rests on a binary relation, i.e. Figure + Ground, or a ternary relation, i.e. Figure + Ground + an environmental entity such as the directions of the winds, the path of the sun etc. While Levinson (1996: 147; 2003: 50, 53) argues for interpreting the absolute FoR as a binary relation, Levinson & Wilkins (2006: 542), Danziger (2010: 170) and Palmer (not dated) analyse the absolute FoR as being a ternary relation (see also Palmer, not dated: 6) who points at this contradiction). In line with Palmer (not dated: 6), the absolute FoR is considered as a ternary relationship in this study for the Figure and Ground would not suffice in establishing an absolute system. An opposition between two environmental entities (Levinson & Wilkins' "fixed bearing", 2006: 542) is necessary to impose a coordinate system onto the Ground.

The more we study absolute systems amongst unrelated languages, the more variation within the absolute category is found, including in the scale of application and in the characteristics of the environmental bearing on which the absolute FoR is based. The definition of the environmental element as a relatively immovable bearing fixed by convention as offered by Levinson (1996: 145-147) and Levinson & Wilkins (2003: 21, 541) represents one end of a cline displaying a range of various absolute systems. The latter can also be based on ecological cues¹⁴⁴ whose abstractness, fixedness and arbitrariness are often more qualified. The environmental bearing can be more or less abstract, ranging from compass points or gravity (upward/downward) to the sea-land opposition (for discussion, see Palmer, 2003, not dated; Levinson & Wilkins, 2006: 541-542). Depending on which conceptual frame one adopts, the absolute directions in a particular language can be considered as

¹⁴⁴ See also section 8.2.1 for a discussion about the links between *ad hoc* landmarks and ecological cues in the absolute FoR.

more or less fixed (Palmer, 2003: 8-9; not dated: 6-8). By ‘fixed’ bearings, one refers to stable directions recognized by the community of speakers within their typical/traditional environment and system of reference. In absolute systems based on winds for instance, given that the wind directions are different all over the world, they do not hold outside the particular region where the speaker lives, and to some extent, they are not as fixed as compass points are. Thus, the trade winds with a southeast-northwest orientation on which the absolute systems of the New Caledonian languages (Ozanne-Rivierre, 1997) or the Vanuatu languages (Francois, 2003; 2004) are based hold for the South Pacific region only and are not valid north of the equator. In an in-depth discussion, Palmer (2003: 5-7; not dated: 9-16; 25-32) also shows that the bearings of the absolute FoR are not only anchored in the environment in which the speakers live, but also motivated by that environment because of their saliency in the speakers’ everyday life and perception. The Topographic Correspondence Hypothesis (Palmer, not dated: 25-26) predicts that communities speaking unrelated languages in various parts of the world and without being in contact with one another would develop a similar absolute FoR if they live in a similar topographical environment and have a similar lifestyle (urban vs rural, hunter-gatherer vs settled populations; see also Pederson (2006: 429-432) on rural-urban variation in Tamil). By contrast, the division of space via the absolute FoR seems more uniform (if not cross-linguistically identical) on the vertical plane and relies on the binary opposition ‘up vs ‘downward’ without much (if any) nuances and variation.

7.2.1.4.4 Geomorphic Frame of Reference

In Bohnemeyer & Levinson (not dated) and Bohnemeyer (2011), FoRs are not only classified depending on the nature of their Anchor but also by the way the axes of the coordinate system are computed from the Anchor. They distinguish in particular the absolute FoR whose axes are obtained by abstraction from the location of an environmental entity and the geomorphic FoR based on axes translated from the environmental entity (418).

(418) *From the shop, the post office is uphill.*

Like the absolute FoR, the geomorphic FoR is based neither on the Ground (intrinsic FoR) nor on the viewer (relative FoR) but in an environmental entity. The difference lies in the fact that the axes derived from the environmental bearing are not abstracted (like the absolute FoR) but projected or “in geometrical terms, translated” (Bohnmeyer & Levinson, not dated: 5) from the bearing.

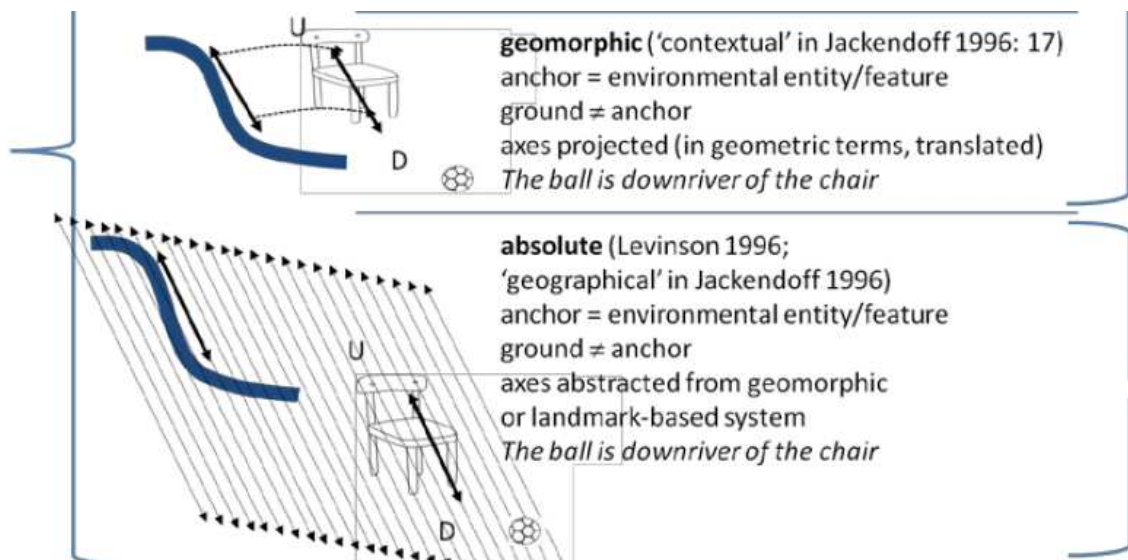


Figure 52: Vectorial representation of geomorphic and absolute FoRs (copied from Figure 1 Bohnemeyer & Levinson (not dated: 5))

While absolute axes always point in the same direction wherever one is located, the geomorphic axes are defined and delimited by the physical features of a natural entity (hill/mountain, river) found in the local surroundings. Whereas absolute directions are typically unbounded,¹⁴⁵ the geomorphic directions are compulsorily bounded.

I use the term 'geomorphic' for reference frames whose anchor is some environmental gradient – the direction of a stream or current, the slope of a mountainside, a prevailing wind direction, etc. Levinsonian absolute frames can be abstracted from such geomorphic frames by letting the terms that denote the directions 'upriver' and 'downriver' in reference to the actual course of the stream – the axis of the anchor – denote the entire set of vectors pointing in the direction in which the river flows and in the opposite direction, respectively, regardless of their beginning points. (Bohnemeyer, 2012: 5).

In Caac, the geomorphic system is based on the elevation of a hill or mountain and the river-course and distinguishes three directions: (i) 'uphill', 'upriver', (ii) 'downhill', 'downriver' and (iii) 'across/crosswise'. Caac geomorphic directions are partly expressed by the same means as the absolute FoR, i.e. by the directionals *da* 'upward; uphill; upriver' vs *de* 'downward; downhill;

¹⁴⁵ The unboundedness of absolute axes calls for some nuance (see discussion in sections 7.2.1.4.3 and 8.1.3).

downriver' (which in this context are often found in combination with the spatial stems *ave* 'side' or *yoo* 'side'), and *ave=da=zin* 'across, on the other side' (< *=zin* 'transverse').

7.2.2 The role of deixis

When interacting, speakers can point to various elements taking part in the speech event, in particular the participants themselves, the temporal frame, the spatial setting or what has already been said or referred to previously in the discourse: "When we communicate, we communicate in a certain context, and this context shapes our utterance" (Senft, 2004: 1). Deictics are those linguistic forms encoding certain aspects of the context in which a speech event takes place and whose interpretation is therefore dependent on this context. This section focuses on space deixis (or spatial deixis), i.e. the anchoring of a spatial relation with the spatial context of the speech event.

A spatial expression can invoke the spatial context in which the speech event takes place in two ways. The difference lies in the degree of integration of a reference point present in the speech event, the Deictic Centre (DC), within the semantics of the spatial expression. On the one hand, when the spatial expression *can* take the Deictic Centre as a reference object, the expression is not considered as a spatial deictic per se. Spatial deixis is not at the core of its meaning as the DC is not necessarily the reference object. When the speaker chooses the Deictic Centre as the reference object, the latter can be encoded by a person deictic phrase¹⁴⁶ (e.g. personal pronouns; 419, 420, 421).

(419) *The man is in front of [me]_{Ground.DC}.*

(420) *He was sitting next to [us]_{Ground.DC}.*

(421) *You will find the community house inland (of us), next to the school.*

The Deictic Centre can either be made explicit (*me* in (419), and *us* in (420)), or left implicit as in (421) (*inland [of where we_{DC} are standing]*; section 7.1.2.2.2).

Such spatial expressions can be used in non-deictic descriptions (i.e. Ground ≠ Deictic Centre; 422-424).

(422) *He is in front of [the house]_{Ground}.*

(423) *He was sitting next to [the chimney]_{Ground}.*

(424) *From [the school]_{Ground}, the community house is inland.*

¹⁴⁶ Person deixis is a category of deixis along space deixis and time deixis. Person deictics are linguistic forms referring to the speech-act participants, e.g. *I told you it would be too late to go to the cinema*. The subject pronoun *I* encodes the speaker and the object pronoun *you*, the addressee.

On the other hand, some spatial expressions imply that the DC is the reference point and cannot take any other Ground than the Deictic Centre ('spatial deixis' or 'space deixis'). They can be paraphrased as '(to be) in such spatial configuration in relation to the Deictic Centre (where DC is the only possible Ground)' as in (425).

(425) *I found your bag here.*

The adverb *here* in (425) is inherently deictic as they encode the notion of proximity in relation to the Deictic Centre only (the Ground being obligatorily the Deictic Centre, here the speaker).

7.2.2.1 Deixis and space

Spatial deictics call upon a reference point found in the speech event (the Deictic Centre). The Deictic Centre is most typically the speaker and/or addressee (such as in *He left his wallet here* [Deictic Centre = speaker's location]) but it can be shifted on a third person for example in story telling. For instance in *And then she said: 'You left your wallet here'*, the location of the female character (*she*) functions as the Deictic Centre. Spatial deixis is encoded by a wide range of linguistic forms, typically by demonstrative pronouns and determiners (e.g. Saliba *te/ta* 'near speaker', *me* 'near addressee', *ne* 'distal' (Margetts, 2004: 51-52), adverbs (e.g. German *hier* 'here', *da* 'there', *dort* 'over there'), motion verbs (e.g. English *go*, *come*, *bring*, *take*), directional particles (e.g. Nêlêmwa *me* 'CENTRIP', *ve* 'CENTRIF'; Bril, 2004a: 117), (non-)verbal affixes (e.g. Caac non-verbal forms *-ien* 'PROX', *-(i)na* 'DIST'), presentatives (e.g. French *voici*, *voilà*).

In Caac, I will more specifically examine the exophoric (or situational) usage of spatial deixis, that is how to refer to some element in the context of utterance (*I used **this**_{Exophoric} non-stick pan*). The role of spatial deictics in referring to an entity in the discourse (called endophoric reference; e.g. *I used **this**_{Exophoric} non-stick pan; is **that**_{Endophoric} all right?*) is not explored here. Various parameters are involved in exophoric space deixis.

Most spatial deictic systems heavily rely on the relative distance (i) from the speaker alone (e.g. English demonstratives *here* vs *there* vs *over there*; *this* vs *that*), and/or (ii) from the speaker and other speech-act participants (e.g. Saliba *te/ta* 'near speaker', *me* 'near addressee', *ne* 'distal' (Margetts; 2004: 51-52). The number of distinctions expressing the relative distance between the Deictic Centre and the Figure in languages varies. The encoding of the relative distance between the Deictic Centre and the Figure can also vary within one language. Thus, demonstrative adverbs in French can express three degrees of distance (*ici* / *là* / *là-bas* 'here' / 'there' / 'over there') but French demonstrative pronouns lexicalize only a two-way distinction *celui-ci* 'this one' / *celui-là* 'that one'.

This number of distinctions is not unproblematic though. English – which is said to have a two-way contrast deictic system (demonstrative adverbs *here/there* and determiners *this/that*) – can express three degrees of distance if one takes into account the compositional adverb phrase *over there* or the archaic adverb *yonder*. Many languages have more distinctions than those of the Indo-European family, ranging from two (expressing the basic opposition proximal/distal) to eleven degrees (e.g. Tolai) and even 88 spatial contrasts in some Eskimoan languages. In these complex systems, other parameters are coexpressed with distance such as:

- (i) attention-calling (e.g. in Malagasy; Imai, 2003: 151)
- (ii) accessibility (e.g. in Yucatec Maya; Hanks, 2009)
- (iii) extended vs bounded referents (e.g. in Malagasy; Imai, 2003: 107)
- (iv) contact and control (e.g. in Japanese; Imai, 2003: 135-136)
- (v) visibility, audibility (e.g. in Nyelâyu; Ozanne-Rivierre, 1998a: 42-44)
- (vi) elevation (e.g. in some languages of Australia, Papua New Guinea; Diessel, 1999: 42)
- (vii) geographical features (e.g. in Jahai; Burenhult, 2008: 117; in Iaai; Ozanne-Rivierre, 2004; in Dyirbal; Dixon, 1972: 263) etc.

In Caac, spatial deixis outside the directional system rests on the relative distance to the speaker. Deictic adverbs encode two distinctions (*ja* ‘here’ vs *tena* ‘there’; section 5.3.3.1) and deictic determiners and pronouns, three distinctions (*hî* ‘S.PROX’, *=ien* ‘PROX’, *=na* ‘DIST’; section 2.2.2.4). By contrast, dynamic deictic directionals co-express a movement away or towards the Deictic Centre and an absolute direction (e.g. *=me* ‘up towards me’; section 6.2.2).

7.2.2.2 Spatial deixis and Frames of Reference

The relation between deixis and FoRs has been often debated. Levinson (2003: 35-38) clearly differentiates deixis from Frames of Reference, showing that deixis can occur within the Frames of Reference. The deictic centre can either function as the origin point of the coordinate system (relative FoR, 428, 429) or as the reference object (intrinsic FoR (426, 427); Levinson (2003: 35). His examples (426, 427, 428, 429) more precisely illustrate the definition of two separate FoRs: the intrinsic FoR involving a spatial relationship between the Figure and a reference object versus the relative FoR which involve a spatial relationship between the Figure, a reference object and a viewer.

- (426) *The ball is in front of the chair (i.e. at the chair's front).*
 INTRINSIC FoR and non-deictic origins (origins = reference object = chair)
- (427) *The ball is in front of you.*
 INTRINSIC FoR and deictic origins (origins = reference object = addressee)
- (428) *The ball is to the right of the lamp from your point of view.*
 RELATIVE FoR and deictic origins (origins = viewer = addressee; reference object = lamp)
- (429) *John noticed the ball to the right of the lamp.*
 RELATIVE FoR and non-deictic origins¹⁴⁷ (origins = viewer = John; reference object = lamp)

The same applies to absolute and geomorphic FoR expressions whose reference object can also be deictic or not (section 7.2.1.4.3 and examples (394, 395) and (380, 381) above).

According to Levinson, the Deictic Centre is basically one possible type of reference object or the centre of the coordinate axes inter alia and does not interfere in the classification of FoRs. By contrast, Danziger (2010) offers a revision of Levinson's FoRs in which the role of the speech-act participants is paramount, and differentiates a fourth FoR. The additional FoR results from the breakdown of Levinson's intrinsic FoR into two types: the 'direct FoR' and the 'object-centred FoR' based on whether the Anchor (the name Danziger gives to the origins of the coordinate system) merges with the speech-situation participant,¹⁴⁸ which in this case functions as the Ground (430), or not (431).

- (430) *The bowl is in front of **me**.* Anchor = Ground = Speech-participant
 => direct FoR
- (431) *The bowl is in front of **the chair**.* Anchor = Ground ≠ Speech-participant
 => object-centered FoR

¹⁴⁷ Note that example (429) would have a deictic reading if the viewer would be the speaker.

¹⁴⁸ Her revision of Levinson's typology originates in her observation that "by analogy with Absolute and Relative [...], it has been declared (Levinson, 1996; Pederson et al. 1998: 589) that all utterances with Ground as Anchor should fall within the same (Intrinsic) Frame of Reference whether or not their Ground object is drawn from a speech-act participant" (Danziger, 2010: 171).

In the present analysis, the Deictic Centre is treated like any reference object. This poses no problem for descriptions based on the intrinsic FoR. However, in Caac, the Deictic Centre is singled out by grammatical means in the absolute and geomorphic FoRs. The question of the role of deixis in coordinate systems is therefore carefully examined here with regard to the absolute and geomorphic FoRs (section 8.2.2).

In many angular-anchored descriptions, the Deictic Centre is either made explicit or left implicit (e.g. absolute FoR: *He is north*. [north of us]; Intrinsic FoR: *It's them in front*. [in front of us]). In Caac, the Deictic centre is co-expressed with absolute and geomorphic directions in deictic directional morphemes: =*ec* 'upward away from DC', =*uc* 'downward away from DC', =*me* 'upward towards DC', =*ve* 'downward towards DC'. Describing these directionals by means of vectors helps us in taking into account the Deictic Centre as a major bearing in these expressions and the different functions of the DC within the spatial description: either Head of vectors (centripetal forms) or Tail of vectors (centrifugal forms).

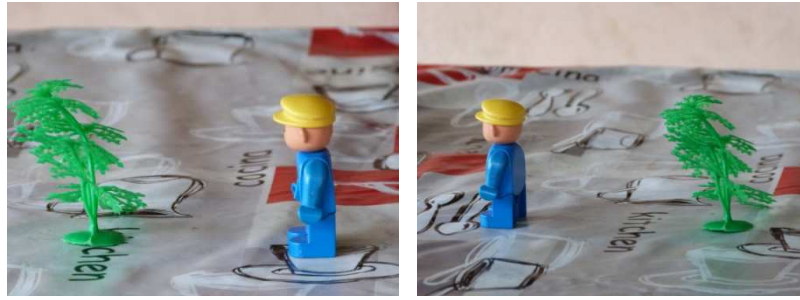
7.3 Typology of spatial domains

This last section defines three types of spatial information the speaker can deliver: location, motion and orientation. The various spatial strategies described in sections 7.1 and 7.2 (non-vectorized, head-anchored vector and angular-anchored vector) operate within these three spatial domains. This final section provides a detailed description of the features of location, motion and orientation events, starting with specifying the status of orientation as it has not been the focus of studies on space until very recently and has been barely discussed in theoretical works on space.

7.3.1 Definition and status of orientation

The basic opposition between location and orientation relies on the difference between 'standing' vs 'facing' information (Levinson & Wilkins, 2006: 545; Terrill & Burenhult, 2008). Pictures 2 and 3 illustrate two opposite placements of the Figure (the man) with regard to a reference object (the tree). Pictures 2 and 3 differ in the location of the man in relation to the tree (432 vs 433). The location of the Figure is described in relative terms.

- (432) *The man is to the right of the tree.* (picture 2)
(433) *The man is to the left of the tree.* (picture 3)



Picture 2 and 3: Locative information (based on the Man&Tree Game; Levinson et al., 1992)

By contrast, orientational information rests upon one facet of the Figure. In (434; Picture 2) and (435; Picture 4), the prepositional phrase *on our right* indicates that the speaker situates the Figure by means of the intrinsic Frame of Reference; the coordinate system is anchored in the reference object, here the speech-act participants. While the location of the Figure remains the same in these two examples, the difference between these two scenes resides in the fact that the man has either his front side (434) or his back (435) oriented towards the tree.

(434) *The man is on our right and he's **facing** the tree.* (picture 2)

(435) *The man is on our right and he's **turning his back towards** the tree.* (picture 4)



Picture 2 and 4: Orientational information (based on the Man & Tree Game; Levinson et al., 1992)

What is considered to be an orientational description has been controversial. Terrill & Burenhult (2008: 99) explain: “Note also that our categorization differs from that of previous accounts in that we abstract away from syntactic expression. Therefore, propositions describing the tree’s relation to the facets of the man (e.g. *The tree is at the man’s back*) are treated as orientational just like descriptions in which a facet of the man is related to the tree (e.g. *The man’s back is towards the tree*). Although differing in syntax and information structure, the two describe exactly the same

spatial configuration based on the man’s facets, and accordingly we treat them as equivalent.” Along with Bohnemeyer & O’Meara (2012), I disagree with Terrill & Burenhult’s analysis, and in the present work a description is classified as orientational when the speaker explicitly bases it on one facet of the Figure. This excludes sentences such as [*The tree*]_{FIG} *is at the back of* [*the man*]_{Ground} since the description does not rest on the Figure’s (the tree’s) facet; only the Ground (the man) is divided into facets. Such a sentence is analyzed as a locative description resorting to topological¹⁴⁹ spatial terms (*at the back of*; section 7.2.1.1).

Terrill & Burenhult (2008) state that orientation is a fundamental strategy which, in some languages, can be preferred to the use of a Frame of Reference, stating thereby that orientation and Frames of References are alternatives to describe a spatial arrangement. This idea originates in their observation that for some languages (e.g. Mopan, Kilivila, Jaminjung, Semnam), it is rather difficult to assert the predominance of one particular Frame of Reference, a phenomenon also reported by Bohnemeyer (‘referential promiscuity’;¹⁵⁰ 2011). According to Terrill & Burenhult, orientation is not simply a device crosscutting the typology of FoR but a major strategy which structures the expression of spatial relations and can account for the apparent unsystematic strategies used to situate an entity in space in languages such as Jahai and Lavukaleve. By contrast, Bohnemeyer & O’Meara (2012: 221-224; 246) assert that orientation is complementary to FoR and does not replace them. In line with Bohnemeyer & O’Meara, FoRs are considered here as a means or strategy to encode spatial information whereas orientation is a type of spatial information (along with location and motion) which may or may not involve the expression of a spatial relationship in terms of FoRs. The following examples illustrate the way in which FoRs (in this case, the absolute FoR) cross-cut the spatial domains of location (436), motion (437) and orientation (438).

- | | | |
|-------|-------------------------------------|---------------------------|
| (436) | <i>Sheffield is south of Leeds.</i> | Location; absolute FoR |
| (437) | <i>The birds are flying south.</i> | Motion; absolute FoR |
| (438) | <i>The house is facing south.</i> | Orientation; absolute FoR |

7.3.2 Location vs motion vs orientation

Based on Levinson & Wilkins (2006: 545), the notion of orientation is defined by contrast with locational information, opposing ‘facing’ vs ‘standing’ information: orientation provides spatial

¹⁴⁹ Alternatively, the spatial expression *at the back of* could be analyzed as expressing the intrinsic FoR (section 7.2.1.4.1).

¹⁵⁰ Bohnemeyer (2011: 893) defines ‘referential promiscuity’ as 1) “the unrestricted availability, in at least a subset of the speakers, of all major types of FoRs in manipulable space; [and 2)] the absence of a default perspective for reference to manipulable space.”

& O'Meara, 2012: 221-225). In (444), the speaker communicates on the orientation of the Figure (the man). However, from this description, the addressee can also get a rough approximation of the location of the Figure in relation to an absolute direction and the speech-act participants. In (444), if by looking upriver the man cannot look at the speech-act participants, it means that the speech-act participants are not located between the Figure and the headwaters. Therefore the speech-act participants are most probably downriver from the Figure (see Part III).

(444) *The man is looking [upriver]_{Geomorphic.FoR} [away from [us]_{DC}]_{Head-anchoredVector}.*

7.3.3 Revision of the typology of spatial domains

The discussions of the status of orientation in section 7.3 and the vectorial analysis in section 7.1 invite us to revise the sub-categorization of the spatial domains, their relations to non-vectorized and vectorized strategies. Spatial reference (represented by the top node in the Figure 53) has been divided on the basis of dynamicity vs stasis by Levinson & Wilkins (2006: 3; Figure 53).

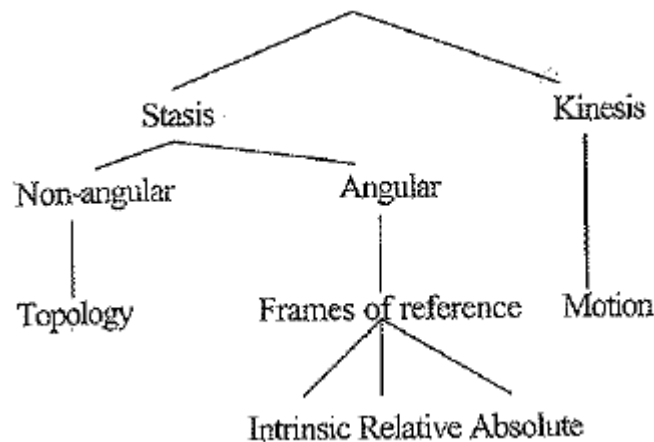


Figure 53: The categorization of spatial domain according to Levinson & Wilkins (Figure copied from Figure 1.1 in (2006: 3))

The opposition between stasis and dynamicity is often used in a manner synonymous to that between location and motion. However, the location of a Figure can be specified in a dynamic context, for instance when it is combined with a motion event (445).

(445) *[The woman]_{FIG} [is running [around]_{Path}]_{Motion} [inside the church]_{Ground}.*

The dichotomy between location and motion itself does not capture the whole domain of spatial reference. Orientation ('facing information') is a third type of spatial information one can express. It can therefore be treated on a par with location and motion. The second sub-division is also quite problematic for two reasons. First, it ignores the head-anchored strategy (e.g. Location: *He is towards the cinema*; Motion: *He went to the cinema*; Orientation: *He is facing the cinema*; section 7.1.2.2.1.1). Secondly, topology and FoRs, which are presented on the same level as motion and classified under 'stasis' in Figure 49, can be employed to express the Source (or direction from which the Figure comes) and Goal (or direction towards which the Figure is moving) in motion events (446, 447), the Cue (or direction towards which the Figure is oriented) in orientation descriptions (448, example in Caac in (459) section 8.1.1.2), in addition to the Ground (or direction in which the Figure is located) in locational descriptions (449, 450).

- (446) *The actor went on [the stage]_{Goal}.*
 Topology (strategy); Motion (spatial domain)
- (447) *He walked [inland]_{Axis}.*
 Absolute FoR (strategy); Motion (spatial domain)
- (448) *The man is facing [seawards]_{Axis}.*
 Absolute FoR (strategy); Orientation (spatial domain)
- (449) *The man was sitting on [the bench]_{Ground}.*
 Topology (strategy); Location (spatial domain)
- (450) *The town is [south]_{Axis} of [Liverpool]_{Ground}.*
 Absolute FoR (strategy); Location (spatial domain)

However, in motion descriptions when the Source and/or Goal are coded by a Frame of Reference (e.g. *She arrived [in front of your house]_{Goal} completely out of breath. At this season, the wind blows [from the north]_{Source}*), the latter are first established as locations. The addressee needs to compute the system of coordinates coded by *in front of the house* and *north* as locations: the house's front region and the north axis, represented by a search space vector. The locations are then established as Source (*blows from the north*) or Goal (*arrived in front of the house*) of a motion event.

Another fundamental difference between location and motion descriptions lies in the fact that the vector in motion descriptions represents the trajectory of the Figure specified either by a Goal (e.g. *He went to [the garden]_{Goal}*), a Source (e.g. *I left [the house]_{Source} at 12.30.*), and/or a Direction (e.g. *He walked [inland]_{Axis}*). By contrast, in location and orientation description, the vector does not describe the path followed by the Figure but opens a search space in which such a Figure is either to

be found (for location) or towards which a facet of the Figure is to be directed (for orientation). However, when dynamic terms such as directional morphemes (*da* ‘upwards’) are used in static settings, the Figure is located by virtue of a fictive path to the Figure or to the Deictic Centre coded by the dynamic term (section 8.3).

A revised version of the classification of spatial reference is proposed in Figure 54. Location, motion and orientation are treated on the same level, as three types of spatial information. Based on the vector analysis, the strategies to provide information about the entity to locate, move or orient are first categorized in non-vectorized and vectorized strategies. The latter category is further divided into angular and head-anchored vectors, depending on whether the vector is concordant with some axis (as part of a FoR) or pointing at or away from some entity, an *ad hoc* landmark or the Deictic Centre.

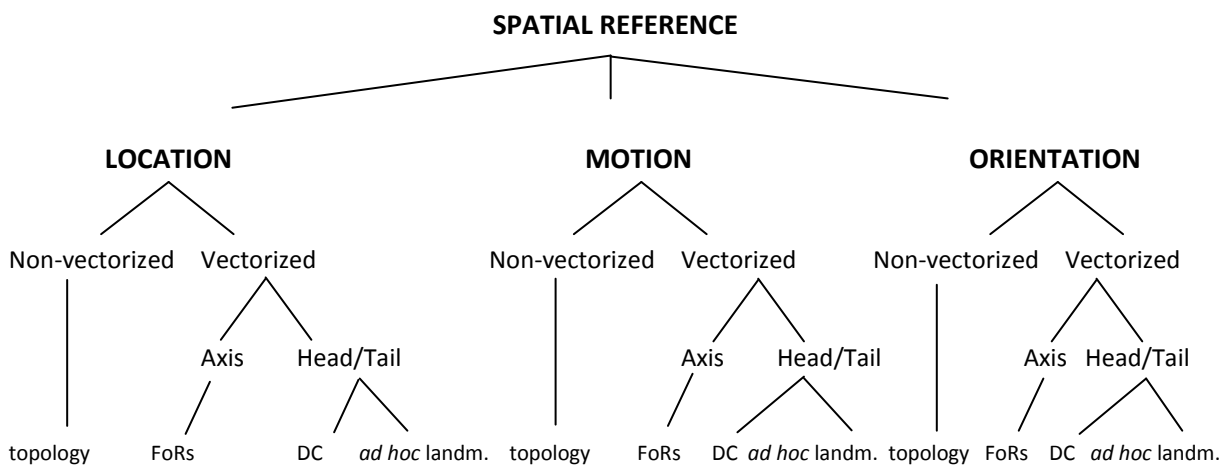


Figure 54: Re-analysis of the spatial domains and the vectorial strategies

Location descriptions express the relationship between a Figure and a Ground; the vectorized strategies define the search region in which the Figure can be found. In motion descriptions, the spatial strategies can refer to the Source, the Goal, the Passed Ground,¹⁵¹ and the Direction of the motion event. In orientation descriptions, vectorized strategies only give a direction towards (or away from) which the Figure is oriented. The topological strategy may be less common in orientation descriptions. The fact that orientation involves some degree of distance between the Figure and the

¹⁵¹ A Passed Ground is a reference object which is on the path of the Figure in motion descriptions; typically it designates a Ground one goes past, a Ground one goes across, or a Ground one goes through. The notion will not be explored further in this study, but some Caac examples are available in section 4.3.5.

Cue may exclude the topological expressions that specify some contact between the Figure and the reference object ((459) below). It is difficult to evaluate the role of the topological strategy in the domain of orientation in general as, to my knowledge, this has not been described in the literature. In chapter 8, I apply the vectorial analysis of the spatial strategies used in location, motion and orientation to Caac data.

Chapter 8: Vectorial analysis of spatial expressions in Caac

In this chapter, the six different strategies in the framework of the vectorial analysis discussed above (chapter 7) will be applied to the linguistic resources used by Caac speakers for spatial reference (reviewed in the section 7.2): (i) three angular-anchored strategies i.e. intrinsic Frame of Reference, absolute Frame of Reference and geomorphic Frame of Reference, (ii) two head-anchored strategies, i.e. *ad hoc* landmarks and Deictic Centre, (iii) a non-vectorized strategy (strategy that does not involve any concept of vector). The representation of spatial strategies by means of vectors enables us to take account of the dual nature of the information encompassed in Caac absolute deictic directionals and to examine the role of directionals in static settings (Fictive Motion).

This chapter investigates each vectorized strategy (i. and ii) in each spatial domain: location, motion and orientation. Non-vectorized spatial representations are not the main focus of this analysis; they will be considered in relation to their combination with vectorized strategies. This chapter examines the formal links existing between vectorial strategies as well as the combinations of strategies found within a single spatial description with a particular focus on absolute directions and deixis, the two primary bearings used for spatial reference by Caac speakers. The notions of motion, location and orientation themselves are coded by the verbal or nominal predicate (chapter 4 and section 3.3.1.1). However, we will see in section 8.3 that directionals (verbs and clitics), although being semantically dynamic (section 8.3.1), also allow the speakers to describe a static scene (Fictive Motion, section 8.3). More generally, the role of the directionals in Caac is of great of interest for two reasons: 1) for their ability to express both absolute directions and movement towards/away from the Deictic Centre within one linguistic form, and 2) for their role in Fictive Motion expressions.

Table 1 offers a classification of linguistic material used by Caac speakers for spatial reference within the vectorial framework. The primary division rests on vectorized vs non-vectorized spatial strategies, that is spatial terms that can be represented by means of a vector versus those that cannot be represented by means of a vector, the bulk of the analysis bearing on the vectorized strategies. The spatial strategies are further classified depending on whether one infers a region as a search space. Last, in the case of strategies resting on the latter parameter, the region may emerge from the projection of an axis (direction or vector) or not (i.e. non-oriented regions). The relative FoR is absent from this table but note that there are instances of ambiguous cases which are discussed in section 8.1.2.

Non-Vectorized spatial relationships/strategies	(i) specifying a relationship of contiguity	<i>o</i> 'at', <i>cele</i> 'at X home' (essive use), <i>re pene</i> -POSS 'in the middle of', <i>re</i> -POSS 'in, inside', <i>aria</i> -POSS 'next to', <i>re wanenge-n</i> + Noun 'at the rear of sth', <i>re wan</i> + Noun 'at the front of sth' etc.
[Tail+Head] Vector (= Head-anchored Vector)	(i) with head specified	= <i>me</i> '(general) CENTRIP'
	(ii) Unspecified-Head vector	= <i>ap</i> '(general) CENTRIF' (as used in location and motion descriptions), <i>ja</i> 'PROX', <i>tena</i> 'DIST'
[Tail+Axis] Vector (= Angular-anchored Vector)	(i) intrinsic FoR	<i>o/bwe me</i> 'on/to the left', <i>o/bwe jure hi-k</i> 'on/to the right', <i>habur o</i> 'in front (of)', <i>pûr o</i> 'behind', <i>tuu</i> -POSS 'behind', <i>o jere~jele</i> -POSS 'beside', <i>bwe o/e</i> 'above', <i>re pire</i> -POSS 'under'
	(ii) geomorphic and absolute FoRs	= <i>de</i> 'downward', = <i>da</i> 'upward', =(<i>z</i>) <i>in</i> 'transverse', <i>bwe daan</i> 'windward', <i>are daan</i> 'leeward'
Combination of [Tail + Head] Vector and [Tail + Axis] Vector	(i) Head = Deictic Centre; Axis based on absolute or geomorphic system	= <i>me</i> 'upward towards Deictic Centre', = <i>ve</i> 'downward towards Deictic Centre'
	(ii) Tail = Deictic Centre, Head = unspecified; Axis based on absolute or geomorphic system	= <i>ec</i> 'upward away from Deictic Centre', = <i>uc</i> 'downward away from Deictic Centre'

Table 39: Vectorized and non-vectorized spatial strategies in Caac

8.1 Spatial strategies relying on angular-anchored vectors

8.1.1 Intrinsic Frame of Reference

In spatial descriptions relying on the intrinsic FoR, the Ground is divided into facets from which a search domain is projected; the Figure is to be found in this search domain (see section 7.2.1.2). The facets employed in intrinsic expressions in Caac are based on the following salient axes: (i) the sagittal

axis, i.e. a front facet and a back facet, (ii) along the lateral axis i.e. the speaker can refer to an unspecified side, or partitions the Ground into a left side or a right side, or (iii) along a top/bottom axis, i.e. a top side and under side (above vs underneath). The intrinsic FoR is expressed by prepositional phrases (e.g. *habur o* ‘in front of’) or spatial nominal phrases headed by a relational noun (e.g. *tuu-n* ‘behind it/him/her’) some of which originate in body part terms e.g. *tuu-n* ‘behind him/her/it’ < *duu-n* ‘his/her/its back’ (section 5.2.1.5).

This spatial strategy is commonly found in elicited and non-elicited data, most frequently in small-scale settings, e.g. to locate an object on a table or in a house or in the village. All intrinsic expressions are found in locative and motion descriptions (specifying the path (e.g. *going to your right*) or end point (e.g. *going in front of the house*) of a motion event). The front, left and right sides are attested in orientational descriptions as well.

8.1.1.1 *bwe(-n) e/o/na* ‘above’ vs *re pire-n* ‘underneath’

The top or bottom facet of the Ground can constitute the anchor from which an upper region (above) and a lower region (underneath) are projected. Caac speakers encode these regions in the spatial NPs *bwe-n o/e/na* ‘above sth’ and *re pire-n* ‘underneath him/her/it’). The latter are found encoding a Ground in locative descriptions (451, 452) and a Goal or Source (preceded by the ablative preposition *na* ‘from’) in motion descriptions. They are not attested in orientation descriptions.

- (451) *I ap [re poa]_{PP} [na neiny]_{NP_Subj...} [bwe o na joor]_{PP}.*
 3SG.S go in sky DIST cloud top.side at/to DIST
 mountain
 ‘That cloud is passing (lit. goes) in the sky... above a mountain.’ (TopRel_DN)

Axis orthogonal to top side

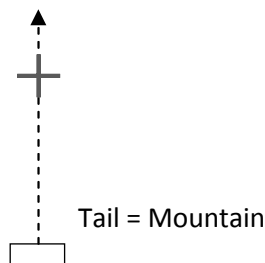


Figure 55: Vector representing example (451)

- (452) *Ina mimi [re pire na taap]_{NP}.*
 EXIST.DIST cat in under DIST table
 ‘There is a cat under that table.’ (TopRel_DN)

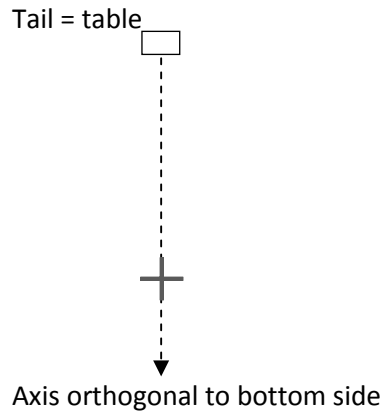


Figure 56: Vector representing example (452)

The spatial term *re pire-n* is not exclusively used to designate the lower region projected off a Ground. It can also express the spatial relation whereby the Figure is in contact with the bottom facet of the Ground (453), i.e. a topological relationship, section 7.2.1.1).

- (453) *Pwa na pooc na [re pire na taap]_{NP}.*
 EXIST DIST thing PRE.LOC in under DIST table
 ‘There is something (a chewing gum stuck) under the table.’ (TopRel_DN)

As for the complex phrase *bwe o/e/na* ‘above’, it is only employed in intrinsic FoR expressions. However, the cognate relational noun *bwe-n* (top.side-3SG.POSS ‘on him/her/it’) used in a simple spatial NP is used to describe spatial configurations involving a contact between the Figure and the top facet of the Ground (*bwe-n* ‘on him/her/it’). The fact that spatial terms are used in several spatial strategies (in the case of *re pire-n* and *bwe-n*, in the intrinsic FoR and in non-vectorized/topological spatial relationship) has been observed many times including in English (Levinson, 1996: 161, note 33).

8.1.1.2 *habur o/e* ‘in front of’, *pûr o/e* ‘behind’ and *tuu-n* ‘behind him/her/it’

The prepositions *habur o/e* ‘in front of’, *pûr o/e* ‘behind’ and the bound noun *tuu-n* ‘behind him/her/it’ (see section 5.3) express the intrinsic regions projected off the front and back facets of a Ground (454; Figures 57 and 58).

(454) *Pwa na poka ceez, i [habur e-i]_{PP}; pwa*
 TOP DIST pig one be.at.3SG in.front IND-3SG.O TOP

na ceec i [tuu-n]_{NP}.
 DIST one 3SG.S back-3SG.POSS

‘One pig, it’s in front of him (one toy man); another one is behind him (one toy man).’
 (Man&Tree_AT_FT)

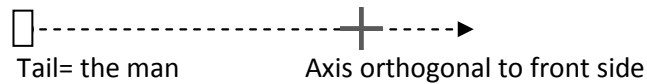


Figure 57: Vector representing *i habur e-i* in (454)

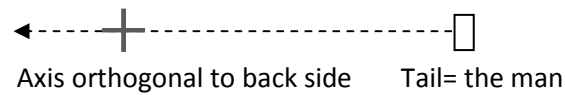


Figure 58: Vector representing *i tuu-n* in (454)

The front and back facets are determined by the use and function of the Ground in a very similar way to English. Thus, the front side of a church is the facet where the main entrance is found; the front facet of a person is the facet where his/her face is (the facet from which (s)he can see, speak and move); the front part of a chair corresponds to the side where one sits; the front part of a car is the side the driver is facing. We will see in example (460) below that front and back parts are also attributed in a systematic way to some cultural objects such as a customary heap. When the Ground is non-featured, *habur o/e* ‘in front of’ and *pûr o/e* ‘behind’ can still be used, partly relying on the viewer’s location (thereby calling upon the relative FoR); this is further developed in section 8.1.2 below.

These spatial phrases are relational. They are used for projective intrinsic relations only and cannot be used to name regions of a ground (the back/front of an entity) except for *pût* (455). Unlike *re pire-n* ‘underneath him/her/it’ and *bwe-n e/o/na* ‘above sth’, they cannot express the idea of contact between the Figure and the front or back facet of the Ground. In this case, speakers resort to NPs or PPs headed by a relational noun (e.g. *re-n* ‘in(side); at; to’) or preposition (e.g. *o* ‘at; to’) and followed by a noun referring to the front or back region of the Ground: most commonly *bwa-n* ‘his/her/its head’ (455) and *wan* ‘opening, entrance’ for the front facet (456), and *waneng* ‘end, rear’ for the back facet of the Ground.

- (455) *Tabo* [*le kabe*]_{NP} [*o bwa-n wang*]_{PP}.
 sit DEF child at/to head-DET boat
 [*Te=le âc*]_{NP} *re tabo* [*pût*]_{PP}.
 DU=DEF man 3DU.S sit behind
 ‘The child is sitting at the front of the boat. The two men, they are sitting behind.’

- (456) *Ra taa=me* [*re wan mwe cireni*]_{NP}
 3PL.S arrive=CENTRIP at/to opening house forbidden
 [*bwe loto*]_{NP}.
 top.side car
 ‘They arrive by car at the front of the church.’

Habur o/e ‘in front of’, *pûr o* ‘behind’ and *tuu-n* ‘behind him/her/it’ encode facets of the Ground in locative descriptions (454) and facets of the Goal (457) or Source (458) in motion descriptions.

- (457) *Jo pwame le diliz o... u ca parawa-ni o=le*
 then TOP DEF land TOP PERF really drop-TR NEUT=DEF
i meze ra i parawa-ni a ja=ira [tuu-n
 3SG.S throw and 3SG.S throw-TR go PROX=upward behind-DET
Miciô]_{NP}.
 Mission
 ‘Then as for the land [that Bwak stole]... she dropped it, x she threw it and she dropped it inland behind the church.’ (Higon1_FT)

- (458) *No ap [na [habur o le wang]*]_{PP}]_{PP}.
 1SG.S go from in.front at/to DEF boat
 ‘I’m coming from in front of the boat.’

In orientation descriptions, the topological expressions encoding the front or back facet of the Figure are attested with the form *wan* ‘opening, entrance’ although this very rarely occurs in my data (459).

- (459) *E-rô bwe waadan hâc;*
 be.at-1SG.O top.side path big

no alô da [re wan mwe cire-ni]_{NP}.
 1SG.S look upward in opening house forbid-TR
 ‘I’m on the main road facing (lit. I look inland towards/into) the church’s entrance.’
 (SpaceScen_JP)

Example (460) illustrates a culturally determined partition of the Ground.

(460) nya coor [pûr o le coutume e-nya]_{PP}]_{Main.CL} [me
 1PL.INCL.S stand behind at/to DEF custom IND-1PL.INCL.O SUB
 nya pu pwalek e o le waanirit]_{Sub.CL}.
 1PL.INCL.S do respect mm at/to DEF maternal clan
 ‘We are standing behind our custom (heaps) in order to show respect to the
 maternal clan.’ (FuneralsCustom_AN)

In (460), the speaker describes a customary ceremony in the context of funerals. During that ceremony, the paternal clan leading the ceremony gathers various gifts (yams, taros, woven mats, packs of rice, sugar, tobacco, money etc.) to offer to the maternal clan. The paternal clan presenting the gifts is standing behind the customary heap while the maternal clan is standing several meters in front of them. The customary path is symbolized by several long and narrow pieces of cloth (called *manou* in New Caledonian French) spread on the ground, symbolically linking the customary heap (and therefore the paternal clan) and the maternal clan. The gifts are laid out in a particular way: the most precious goods facing the maternal clan (e.g. yams, cloth etc.), the smallest being on top of the heap (e.g. money, tobacco etc.) while the less important gifts (such as bags of rice or sugar) are piled at the back of the heap towards the paternal clan who are leading the ceremony. In this context, the back of the customary heap is where the clan offering the gifts is standing while the front facet of the heap is the side of the heap the maternal clan receiving the goods is facing.

8.1.1.3 *o jele-n~(o) jere-n* ‘beside him/her/it’

O jele-n~(o) jere-n ‘beside him/her/it’ is used with featured Grounds expressing either the region projected off a side of the Ground (intrinsic relation between the Figure and the Ground; 461) or a relation of contact between the Figure and a side facet of the Ground (topological space; 462). It is attested in motion and location descriptions.

- (461) *No ap [na [jere le mwa]_{PP}]_{PP}.*
 1SG.S go from beside DEF house
 ‘I’m coming from the side of (lit. from beside) the house.’

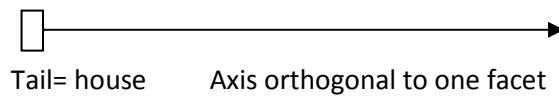


Figure 59: Vector representing example (461)

- (462) *l coor [o jere na bwa-n joor]_{PP}; na*
 3SG.S stand at/to side DIST head-DET mountain DIST

wawe.
 columnar.araucaria
 ‘The columnar araucaria tree is standing beside that mountain’s summit.’
 (TopRel_DN)

When the spatial relationship between two identical entities is based on the sides of these entities (‘X and Y are side by side’), speakers resort to the bound noun *jere-n* ‘his, her, its flank / side’ used then as a nominal predicate (e.g. *re cu-jere-le*¹⁵² ‘they are standing side by side’) or the posture verb *bavala* ‘be side by side’ (463). Both forms denote a symmetrical spatial configuration whereby the Figure is located in a lateral region of the Ground and both entities reciprocally function as Figure and Ground.

- (463) *Le wavaze imâc... te=le he-ru âc...*
 DEF first picture DU=DEF CLASS1-two man

re cu-bavala.
 3DU.S standing-be.side.by.side
 ‘The first picture... the two men, they are standing side by side.’ (Man&TreeDN_DI)

8.1.1.4 *me* ‘left’ vs *jere hi-k* ‘one’s right’

The sides of the Ground can be specified as its left and right sides by means of the spatial phrases *bwe/o me* ‘on/at/to the left’ and *bwe/o jere hi-k* ‘on/at/to one’s right’ (lit. ‘one’s true hand/arm’; section 5.2.1.6). With respect to their morphology and etymology, the lexemes for ‘left’ and ‘right’ in Caac seem fairly typical of Kanak (and Oceanic in general) languages (often a bound noun initially referring to a body part). As for their usage as spatial terms, it is generally reported that Kanak

¹⁵² 3DU.S standing-side-3DU.POSS.

languages make little or no use of the pair left/right for direction and location (see Ozanne-Rivierre, 1997: 83; Ross, 1998: 230-231, Brill 2002: 309 for Nêlêmwa; Bearune, 2012: 233, 237 for Nengone). In his Caac-French dictionary, based on the 19th century tales and his own fieldwork in the 1960s, Hollyman (1999b: 99, 78) reports that the term for 'left' in Caac is used only in conjunction with the body part term 'hand'; and the phrase *jure hi-k* 'right' literally means 'one's true/right hand'. However, elicited data as well as naturalistic data in Caac show many examples of *o /bwe meu-n* 'to/on his/her/its left' and *o/bwe jure hi-k* 'to/on one's right' used by Caac speakers of different generations, addressing other Caac speakers, usually in route descriptions and elicitation games. They are not found in the tales where directionals are preferred, enabling the speaker to inscribe the story within the local contexts. Although uncommon, cases of spatial usage of the left/right terms have already been recorded in certain Kanak languages and have been attributed to the influence of the lingua franca – French – on the speakers, as in Nengone (Bearune, 2012: 240-241). In Caac, it seems that the spatial reference of the terms left/right (hand) is a recent development,¹⁵³ probably influenced by bilingualism with French which makes extensive use of the phrases *la droite/ la gauche* 'the left/ the right' in two spatial strategies: (i) the intrinsic FoR i.e. the left and right sides are anchored in the Ground, e.g. *sur ta droite* 'on your right' (origins of the coordinate system = Ground = addressee), and (ii) the relative FoR i.e. the left and right sides are anchored in the viewer, e.g. *à droite du lampadaire* 'on the right of the street lamp' (origins of the coordinate system = viewer ≠ Ground [street lamp]). The influence of French may be reinforced by the fact that the relative strategy was initially not available in Caac. The possibility that the use of left/right has encroached on the spatial domain under the influence of French should therefore be considered. Some speakers also resort to the corresponding spatial expressions in French (*à gauche* 'on the left' and *à droite* 'on the right' and readily integrate those expressions within a Caac sentence.

Left and right regions are used in all three spatial domains – location (464), motion and orientation (465).

(464)	<i>Jo</i>	<i>zo</i>	<i>ja</i>	<i>ta</i>	<i>taa</i>	<i>da</i>	<i>texi</i>	<i>le</i>	<i>avono ;</i>	
	then	2SG.S	ASS	go.up	arrive	upward	find	DEF	dwelling	
	<i>u</i>	<i>tena</i>	<i>Pwerabi</i>		<i>le,</i>	<i>i</i>		[o	meu-m] _{pp}	<i>ne</i>
	PERF	DIST	Pwerabi		RES	be.at.3SG		at/to	left-2SG.POSS	IRR

¹⁵³ Bearune (2012: 240) also notes the same tendency for young people to extend the use of these terms as spatial indicators.

zo ta.
 2SG.S go.up
 ‘Then you go inland (and) arrive inland (and) find the house; Pwerabi is there, it’s on your left when you go upwards.’ (PaaraRoute_AN)

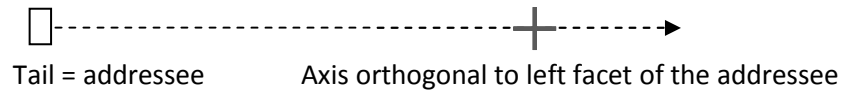


Figure 60: Vector representing example (464)

(465) *l* *cu-alô* *ap* *o* *meu-n.*
 3SG.S standing-look CENTRIF at/to left-3SG.POSS
 ‘He is standing looking away to his left.’ (Man&Tree_DN_DI)

8.1.2 Ambiguous cases: between intrinsic and relative Frames of Reference

The spatial terms *me* ‘left’, *jure hi-k* ‘its right’, *habur o/e* ‘in front’ and *pûr o/e* ‘behind’ allow the complete absence of specification of the Ground. In some contexts, the Ground has been already acknowledged to be the addressee or both speech-act participants; this is the case in elicitation games where the general configuration (the speaker in relation to the addressee) does not vary. Thus, in the Man & Tree game (Levinson et al., 1992) the speech-act participants are sitting side by side and one speaker is describing the spatial array of two entities (s)he can see on a picture. In this context, the Ground can be easily retrieved from the situation and does not need to be made explicit again. For instance in (466b), Speaker DN orients the Figure (some toy pigs) in the right direction. The non-personal possessive marker *-k* on the phrase *jure hi-k* ‘one’s right’ leaves the Ground unspecified. The right side could be interpreted as anchored in the viewer’s perspective, which means the speaker would resort to the relative FoR (see section 7.2.1.4.2 for details). However, by specifying *jure hi-nya* ‘our right side’ in (466c, 466f), Speaker DN makes it clear that the description here is actually anchored in the right side of the speech-act participants, hence the intrinsic interpretation. Indeed, the reading is relative only if the Ground is not a speech-act participant.



Picture 5: Man & Tree Game PP4_03

- (466) a. DI: *Oni pwame ta=le bwa-la ra poo le...*
 but TOP PL=DEF head-3PL.POSS 3PL.S thing DEF

ra beve-ra.
 3PL.S turn-3PL.O
 'But their head, they what... they are turned.'
- b. DN: *Alô da jure hi-k?*
 look upward true hand-NON.PERS.POSS
 '(They) look on the right?'
- c. DI: *Â jure hi-nya.*
 yes true hand-1PL.INCL.POSS
 'Yes on our right.'
- d. DN: *Â.*
 yes
 'Yes.'
- e. DI: *Voilà.*
 here.it.is
 'Here it is.'
- f. DN: *Alô da o jure hi-nya.*
 look upward at/to true hand-1PL.INCL.POSS
 '(They) look inland to our right.'

However some cases are more ambiguous. Sentence (467) below exemplifies a slightly different use of *habur* 'in front' and *pûr* 'behind'. The pair encodes the position of two symmetrical and unfeatured

entities both located in front of the speaker. In this situation, the Ground remains implicit as there is no NP following *habur* ‘in front of’ and *pûr* ‘behind’.

(467) *Te=le bul mia, re pe juru aria-le ;*
 DU=DEF ball red 3DU.S REC very next-3DU.POSS

ceec na pûr ; ceec na habur.
 one PRE.LOC behind one PRE.LOC in.front

‘The two red balls, they are very much next to each other; one is behind, one is in front.’ (ManTreeG2_DNDI)



Picture 6: Man & Tree Game 4, PP2_10

In this example, the Ground does not coincide with the speech-act participants as the ball described as being ‘behind’ (*pûr*) is not, in the extra-linguistic world, located behind the speakers but on a picture placed in front of them. In this context, *pûr* ‘behind’ and *habur* ‘in front’ could not be substituted by the fully-fledged phrase: *pûr e-nya* ‘behind us’ (behind / IND-1PL.INCL.POSS) and *habur e-nya* ‘behind us’ (in front IND-1PL.INCL.POSS). This rules out the interpretation whereby the implicit Ground is the speech-act participants as in examples (466) above. In this example, – the ground in each clause is the other ball, which is assigned a front/back facet mirroring the front/back of the speaker, hence the relative reading. This results in the interpretation that what is in front is closer in the visual field and what is behind is further away. The FoR is therefore anchored in the viewer, i.e. the speech-act participants. *Habur* ‘in front’ and *pûr* ‘behind’ would be then used in a relative FoR as their usage in (467) is based on a ternary relationship between the Figure [one ball], the Ground [the other ball] and the Viewer [speech-act participants].

Ambiguous cases are found in location, motion and orientation descriptions. Resulting from a methodological bias (elicited data, the presence of a French speaker) or not, these examples show that the speaker has at least the morphological possibility to use the ‘left/right’ and ‘in front/behind’ terms in a relative FoR as the specification of the possessor in the case of *me* ‘left’ and *jure hi-k* ‘one’s

right' and the specification of a prepositional object with *habur (o)* 'in front (of)' and *pûr (o)* 'behind' can be avoided. The relative use of left/right terms might be on the rise amongst Caac speakers, again probably under the influence of French, by copying the use of the French spatial nouns *la gauche* 'the left' and *la droite* 'the right' onto *me* 'left' and *jure hi-k* 'right' for the intrinsic usage of 'left' and 'right' lexemes as spatial terms is either absent or a very recent development in New Caledonian languages (see Nengone, Bearune, 2012: 240-241, 246) and Oceanic languages in general. Their relative usage is not attested in this language family.

8.1.3 Absolute Frame of Reference

The absolute FoR in Caac applies to expressions involving directionals morphemes and verbs in addition to two spatial nominal phrases *bwe daan* 'windward' and *are daan* 'leeward'. As described in detail in chapter 7, the absolute axes are defined neither by the Ground's facets (intrinsic FoR) nor by the viewer (relative FoR) but by a third bearing found in the environment of the speakers (see Levinson, 2003; Bohnemeyer & Levinson, not dated; Danziger, 2010). The absolute system in Caac relies on the same natural bearings (land, sea, trade winds) as in other Northern New Caledonian languages (Ozanne-Rivierre, 1997) and many Oceanic languages spoken in a similar ecological context in the Pacific region (see François, 2004). Those natural bearings are the most visible and prominent entities in the environment of the speakers and have an important role in the daily life of the speakers in terms of climate, food supply or division of labour amongst the clans for example. The sea and the mountains also form the eastern and western physical limits of the village of Pouebo and Mwelebeng chiefdom. The fact that the absolute system in Caac is motivated by some salient ecological bearings is also visible in the correlation between new uses of the absolute FoR and changes in the lifestyle of the speakers. The system can indeed change if it is motivated no longer by the lifestyle of the speakers and is therefore losing some degree of saliency in the speakers' perception (section 6.1.2.2.1). Based on the uses of the absolute spatial terms in Caac, the first part of this section is dedicated to specifying the definition of the absolute FoR in Caac. Note that the examples illustrating absolute directions often include *ad hoc* landmarks (represented by a head-anchored vector); thus, the section already presents some complex vectorial representations involving angular-anchored and head-anchored vectors.

8.1.3.1 How systematic are the absolute directions in Caac?

An inherent feature of absolute directions is their systematicity, i.e. their conventionalized use. Absolute directions are therefore clearly distinct from *ad hoc* landmarks (Cablitz, 2006: 276-278).

In example (468), the underlying and conventionalized bearings of the absolute markers *de* ‘downward’ and *da* ‘upward’ are the sea and mountain. In contrast, the spatial phrases *o kumaac* ‘towards the shore’ and *joor* ‘(towards the) mountain’¹⁵⁴ encoding *ad hoc* landmarks are chosen by a speaker to reinforce the directionals and inscribe the description in the local physical context.

- (468) [Cu-*alô* **de** **o** **kumaac** *o* *ceec*]_{CL1}
 standing-look downwards at/to beach SBJ one
- [cu-*alô* **da** (**o**) **joor** *o* *ceec*]_{CL2}
 standing-look upwards at/to mountain S one
 ‘One is standing facing seawards, towards the shore, one is standing facing inland towards the mountains.’ (ManTreeG4_DNDI)

Figure 61 illustrates the spatial expressions in the first clause of example (468). An angular-anchored vector represents the seaward axis expressed by the directional *de* ‘downward’. The second vector is a head-anchored vector representing the landmark coded by the prepositional phrase *o kumaac* ‘towards the shore’.

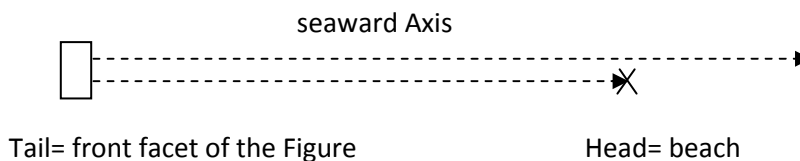


Figure 61: Vectors representing Clause 1 in (468)

While absolute axes always point in the same direction wherever one is standing and are encoded by a close set of linguistic forms, *ad hoc* landmarks vary in the way they are encoded and in the direction they point. They also vary from one speaker to another but also in the course of the speech of a single speaker who, within the time of a work session, felicitously selects different landmarks for the same general direction (a direction which can be expressed by one directional only). Thus, while remaining at the same place, a speaker can for instance switch between the phrases *bwe waadan* ‘on/onto the path’ and (*o*) *joor* ‘(towards) the mountains’ to express the inland direction (systematically encoded by *da* ‘upward’). Likewise, (s)he can specify the seaward direction (systematically encoded by *de* ‘downward’) by mentioning alternatively *o kumaac* ‘to the shore’ and *re nen nu* ‘into the coconut grove’. The difference in systematicity between the absolute and *ad hoc*

¹⁵⁴ *Joor* ‘mountain’ may also be analyzed as the object of the verb *alô* ‘look’ because of the absence of any spatial marker although there are examples in which *joor* occurs as a spatial adjunct without any spatial marker.

landmarks is also visible in the morphological differences between them. *Ad hoc* landmarks are encoded by spatial nominal phrases (e.g. *bwe waadan* ‘on(to) the path’) or prepositional phrases (e.g. *o kumaac* ‘towards the beach’; sections 8.2.1). This contrasts with the directionals (*z*)*in* ‘along the shore’, *da* ‘upward’ and *de* ‘downward’ expressing conventionalized absolute directions.

The directionals *da/de/(z)in* form a system of spatial reference which is very frequently used and familiar to the speakers. However, the degree of systematicity and familiarity varies depending on whether the directionals are used on the sea-land axis or on the wind axis. In Caac, speakers resort to directionals on the sea-land axis in a very systematic way. However, as observed in section 6.1.2.2.1, the use of directionals is prone to variation when speakers locate an item on the wind axis, probably because seafaring is not as crucial as it was once in their society. It is also clear that the use of directionals based on the winds axis is much less systematic when locating something on the western coast; the use of *da/de* shows great variation amongst speakers in that case (section 6.1.2.2.1). The need to directly refer to places on the western coast (centre and south above all) may be quite recent in the history of the Caac speakers, and/or the routes to get there were very likely to be different (probably via different routes and following the customary paths, they may refer to the stages of their trip – broken down into smaller trips – instead of directly referring to a route from Pouebo to such place on the western coast). Nowadays the coastal routes and a few transverse roads connect new cities¹⁵⁵ on the western and eastern coasts. The spatial reference system is likely to change in response to newly arising needs of the speakers (section 6.1.2.2.1).

8.1.3.2 How abstract and fixed are the absolute axes in Caac?

Across languages, absolute directions range from salient elements belonging to the speech-act participants’ environment (e.g. *We walked seaward*.) to more abstract bearings such as the compass points in Present-Day English for instance (e.g. *We drove south through the Lake District*) (although see Palmer (not dated: 15) on the overstated abstractness of the cardinal points in English). The fact that the absolute system can be based on environmental cues entails that the absolute directions depend on the location of those bearings and are not necessarily unbounded. Within the Caac absolute system itself, not all absolute directions (on the horizontal plane) share the same properties in terms of boundedness, fixedness and abstractness.

¹⁵⁵ This includes the main city and administrative centre, Noumea, formed at the end of the 19th century, as well as the recent expansion of Koné and Voh resulting from the implantation of a mine at Koniambo.

On the vertical plane Caac speakers resort to only one fixed axis:

- i. the up/down axis determined by gravity and encoded by *de* 'downward' and *da* 'upward' (see chapter 3.4).

On the horizontal plane, Caac speakers resort to several axes involved in the absolute FoR:

- ii. an unbounded axis based on the trade winds (southeast-northwest in compass terms); used in any scale but preferably in large-scale settings, and encoded by *de/da* 'downward: leeward' / 'upward: windward' (section 6.1.2.2.1)
- iii. an axis bounded on one end (landward / inland) and whose directions depend on which coast the Figure is located on; this axis is based on the two main geographical traits of the speakers' environment (an island): land vs sea; used in any scale, and encoded by *de/da* 'downward: seaward' / 'upward: inland' (section 6.1.2.2.2)

Note that the fact that the absolute directions are based on the trade winds is not identifiable by many speakers. This consolidates the idea that this absolute axis is more abstract and/or the direction of the winds in daily life is nowadays less relevant in the life of the speakers. By contrast, the origins of the use of *de/da* based on the sea and mountains are clearly identified by speakers (section 6.1.2.2.1).

- iv. an axis parallel to the shore and perpendicularly crossing the land-sea axis; bounded to the chiefdom's boundaries, restricted to the small scale; encoded by *(z)in* 'transverse, along the coast'
- v. on the widest scale (called 'global scale'), the use of the directionals rests on the home land-abroad opposition: *da* 'upward: inside; in homeland' vs *de* 'downward: outside; abroad' (see section 6.1.2.2.5).

The fact that the landward and transverse axis are bounded (iii and iv), and that the landward-seaward directions depend on whether the speaker is located on the eastern and western coast show that the sea-land-transverse axes are not as fixed and immovable as the axis based on winds (ii). The latter gives way to the inside/outside opposition when the scale is global (see also Figure 8).

As Palmer (2003: 8-9) points out, the degree of fixedness of absolute directions needs to be specified. Depending on which conceptual frame one adopts, the absolute directions of a language can be considered as more or less fixed. As explained above, on the one hand the upwind-downwind axis is fixed in that it refers to the same directions wherever one is in New Caledonia. On the other hand, this axis is not always absolute when one compares with an absolute system based on cardinal points

In (469), the transverse direction is calculated from the location of the Deictic Centre, here the speech-act participants. It is possible to designate a Ground other than the Deictic Centre; the nominal Ground is then preceded by a prepositional phrase with *na* ‘from; with respect to’ (470). This construction has been attested with directional adverbs (*ja* ‘PROX’ + =DIR; 482) and region stems (*ave/yoo* ‘side’ + =DIR; 483). In (470) and (471), the inland side and seaward side are respectively projected off a place called *Bwe o ciia* and a road (*waadan*). When the directional follows any other lexeme (e.g. a noun, a determiner, a verb), the Ground of the absolute expression seems to be restricted to the Deictic Centre.

(470) *Pwerabi, i ja=da na Bwe o ciia.*
 Pwerabi be.at.3SG PROX=upward from Bwe o ciia
 ‘Pwerabi, it’s inland to *Bwe o ciia*.’

(471) *I mo [ave=de [o¹⁵⁶ waadan]_{PP}]_{ADV}.*
 3SG.S stay side=downward at/to path
 ‘It (*Bwe o ciia*) is on the seaward side of the path.’

The difference between (470) and (471) lies in the fact that in (470) the inland direction is projected off a place, an unfaceted, point-like referent object while in (471), the elongated Ground (the road) is attributed two facets defined by two absolute directions (a seawards side and an inland side). Contrary to the claim made by Levinson,¹⁵⁷ the region terms based on the absolute FoR such as *ave=de* ‘on the seaward side’ in (471) do not require the combination of the absolute and intrinsic FoRs. The two regions are not based on the inherent asymmetry of the Ground (like in the intrinsic FoR) but derived from the absolute system. One feature of the absolute FoR is that under rotation of the whole array (Figure and Ground), the spatial description would not hold. For instance, in this example *On the map, it’s indicated that Bury is north of Manchester*, if the cities of Bury and Manchester were to be rotated, the spatial description (*north of*) would not be valid anymore. Or, taking an example in Caac, if the places *Pwerabi* and *Bwe o ciia* were to be rotated in (471), locating *Pwerabi* as inland (*ja=da* PROX=upward) to *Bwe o ciia* would not hold anymore. Likewise, under this test, the spatial description in *ave=de* ‘on the seaward side’ in (471) would be inaccurate to locate the Figure *Bwe o ciia* in relation to the Ground *waadan* ‘path’ if the latter were rotated. This contrasts with spatial descriptions based on the intrinsic system, e.g. *Pwerabi is in front of Bwe o ciia* and *Bwe*

¹⁵⁶ The complement of the region stems *ave* ‘side’ and *yoo* ‘side’ is preceded either by the ablative preposition *na* ‘from’, the general spatial preposition *o* ‘at; to’ or the indirect marker *le* ‘IND’ (see section 5.3.2.1).

¹⁵⁷ “For example, the Australian language Guugu Yimithirr has (derived) lexemes meaning “north side of”, “south side of”, and so on, which combine both intrinsic and absolute frames of reference in a single word.” Levinson (1996: 138, 161 note 33).

o ciia is **on the right side of the path**, would remain the same under rotation of the Figure and Ground spatial array. Finally, under rotation of the viewer, the absolute description would still be accurate. To some extent, region terms enable speakers to attribute some absolute facets to a Ground, and turn the search path vector into a search region vector (similar to the one used to represent the intrinsic FoR projected from an explicit Ground) when the latter lacks intrinsic facets. Thus, in (470) *ja=da* ‘inland’ describes an inland search path with the place *Bwe o ciia* functioning as the Tail of the vector while in (471), the region expression *ave=de* ‘on the seawards side’ project sides off the road (the seaward side, and by opposition, the inland side).

Example (472) illustrates the use of directional clitics and verbs in a dynamic context, expressing the direction in which or from which the Figure is moving.

- (472) *Ra* ***ta=mwa...*** *ule-i* ***da=mwa*** ***ja=ira*** *me*
 3PL.S go.up=back drive-3SG.O upward=back PROX=upward SUB
- ra* ***ta=mwa*** *pwâdi.*
 3PL.S go.up=back show
 ‘They went back windward, brought her back windward to show her [to their chief]
 (lit. so that they went windward (and) showed her.)’

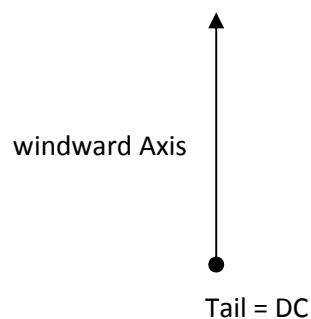


Figure 63: Vector representing example (472)

The encoding of the absolute FoR, based on the sea-land axis or winds axis, by directional morphemes is also a frequent spatial strategy used in orientation descriptions (473).

- (473) *l* *ta-wan* ***da*** ***bwe daan.***
 3SG.S sitting-opening upward windward
 ‘It (the house) is sitting its entrance upwards, windward.’

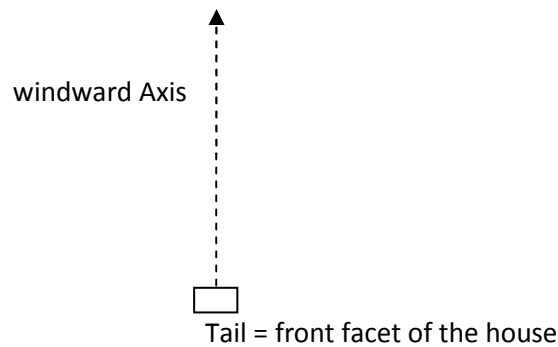


Figure 64: Vector representing example (473)

In this example (473), *bwe daan* 'windward' co-occurs with its corresponding directional (*da* 'upward'), narrowing down the possible interpretations of the directionals to one direction (*da* as 'windward').

8.1.4 Geomorphic Frame of Reference

Like other Northern New Caledonian languages (see for example, Nemi in Ozanne-Rivierre, 1997: 86), the directionals *ta/da* 'go up' / 'inland', *te/de* 'go down' / 'downward' and *(z)in* 'transverse' can refer to the 'uphill' / 'downhill' / 'on the other side' (475) and 'upriver' / 'downriver' / 'crosswise' (474) directions (section 6.1.2.2.3). In that case, the directions expressed by the set of directional forms are bounded and tailored to the local relief. This geomorphic use of directionals does not necessarily align with the more encompassing absolute directions based on the sea, land and winds. Directionals are therefore not restricted to one spatial strategy but can function both in the absolute system, and in the geomorphic system; the same is true for the intrinsic and relative FoRs which often share the same linguistic means e.g. English *to the left/right of the house*. Only the adverb phrases *ave=da=zin* and *yoo=da=zin* 'on the other side, crosswise' are specific expressions coding geomorphic directions. Like the absolute FoR, the geomorphic FoR is anchored neither in the Ground (intrinsic FoR) nor in the viewer (relative FoR) but in an environment entity and involves a ternary relationship (Figure + Ground + environmental entity). The difference lies in the fact that the axes derived from the environmental bearing are not abstracted (like the absolute FoR) but projected or "in geometrical terms, translated" (Bohnmeyer & Levinson, not dated: 5; section 7.2.1.4.4) from the bearing.

In (474), the Figure is going uphill (*ta* 'go up'), crosses the ridge (*u* 'cross') and goes downhill on the other side of the mountain (*de*). Both directionals, *ta* 'go up' and *de* 'downward', are based here on

the topographical bearing, a mountain. They describe two motion events and can be represented by two vectors which are applied in sequence, and encoded by a serial verb construction.

(474) *Ra* [[*ta*]_{vb1} [*u*]_{vb2} *de* *o* *paze*]_{svc}.
 3PL.S go.up cross downward at/to ridge
 'They go uphill cross down(hill) the ridge.'

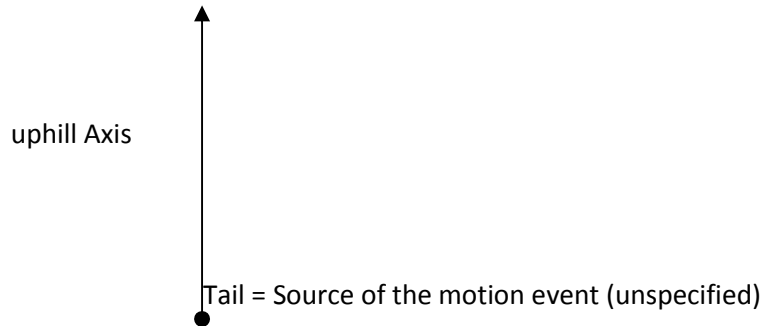


Figure 65: Vector representing *ta* 'go up' in (474)

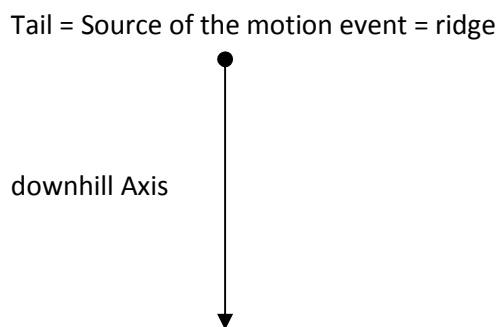


Figure 66: Vector representing *de* 'downward' in (474)

In (475-476), the directionals *da* 'upward' and *de* 'downward' refer to the upstream and downstream directions; the spatial description is anchored in the river-course.

(475) *Taa* *de* *o* *tele* *beg* *le...*
 arrive downward at/to ANAPH.SP be.steep RES

nya *tena* *da* *thoon,...* *u* *tawa* *de*
 1PL.INCL.S hear upward waterfall PERF fall downward

we thi(?) bwe ta=le peic.
 water x top.side PL=DEF stone
 ‘Until (lit. it arrives seaward) where it’s steep... we hear uphill the waterfall... the water x falls downhill on the stones.’ (We_DI)

(476) *Jo zo huri da le wan we.*
 then 2SG.S follow upwards DEF opening water
 ‘Then you follow the river upstream.’ (CommHouseRePwec_JP)

The directional form (*zin*) ‘transverse’ is used in the geomorphic FoR in complementary distribution to *da* ‘uphill, upriver’ and *de* ‘downhill, downriver’. In the elevation-based usage of the directional (hill, mountain), (*zin*) refers then to a flat surface on the same plane as the reference object, neither uphill nor downhill. In both the elevation and river-based system, (*zin*) expresses the opposite side of a hill, mountain or river (‘crosswise’; see section 5.3.2.1 for the combination of =*da* and =*zin* in this context). Likewise, the geomorphic directions expressed by (*zin*), i.e. ‘horizontal, neither uphill nor downhill’ and ‘crosswise’, do not necessarily align with the transverse axis (the use of (*zin*) in the absolute FoR).

(477) *Wan we Bwe o ciia, wan we... ne i*
 opening water Bwe o ciia opening water SUB 3SG.S

ta=me Pwanyo... Bwerilo na jere
 go.upward=CENTRIP Pwanyo Bwerilo PRE.LOC beside

yoo=da=zin *Wazame.*
 side=upward=crosswise Waazame
 ‘The canal of Bwe o ciia, the one that goes inland to Pwanyo, Bwerilo, (and) the other side of Wazame (river)’

(478) *No ap [ave=da=(i)zin [o Bwaep]_{PP}]_{AdvP}.*
 1SG.S go side=upward=crosswise at/to Bwaep
 ‘I go on the other side of Bwaep (situated on a hill).’

Geomorphic descriptions are used to express locative (*tena=da* in 475) and motion (474; 476-478) relations. They are not attested in orientation descriptions.

As a consequence of their dependence on the local topography, directionals used in the geomorphic system are used in the small-scale setting only (from the table-top to the village). The usage of

directionals in the geomorphic FoR probably emerged from the absolute FoR as it calls upon the properties of the vertical axis: the absolute vertical notions of up and down are applied on the horizontal level (up the hill vs down the hill, up the stream vs down the stream).

8.2 Spatial strategies relying on head-anchored vectors

Head-anchored vectors comprise spatial strategies which can be represented by a vector pointing at an entity, here a landmark or the Deictic Centre.

8.2.1 Landmarks

Ad hoc landmarks are bearings chosen in the environment of the speaker and can be man-made (e.g. the church) or natural (e.g. the shore). They are not conventionalized bearings and vary from one speaker to another and in the course of the speech of one speaker. *Ad hoc* landmarks are encoded by spatial nominal phrases (e.g. *bwe waadan* ‘towards the road’) or prepositional phrases (e.g. *o kumaac* ‘towards the beach’) and are very often used to complement a spatial description with absolute and geomorphic directions in order to specify an absolute direction (479). Landmarks are commonly employed in small and large-scale settings and are attested in all three spatial domains: location, motion and orientation. The spatial relation established between the landmark and the Figure is represented by means of a vector pointing towards or away from the landmark (head-anchored vector). Although the definition of absolute directions in terms of abstract and fixed landmarks has to be specified and relativized according to the language under study, based on their linguistic forms and usage, *ad hoc* landmarks in Caac are more concrete, non-systematic and less fixed than absolute directions are. On the syntactic level, they are found adjacent to the predicate whereas other types of Ground follow.

(479) *E-rô* *bwe* *waadan* *hâc;* *no* *alô* ***da***
 be.at-1SG.O top.side path big 1SG.S look upward

[*re* ***wan*** ***mwe*** ***cireni***]_{NP}
 in opening house forbidden

‘I’m on the main road; I’m facing (i.e. I look inland towards) the church’s entrance.’
 (from CorrectJP29Jan2014_QuestionsCA_1_18Dec2013_ACcomments.docx)

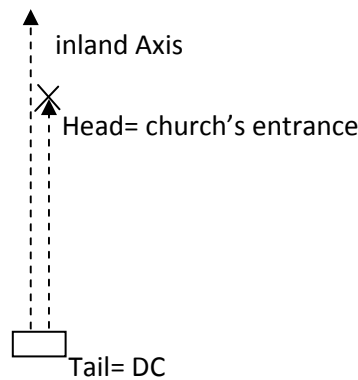


Figure 67: Vectors representing example (479)

These three strategies, i.e. *ad hoc* landmarks, geomorphic FoR and absolute FoR, can be represented in terms of a cline from concrete and *ad hoc* environmental bearings (direction towards landmark; 480) towards a system relying on a few conventionalized environmental bearings (absolute directions; 482) via a system based on environmental bearings, systematic bearings but fully dependent on the local relief (geomorphic directions; 481).

(480)	<i>The crane flew towards the sea.</i>	head-anchored vector, landmark
(481)	<i>The crane flew downriver.</i>	angular-anchored vector, geomorphic direction
(482)	<i>The crane flew seaward.</i>	angular-anchored vector, absolute direction

Several researchers have observed this cline between landmarks and absolute FoR (Bohnenmeyer, 2012: 5; see also Palmer, not dated: 12-16):

[S]ome languages use conventionalized landmark systems that in practice grade into absolute systems, although there are reasons for thinking that landmark systems and fixed bearings [i.e. absolute] systems are distinct conceptual types. (Levinson, 1996: 161 note 35)

This cline in use can be also described in terms of vectors:

- i. head-anchored vector pointing towards a landmark chosen by a speaker (*ad hoc* landmarks; bounded vector)
- ii. angular-anchored vector based on the axes translated from an environmental entity (geomorphic FoR; bounded axes)

- iii. angular-anchored vector based on the axes abstracted from an environmental entity (absolute FoR; unbounded axes such as wind-based directions).

To some extent, the land-sea-transverse directions share some features of the geomorphic FoR (the inland and transverse directions are bounded) and of the absolute FoR (the seaward direction is unbounded), and stand mid-way between (ii) and (iii) (see also sections 7.2.1.4.3 and 7.2.1.4.4).

8.2.2 Deictic Centre

In New Caledonian languages and in Oceanic languages in general, the Deictic Centre is a prominent bearing in relation to which the Figure can be located, oriented or moving. In Caac, the location, orientation and motion of the Figure is often described with respect to the Deictic Centre by means of a set of deictic directionals, the general centripetal morpheme *=me* ‘toward DC’ and the general centrifugal morpheme *ap* ‘away from DC’. When attached to the verb *ap* ‘go, move’, the centrifugal *=uc* is preferred (see section 6.2.2). In (483), the speech-act participants are sitting under the eaves of a house, facing a wall of the house; the Deictic Centre is the speaker. The Figure is oriented away from the speech-act participants (*ap*). The prepositional phrase *o mur* (an *ad hoc* landmark) specifies the direction the Figure is oriented towards. One head-unspecified vector is defined by the Deictic Centre (as the Tail) and a second head-anchored vector points at one landmark, i.e. the wall or the house.

- (483) *Pwame â=le ceez, o mwa cu-alô ap o mur;*
 TOP M=DEF one TOP rather standing-look CENTRIF at/to wall
- i cu-alô ap o hî mwa.*
 3SG.S standing-look CENTRIF at/to S.PROX house
 ‘That one, he is standing looking away toward the wall (of the house); he (same Figure) is standing looking away toward the house.’

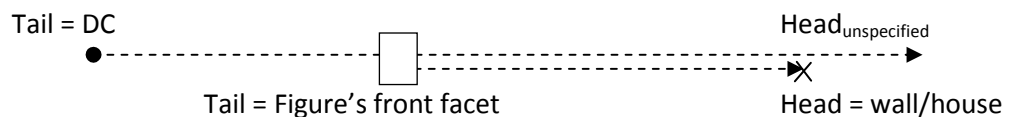


Figure 68: Vectors representing example (483)

The deictic adverbs *ja/tena* 'PROX/DIST' also anchor the spatial description in relation to the Deictic Centre. The main difference to deictic (only) directionals *=me/(=)ap* 'CENTRIP/CENTRIF' lies in the fact that the adverbs *ja/tena* 'PROX/DIST' encode the distance in relation to the DC while the former do not specify the distance between the Figure and the DC but imply a direction towards or away from the DC.

In Caac, the Deictic Centre is also coded in a set of two centripetal and two centrifugal directionals. The latter express the direction towards or away from the speaker and are simultaneously restricted with respect to the absolute direction of the vector: *=me* 'upward towards DC', *=ve* 'downward towards DC', *=ec* 'upward away from DC', *=uc* 'downward away from DC'. The type of information combined in one linguistic form varies according to languages. Some provide information about the nature of the **absolute direction** and the distance of the Figure with respect to DC, e.g. Manam (*ilau* 'in **seaward** direction', *elau* 'over there in **seaward** direction', *elau-ra* '(way) over there in **seaward** direction' (Lichtenberk; 1983: 574); deictic markers in Dyrbal *baydi* 'short distance downhill', *bayda* 'medium distance downhill', *baydu* 'long distance downhill' (Dixon, 1972: 263; see also Levinson & Wilkins, 1996: 361). Other languages provide information about the nature of the **absolute direction** and express *a path in relation to the Deictic Centre*, e.g. directional verbs in Paluai: *sa, sak* 'come **inland** towards DC', *sot* 'move **inland** away from DC' (Schokkin, 2013: 171); directionals in Nengone: *lo* '**upwards** towards DC', *zo* '**upward** away from DC' (Bearune, 2012: 209-221); directionals in N.E. Ambae: *hage* 'upward away from speaker', *hamai* 'upward towards speaker', *hagatu* 'upward towards addressee' (Hyslop, 2001: 292); directionals in Caac *=ec* '**upward** away from DC', *=uc* '**downward** away from DC'. Within the vectorial framework, caac deictic directionals call upon both angular-anchored and head-anchored vectors. Some languages have both strategies. For instance, Manam possesses a set of forms co-expressing the distance with regard to the Deictic Centre and an absolute Direction e.g. *elau* 'over there in seaward direction' and another set of forms co-expressing the position of DC with regard to an absolute direction and the Figure, and an absolute direction, e.g. *oti* 'move in seaward direction towards or parallel to DC' (Lichtenberk, 1983: 576-577).

Although they are found attached to the absolute directional *de/da* 'downward/upward', the deictic directionals distinguish between the downward and upward directions and are specialized in one absolute direction (section 6.2.2). This set of directionals is therefore represented by a dual vector: one head-anchored vector (expressing the movement towards or away from the speaker) and one angular-anchored vector (anchoring the movement in such absolute direction). The deictic directionals specify if the head or the tail of the vector is in the DC.

- i. Head-anchored and angular-anchored vectors in the representation of =ve '(down)CENTRIP' in (484)

(484) / te=ve.
 3SG.S go.down=(down)CENTRIP
 'He comes seawards towards us.'

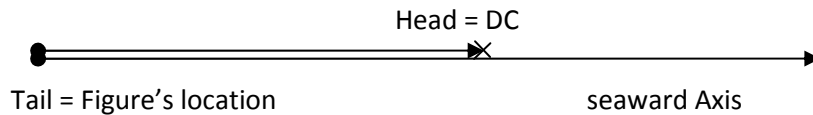


Figure 69: Vectors representing example (484)

- ii. Head-unspecified vector and Angular-anchored vector in the representation of =uc '(down)CENTRIP' in (485)

(485) / te=uc.
 3SG.S go.down=(down)CENTRIP
 'He goes seawards away from us.' (the Figure being initially located at the same place as the Deictic Centre)

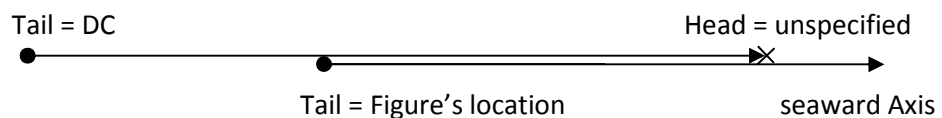


Figure 70: Vectors representing example (485)

The centripetal /centrifugal clitic does not express the idea that the absolute direction is projected off the Deictic centre (e.g. =ve 'CENTRIP' does not mean (*X is/moves/looks*) *seawards of me/us*) but to refer to a direction away from or towards the Deictic Centre. Taking again the form =ve 'CENTRIP' for example, the clitic means (*X is/moves/looks*) *seawards towards me/us*'. The vector in the seaward direction has as its tail (i) a Ground in location descriptions, (ii) the Figure's initial location in motion descriptions (486) and (iii) the Figure's facet in orientation descriptions (487). Example (486) is

extracted from a narrative. A group of people are leaving their place in Colnett in search of a wife for their chief. They go first leeward to Weda, and from there, they start visiting people in several places slowly moving back windward, towards Colnett.

- (486) *Jo pût ra te=wa me ra te=wa pe*
 then after 3PL.S go.down=far SUB 3PL.S go.down=far movement?
- taavun da=me na Weda, me ra yagala*
 start upward=CENTRIP from Weda SUB 3PL.S look.for
- le-za... teevo; m_i ta=mwa bwa*
 IND-1PL.EXCL.O woman SUB_3SG.S go.up=completely because
- m_i... yawe â=le jure âc Colnett.*
 SUB_3SG.S wife M=DEF true man Colnett
- ‘Then after they went away leeward so that they went away leeward (and) started windward towards us from Weda in order to look for us, a woman; so that she goes away windward to be the wife of the chief of Colnett.’

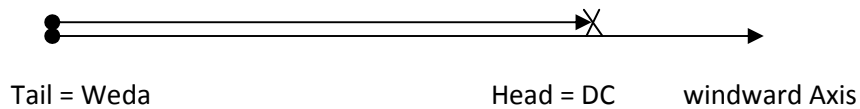


Figure 71: Vectors representing *taavun da=me na Weda* in (486)

Example (487) illustrates the use of centripetal form in an orientation description. In (487), the vector is anchored in the front side of the house. Its head is toward the speech-act participant and the sea.

- (487) *Yo n_i ta-no=de=ve*
 be.good IRR_3SG.S sitting-view=downward=CENTRIP
- ni=en mwa.*
 SG=PROX house
- ‘It is good if this house is sitting looking downward towards us.’ (Bwaep_JP)

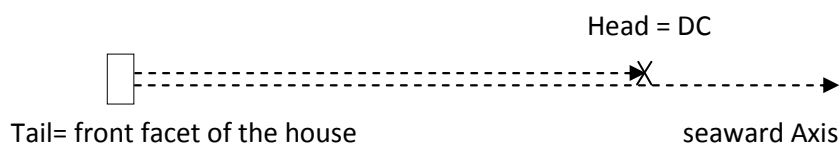


Figure 72: Vectors representing example (487)

The speaker can make explicit reference to the Deictic Centre by means of an object suffix (*no=de=ve le-za*, unmarked) or an independent pronoun (*no=de=ve le câ*; marked; 488) in addition to the centripetal clitic (=ve ‘CENTRIP’). Such explicit expression has not been attested with the centrifugal clitic.

(488)	<i>l</i>	<i>cu-alô</i>	<i>de=ve</i>	<i>le</i>	<i>câ</i>	<i>â=le</i>	<i>ceec.</i>
	3SG.S	standing-look	downward=CENTRIP	IND	2DU.INDPT	M=DEF	one
	‘One is standing looking downward towards us.’						

Examples of deictic directionals in location descriptions call upon a Fictive Motion interpretation; such examples are analyzed in section 8.3 below.

8.3 Fictive motion

The set of absolute directionals and deictic directionals can occur 1) in **dynamic** settings expressing the direction and path followed by the Figure in a motion event; 2) in **static** settings, (i) expressing either the direction and path to follow to find the Figure, or (ii) expressing the path followed by the Figure to reach the Deictic Centre, or (iii) the path occupied by a spatially extended Figure or (iv) expressing the **direction** the Figure is turned towards (orientational information). Absolute and deictic directionals in Caac are therefore not restricted to dynamic spatial reference only. This is not the case in all Kanak languages: the use of deictic directionals for instance is sometimes restricted to dynamic contexts (e.g. *me* ‘CENTRIP’ in Nêlêmwa; Bril, 2002: 284, 301). When they are found in static contexts, the use of dynamic terms such as directional verbs and clitics in Caac can be explained in terms of Fictive Motion.

Resorting to motion expressions to refer to a static scene when no actual motion (“factive motion”; Talmy, 2000: 99-103) takes place is referred to as Abstract/Subjective¹⁵⁸ Motion (Langacker, 1986: 467), Subjective Motion (Matsumoto, 1996) or Fictive Motion (Talmy, 2000: 99-103). The event is linguistically represented as dynamic although factively static. Fictive motion expressions in Caac depict in dynamic terms the orientation, location or spatial configuration of the Figure. They are based on the association of an elongated static Figure and either (i) some hint at its possible use for travel (e.g. the road goes up, i.e. people can go up the road), (ii) the direction of the Figure’s gaze (e.g. the man is looking seaward’, i.e. the line of the gaze is directed seawards, see Talmy, 2000: 110) or (iii) the imaginary path to reach the Figure or the speech-act participants. In orientational descriptions,

¹⁵⁸ Subjective Motion being a type of Abstract Motion: “an instance of abstract motion, with C [Conceptualizer] as the mover” (Langacker, 1986: 467)

the examples of Fictive Motion collected up to now in Caac fall into one type: a Path emanating from a facet of the Figure. Another category of interest is Co-extension Paths (Talmy, 2000: 138-139).¹⁵⁹ Co-extension Paths are used to depict the spatial configuration of a complex Figure (section 8.3.2). Fictive motion expressions are also found to describe the location of the Figure. We will resort to the Access Path¹⁶⁰ category (Talmy, 2000: 136-137) and an Anticipated/Return Path category. These categories have been established or examined by Talmy, with the exception of Anticipated/Return Path category which is based on this corpus in Caac. Co-extension Paths are the only Fictive Motion expressions in which directional verbs (*go up/down/along the coast*) are attested. In all other cases, directional verbs seem to be exclusively used for (factive) motion events. In any other Fictive Motion categories, directional clitics are involved. We will pay particular attention to their combinations and distribution which yield the different types of Fictive Motion introduced above. Other spatial terms (i.e. not involving any directionals) are underspecified in terms of stasis and dynamicity, being used to express Goal and Locative Ground indifferently and lacking of any notion of directionality in their meaning (more details in section 8.3.4.4).

8.3.1 Directionals as dynamic terms

The concept of Fictive Motion is based on the observation of a discrepancy between a phenomenon – here, a non-moving entity – and its linguistic representation – in terms of motion descriptions, implying a dynamic interpretation of a static scene. Fictive Motion is a transfer of dynamic terms to the static domain. This presupposes that the notions of dynamicity or stasis are a semantic component of such linguistic forms. As we will see below, directional verbs and clitics have been attested in Caac Fictive Motion descriptions. Directional verbs and clitics are understood as fundamentally dynamic terms.

Directional verbs are motion verbs: *te* ‘go down’, *ta* ‘go up’ and *ap* ‘go; go along the coast’. They encode a change of location and the path of the Figure with respect to an absolute/geomorphic direction. They are found in dynamic contexts only, except when used to describe the configuration of an entity one can travel on (see Co-extension paths below). They are not used to locate a Figure or to orient a Figure in their corresponding absolute/geomorphic directions. Finally, they can take Source and Goal expressions. Directional verbs are interpreted in this analysis as dynamic.

¹⁵⁹ Talmy has not coined this category and this type of fictive motion has been labelled in various ways; but this analysis rests on Talmy’s work for his thorough classification of fictive path expressions and his detailed definitions of each category.

¹⁶⁰ Idem.

Like directional verbs, absolute deictic directional clitics =*ve/=me* '(down/up)CENTRIP', =*uc/=ec* '(down/up)CENTRIF' and the general deictic clitics =*me/(=)ap* 'CENTRIP/CENTRIF' have the notion of dynamicity at the core of their meaning: 'upward/downward **towards/away from** DC'. They are frequently used in combination of the directional verbs and directional morphemes in motion, location and orientation descriptions.

The absolute directional clitics *de* 'downward', *da* 'upward', (*z*)*in* 'transverse' are found in both dynamic and static contexts and are used in motion, location, orientation descriptions. Like the directional verbs from which two directionals are very probably derived (*de* 'downward' < *te* 'go downward'; *da* 'upward' < *ta* 'go upward'), they encode the notion of Path or directionality in which we can find the Figure or in which the Figure's facet is turned towards. When an absolute directional follows the locative verb *e* 'be at' (Basic Locative Construction; section 3.1.1) and when the Figure is animate, the meaning of the BLC is ambiguous and depending on the context it can be dynamic 'be on one's way in X direction towards Y' or static 'to be in X direction at Y' (section 8.3.4.3). This ambiguity arises in the context of the BLC only. In any other circumstances, i.e. when the absolute directional follows another element than the locative verb *e* 'be at' e.g. the adverb *ja=da* 'upward', or when the locative verb *e* 'be at' is followed by a spatial complement other than a directional (or a set of absolute and deictic directionals), the BLC can only describe a static scene. Two arguments for dynamicity presented in Matsumoto (1996: 365) apply to Caac directionals. First, absolute directionals can take a marker specifying the degree of distance separating the Figure and a spatial bearing, =*mwa/=wa* 'furthest, at the (up/down) most' (489). Note that =*mwa* / =*wa* are also reversive markers ('back') and combined with the absolute directionals, they refer to the journey back to the initial place of the Figure. Second, the Source can be specified by the same means as in motion events (with the preposition *na* 'from; with respect to'; 490).

(489) *I* *ja=da=mwa* *Colnett.*
 be.at.3SG PROX=upward=far Colnett
 'It (Jawe) is way windwards, towards/at Colnett.'

(490) *Pwerabi,* *i* *ja=da* *na* *Bwe o ciia.*
 Pwerabi be.at.3SG PROX=upward from Bwe o ciia
 'Pwerabi, it's inland from/with respect to *Bwe o ciia*.'

When directionals are used to describe a static scene, the notion of motion is no longer found in the action undertaken by the Figure (as the latter does not factively move) but in the way of conceptualizing the scene, in the sense of directionality perceived by the conceptualizer:

The conceptualization of motion has not disappeared entirely, however: a shadow of it remains in the directionality with which the static configuration is construed [...].

Whereas the basic meaning profiles physical motion by an objectively-construed mover (namely the subject) one (unprofiled) facet of the extended meaning is abstract motion by a subjectively-construed mover, specifically the conceptualizer. (Langacker, 1986: 467)

In *The road goes up the hill*, the elongated Figure is presented as extending to the hill top.¹⁶¹ Such sentence “profiles a single, constant configuration and follows its continuation through conceived time” (Langacker, 1986: 464). A similar sense of abstract motion applies in examples (489, 490) above: a location (the Figure) is presented as the final place of the conceptualizer’s potential journey to reach it: one goes far in the windward direction from where the speech-act participants/conceptualizers are presently located in order to find Jawe in (489) and one goes in the inland direction from where the speech-act participants/conceptualizers are located to find Pwerabi community house.

To summarize, directional verbs and clitics are dynamic terms which, when involved in static settings, call upon Fictive Motion to be interpreted. Amongst Caac spatial terms (except motion verbs), they are actually the only forms to have dynamicity as their semantic component. Other spatial terms are underspecified with regard to dynamicity/stasis. They can be used to encode a Locative Ground, Source or Goal and do not involve any notion of Path or directionality.

8.3.2 Coverage / Co-extension Paths

Co-extension Paths serve to depict

the form, orientation or location of a spatially extended object in terms of a path over the object’s extent. What is factive here is the representation of the object as stationary and the absence of any entity traversing the depicted path. What is fictive is the representation of some entity moving along or over the configuration of the object. [English example:] *The fence goes/zigzags/descends from the plateau to the valley.* (Talmy, 2000: 138).

¹⁶¹ As we will see below in section 8.3.2, *The road goes up the hill* is an example of coverage or co-extension paths.

The co-extension path can also be expressed by an NP headed by a nominalized directional verb combined with a deictic directional. Examples have been found e.g. *man-te=ve* ‘the place (path) going down towards us’ in (493). There exists a lexical word for ‘path’ (*waadan*) or road (*pezeng*) but the nominalized construction used in (493) enables the speaker to specify the configuration of the path by indicating the direction one would follow if taking that path. In narratives, this construction is very useful to remind the audience of the path taken by a character. Sentence (493) is an excerpt from a narrative; the character is in Re Caac (Pouebo). He explains where their delegation comes from (Colnett, windward to Pouebo), where they have been (they first went down to Weda, the most leeward place in Pouebo) and what they are doing (walking windward and stopping in a few places to visit people and hopefully, find a wife for their chief in Colnett). The NP *le man-te=ve* ‘the place/path going downward towards here’ provides information on the origins of the delegation (windward) by mentioning their journey leeward, from Colnett to Pouebo.

(493)	<i>Pwame</i>	<i>tebwini,</i>	<i>za</i>	<i>te</i>	<i>taavun na</i>		
	TOP	yesterday	1PL.EXCL.S	go.down	start	from	
	<i>Weda. Pwame</i>	<i>hen,</i>	<i>za</i>	<i>u</i>	<i>ta=me</i>	<i>ra</i>	
	Weda TOP	today	1PL.EXCL.S	PERF	go.up=CENTRIP	and	
	<i>u</i>	<i>e-za</i>	<i>ja</i>	<i>Re caac.</i>	<i>Oni...</i>	<i>u</i>	<i>heli</i>
	PERF	be.at.1PL.EXCL.O	PROX	Re Caac	but/and	PERF	say
	<i>le</i>	<i>man-te=ve</i>		<i>ra</i>	<i>pwa</i>	<i>taa</i>	<i>ra</i>
	DEF	PLACE-go.down=CENTRIP		3PL.S	do	arrive	and
	<i>te=ve</i>	<i>ra</i>	<i>te=ve</i>	<i>me</i>	<i>ra</i>	<i>yagala</i>	
	go.down=CENTRIP	and	go.down=CENTRIP	PURP	3PL.S	look.for	
	<i>za...</i>	<i>za</i>	<i>a-pozet [...].</i>				
	INDEF	INDEF	PROPERTY-cook				

‘Yesterday, we went leeward (and) started from Weda. Today, we came here windward and we are here in Re Caac. And he talked about **the trip leeward towards (leading) here**, that they did until they came leeward and came leeward in order to find a wife (lit. the one cooking).’

Directional verbs are not the only means to express co-extension paths. A directional clitic or a directional free form can serve the same purpose (494). In (494), the narrator describes the path followed by a group of people along the coastal road and in the direction of the speech-act participants (the children listening to the narrative; Figure 69). The goal of the motion event is itself

quite complex as it is an *ad hoc* landmark encoded by the prepositional phrase *re waadan* ‘to the path’ which is specified by an absolute direction (going seawards from the coastal road, *de* ‘downward’) and a Goal (to the beach, *o oon* ‘to the sand’ in a co-extension path expression (the road goes seawards to the beach; Figure 70).

(494) *Jo pwame ra [u a=me... a=me a=me ra*
 then when 3PL.S PERF go=CENTRIP go=CENTRIP go=CENTRIP and

taa=me ja [re waadan de
 arrive=CENTRIP PROX in path downward

*o oon]*_{FictiveMotion]}_{FactiveMotion...} *o i (h)eli o=le*
 at/to sand SBJ 3SG.S say NEUT=DEF

a(ve) ne zi gaa coor, za gaa coor
 QUOT IRR 2DU.EXCL.S TAM stand 2PL.EXCL.S TAM stand

‘then when they came came came and arrived here at the path (which goes) seaward to the beach, she said ‘Wait ! Wait!’ (Higon2_FT)

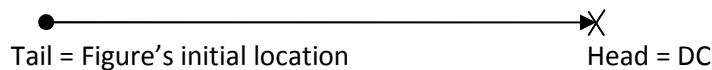


Figure 73: Vectors representing the (**factive**) motion event *a=me* ‘came’ in (494)

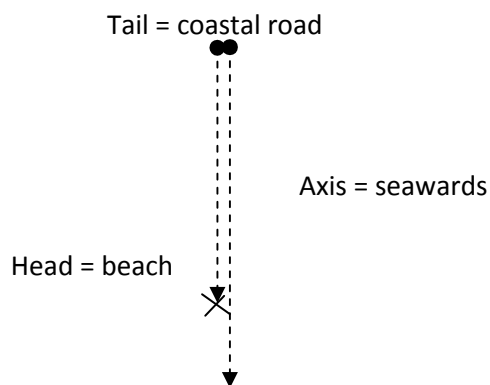


Figure 74: Vectors representing expressed the **fictive** path in *re waadan de o oon* ‘at/to the path (going) seawards to the beach’ in (494)

8.3.3 Paths emanating from a facet of the Figure

Another possibility is presenting an imaginary path emanating from a facet of the Figure; this type of fictive motion is used to describe the orientation of the Figure. The path is then encoded by a

directional (or a combination of directionals) while the facet of the Figure can be coded either by a posture verb (495) or a verb of looking (496). In (495), the speaker describes the spatial configuration of an elongated Figure. However, unlike in the case of Co-extension Paths there is no fictive “entity traversing the depicted path” (Talmy, 2000: 138). The construction consists of a posture verb followed by directionals indicating in which direction the space occupied by the Figure is. This type of fictive motion is found when Caac speakers describe the orientation of figures that are faceted, hence the preference for using posture verbs. By contrast, co-extension paths apply to extended Figures that are road-like. This type of configuration “does not consist of a single point but rather the path-like set of points” (Langacker, 1986: 465-466) in which the conceptualizer’s sense of directionality originates when the description is static.

(495) *Pwame ni=en* *hôgo, i* *kôgo* *de=ve*
TOP SG=PROX yard 3SG.S lie.down downwards=CENTRIP

ja
PROX

‘As for the yard, it lies downwards towards us here.’ (Bwaep_JP)

In Caac orientational descriptions, absolute directionals used on their own or combined with deictic directionals can occur with body part nouns in predicative function (*duu-n* ‘have his/her back towards’, *wan* ‘have its opening (towards)’), posture verbs (*beve/bira* ‘turn, be turned’) and verbs of looking in a context where no real motion takes place (a strategy Talmy called *Line of sight Paths*,¹⁶² 2000: 110-111). The use of directional clitics inscribes the spatial description in the domain of Fictive Motion because the scene, although static, is expressed by means of a morpheme inducing a dynamic reading. An absolute/geomorphic direction and a centripetal or centrifugal direction are transposed onto the facet of the Figure and indicate the orientation of the latter. In (496), the Figure is factively static. The fictive path is coded by one directional (=me ‘CENTRIP’) hosted by the verb of looking *alô* ‘look’.

¹⁶² Line of sight Paths are based on “an intangible line emerging from the visual apparatus located typically on the front end of an animate or mechanical entity” such as in “*I slowly turned/looked toward the door.*” (Talmy; 2000: 110).

- (496) *Pwame â=le ceeç, i cu-alô=me le-i.*
 TOP M=DEF one 3SG.S standing-look=CENTRIP IND-3SG.ANIM.O
 'As for that one, he is standing looking at him towards here.' (ManTreeG4_DN_DI;
 picture 7)

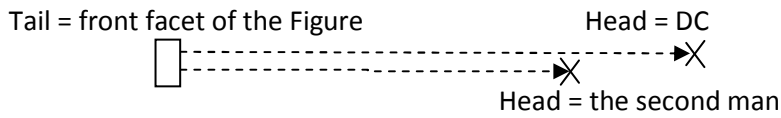


Figure 75: Vectors representing example (496)



Picture 7: Man & Tree Game, PP4_05

8.3.4 Access Paths: Paths to the Figure

Access Paths (Talmy, 2000: 136-137) refer to expressions whereby the speaker indicates the location of the Figure by depicting the access route one can take to reach the Figure. A fictive entity is represented as moving along a path to reach the Figure, e.g. ***From the cathedral, my place is right across the square.*** In this type of Fictive Motion expression, Langacker (1986: 469) explains “through time, the subject is stably located at the endpoint of a path anchored at the other end by the position of C [the conceptualizer], whose abstract and subjective motion along this path allows him to compute the location of the subject relative to his own.” Access Paths in Caac are expressed by a range of constructions, all of them involving directional clitics. This sub-section investigates the constructions with i) absolute directionals (alone), ii) the combination absolute + centrifugal directionals, iii) the combination absolute + centripetal directionals. Constructions with deictic directionals (ii and iii) have some restrictions on the Figure in terms of animacy.

8.3.4.1 Absolute directionals

In each example below (497, 498, 499), the context is static and the speaker intends to describe the location of an entity. What is fictive is the path to follow in order to reach the Figure (animate or inanimate). The fictive path ('inland' in (497, 498); 'transverse/along the coast' in (499)) is coded by absolute directional clitics. The latter are hosted by various stems: the deictic adverb *ja* 'PROX' (497, 499), and the singular stem *ni* 'SG' in a determiner/pronoun form (498). In (498), the location of the man is specified by the determiner *ni=da* 'the inland' coding an access path expression: it indicates the path to take to reach the Figure (the man). By contrast, within the same NP, the relative clause following the noun *âc* 'man' expressed a factive motion event: the man located inland is coming seawards towards us.

- (497) *Pwerabi, i ja=da na Bwe o ciia.*
 Pwerabi be.at.3SG PROX=upward from Bwe o ciia
 'Pwerabi, it's inland from/with respect to Bwe o ciia.'
- (498) *Hien [ni=da âc [i te=ve]_{REL.CL}]_{NP}.*
 EXIST.PROX SG=upward man 3SG.S go.down=CENTRIP
 'Here is the man inland who comes here seawards.'
- (499) *I ja=in.*
 be.at.3SG PROX=transverse
 'He is in the transverse direction.'

Absolute directionals can also follow the locative verb *e* 'be at' (500, 501, 502; see chapter 3.1). In example (500), the speaker locates an inanimate Figure (a cup). In examples (501, 502), the Figure is animate (a man in (501) and some children in (502)). When the Figure is inanimate, this construction (absolute directional used alone with BLC with locative verb *e* 'be at') systematically refers to a static scene. However, we will see in section 8.3.4.3 that constructions involving an absolute directional and an animate Figure can be ambiguous in terms of stasis/dynamicity.

- (500) *I da bwe daan le mia.*
 be.at.3SG upward windward DEF red
 'The red one is upward windward.' (the speaker is locating two cups on the table)
- (501) *I zin le âc.*
 be.at.3SG transverse DEF man
 'The man is in the transverse direction.'

(502) *E-ra da.*
 be.at-3PL.O upwards
 'They (the children) are upwards.'

8.3.4.2 Centrifugal directionals

Access Paths are also coded by the general centrifugal =*ap* (503) and the centrifugal forms specifying an absolute/geomorphic direction: =*ec* 'upward away from DC' and =*uc* 'downward away from DC' (504b). In (503), the bike is located by the speaker by referring to the fictive path (=ap 'away from DC (both speech-act participants)') the addressee could take to find it. The landmark *o le ceec* 'at the tree' helps narrowing down the wide search region expressed by =*ap*.

(503) Vélo *le-zo, chen i ap o le ceec*
 bike IND-2SG.O very be.at.3SG CENTRIF at/to DEF tree
 'Your bike, it's over there (lit. away from us) at the tree.'

In example (504), both participants are on the coastal road. A few meters away in the seawards direction, is a place called *Uvanu*, and further down (seawards) is the place where Speaker 2 lives. In reply to the question in (504a), Speaker 2 explicitly situates the Figure via a fictive path 'seawards of *Uvanu* and the DC, and away from DC (both participants)' (504b).

(504) a. Sp1: *Zo mo ave ni=za na Uvanu?*
 2SG.S live side SG=INDEF from Uvanu
 'Where/on which side do you live in relation to Uvanu?'
 b. Sp2: *No mo de=u(c) tele*
 1SG.S live downward=CENTRIF ANAPH.SP
ave=de.
 side=downward
 'I live down away from us, there on the seaward side.'

In (505), the speaker is asking information about the location of a house. The fictive path is coded by the directional clitics: the Figure is alternatively located inland and seaward (off the coastal road where the speaker is standing) meaning the path to reach the Figure is either going inland or seawards.

(505)	<i>Pwame</i>	<i>ne</i>	<i>zo</i>	<i>taa</i>	<i>de</i>	<i>howa,</i>
	when	IRR	2SG.S	arrive	downward	home
	<i>i</i>	<i>da=e(c)</i>		<i>a</i>	<i>i</i>	<i>de=u(c)?</i>
	be.at.3SG	upward=CENTRIF		or	be.at.3SG	downward=CENTRIF
	'When you arrive home (i.e. in Pouebo) leeward (from Noumea), is it (a place) inland away (from the road) or seawards away (from the road)?'					

Access Paths coded by a centrifugal clitic (alone or in combination with an absolute directional) attached to a BLC (such as in (505)) are attested with inanimate / non-moveable Figures only. The association of a centrifugal clitic, a BLC and an animate Figure is examined in section 8.3.4.3.

The directionals *=da=zin* are used with the region stems *ave* 'side' and *yoo* 'side' are used in opposition to the adverbs *yoo/ave=da=me* 'on this side of', and to some extent, they can have a (centrifugal) reading (section 5.3.2.1). In this context, the fictive path consists of a path away from the Deictic Centre and over an obstacle (hence the exceptional collocation of two absolute directionals *=da* 'upward' and *=(z)in* 'on the other side' (geomorphic FoR, section 8.1.4).

(506)	<i>l</i>	<i>yoo=da=zin</i>	<i>o</i>	<i>waadan.</i>
	be.at.3SG	side=upward=crosswise at/to	path	
	'It (the bike) is on the other side of the road.'			

8.3.4.3 Note on the construction [BLC + absolute directional (+ centrifugal directional)]

With animate/moveable Figures only, the Basic Locative Constructions consisting of the locative verb *e* 'be at' and its object suffix, an absolute directional, optionally a centrifugal clitic, and a spatial phrase is also found in factive motion descriptions. In that case, the spatial phrase encodes a direction towards which the Figure is moving. Only the context helps to determine if the sentence in question has to be interpreted as dynamic ('be on one's way up/down towards X') or static ('be up/down in X'). In (507) and (508), Speaker 1 is in Pouebo on the phone with his daughter (Speaker 2) who is driving her minibus to Hienghene, situated windward (up to Pouebo) to attend a concert in the area with some friends.

(507)	Sp1:	<i>E-za</i>	<i>pa?</i>
		be.at-2PL.O	where
	'Where are you?'		

(508) Sp2: *U e-za da Hienghene.*
 PERF be.at-1PL.EXCL.O upward Hienghene
 ‘We are on our way upward/windward towards Hienghene.’

In her answer to the basic locative question ‘Where are you?’ (507), Speaker 2 resorts to the BLC followed by the directional *da* ‘upward’ and a spatial phrase, i.e. the toponym *Hienghene*. In this example, the directional *da* codes the direction in which Speaker 2 is moving. The spatial phrase following the directional also expresses a direction, not necessarily the Goal of the motion event. The construction with the BLC can be atelic (509; first clause); the telic construction one would use in the same context consists of a directional verb and a spatial phrase (509; second clause).

(509) [*I de Pwai*]_{CL1} *oni* [*i te*
 be.at.3SG downward Pwai but 3SG.S go.down
Kareon]_{CL2}.
 Kareon
 ‘She was on her way seaward towards Pwai but she went down (seaward) to Kareon.’
 (Kareon being a beach located further down, after Pwai)

The construction in (509) is formally identical to the construction with the BLC in *i/e* used for a particular type of Fictive Motion, Access Paths (510). Relying on the context, one can interpret this construction as either static or dynamic.

(510) *E-ra da (Pwerabi).*
 be.at-3PL.O upwards Pwerabi
 ‘They are upwards (in *Pwerabi*).’

Example (511) can also be interpreted as static ‘The coach is leeward in Ouegoa.’ (Access Path reading) or dynamic ‘The coach is going leeward to Ouegoa.’

(511) *I de [re Wegoa]_{Loc} [le car]_{FIG}.*
 be.at.3SG downward in Ouegoa DEF coach
 ‘The coach is leeward in Ouegoa.’ or ‘The coach is going leeward to Ouegoa.’

By contrast, a sentence with the directional morpheme attached to any other host than the locative verb *e* ‘be at’ is unambiguously static (directional adverb *ja=de* ‘downward’ in 512).

(512) *I* **ja=de** *le* car *re* *Wegoa.*
 be.at.3SG PROX=downward DEF coach in Ouegoa
 ‘The coach is leeward in Ouegoa.’

The BLC with a centrifugal directional can also allow a dynamic reading. In (513), Speaker 1 reports to his wife (both husband and wife are at the same place (at home)) what Speaker 2 told him on the phone in (508). Speaker 1 uses the absolute directional =*da* ‘upward’ and the centrifugal directional (=ec) corresponding to the actual direction of the motion event ‘windward away from us’.

(513) *E-ra* **da=e(c)** *Hienghene.*
 be.at-3PL.O upward=CENTRIF Hienghene
 ‘They are on their way windward towards Hienghene, away from us.’

In (514), the speaker and addressee are on the phone. The speaker is going seawards to meet the addressee at his place. (Note that the centrifugal morpheme ‘away from DC’ can be interpreted as ‘towards the addressee’ when the speaker and addressee are not at the same place; section 6.2.2.4.1). Given that the speaker (the Figure) and the addressee (the Ground) are in different places, the interpretation is most likely dynamic and not static. The interpretation in terms of Access path cannot hold in (514) since the direction coded by *de=uc*, lit. ‘seaward away from me’, does not correspond to the Access Path to the Figure, here the speaker: if the addressee wants to reach the speaker, he should not go away seawards, but inland from the addressee’s place.

(514) *E-rô* **de=uc.**
 be.at-1SG.O downward=CENTRIF
 ‘I’m on my way seaward to you/yours.’

Examples (514) and (515) illustrate factive motion with an animate Figure while sentences (516) exemplify the fictive path to reach an inanimate Figure.

(515) *E-rô* **de** *re* *Kumwaak.*
 be.at-1SG.O downward in Koumak
 ‘I’m on my way leeward to Koumak.’

(516) *Chen* *i* **de=wa** [*ni=maade*]_{FIG.}
 very be.at.3SG downward=far SG=downward
 ‘The one seawards (a tap) is far down.’

8.3.4.4 Centripetal directionals

The combination of the locative verb *e* ‘be at’ (and its object suffix), an absolute directional, and a centripetal clitic is attested in Access Paths expressions with inanimate / non-moveable Figures only. In (517), the speech-act participants are both on the coastal road, the shop is inland and the Figure (*lokal* ‘premises’) is between the shop and the speech-act participants (see Figure 76 below). The speaker locates the premises as slightly seawards from the shop and in their direction. An imaginary path is encoded in the directionals *de=ve* ‘downward towards us’, and the point from which the seawards direction is anchored (the Ground) is the shop. To find the Figure, one goes seaward from the shop, towards where the speech-act participants are standing.

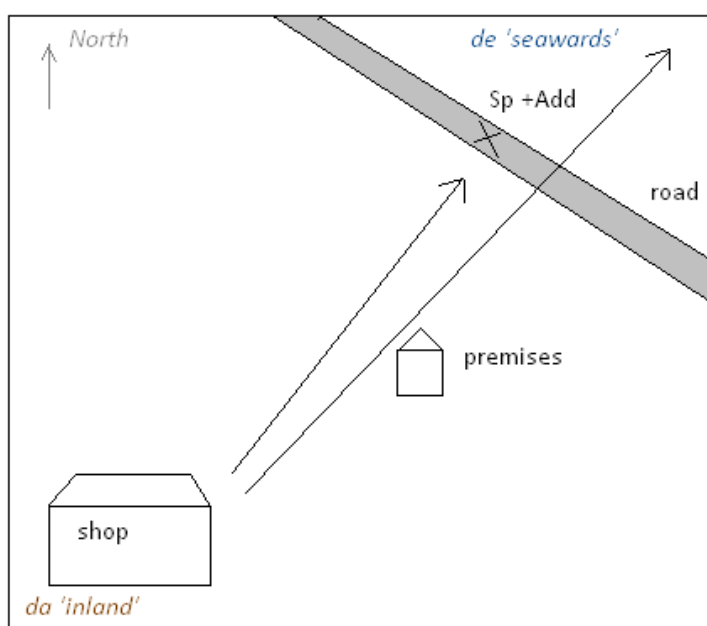


Figure 76: Spatial configuration in example (517)

(517) *Pwen i de=ve le lokal na le*
 a.bit be.at.3SG downward=CENTRIP DEF premises from DEF

mââcâ.

shop

‘The premises are a little bit seawards from the shop towards us.’

An angular-vector represents the seaward axis; the centripetal path is represented by a head-anchored vector; in this locational description, the Ground (the shop) functions as the Tail of both vectors.

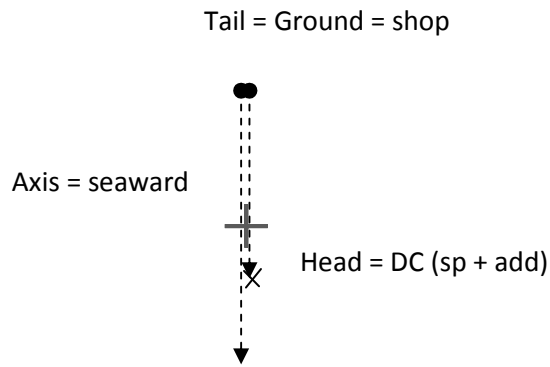


Figure 77: Vectors representing example (517)

In (518), the speaker is situated next to the shop; the addressee is on the coastal road seaward (down) with respect to the Figure and the speaker, and the Figure (again, the premises or *lokal*) is between the shop (i.e. the speaker's location) and the addressee. In (518), the speaker locates the *lokal* as 'inland towards Deictic Centre'. The Deictic Centre is the speaker by inference from the context (=me 'towards the speaker' here). The path is anchored in the Ground, i.e. the addressee (= Tail of the vector).

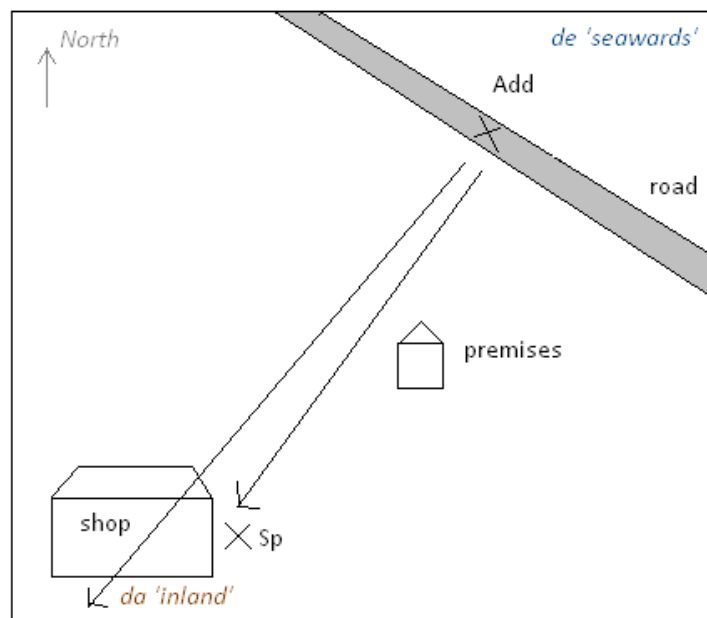


Figure 78: Spatial configuration in example (518)

- (518) / **da=me.**
 be.at.3SG upward=CENTRIP
 'It (the premises) is inland towards me.'

The location of the Figure is again to be deduced from the description of the path the addressee would follow to reach the Figure (i.e. *You go inland towards me [speaker]*). Like (517), example (518) can be represented by two vectors: an angular-anchored vector symbolizing the inland axis and a head-anchored axis pointing towards the Speaker (Head). The addressee functions as the Tail of both vectors.

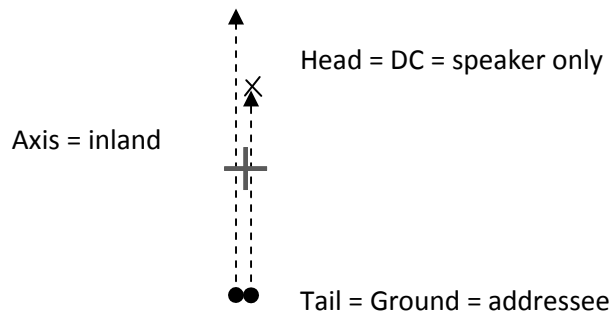


Figure 79: Vectors representing example (518)

Spatial domains and spatial strategies are often combined. Example (519) illustrates two location descriptions based on an Access Path expression (Figures 81 and 83) and a Co-extension Path expression (Figure 84), and one orientation description based on an expression of Paths emanating from the facet of the Figure (section 8.3.3; Figure 82; see also Figure 80).

(519) [*Ina* *de* [*te=ina* *âc* [*re* *phiina*
 EXIST.DIST downward PL=DIST man 3DU.S walk

Uvanu]_{REL.CL}]_{NP}]_{CL} [*Ile* [*ceec*]_{NP_FIG} [*bweriva* *le*
 Uvanu EXIST.ANAPH1 one facing DEF

peic]_{NP}]_{CL} [*(i)* *cu-no=da=me* [*le* *ceec*]_{NP_FIG}
 stone 3SG.S standing-view=upward=CENTRIP DEF one

[*o* *ta=le* *ceec*]_{PP} [*re* [*ni=en* *man-te=uc*]_{NP}]_{NP}]_{CL}.
 at/to PL=DEF tree in SG=PROX PLACE-go.down=CENTRIF

‘There are seaward at that *Uvanu* those two people who wander (i.e. two tourists). There is one facing the monument (lit. the stone); (he) was looking inland towards us towards the trees in (planted along) this avenue (going) seaward away from us.’

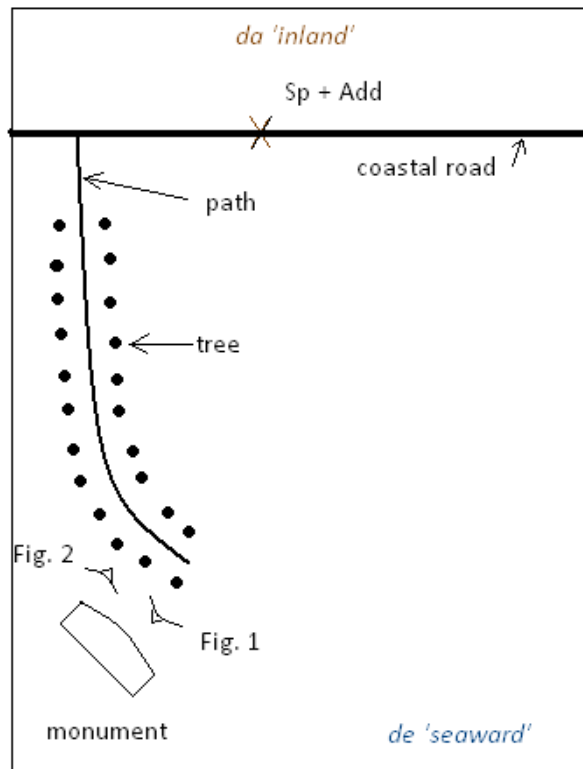


Figure 80: Spatial configuration in example (519)

The speaker mentions the presence of two tourists in *Uvanu* in the existential clause in *ina* 'EXIST.DIST' and specifies that the Figures are situated seawards (Access Path expression with *de* 'downward', Figure 81) and at some distance of the speech-act participants (*ina* 'EXIST.DIST'; *te=ina* 'those two'). In the second existential clause, the orientation of one of the tourists is expressed by an *ad hoc* landmark coded by the NP *bweriva le peic* 'facing the stone' (Figure 82). The orientation of the second Figure is given in the third clause. The latter illustrates a very common orientation description in Caac, combining an absolute direction (*da* 'upward'), the Deictic Centre (=me 'CENTRIP') and the nearest and most salient landmark chosen in the immediate surrounding (*o ta=le ceec* 'towards the trees'). This orientation description is represented by means of three vectors, all originating in the Figure's front facet (the Figure's eyes, *no* 'view'; Figure 84). One angular-anchored vector represents the inland direction; a head-anchored vector points at the Deictic Centre and a second head-anchored vector points at one *ad hoc* landmark, i.e. the trees. The front facet of the Figure is aligned with the angular- and head-anchored vectors. Note that the spatial phrase [*o ta=le ceec*] '(look) at the trees' does not provide any clue in terms of dynamicity as the preposition *o* can express a Goal or a Location. In this type of fictive paths, the notion of Directionality is called upon in the reference to the gaze or path emerging from the Figure's facet and results from a sense of a path unfolding away

from the front facet of the Figure. Finally, the *ad hoc* landmark (the trees) is located close to the Deictic Centre (deitic determiner *ni=en* 'this') and along a path itself defined as a co-extension path (*man-te=uc* 'the place going downward away from us'; Figure 79).

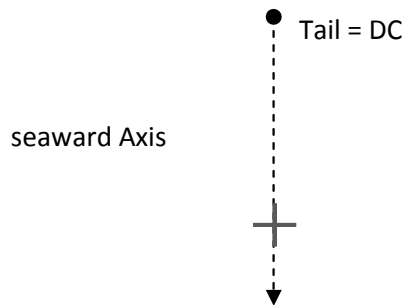


Figure 81: Vectors representing the Access Path in *ina de (te=ina âc)* 'there is seaward those two men' in (519)

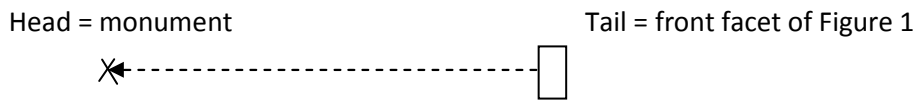


Figure 82: Vectors representing *bweriva le peic* 'facing the monument' in (519)

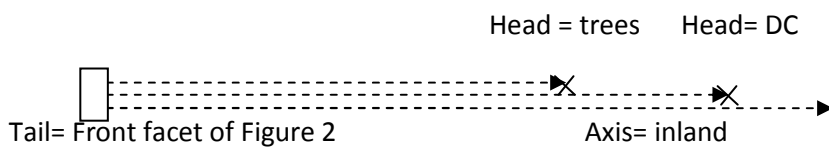


Figure 83: Vectors representing the fictive Path emanating from the front facet of the Figure in *cu-no=da=me* 'standing looking upward towards us' in (519)

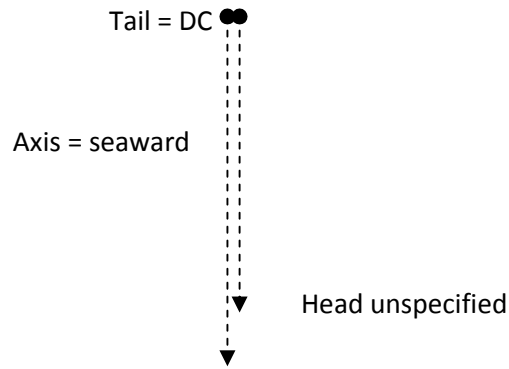


Figure 84: Vectors representing the co-extension path in *(ni=en) man-te=uc* '(this) place going seaward away from us' in (519)

To summarize, Access Paths are expressed by various constructions all involving one or two directional clitics:

Construction 1: any host including the BLC based on the locative verb *e* 'be at' to which can attach:

(i) with ABS.DIR (with inanimate Figures)

Construction 2: with the BLC based on *e* 'be at' only

(ii) ABS.DIR + CENTRIF

(iii) ABS.DIR + CENTRIP

Both constructions are also used for factive motion 'be in X direction on one's way to' with animate Figures.

8.3.4.5 Access Path from fictive Ground

Some examples involving absolute and deictic directionals involve the division of space into two zones. In (520), the speakers try to describe a picture from the Man & Tree Game (Levinson et al., 1992; see below). The speech-act participants are sitting side by side and facing in the upwind direction, the sea being therefore on their left, the mountain range on their right side and the leeward side behind them. The toy man which in the picture is the closest to the speech-act

participants is described as being *ave=de=ve* ‘on the down (leeward) side towards us’ (520a) while the second toy man is located as *ave=da=zin* ‘on the other/opposite side’ (520c).



Picture 8: Man & Tree Game, PP4_10

- (520) a. *pwame â=le alô da bwe waadan i*
 TOP M=DEF look upward top.side path be.at.3SG
- ja i ja ave=de=ve.*
 PROX be.at.3SG PROX side=downward=CENTRIP
 ‘The one who is looking inland towards the path, he is here, he is here on the down side towards us.’ (picture PP4_100)
- b. *A... i a mo na... na le câ.*
 mm 3SG.S go stay about about IND 1PL.INCL.INDPT
 ‘Ha... he stays towards (lit. about) us.’
- c. *l ja i ja cele câ.*
 be.at.3SG PROX be.at.3SG PROX at/to 1PL.INCL.INDPT
- Â. Pwame â=le i cu-alô o kumaac,*
 yes TOP M=DEF 3SG.S standing-look at/to beach
- mwa i ja ave=da=zin.*
 rather be.at.3SG ASS side=upward=crosswise
 ‘He’s here, he’s here toward us. Yes. As for the one looking towards the beach, he is more on the other side.’ (picture PP4_100)

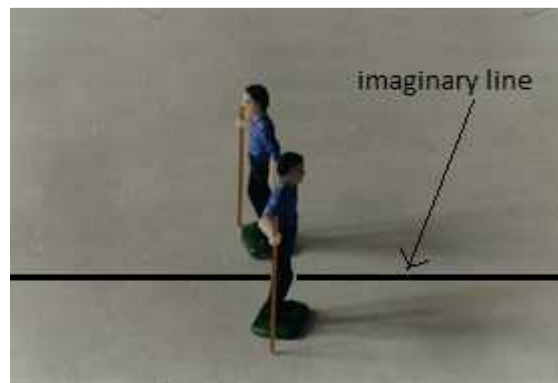
The matcher is confused, so the speaker phrases the location of the first man slightly differently (as a result, the matcher corrects himself and selects the right picture).

(521) *Oni* *pwame â=le* *i* *cu-alô* *da* *bwe*
 and/but TOP M=DEF 3SG.S standing-look upward top.side

waadan, *chen* *i* ***de=ve*** ***ja.***
 path very be.at.3SG downward=CENTRIP PROX

‘But as for the one who is standing looking inland towards the path, he is very much leeward towards here.’

The spatial description is anchored in an invisible line separating the picture into two zones: one containing the first toy man (a downward region, =*de=ve*) and one with the second toy man (its opposite region, =*da=zín*¹⁶³). These examples based on a fictive obstacle also illustrate a more abstract use of the geomorphic expression =*da=zín* ‘crosswise’.



Picture 9 (modified from Picture 8): Imaginary division of space in example (520)

¹⁶³ See section 5.3.2.1 for the exceptional co-occurrence of =*da* ‘upward’ and =(z)*in* ‘transverse’.

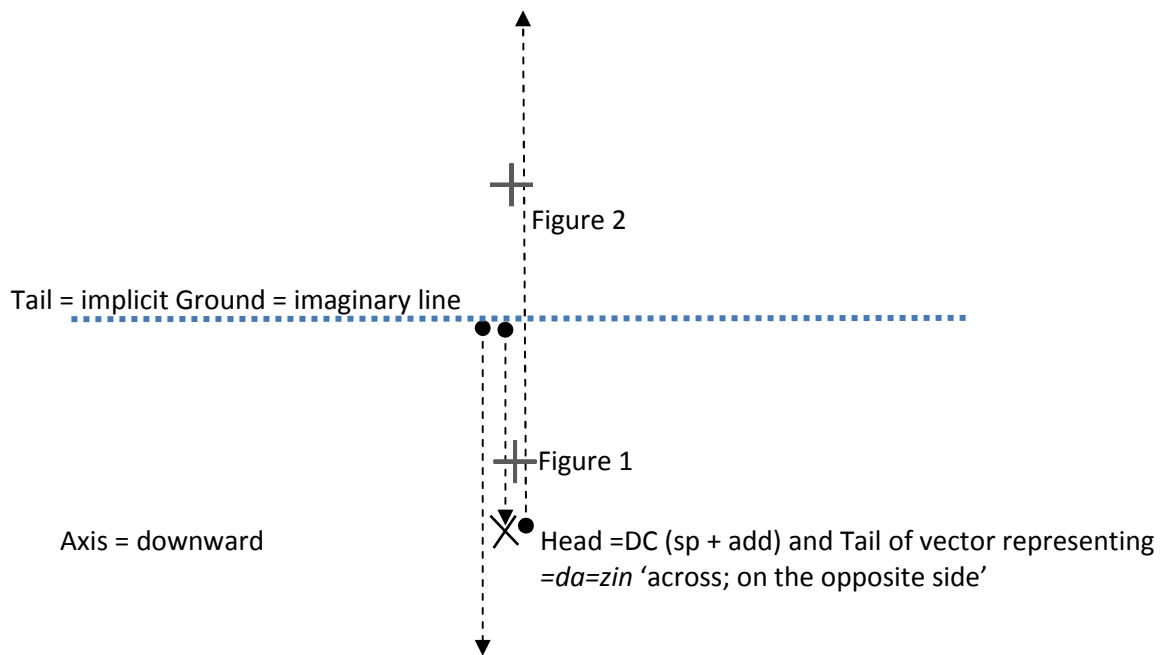


Figure 85: Vectors representing example (520)

Both spatial descriptions (in *ave=de=ve* and *ave=da=zin*) can be explained in terms of Access Paths (Path-to-Figure) but assume a fictive entity at the imaginary line (functioning as an implicit Ground). More precisely, the adverb *ave=de=ve* expresses a Path-to-Figure-from-fictive-Ground and the adverb *ave=da=zin* expresses is a Path-to-Figure-from-DC-across-fictive-ground-as-obstacle. One search region is defined by a dual vector as the downward region (angular-anchored vector) towards the Deictic Centre (head-anchored vector). A second search region (where to find the second Figure) is defined as across the obstacle in the opposite direction (the second angular-anchored vector with the Deictic Centre functioning as the Tail of the vector). This type of description shares some similarities with the way the relative FoR is used (section 7.2.1.4.2) as the division of space into a downward zone close to the Deictic Centre versus a crosswise, opposite zone is relative to the viewpoint of the DC/speech participants and not the local topography. Like descriptions based on the relative FoR, if the speech participants/viewer were to rotate, the description would not be felicitous anymore. This type of description differs slightly from the analysis of region adverbs that are marked by the absolute directional (e.g. *ave=de o waadan* 'on the seawards side of the road'; section 8.1.3.3), a spatial description in which two sides are defined by absolute directionals are projected off a real reference object. In this context, the description does not rely on the viewpoint of the Deictic Centre but on the absolute directions only, and would still be felicitous if the viewer was to rotate.

8.3.5 Anticipated Paths

A fourth type of Fictive Motion has been identified in Caac. What I propose to call Anticipated or Return Paths is the opposite of Access Paths which is the fictive path that the Figure could follow to reach the Deictic Centre.

8.3.5.1 Centripetal directionals

Examples (522), (523) and (524) are answers to the question ‘Where are the children?’. The context is the following: the speech-act participants are at home. The children are in the community house called Pwerabi, a place located inland in relation to the speech-act participants’ current location. In (522-523), the speaker resorts to the absolute direction *da* ‘upward’ to position the Figure, that is an Access Path strategy whereby the addressee can infer the location of the Figure from the fictive path (s)he would have to follow to reach that Figure. An alternative answer is (524) and the set of directionals *de=ve* ‘downward towards us’.

- (522) *E-ra* ***ja=da.***
be.at-3PL.O PROX=upwards
‘They are (here) upwards.’
- (523) *E-ra* ***da*** (*Pwerabi*).
be.at-3PL.O upwards Pwerabi
‘They are upwards (in Pwerabi).’
- (524) *E-ra* ***de=ve*** (*Pwerabi*).
be.at-3PL.O downwards=CENTRIP Pwerabi
‘They are upwards (lit. down towards here) (in Pwerabi). (no real motion event implied here, ≠ ‘They come seawards towards us *to/*from Pwerabi’)

In this context, the centripetal morpheme is combined with the opposite absolute directional. Thus, instead of saying ‘he is inland, in Pwerabi’, one describes the motion the Figure would fictively make to come to the place where the speech-act participants are: *E-ra de=ve Pwerabi*. ‘They are **inland** in Pwerabi, i.e. ‘they would have to go **seawards** to come **towards us**’. This strategy is labelled here Anticipated Path and functions as a reversed Access Path: it signals the fictive path the Figure would have to follow to reach the Deictic Centre (i.e. the speech-act participants). More precisely, it designates the path the Figure is expected to follow in an anticipated future, (with the verb *e* ‘be at’ for present and future reference; section 3.1.1), or have just followed (with the BLC for past reference employing the verb *mo* ‘stay; live’).

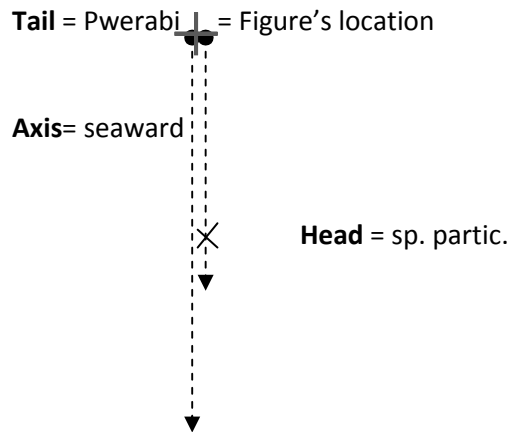


Figure 86: Vectors representing the Anticipated Path in (524)

The scenes described in (522-524) are static: the speaker aims at describing the place where the Figure is. Note that in both cases – with an absolute directional only (e.g. *da*) or with the combination of absolute and deictic directionals (*de=ve*) – the spatial information following the directionals (here, a toponym *Pwerabi*) clearly refers to the current location of the Figure (and not the destination of the Fictive Motion with *=de=ve*. If the sentence denoted factive motion, on the other hand, *Pwerabi* would be replaced by *Bwe o ciiā*, since the children go to *Bwe o ciiā*, the place which is seawards and where the speech-act participants are. Finally, if the spatial complement expressed the source of a factive motion event (‘they come down to us from *Pwerabi*’), the ablative preposition *na* would precede the spatial complement (*na Pwerabi* ‘from *Pwerabi*’).

The same anticipated path strategy applies in (525) where the Figure is on the beach at *Kareon*, i.e. seawards (down) with respect to the speech-act participants’ location. Spatial information is coded by the opposite directionals *da* ‘upward’ and *=me* ‘CENTRIP’, which refer to the Anticipated Path-to-DC.

- (525) *I* *da=me* *Kareon.*
 be.at.3SG upward=CENTRIP Kareon
 ‘She is down (lit. ‘up towards us’) at *Kareon.*’ (≠ ‘She comes inland towards us’)

An Anticipated Path encodes a complex spatial relation and gives more information than the location of the Figure only. It locates the Figure and implies that this location is momentary: it is one point on a journey undertaken by the Figure. It indicates that the Figure is expected to come back to the initial place (the speech-act participant's location). Thus, the implicature in (524) is that the children who are in Pwerabi for a customary ceremony are expected to be at that place temporarily and come back home at some point during the day/night. What is meant by 'the children are at X place' is also 'they went there but will come back here'. In (525), the Figure has left her place (where the speech-act participants are) to go into the mangrove swamp to fish crabs; the implicature is that she is expected to come back home a few hours later. The return journey is anticipated through the use of the directionals. Such expressions display two distinct elements: a temporary location encoded by the spatial phrase (e.g. *Kareon* in (525)) and a journey towards the Deictic Centre (always identified with the speech-act participants in the examples collected up to present). The two pieces of information are not presented on the same level: the location is foregrounded and the journey is backgrounded and presented as fictive, i.e. either as expected/anticipated in the future (this relies very heavily on the context) or just accomplished. One difference to Access Paths expressions is that this location is the result of a complex motion event (go to X and return to DC's location) and not a single Fictive Motion event.

Anticipated Paths are encoded by the Basic Locative Construction, a construction which, whatever its spatial complement is (directionals, PPs, NPs, AdvPs), expresses the location of an entity. The combination of the BLC with the absolute and centripetal directionals allows the speaker to reframe this stative relation (location) in a wider context, which can be dynamic; this is possible with animate/moveable Figures, however. The motion event can have already happened in a past context (with the BLC in *mo*). In that case, the speaker provides information on where (s)he was (at X) and on the journey back to the speech-act participant's location. In (526), both speech-act participants are in Pwerabi for a customary ceremony, which is located inland to Dau. Example (526) is the answer to the question 'Where have you been?'. The speaker explains that she went home to Dau as she had something to do there and came back. The speaker resorts to the BLC with *mo* 'stay; live' for past reference.

(526)	<i>No</i>	<i>mo</i>	<i>da=me</i>	<i>Dau.</i>
	1SG.S	stay.PST	upward=CENTRIP	Dau
	'I was in Dau (and came back) up here.'			

The actual path from Pwerabi to Dau is going seawards (downwards) and one could say *No te Dau*. 'I went down to Dau'. In (526), the directionals *da=me* 'upwards towards here' express the trajectory or

path back to the initial place (Pwerabi). Sentence (526) also differs from a sentence reporting the motion event *No te Dau*. 'I went down to Dau' in that the spatial complement (*Dau*) refers to the destination of the motion event in *No te Dau* 'I went seaward to Dau' while in example (526) the same spatial complement *Dau* refers to the temporary location of the Figure (I was in *Dau* (and came back) up here'). Note that the order in which the spatial information is presented is not iconic. Compare the actual trajectory represented in A and its linguistic encoding in B:

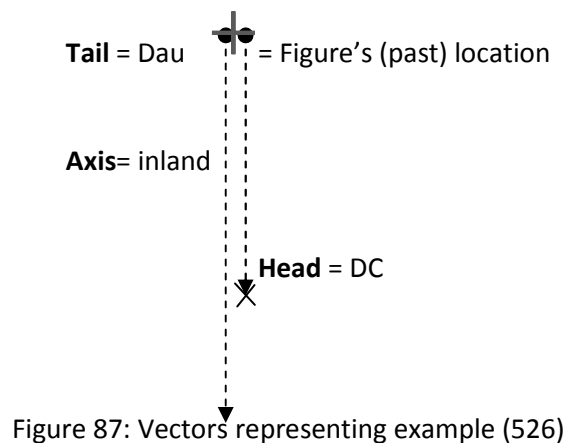
A.

Motion 1: from Pwerabi to Dau, going seawards (understood by pragmatic inference only)

Motion 2: from Dau to Pwerabi, going inland (really encoded)

B.

No	mo	da	=me	Dau
I	was	upwards	towards here	(in) Dau
Figure	past location	trajectory back up here (Pwerabi, 2 nd destination)		past location



Alternatively, one can reply:

(527) *No ta=me [na Dau]_{Source}*
 1SG.S go.up=CENTRIP from Dau
 'I came up here from Dau.'

(528) *No te ta [Dau]_{Goal}*
 1SG.S go.down go.up Dau
 'I went to Dau and came back.' lit. 'I went down (to), (then) up (from) Dau.'

(529) *No* ***te*** ***ta*** ***ciez*** [*o* *Dau*]_{Goal}.
 1SG.S go.down go.up back at/to Dau
 ‘I went to Dau and came back.’ lit. ‘I went down (to), (then) back up (from) Dau.’
 (SpaceQuest_PK)

Note that in both factive motion descriptions (529, 530, 531) and Fictive Motion descriptions (528), the spatial complement (*Dau*), coding the Source in (529), the Goal of the 1st verb in (530, 531) and Location in (528), is found following the sequence of verbs (*te ta*, *te ta ciez*) or verb + directionals (*mo da=me*). The sequence of motion verbs in (530, 531) adheres to the serial verb construction pattern reported in New Caledonian languages: the nuclear-type SVC (Bril, 2007: 276; see Part I). However, the displacement of the spatial complement after the sequence of verbs (and therefore the non- iconicity of the SVC) may not be as typical.

In (530), Speaker 1 and Speaker 2 are working in the fields. Speaker 1 asks Speaker 2 to go home (located seawards) and bring back some matches. Speaker 2 complains as she just went to the house to bring back a bottle of water they had also forgotten.

(530) Sp2: *No* *gaa* ***mo*** ***da=me*** ***le!***
 1SG.S DUR stay.PST upward=CENTRIP ANAPH.SP
 ‘I’ve just been there!’ (lit. I was -came back here- there.)

From the fields, Speaker 2 went seawards to go home and went inland to go back to the fields. The combination of directionals *da=me* ‘upwards=CENTRIP’ refers to the trip inland back to the fields and the spatial anaphoric marker *le* refers to the house seawards.

In (531), the speaker explains that the coach is in Ouegoa, leeward (down) to Pouebo (where both speech-act participants are located).

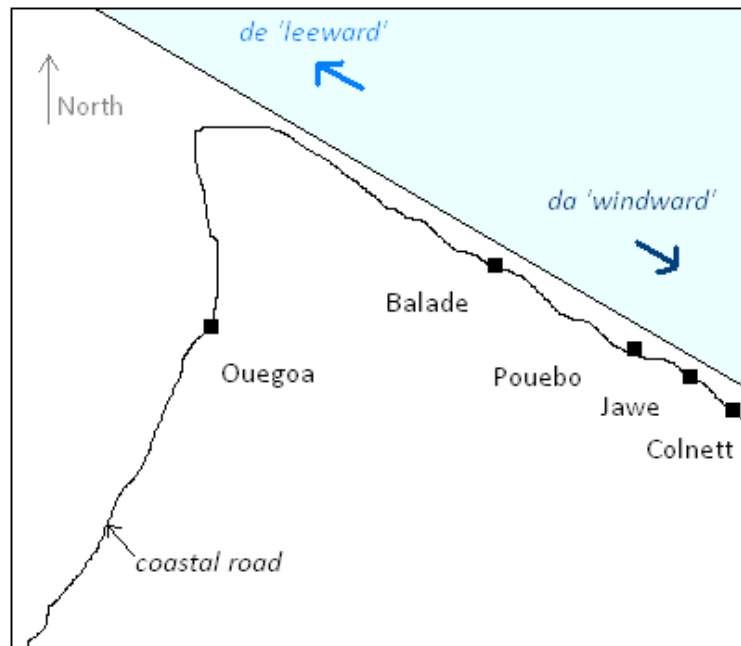


Figure 88: Map from Ouegoa to Colnett

The use of the directionals *da=me* situates this location within a wider context: the coach is a regular one coming from Noumea to Pouebo, it is presently to be found in this town (Ouegoa) on its way to Pouebo (hence *da=me* 'upwind towards the speech-act participants'). If the speaker was solely giving information on the location of the coach, (s)he would simply use *(ja)=de* 'downward' as Ouegoa is downward/leeward to Pouebo.

- (531) (Gaa) *i* **da=me** *re*¹⁶⁴ *Wegoa*.
 DUR be.at.3SG upward=CENTRIP in Ouegoa
 'The coach is (still) in Ouegoa, (and) on its way to come up here.'

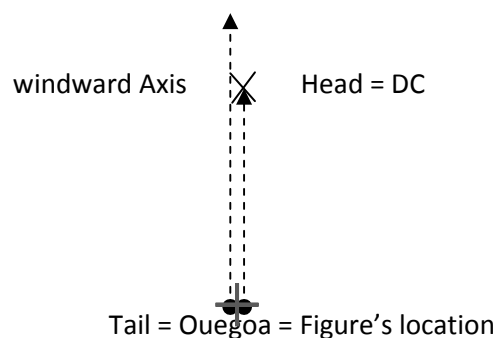


Figure 89: Vectors representing example (531)

¹⁶⁴ For a discussion of the presence or absence of prepositions with toponyms, see section 3.2.3.

In this construction, the source (always preceded by *na* ‘from’) cannot be mentioned: **I da=me le car [na re Wegoa]_{Source}* and the description is therefore not dynamic (≠ ‘The coach comes windward towards us from Ouegoa.’). By contrast, in a construction with a directional verb, the source and goal could be specified (532) but not the transitory location.

(532) *I* **ta=me** [*le car*]_{NP_Subj} [*na re Wegoa*]_{Source}
 3SG.S go.up=CENTRIP DEF coach from in Ouegoa
 ‘The coach comes upwind from Ouegoa’

When negated, the speaker denies that the Figure is in Ouegoa but does not deny the journey of the coach upwind towards Pouebo. Thus in (533), the speaker explains that the coach is not in Ouegoa (anymore) but has already left. The coach could be anywhere between Ouegoa and Pouebo. It is therefore on its way to Pouebo. In (533), the same coach has left Ouegoa and is in Balade (the next village the coach would go through between Ouegoa and Pouebo; see Figure 88). Again the coach is on its way to Pouebo.

(533) *Came i* **da=me** *re Wegoa bwa*
 NEG be.at.3SG upward=CENTRIP in Ouegoa because

 i **da=me** *Balaar.*
 be.at.3SG upward=CENTRIP Balade
 ‘It (the coach) is not in Ouegoa (anymore) as it is (now) in Balade.’ (the coach is still on its way to Pouebo, Balade being situated between Ouegoa and Pweevo)

Alternatively, one could have said:

(534) *U* **yau** *o Wegoa, i*
 PERF pass at/to Ouegoa be.at.3SG

 da=me=mwa *Balaar.*
 upward=CENTRIP=completely Balade
 ‘It (the coach) has passed Ouegoa; it’s now in Balade.’

Note that it is possible to give the location of the coach in Wegoa without providing any information about the journey of the coach (one does not know whether the coach is on its way back to Pouebo or on its way out to Noumea). In that case, the absolute directional alone is employed (*de* (535) vs *da=me* (533)) and its use is interpreted as an Access Path (a path going *leeward* to reach the Figure).

(535) *I* *de* [*re* *Wegoa*]_{Loc} [*le* *car*]_{FIG.}
 be.at.3SG downward in Ouegoa DEF coach
 ‘The coach is leeward in Ouegoa.’ [Access path]

Similar to (531), example (536) illustrates an Anticipated Path with the coach being in the windward direction, in Jawe (Figure 88). The first clause refers to the actual motion of the coach to Jawe (upwind to Pouebo), the end point of the coach route where the driver turns round and drives all the way to Noumea again. The second clause refers to the fact that the coach is still in Jawe but expected to come back here (on its way to Noumea). Again, instead of saying that the coach is *ja=da* ‘upward’ meaning ‘upwind’ to refer to his location in Jawe, the speaker resorts to *de=ve* ‘down towards us’ implying it is in Jawe but is expected to come leeward to Pouebo.

(536) [*U* *ta* *re* *Jawe*]_{FactiveMotion} *jo* [*gaa* *i*
 PERF go.up in Jawe then DUR be.at.3SG

*de=ve*_{FictiveMotion}
 downward=CENTRIP
 ‘It (the coach) went windward to Jawe and it is still there. (lit. it is still leeward towards us)).

Anticipated Paths can also be coded by a set of directionals following a predicate other than the locative verb *e* ‘be at’: directionals have been found with stative verbs (e.g. *dedo* ‘be black’) and with the fluid basis¹⁶⁵ *kola* ‘rain’ in (537). In (537), the speaker describes the weather in Colnett, a place on the coast, upwind (south-east; see Figure 88) to Pouebo. The speech-act participants are on an elevated point in Pouebo and can see far along the coast, in the north-west and south-east directions. The speaker explains that the clouds are upwind in Colnett and, expectedly, on their way towards the speech-act participants/Pouebo as the trade winds blow from southeast to northwest. The adverb phrase *ja=da(=ec)* locates the Figure upwind (away from the speech-act participants’ location) and can be accounted for in terms of an Access Path (Path-to-the Figure). The directionals *de=ve* (‘leeward towards us’) encode the Anticipated Path of the clouds towards Pouebo (Path-to-DC).

¹⁶⁵ See section 2.2.1.9.

(537) *Pwame na cele-ny, i*
 TOP PRE.LOC at/to-1SG.POSS 3SG.S

kola/ dedo de=ve ja=da(=ec)].

rain/ be.black downward=CENTRIP PROX=upwards(=CENTRIF)

‘(Here) at home, it’s raining windward away from us (and the rain) coming leeward towards us.’ (lit. ‘As for (here) at home, it’s raining/dark coming leeward towards us, (being) windward away from us.’)

In (538), the speech-act participants are in Pouebo. The Figure is the addressee and comes from France. The speaker refers to the journey undertaken by means of the directionals *da=me* ‘upward towards DC’ in order to trace her origins (abroad). The meaning of the absolute directional *da* is based here on the home-abroad opposition and used on the global scale; *da* refers to ‘home’ from the speaker’s perspective (section 1.2.2.5). The sentence is incorrect without the centripetal morpheme: **Zo teevo da*. lit. ‘You are a woman upward’. Note that if it was grammatical, the same sentence without the centripetal morpheme would refer to the opposite absolute direction to (538), i.e. upward [New Caledonia]. In this example, the pair of directionals are within the NP (which has the predicative function), and therefore characterize the referent by its anticipated motion (this remark also applies to example (541)).

(538) *Zo [teevo da=me]_{NP.Pred}*
 2SG.S woman upward=CENTRIP
 ‘You are a woman from abroad (France).’ lit. You are a woman coming to my home here.’

Example (539) is an excerpt from the traditional narrative in which the people of Colnett (located windward to Pouebo) try to find a wife for their chief. They find a potential bride in Pouebo and bring her back to Colnett. Someone blows the conch shell to call the chief who lives inland in the bush. After blowing a few times the conch shell, they can hear some sound coming from the forest inland (539). After (539), the narrator tells that the chief comes out of the forest and it turns out to be a big snake.

(539) *jo e ui na jaarak [m_i u tho=da*
 then again blow DIST conch.shell PURP_3SG.S PERF call=upward

[â=le jure âc de=ve]_{NP_Dir.Obj}_{SUB.CL}

M=DEF true man downward=CENTRIP

‘[...] then he blew again the conch shell in order to call inland the chief of inland (lit. seawards towards them [i.e. the people waiting for the chief to appear]).’

The Deictic Centre is here shifted to the people of Colnett waiting for the chief. The combination of directionals in *de=ve* ‘seawards, towards DC’ provides information on where the chief comes from (inland) and his future trip towards the place where the people are waiting, resorting therefore to an Anticipated Path. This interpretation is also confirmed by the language consultant who translated the nominal phrase *â=le jure âc de=ve by le grand chef d’en haut* ‘the big chief of inland’.

8.3.5.2 Centrifugal directionals

When the speaker wants to specify that the Figure is in a temporary location and on its way towards a place that is *not* the location of the Deictic Centre (unlike the examples discussed above in 7.3.6.1), they can combine an absolute directional with a centrifugal clitic in a BLC with the locative verb *e* ‘be at’. However, the use of the centrifugal clitics in this context can be accounted for in two ways. I will take again the example of the coach in *Wegoa* to illustrate the two possible interpretations. In the opposite situation where the coach left *Pouebo* and is leeward in the town of *Ouegoa* but on its way to *Noumea* on the south-western coast, and not towards the Deictic Centre in *Pouebo* (see Figure 83), the speaker resorts to the directional *de* ‘downward’ in combination with the centrifugal directional (=uc here ‘away from the speech-act participants’ location’). The spatial phrase [*re Wegoa*] encodes the temporary location where the Figure is (as in example (531) above).

- (540) *I* ***de=uc*** [*le car Numia*]_{FIG} [*re*
 be.at.3SG downward=CENTRIF DEF coach Noumea in

 Wegoa]_{Loc.}
 Ouegoa
 ‘The coach to Noumea is in Ouegoa leeward away from us.’

One could interpret example (540) in two ways: (i) as an Access Path, in that one can follow the path leeward away from the location of the speech-act participants to find the coach, or (ii) as a type of Anticipated Path, in that this sentence conveys information on the temporary location of the Figure expressed in the spatial phrase *re Wegoa* ‘in Wegoa’ and implies a journey that is further downwards and away from the DC (i.e. towards Noumea) than its current location. The only difference with descriptions using centripetal directionals such as in (531) is that it does not describe a Path-to-Speech-Participants but a Path-away-from-Speech-Participants.

8.3.6 Overview

One can distinguish dynamic contexts from static contexts, and static contexts with a journey implied or not. Constructions vary depending on the animacy of the Figure, the use of directional verbs or clitics, and the combination of directionals hosted by the Basic Locative Constructions or verbs or nouns in predicative function or not. Table 40 recapitulates the various constructions used to describe motion, location and orientation. The BLCs are typically used in static contexts in location descriptions or in factive motion, as ‘to be on (up/down) way towards X’. Directional verbs are typically found in dynamic contexts expressing the direction of a motion event. They have been attested in static contexts in Co-extension Paths describing the configuration of a spatially extended Figure only. Directional morphemes are present in factive and fictive motion, in all three spatial domains. Depending on their combinations (ABS, CENTRIP/CENTRIF) and the nature of their host (verbs, nouns, adverbs etc.) and constructions in which they occur (e.g. BLCs with *mo* ‘stay; live’ or with the locative verb *e* ‘be at’), the nature of the spatial information conveyed and the type of fictive motion vary.

Factive Motion			
directional verb Motion event	directional + telic	‘go up/down/along the coast to (Z) [Goal]’	animate and inanimate Figures
BLC with ABS or BLC with ABS + CENTRIF Motion event	directional + atelic	‘be on (X) way towards (Z)’	animate and inanimate Figures
Location with Fictive Motion expressions			
(i) directional verb (ii) directional clitic hosted by a noun coding the Figure (e.g. path upwards) Co-extension Paths	spatial configuration of an extended object (e.g. road)	‘(go) up/down/along the coast to (Z) [Goal]’	inanimate Figures
(iv) ABS on any host (except BLCs) Access Paths	location (no journey implied)	‘(being located) in (X) direction’	animate and inanimate Figures
(i) BLC with ABS or general CENTRIF = <i>ap</i> Access Paths	location (no journey implied)	‘be in (X) direction’	inanimate and animate Figures
(ii) BLC with ABS + CENTRIF Access Paths	location (no journey implied)	‘be in (X) direction’	inanimate (and animate?) Figures

(iii) BLC with ABS + CENTRIP Access Paths	location (no journey implied)	'be in (X) direction'	inanimate Figures only
(i) BLC with ABS + CENTRIP (ii) or stative predicate + ABS + CENTRIP Anticipated Paths	temporary location + journey implied	'be at (Y) [Location] on one's way towards (X) (Direction)'	animate or moveable Figures only
Orientation with Fictive Motion expressions			
(i) ABS on predicative element encoding a facet of the Figure (e.g. <i>alô</i> 'look', <i>beve</i> 'turn; be turned', <i>duu-n</i> 'have his/her back') Paths emanating from a facet of the Figure	orientation	'(being oriented) in (X) direction'	animate and inanimate Figures

Table 40: Constructions with DIRs in dynamic and static contexts

To summarize, four types of Fictive Motion have been identified up to present, all involving directional forms: Co-extension Paths, Paths emanating from a facet of the Figure, Access Paths and Anticipated Paths. Expressions based on Paths emanating from a facet of the Figure are used in orientation descriptions or to describe the spatial configuration of a complex Figure. They consist of a predicate coding a facet of the Figure (e.g. verbs of looking, posture, body part nouns) followed by one or two directional morphemes. Co-extension Paths serve to describe the configuration of a spatially extended object only. Access Paths enable the addressee to find the Figure by imagining the fictive path leading to the Figure. This type of Fictive Motion is expressed in many ways and directionals can follow different hosts. In the BLC with the locative verb *e* 'be at', some restriction on the nature of the Figure operates: the Figure is preferably inanimate in the BLCs with absolute directionals alone and with centrifugal directionals; a BLC composed of the locative verb *e* 'be at' (+ an object suffix) and a pair of absolute and centripetal directionals is used with inanimate Figures only. Finally, a fourth type of Fictive Motion is proposed here: Anticipated Paths. Anticipated Path expressions enable the speaker to express the temporary location of the Figure and imply that this locative event takes place in the wider context of a journey undertaken by the Figure with respect to the speech-act participants and with respect to an absolute/geomorphic direction. Anticipated Paths describe the fictive Path to the Deictic Centre, i.e. the Figure is the entity fictively moving towards the place where the Deictic Centre is located. This is restricted to animate or moveable Figures. The need to be able to identify the places one comes from and the places one goes next is of particular

relevance in the Kanak culture which relies on customary paths and it may explain this particular non-iconic construction. A type of factive motion expression is found with the same structure as the Access Path expressions based on the combination of the locative verb *e* 'be at' (+ an object suffix), absolute and centrifugal directionals and a spatial phrase, and can be translated as 'be on one's X way towards Y'. The dynamic interpretation is valid only with animate or moveable Figures and in this context, the spatial phrase encodes the direction (not necessarily the Goal) towards/in which the Figure is moving.

The term 'Fictive Motion' encompasses various expressions which have it in common that they describe a static scene in dynamic terms. However, the element that is fictive varies: in accordance with Talmy's observations (2000: 105), the fictive element can be an entity which is imagined to move along an extended Figure in Co-extension paths (e.g. *The road goes uphill*) or the path itself can be created in expressions based on the Path emanating from a facet of the Figure. The analysis of Caac data shows that the fictive element can also be a fictive reference object in which Access Paths can be anchored (see section 8.3.4.5). This analysis also highlights that the direction of the fictive path is subject to variation as well: in Access Paths, an imaginary path originates in the location of the Deictic Centre and is directed towards the Figure while in Anticipated Paths, the imaginary path leads from the Figure to the location of the Deictic Centre. Finally the fictive path described in Anticipated Path expressions is slightly different. As in other types of Fictive Motion, such expressions refer to a virtual path and an actual location; however, the path the directionals refer to is either expected or already achieved by the Figure (explaining its current location) and reframes the actual location of the Figure in the wider context of a journey. The vectorial analysis enables us to give a detailed and unified account for the bearings used in the spatial expressions of location, motion and orientation and give a representation to the fictive motion.

Conclusion

This thesis has presented the first systematic description of the inventory of spatial expressions in Caac for different scales and for location, motion, orientation, in terms of the framework of vectors. This study has required an extension and revision of the framework of vectors, and addresses several questions raised in the literature about the relationship between deixis, Frames of Reference and orientation. Given that Caac is an under-documented and endangered language, this study also necessitated a first basic grammatical description, presented as a grammatical sketch in Chapter 2. This sketch grammar represents the first documentation published on Caac as spoken in Pouebo in the early 2010s, and includes a number of grammatical topics which had not been addressed in Hollyman's grammatical notes on Caac in the 1960s, e.g. TAM markers, relative clauses, complement clauses, topicalisation and focalisation in Caac.

The linguistic resources of the Caac language used for spatial reference are distributed over seven word categories: directionals, verbs, demonstratives, relational nouns, adverbs and a small set of prepositions. Most of them are widely shared with other Oceanic languages. The demonstrative system in Caac which is based on two deictic forms encoding the distance to the speaker and two anaphoric markers is less complex than those described for some other Kanak languages such as Nyelâyu, Iaai and Nengone, and seems rather similar to the demonstrative system in Nêlêmwa. The classification of absolute directionals in Caac is more challenging for historical reasons. Absolute directionals are very likely to have resulted from the grammaticalization of the directional verbs meaning 'go up' and 'go down'. They are found in various syntactic contexts and exhibit formal features of both free forms and clitics; they are analyzed as such depending on the context in question (section 6.1.1).

As far as the nature of the spatial bearings is concerned, the data show the prominence of two types of bearings called upon by Caac speakers: the location of the Deictic Centre and the environment of the speech act participants. They have been identified as major spatial bearings in Oceanic languages (Ross, 1998: 228-229; Bennardo, 2002; Senft, 2004) including New Caledonian languages (see Ozanne-Rivierre, 1997: 83; for Nengone, see Bearune, 2012: 332-333). In Caac, these two bearings are found in spatial descriptions on any scale, and in location as well as motion and orientation expressions.

The flexibility in the uses of absolute directionals in various settings is well-known in New Caledonian languages (Ozanne-Rivierre, 1997; Bril, 2004; Bearune, 2012); it is also a feature shared by the Caac

directional system. In small-scale settings (i.e. from a table top to the space occupied by the village of Pouebo), the usage of Caac absolute directionals can be based on the sea-land axis and the axis parallel to the shore and bounded by the chiefdom's boundaries, or it is based on geomorphic directions ('uphill' / 'upriver', 'downhill' / 'downriver', and 'crosswise, on the other side'). In large-scale settings (i.e. beyond Pouebo but on Mainland New Caledonia; intra-island scale), the use of absolute directionals relies on the sea-land axis and the crosswise axis (which are at the crossroads of absolute and geomorphic systems) as well as the wind-based axis. In current descriptions of other New-Caledonian languages (Ozanne-Rivierre, 1998a; Bril, 2004a see also Francois, 2004), it is not indicated whether the transverse directional (coded by *(z)in* in Caac) can refer to the other side of the mountain range 'crosswise (geomorphic Frame of Reference)'; the use of the transverse directional in large-scale settings has not been described (or is not attested) in the neighbouring languages. The navigational scale refers to a space of the lagoon or the nearby islets, and the Belep Islands. Strictly speaking, this scale does not correspond to an inter-island scale (Francois, 2004: 8-9), i.e. the spatial relations between New Caledonia and other (non-Caledonian) islands in the Pacific, because my data do not provide any information on spatial reference relying on inter-island navigation. But we can presume that this scale was used to refer to inter-island trips undertaken by sailing boats as in other Oceanic languages. However, nowadays, when referring to a trip to any place outside New Caledonia in Caac, the description rests on the opposition between home land (i.e. Mainland New Caledonia; coded by *da* 'upward, towards home') and abroad (including the Loyalty Islands; coded by *de* 'downward, abroad'). This can probably be explained by the fact that nowadays, trips do not involve sailing boats anymore and include more destinations than before (extra-Pacific destinations; global scale). Absolute directionals are very often followed by deictic directionals and complemented by *ad hoc* landmarks on any scale. More spatial specification is provided by toponyms and topological means, whatever the scale. Spatial expressions based on a Faceted Ground (intrinsic Frame of Reference) tend to be used in small-scale settings only; they are found both in location and motion expressions.

One difference between New Caledonian languages resides in the way the environmental bearing and the Deictic Centre are encoded. In Caac the importance of those two bearings is clearly visible in the specialisation of deictic directionals in absolute directions. To my knowledge and within the limits of available linguistic descriptions, a set of specialized directionals combining deictic and absolute bearings is not very common amongst Oceanic languages, including Kanak languages.

The difficulty in describing deictic directionals within the more traditional Frames of Reference system led me to employ the concept of vector, as the latter enabled me to represent the two types

of bearing in terms of Tail and Head or Axis. The application of the vectorial analysis developed by Bohnermeyer (2012) and Bohnermeyer & O'Meara (2012) to spatial descriptions also required further specification of some aspects of the framework to account for all spatial terms found in Caac. Specifically, I propose to further divide the head-anchored vector category into a Head-specified Vector, and a Head-unspecified Vector. This allows me to apply the vectorial framework to centrifugal directionals in Caac. Interpreting spatial data in terms of vectors further enables me to integrate the use of the main spatial components in Caac in location, motion and orientation while addressing several major issues raised from the canonical accounts of Frames of Reference, in particular its links to non-oriented directions and its relation with deixis. Finally, I also distinguished spatial strategies (what speakers use to make reference to space) from three spatial domains (what speakers communicate on), clarifying therefore the relationships between Frames of Reference, motion, location and orientation.

By way of summary, within the vectorial analysis, five spatial strategies have been identified in Caac: (i) the intrinsic Frame of Reference, (ii) the absolute Frame of Reference, (iii) the geomorphic Frame of Reference – all analyzed as angular-anchored vectors – (iv) *ad hoc* landmarks represented by head-anchored vectors, and (v) the Deictic Centre serving as the Head of Head-anchored vectors or as the Tail of the angular-anchored and head-unspecified vectors. Deictic directionals anchor the description with regard to an absolute or geomorphic direction and the location of the Deictic Centre, involving therefore both an angular-anchored vector and a head-anchored vector. Spatial strategies which do not involve any vector (topology) were described briefly in sections 5.1 and 5.2, and are mentioned in passing when discussing their combinations with vectorized strategies in Location, Motion and Orientation.

Another central issue I address in this work is the use of present-day Caac, raising questions about the extent to which spatial reference can be affected by changes in the way the speakers relate to their environment, in their lifestyle, and therefore in their communicative needs. An example of this is the relevance of the wind-based system in a society which no longer primarily relies on sailing, seafaring and fishing, the need to express different spatial relationships with their territory, and the potential influence of French on Caac spatial references. One recurrent feature of spatial reference in Oceanic languages is the absence of a relative usage of intrinsic terms. Section 8.3.4.5 shows the extension of the use of intrinsic expressions to spatial arrays in which two objects do not have intrinsic sides, and the potential for those expressions to describe a spatial configuration in the relative Frame of Reference. It is already acknowledged that the relative Frame of Reference often develops from the intrinsic system when the latter fails in describing a spatial array, in particular

scenes with a non-faceted reference object (Levinson & Wilkins, 2006: 543). But interestingly, in order to describe another symmetrical spatial array showing two identical faceted objects (e.g. two toy men, section 8.3.4.5), speakers may resort to a different strategy and project absolute and geomorphic regions off an imaginary obstacle (Fictive Ground). This type of description shows a more abstract use of a geomorphic expression and shares some similarities with the way the relative Frame of Reference is used as the division of space into a downward zone close to the Deictic Centre versus a crosswise, opposite zone which is relative to the viewpoint of the speaker, and not the local topography. Thus, several issues have been addressed that had posed problems for the Frame of Reference typology. In particular, there are three types of expressions which are difficult to account when relying solely on Frame of Reference systems and which can be better accounted for with the notion of vectors: (i) the deictic directional clitics specialized in absolute directions (section 6.2.2), (ii) the region adverbs projecting facets defined by absolute directions and projected off a reference object (section 8.1.3.3), and (iii) the region adverbs projecting facets defined by geomorphic directions and projected off an imaginary obstacle while relying on the viewer's perspective (section 8.3.4.5).

This study also offers the first analysis of fictive motion expression in a New Caledonian language. Besides cross-linguistically common expressions such as Co-extension Paths, Paths emanating from the Figure's facet and Access Paths, we investigate a particular usage of directionals in the Basic Locative Construction which led us to introduce another category of Fictive Motion expressions, called 'Anticipated Paths'. Anticipated Paths are conceptually the opposite of Access Paths. In Access Path expressions, the speaker expresses the location of the Figure by referring to the fictive path that the speech-act participants could follow to reach the Figure in question. In Anticipated Path expressions (which in Caac always involve deictic directionals), the speaker presents the location of the Figure as a temporary place which is part of a journey towards the speech-act participants. Anticipated Path expressions therefore denote a non-actual path, i.e. a path the speech-act participants expect the Figure to follow. The non-iconicity of the word order and the inverted use of the absolute directionals in comparison to the Basic Locative Construction based on Access Paths are striking features of Anticipated Path expressions which probably make them more difficult to compute than other Fictive motion expressions, and we may therefore wonder about the necessity of having such a complex construction. One hypothesis is that Anticipated Path expressions may enable the addressee to trace the journey of an animate Figure. This construction again demonstrates the importance of positioning somebody in relation to environmental bearings and to the speech-act participants' location in Kanak languages, which might also point to the importance of locating someone within the network of community

relationships in the Kanak culture to anticipate the following steps of his/her journey. This need to anchor an entity within the network of social references via spatial references has been underlined in many New Caledonian narratives (see Ozanne-Rivierre, 1979: 16; Bril, 2004a: 123). It is most likely that absolute and deictic directionals in the Anticipated Paths contribute to this subtle social mapping.

In short, this thesis has afforded many insights into the analysis of space in Caac. However, much more needs to be done on Caac's grammar to understand the complex grammatical nuances of this language. Several aspects of the discussion on space could also be expanded including, for instance, the relationship between orientation and the topological strategy or the vectorial analysis of deictic adverbs and demonstratives. Another topic of interest is the nature of the relationship between vectors and spatial domains. On a more abstract level, we could potentially explore the idea of sub-dividing angular-anchored vectors into two types: one creating a path – be it fictive or factive – such as in (Factive) Motion, Access Paths and Anticipated Paths expressions, and another type of vector which creates a search region coded by intrinsic expressions and, to some extent, by the relative-like use of the geomorphic expressions mentioned above.

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